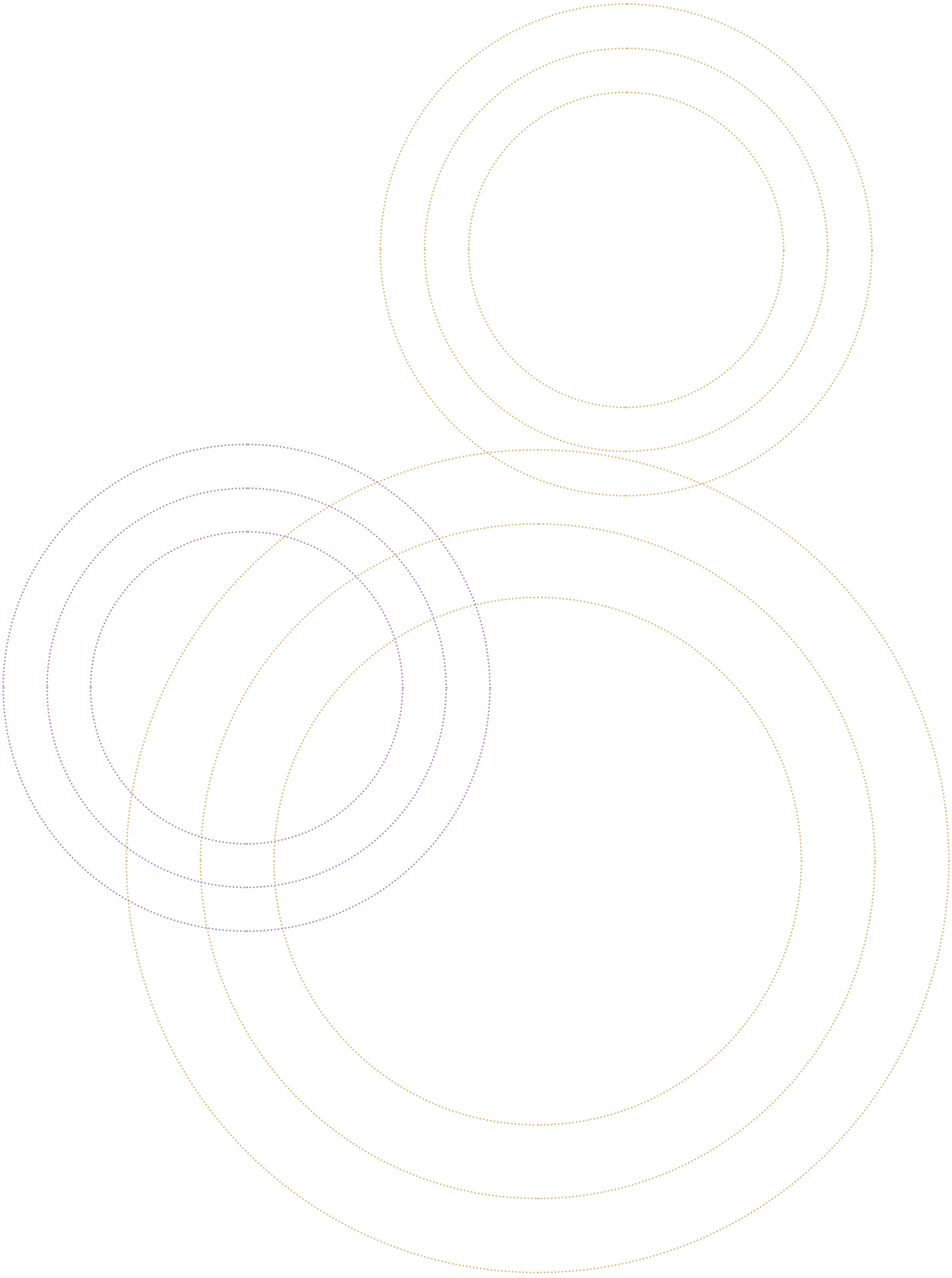
FEDERATION OF EUROPEAN AQUACULTURE PRODUCERS

ANNUAL REPORT 2015



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About FEAP

FEAP is the united voice of the European aquaculture production industry, being the Federation of National aquaculture associations in Europe that represent professional fish farming.

With 26 members drawn from 22 States across the European continent, the FEAP represents

- **>2 million tons of produce**
- **Ex-farm value of over € 8 billion**
- **100,000 direct jobs in coastal & rural areas**

FEAP works to support and promote the responsible development of the European aquaculture sector and develops and provides the common positions and opinions of the European sector.

Focused on fish farming, FEAP represents a range of different farmed species that include:

- Trout
- Salmon
- Carp
- Sea bass
- Catfish
- Seabream
- Turbot
- Cod
- Sturgeon
- Meagre

European aquaculture rears many other species, both in fresh and salt water, and details on the levels of production reported can be found in 'Facts & Figures' at ***www.feap.info***. Additional statistical information on aquaculture is provided by the FISHSTAT service of the Food and Agricultural Organization of the United Nations (***www.fao.org***) and the European Commission's Directorate General for Maritime Affairs and Fisheries – DG MARE (***ec.europa.eu***)

Founded in 1969, FEAP has responded to the changes and developments in European aquaculture and, in line with society's expectations, provides transparent information on activities and developments in this dynamic sector.

FEAP is run by professionals for professionals, meaning that all of its members are active in fish farming and its markets and is thus very aware of the main issues concerning aquaculture and its sustainable development in Europe.

FEAP's Mission

- Pursue and improve its coordination role of the goals of its National member associations and the aquaculture profession.
- Assure a pro-active position in front of all relevant authorities and interests
- Provide accurate information and sound rationale to policy and decision makers.
- Guarantee the communication of unbiased information on aquaculture processes and products to the consumer.
- Guarantee valid, consensual and timely responses to key issues.
- Develop the structure and operations required for the representation of a dynamic and visible sector at European and worldwide levels.

Introduction
Annual Report 2015

2015 marks 20 years of the FEAP, since while it was in 1994 that it was agreed to widen the scope of the Federation of European Salmoniculture to cover all fish species and, following statutory changes, the FEAP held its first AGM in 1995 on the island of Santorini in Greece. To mark this event, a summary of FEAP's progress and achievements has been prepared.

European aquaculture starts in 2015 with new optimism following agreement in 2014 for all of the instruments that accompany the reformed Common Fisheries Policy (CFP). Aquaculture's role is to "contribute to the preservation of the food production potential on a sustainable basis throughout the Union so as to guarantee long-term food security, including food supplies, as well as growth and employment for Union citizens, and to contribute to meeting the growing world demand for aquatic food." The concern of the FEAP for many years has been how to maintain its competitiveness in the marketplace, while adapting to legislative demands and the accompanying investments.

The new CFP addresses many of the FEAP's requests, including that of the level playing field for all aquaculture products – regardless of their origin - so that consumers can make an informed choice of purchase. A condition of the Strategic Guidelines for the Sustainable Development of European Aquaculture (2013) is that Member States need to provide national multi-annual plans for aquaculture so as to obtain a position whereby open consultation and coordination would give a clear overview of how European aquaculture could develop. Administrative and licensing issues are clearly identified as factors that are holding back aquaculture growth and development. The FEAP has regularly underlined that the provision of clear national plans, supported by appropriate spatial planning – made in agreement with local authorities – are requisites for sustainable development. In place from November 2014, the new Juncker Commission has made a commitment to jobs, investment in growth and that the EU becomes a stronger global actor.

FEAP's annual event, 'Aquaculture in Motion' was co-organised with the FEFAC – the Federation of European Feed Manufacturers – and focused on 'Confidence in Culture', providing presentations and debate on why consumers and regulators should have confidence in fish farming, its activities and its products. With a focus on efforts to promote and communicate the benefits of European fish farming, the links between Image, Confidence and the Market were also underlined.

The Mediterranean Aquaculture Commission of the FEAP made a Resolution at the 2014 AGM that highlighted its concerns as to the lack of technical improvement in Mediterranean fish culture and for which there is no specific solution. A special workshop was organised in Aquaculture Europe 2014 to address this issue; a summary of the event is included in this Report with associate recommendations.

The 2015 Annual Report provides the information on European fish farming as it stands today and covers strategic, technical and legislative issues that affect its development. The need for focused research and innovation actions is recognised and there are several projects being undertaken to provide new options for the sector in the future. One component of this is the work being done on providing agreed methodologies for assessing the environmental footprint of foods produced in Europe and where the FEAP is following 2 pilot phases, one on feeds and the other on fish and seafood. It is hoped that these important projects will provide substantial evidence for the sustainability of the profession.

The FEAP and its member associations follow the wide range of concerns raised by professionals in the field so as to obtain the solutions required for the sustainable development of European aquaculture. To achieve these aims, this report covers many of the issues identified that will contribute to this and the long-term success of fish farming in each corner of Europe.

Message from Alain Cadec, MEP - Chair Fisheries committee

Born in 1953 in Saint-Brieuc of the Cotes d'Armor department in Brittany, France, Alain Cadec has a DEUG in Economic and Social Administration (University of Rennes).

He has been active in different positions in his home town where he is currently the Chairman of the Local Water Commission (since 2006) and Chairman of the Committee 'Algae Green Bay' of Saint-Brieuc (since 2009). He is also General Counsellor of the Cotes d'Armor (2001-2008, re-elected in 2008).

Alain is a MEP since 2009, a member of the UMP and Chairman of the Committee on Fisheries since 2014.

What raised your first interest in aquaculture ?

I originate from Brittany, a maritime region by excellence. In my daily work as a politician, I am in constant contact with both the fisheries and aquaculture professionals. These businesses play an important role in our European territories.

From the Parliament's point of view, what do you see as the major issues affecting the development of European aquaculture ?

Nearly 75% of the fishery and aquaculture products consumed in Europe are imported from non-European countries. We must stop this trade dependence by giving European producers the means to develop their operations while being in full compliance with health and environmental standards. It is necessary to protect European aquaculture from the sometimes unfair competition from 3rd countries. European aquaculture is recognised for the quality of its products and high health standards. We must preserve and enhance these assets by strengthening the traceability requirements for all aquaculture products consumed in Europe. Aquaculture is a growing business that needs a clear framework for its organisation. This requires governmental action to resolve conflicts on resource use and provide support to the professionals' investments which are often heavy. It is also important to promote an aquaculture that is sustainable, environmentally and nature friendly, particularly with regard to water quality.

In your opinion, will the new Commission bring any changes to the Common Fisheries Policy ?

The reform of the Common Fisheries Policy (CFP) came into force last year. We now need to implement it. This new CFP takes full account of the necessary development of sustainable aquaculture in Europe and I welcome this. A new aspect is that Member States have to establish multiannual national strategic plans for the development of aquaculture in their territory. In parallel, the European Fund for Maritime Affairs and Fisheries (EMFF) devotes a whole chapter to aquaculture, to co-finance producers' investments. The European Union therefore has a clear strategic vision for aquaculture. We now have to implement these instruments and assess them in order to draw full potential.

The EMFF was a stumbling block for the EP at one point and its implementation appears to be delayed. Are you happy with current progress ?

The European Regulation establishing the European Fund for Maritime Affairs and Fisheries (EMFF) entered into force in May 2014 but its implementation in some countries is still pending. It is up to each Member State to develop its operational programme. During negotiations between the European institutions, I obtained that the EMFF was applicable retroactively from 1 January 2014. This means that, from that date, national managing authorities may approve EMFF-eligible projects. The European Commission will then reimburse the share of EU co-financing once their operational programme has been validated. I wish that Member States who are late use this flexibility now so as to fully implement the EMFF and so no longer block the investment projects of the professionals.

It has been difficult to obtain pan-European actions on some issues – notably on Cormorants and Eels; how does the Fisheries Committee approach these problems ?

The cormorants cause significant damage to fish farms. Today, the regulations relating to the protection of this predator vary from state to state. Clearly, I wish that the European Commission proposes a European framework on this issue. Regarding the eel, the Member States must submit to the Commission management plans for the conservation of this species. The measures focus on different types of fisheries, barriers to the movement of eels, restocking, habitat restoration and contaminations.

In the marine sector, more focus is being given to improving society's understanding of the oceans (Ocean Literacy); how can the Fisheries Committee help stronger communication on EU aquaculture ?

The European Parliament gives great importance to the so-called "blue growth", i.e. the coordinated development of the maritime economy. This remains a pool of growth and jobs that is largely untapped. Aquaculture certainly has its place there. In this context, knowledge of the marine environment is fundamental. Several European instruments, such as the EMFF are helping this direction. For example, in aquaculture, programmes focus on identifying the most favourable areas for the development of aquaculture activities. Funding also exist to develop aquaculture methods compatible with the management of Natura 2000 areas.

Future generations: what are your ideas on how Europe can support the young people of the next generation to start an aquaculture business ?

Aquaculture is a promising sector that needs new generations in its workforce. Starting as a young professional is usually very difficult because farms and their operation require significant investments. Through the EMFF, the European Union supports young farmers in launching their business by means of counselling, productive investment and vocational training. The EMFF also provides guarantees in case of livestock diseases. In addition to this financial support, it is necessary to clarify the regulatory framework, particularly in health. These standards are necessary but they must be understood by the professionals. They should not discourage them from entering the sector but there is undoubtedly an effort in simplification to be achieved.

What are your hopes for the future of EU aquaculture ?

Aquaculture has an important role to play in providing Europeans with high quality and safe food. Enhancing the traceability of products is essential, especially to give added value to European products, whose quality is recognised, compared to imported products that do not always meet the same health and environmental rules..

"I hope that the European Union will quickly establish a European Ecolabel for fishery and aquaculture products, which will have much more weight than the multiple private labels that currently exist."

20 years of FEAP

Logo of the FES

Until 1994, the FEAP was the FES – **the European Federation of Salmoniculture** – which was created in 1969, by the professional trout farmers of France, Italy, Belgium and Germany. The original goal was to mirror the structure of the European Economic Community and to defend the interests of the fish farming profession within this. Although carp farming representatives participated in the preliminary discussions, no agreement was reached to create an organisation to defend common aquaculture interests.

In the 25 years between the foundation of FES and 1994, fish farming had developed in different regions and with different species while 'Europe' had grown from 6 Member States to 12. Salmon was still a 'new' species in the 1970s and Norway applied to become a member of FES (with 3,500 tons of salmon and 2,200 tons of trout). Since salmon is, by definition a salmonid, the FES - in English - became the Federation of European Trout and Salmon producers. Operating with internal Commissions covering Trout, Salmon, Fish Health and the Environment, it is interesting to note that many of the issues discussed at that time remain to the fore many years later – including fish health and the availability of treatments, predation by birds and concerns on water use.

Seabass and seabream appeared on the scene in the 1980s and the FES Assembly debated whether it should diversify its interests in line with changing times. In 1994, the Federation of Greek Maricultures requested membership, which was accepted and, in 1995, the FES duly changed its statutes to include all aquaculture species, becoming **the Federation of European Aquaculture Producers – FEAP**. Spain, Portugal and Cyprus joined soon afterwards, boosting the activities of the Mediterranean Aquaculture Commission (MedAqua). By this time, FEAP members were responsible for +/-700,000 tonnes of production, largely salmon and trout.

Other changes were occurring in Europe, following the accession of Sweden, Finland and Austria in 1995. In central and eastern Europe, the privatisation of carp farming activities led to the creation of new associations for freshwater fish farming in many countries and the FEAP started to receive interest from this sector.

Upon the initiative of the President, Baron Charles de Fierlant Dormer, who had previously been responsible for 'European Affairs', the FEAP applied for observer status to the Food and Agriculture Organisation of the United Nations since it had the only international committee that looked at freshwater aquaculture, the European Inland Fisheries Advisory Committee. New contacts brought new participatory actions and the FEAP participated in the preparation of a European study on 'Aquaculture and the environment' the development of a database on production and prices and active participation in dissemination of research project results (by fax and post) to fish farmers – the 'Aquaflow' project.

At that time, office computers and an email address were still rareties !

Hot topics in 1995 included the use of veterinary medicines, how to address cormorant predation and the fishing of glass eels. Concern on the stability of markets for salmon and large trout were regularly voiced and discussed.

The Membership list of that time demonstrates the longevity of certain Federation participants, notably Antonio Trincanato (Secretary of API in Italy), and Richie Flynn (Secretary of IFA Aquaculture (Ireland) with Gustavo Larrazábal (Spain), John Stephanis (Greece) and Paul Birger Torgnes (Norway) still active in the current FEAP Management Committee.

Antonio Trincanato & Richie Flynn

The European Commission wished to expand its official contacts with the aquaculture sector, which was covered previously by a sub-Committee of the Advisory Committee on Fisheries. In 1998, alongside the newly-created European Mollusc Producers Association, FEAP joined the Advisory Committee on Fisheries and Aquaculture (ACFA), participating in a new era for European aquaculture activities. With a dedicated working group on aquaculture, FEAP representatives had to become well versed in the details of European policies and legislation. By this time, FEAP also had active participation from non-EU States, notably the Faroe Islands, Iceland and Turkey.

One of the most important events that occurred was in the 'Dioxin affair' of 1999 where contaminated chicken feeds led to a Europe-wide awareness of the toxicity of dioxins and dioxin-like PCBs. This event created new conditions for the use and approval of feed ingredients in all livestock sectors and a much higher awareness of public health concerns and consumer interests.

The scope of work done by the FEAP changed considerably from 1998 onwards and the advent of increased consultation, accompanied by project activities, led to the Secretariat moving from a part-time to full time activity and, in 2002, Courtney Hough (General Secretary) and Catherine Pons (Office Manager) moved into new FEAP offices in Boncelles (Belgium).

FEAP's first dissemination & workshop project throughout Europe

PROFET

In 2004, the European Union expanded from 15 to 25 with the accession of Central and Eastern European countries. Poland, Hungary and the Czech Republic were already FEAP members at this time.

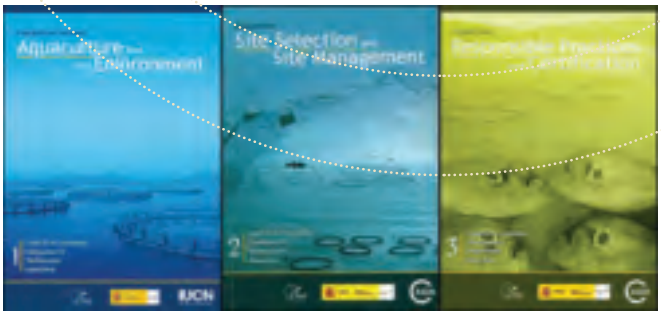
As European fish farming progressed, the FEAP widened its scope for consultation and participation in actions that support its development. Liaison status with the FAO led to cooperative actions with the Committee on Aquaculture of the General Fisheries Council of the Mediterranean (GFCM) and EIFAAC (European Inland Fisheries and Aquaculture Advisory Commission).

ACFA consultation work increasingly covered legislative and regulatory aspects where member association representatives were called upon for their expertise and professional experience. The wide range of topics covered also caused the creation of specific working groups within the FEAP – for topics such as trout quality and glass eel supply.

One working group developed the draft for the FEAP's Code of Conduct for European Aquaculture, developed in 2004 and revised in 2008, which has been widely recognized for its international contribution to improving governance within the sector.

In 2008, the FEAP also prepared its Code of Best Practice for the live transport of finfish.

In 2005, following contact with the Mediterranean office, FEAP signed a Memorandum of Cooperation with the International Union for the Conservation of Nature (IUCN), which, apart from extensive joint consultation on environmental issues, led to the preparation of Guidelines for Sustainable Aquaculture, including Site Selection and Management.



This collaboration continues today, with joint participative actions, including a recent project on sustainable feeds and feed ingredients.

These experiences fed into much of the work of ACFA, where the FEAP provided both data and advice on aquaculture's position within the Common Fisheries Policy and the Common Organisation of the Markets for fisheries and aquaculture products. However, as all fish farmers know, environmental legislation has become an integral component for operations on land, in lakes and in the sea, where the Water Framework Directive, Natura 2000 and the Biodiversity Directives are governing forces.

In parallel, the preparation of European legislation on aquatic animal health required a lot of attention, with FEAP experts providing valuable inputs to the creation of a new Directive in 2006, which is currently under review. These consultation efforts on European policies and legislation became a focal point of FEAP's internal and public work, requiring the mobilisation of expertise from the FEAP's network of members and associated personnel.

20 years of FEAP

These efforts were accompanied by growing international recognition of FEAP's efforts and expertise and, from 2000 onwards, FEAP has participated in many international events and conferences, providing its positions on the development of the profession and how the sustainable development of aquaculture can be achieved.

Contacts with related Associations and Federations, notably on feed ingredients and manufacture, health and veterinary treatments, have been extended to cooperative work and projects.

As mentioned, FEAP's first European project was in the late 1990s; since then, it has participated in more than 25 different projects, covering a wide range of topics and issues. While FEAP has a primary role in dissemination of project results towards the profession, it has also been involved directly in specific research projects, support and dissemination actions, networking and educational activities.

As with its consultation activities, the FEAP has used the capacities of its membership to support the achievement of these project activities, particularly where the encouragement of SME participation has been promoted. In recognising the need for increased research and innovation for the benefit of the aquaculture profession, the FEAP contributed to the creation of the European Aquaculture Technology and Innovation Platform (EATiP) in 2007-8.

European Aquaculture Technology and Innovation Platform

Now recognised as an official European Technology Platform, following the preparation of its Vision and Strategic Research and Innovation Agenda, its Secretariat is coordinated by the FEAP Secretariat in Liege. The FEAP continues to be engaged in projects that are relevant to the sustainable development of the profession, as indicated in the projects' section of this Report.

Notable within this aspect are some new activities, covering organic aquaculture, traditional foods and selective breeding research (see project updates); in addition, the FEAP chairs the Seafood Pilot Phase for measuring the Product Environmental Footprint of aquaculture and fisheries products, which should be completed by 2017 (see separate section).

Finally, with ACFA's mandate ending in 2013, the new Common Fisheries Policy foresaw the creation of an Advisory Council, devoted to aquaculture that is to be managed by stakeholders. The FEAP has worked alongside other stakeholders to create this new entity, which should be finalised within 2015.

The Secretariat

Traditionally, the FES Secretariat followed the Presidency and, when this was attributed to Belgium in 1993, the President asked Courtney Hough, then working with the Gabriel Group, if he could spend one afternoon/ week on FES affairs. FEAP developments confirmed this underestimate. By 2001, the combination of consultative & representative work and projects led to the move to offices in Boncelles (Belgium) and the engagement of Catherine Pons as Office Manager. Further assistance to the Secretariat has been provided by Caroline Gron (Denmark), Albane Lairesse (Belgium), Margreet van Vilsteren (Netherlands), Francesca Margiotta (Italy), Adrien Louyer (France) and, most recently, Marleen Dehasque (Belgium).

In 2008, following flooding of the Boncelles offices, the Secretariat moved to its current location in Rue de Paris in Liege (Belgium) - a coincidental link to the original FES office location in Paris - France.

The FEAP Secretariat
Catherine Pons, Courtney Hough & Marleen Dehasque

This short history of the last 25 years of the Federation, in the shape of the FEAP, cannot be complete without some words on the Presidents and office-holders who have contributed to new strategic directions and the substantial development of the Federation.

- **Baron Charles de Fierlant Dormer** (President 1993-1998 [Belgium]) was originally responsible in FES for 'European Affairs' and promoted official links to the both the European Commission and the FAO.

- **Alessandro Perolo** (President 1998-2003 [Italy]) took forward FEAP's participation in ACFA, taking on the initial administrative tasks and supported FEAP's participation in European project work.

- **Arnault Chaperon** (President 2010- [France]), experienced many aspects of fish farming (freshwater and marine) and marketing, has been very active in both developing and participating in FEAP representative actions.

3 people have been present within FEAP since its inception in 1994 and are still active on today's Management Committee, each having contributed significatnly, and in different ways, to the FEAP's development

Gustavo Larrazábal, Paul Birger Torgnes & John Stephanis

- John Stephanis (President 2003-2010 [Greece]) brought Greece into the Federation and was the first Mediterranean marine farmer to chair the FEAP, promoting wider cooperation efforts on marketing and promotion within the profession.
- Paul Birger Torgnes (Vice-President [Norway]) has been involved in representative work in the Federation from the early days, with expertise in marine farming and feed manufacture, building bridges between the south and north of Europe.
- Gustavo Larrazábal (Vice-President [Spain]), active in Mediterranean hatcheries and ongrowing, supported FEAP's expansion. He also became the Chairman of EATiP in 2007, supporting research and development for the benefit of the profession

The FEAP uses different Commissions, populated by National representatives and experts, to address the main issues and concerns of the profession, where those that deal with topics concerning the environment and fish health are long-standing.

- **Pier-Antonio Salvador** (Chair - Fish Health and Welfare Commission [Italy]) has followed tirelessly the development of legislation on fish health and veterinary issues since 2003, pushing forward the position of fish farmers and ably assisted by the national association veterinary advisers.

- **Jean-Yves Colleter** (Chair – Environment Commission [France]) has been responsible for covering the environmental issues affecting fish farming since 2009, following on from Nick Read [UK], where the Water Framework Directive, Natura 2000, Biodiversity and Organic aquaculture conditions have been the main focus for debate and discussion

FEAP Award for Excellence in European Aquaculture

During the gala dinner after the 2014 FEAP Presidents' meeting on 2nd December in Brussels, Želimir Filić received the 2014 FEAP Award for Excellence in European Aquaculture. Decided by a jury composed of the previous recipients of the Award, following nomination by a FEAP Member Association, the award was presented during the gala dinner of the FEAP Presidents' meeting.

In the presentation by the FEAP President, Arnault Chaperon, Želimir Filić was recognised for dedicating his entire career in developing the technology of fish and shellfish farming as well as upbringing aquaculture to become a distinctive and important economic sector.

After graduating from the Faculty of Marine Fisheries (Szczecin, Poland) in the early '70s, Želimir started work at the Ruđer Bošković Institute, Center for Marine Research (Rovinj, Croatia). Investigating sea bass and sea bream, his first studies covered artificially-controlled spawning and larval and juvenile development. He soon established a laboratory with a prototype hatchery and cage facilities for fish culture which was one of the first in Europe at that time. This pioneering work enabled the implementation of this scientific knowledge to mass production in the sea. At the beginning of the '80s, pilot farms for mass production of fish and shellfish farming in polyculture were installed in Lim bay, Croatia, as a part of the fish and shellfish processing company 'Mirna' (Rovinj, Croatia). Želimir joined as the of Head of department of the 'Center for Mariculture' which later became a joint-stock company for mariculture named 'Marimirna'. Establishing and organizing a fish farming company opened many challenging projects for Želimir, like the construction of an industrial hatchery and providing technical solutions for the pregrowth of fingerlings using warm cooling seawater from the thermal power plants. His production of fine fish products like smoked and marinated fillets of sea bass and sea bream were even recognized as a delicacy by winning the prestigious Seafood Prix d'Elite in 2004 at the European Seafood Exposition in Brussels.

Želimir was, and still is, an active member of many recognized national and European associations of aquaculture. During his career, he was coordinator of the FAO project 'MEDRAP', member of the Presidency of the European Aquaculture Society (EAS), member of the Economic Council of the Chamber of Economy for Region of Istria, Croatia, President of Aquaculture Association, Croatian Chamber of Economy (Zagreb, Croatia), member of the Working Group on Fisheries and the Working Group on Food Safety in the negotiations for Croatian accession to the EU, National Representative in the FEAP and Vice President of FEAP's Mediterranean Aquaculture Commission.

Previous Recipients of the FEAP Award for Excellence in European Aquaculture

Baron Charles de Fierlant Dormer (Belgium)
Jean-Jacques Sabaut (France)
Constantin Vamvakas (Greece)
Tore Håstein (Norway)
Randolph Richards (UK)
Lázaro Rosa Jordán (Spain)
Bjorn Myrseth (Norway)
Yvette White (France)

FEAP member Associations in the picture

The Danish Aquaculture Organisation - Dansk Akvakultur, www.danskakvakultur.dk

Our members are seafood farmers (freshwater and marine trout, eel and mussel), feed companies and exporters/processing companies. We represent our members politically at international, national and regional level, offering technical support to our members, co-ordinating and taking an active part in RDI projects while also providing public relations and communication activities.

It is our mission to increase the output of healthy and responsible farmed aquaculture products to consumers.

Our main priority is to improve the overall framework for farming seafood and to strengthen our member's competitiveness. We have meetings with members of the Danish Parliament on a regular basis where we present and discuss proposals on how to improve the overall conditions for aquaculture in Denmark. We also have ongoing communications with the relevant authorities that regulate aquaculture in Denmark.

We are working on the establishment of a new regulatory framework for marine and freshwater fish farming. This involves, for example, the introduction of an output-based regulation for freshwater farms and zonal planning for marine aquaculture.

We have established recently a new education system for aquaculture, in collaboration with the Danish agricultural sector. The introduction of new technologies in fish farming requires new skills; as an example, the need to improve and expand the use of modern IT systems means that we are currently developing new IT platforms for operation. Since the average age of our fish farmers is steadily increasing, we recognise the necessity to attract younger farmers to the profession.

Veterinary issues and food safety remain a priority and we aim at developing better vaccination protocols, phasing out the use of formaldehyde and at maintaining our position as "VHS free".

In respect of product certification, we continue to support farmers who want to be certified either for organic production or by the Aquaculture Stewardship Council.

Finally, the Danish Aquaculture Organisation is ready to fight unfair competition from third countries and the recent case against Turkey is an example of our commitment to an equitable position for our members.

Italian Fish Farmers Association - Associazione Piscicoltori Italiani, www.api-online.it

API (Associazione Piscicoltori Italiani – Italian Fish Farmers Association) is a professional association, established in June 1964, representing over 300 fish farms using fresh, salt and brackish water, producing many different species. Representing 90% of the Italian production of finfish. API aims to protect, develop and consolidate all activities related to fish farming, promoting any financial, scientific, technical, professional and legal interventions that may prove to be necessary to reach these targets.

The freshwater aquaculture section includes the breeding of trout, the most popular species reared in our country (Italy is a major EU producer) but also of Cyprinidae (carp, tench, etc.), Ictaluridae (catfish), Acipenseridae (sturgeon), eels, as well as other minor species (e.g. pike...). Marine aquaculture involves the rearing of species such as sea bass and sea bream, meagre, as well as other species that are reared in brackish water wetlands - the "Valli da pesca" – historical sites that are very important for the perfect "feeling" between aquaculture and environment.

The major focus of API's political activities in 2014 was related to the EMFF implementation at national level, participating in the work to develop the National Strategic Plan and the Operating Plan. This work continues for the application of the EMFF at regional/local levels. API was and is involved also in the promotion of the quality and nutritional value of Italian aquaculture products and in its guarantees within the complete production chain (the farm to fork principle). Animal health and fish welfare are other important issues to which API is fully committed; in particular, in the continuous assistance to its members regarding the law in force and by following the EU Commission proposals for new regulations on animal health, veterinary medicine and medicated feeds. API has a strong collaboration with research bodies, national and local authorities, so as to provide the best up-to-date knowledge to increase the professionalism of aquaculture farmers. The broad representativeness of API contributes to spreading training activities and technical information to the different Italian fish farms throughout the National territory.

'Aquaculture in Motion' the annual FEAP event

"AQUACULTURE IN MOTION', the third edition of FEAP's annual European aquaculture event, was held in the Committee of the Regions, Brussels, 1st December 2014.

This year's 'Aquaculture in Motion' focused on 'Confidence in Culture' and was co-organised with FEFAC, the European Feed Manufacturers' Federation. To satisfy consumer and society's expectations of European aquaculture, the sector knows that it must provide confidence in the professional activity and its products, adapting to change and investing in new tools for production, management and innovation.

Over 90 participants from 18 different European countries attended this important event.

The meeting was opened with presentations by Mathieu Bergé, responsible for aquaculture in the Aquitaine Region of France, the FEAP President, Arnault Chaperon and Niels Alsted, chair of FEFAC's fish feed committee. Lowri Evans, Director General of DG Mare, made a keynote introduction, highlighting that the European Commission's will to continue to do all it can towards putting the framework in place to provide the business conditions and the support that will encourage growth and jobs in European aquaculture.

'Aquaculture in Motion' the annual FEAP event

The first presentation by the FEAP President, Arnault Chaperon, explained the links between image-confidence-market, focusing on the importance of transparent communication on the high quality of the products that European aquaculture produces. More perspectives were given by Véronique Ehanno who showed examples of the French approach, the need for positive messages and the use of new media channels to get these through.

The second session addressed the different conditions of confidence in European Aquaculture: confidence in product safety, in feed safety, in environmental issues and in welfare. Catherine McManus of Marine Harvest presented the many safety measures that are used in salmon farming while Dr. Wolfgang Trunk of DG SANCO gave an overview of the EU regulations regarding aquaculture feeds, their simplification and achieving a sound safety level by focusing on transparency, efficiency and truthfulness of labelling. Neil Auchterlonie of CEFAS (UK) showed that confidence in environmental issues is gained from a combination of a legislative framework, a science-supported evidence base and a voluntary approach by the industry. Finally, Nancy De Briyne of the Federation of European Veterinarians explained the main welfare issues in aquaculture and the challenges of measuring and monitoring welfare.

The third session engaged a positive approach towards addressing the issues covered previously. Niels Alsted discussed the ongoing developments within the fish feed industry and the challenges that still need tackling, notably on ingredients and their impacts. Javier Ojeda of Apromar (Spain) provided a farmer's perspective on certification and responding to the conditions of consumer choice. Nikos Zampoukas of DG RESEARCH explained the content and scope of EU research programmes related to aquaculture, giving specific examples, while Lara Barazi of Kefalonia Fisheries (Greece) noted the lack of systematic market studies and consumer surveys, underlining the role of the EU to communicate its positive values and principles.

Finally, Gilles Doignon of DG MARE stressed the importance of positive communication and demonstrated this by explaining the aquaculture promotional campaign of the EU - 'Farmed in the EU'.

Richie Flynn, IFA, closed the meeting by stressing that sustainability is the driving point for all economic activities and, increasingly, is the selling point of the EU aquaculture industry and its products. This conference showed how the aquaculture sector has become self-aware, responsible and educated, but that the policy-makers and legislators need to recognise this and take the necessary measures, notably on simplification, to allow the growth foreseen to actually happen.

Sustainability is the driver and the selling point of the EU aquaculture industry and its products !

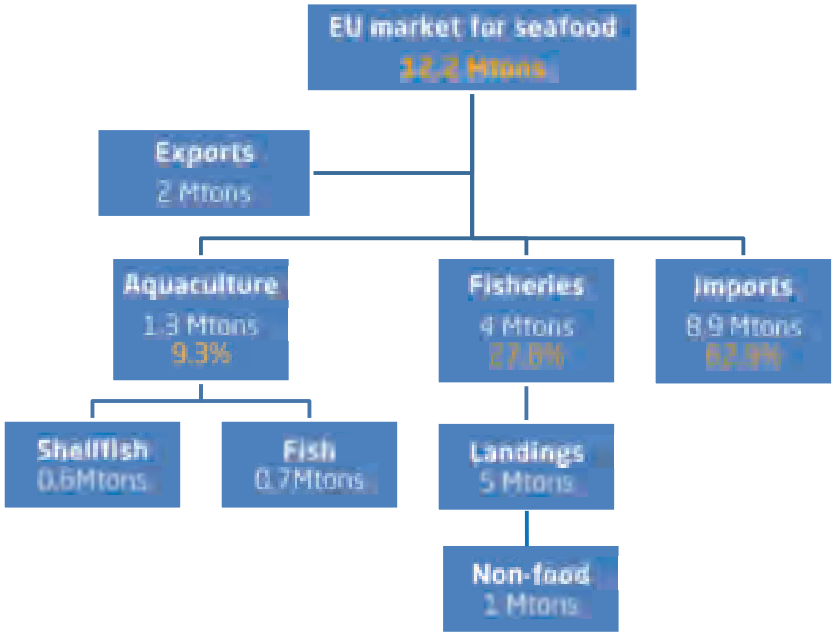
The growing success and impact of 'Aquaculture in Motion' in providing informed, detailed and balanced views on the development of European aquaculture is evident. 'Aquaculture in Motion' will take place again in late 2015.

FACTS & FIGURES

courtesy of FHL - Norway

The European Seafood Market 2013

Structure & Volume



Compared to last year there is a growth in total supply of 234,000 t. to a level of 14.2 million t. (food use) that recovers about half of the reduction seen in last year's figures.[1]

ECompared to last year there is a growth in total supply of 234,000 t to a level of 14.2 million t. (food use) that recovers about half of the reduction seen in last year's figures.

EU aquaculture provides 1.3 million t., split between fish and shellfish, representing 24.5% of EU 'landings' (fisheries & aquaculture). Imported products comprised 8.9 million t., a small increase compared to last year, representing around 63% of the market.

At the EU level, Norway and China are the main extra-EU countries from which fish products are imported. Crustaceans have become the main EU imports in terms of value since 2012.

This picture shows a net consumption total of 12.2 million t. for 2013, an increase of 344,000 t., or 2.9 % over 2012.

These figures bring us to a net consumption level of around 24.4 kg per capita in the European Union. The biggest consumer is Portugal whereas Hungary is at the lowest end.

Tuna, cod and salmon are the main species consumed in the EU in volume.

In value, the United States and Norway were the main countries of destination of EU exports[2].

The EU is the first importer of seafood products, absorbing 24% of total world exchanges in value [2]

[1] A.I.P.C.E. – C.E.P-EU Fish Processors and Traders Association 2014

[2] EUMOFA - The EU Fish Market, 2014 edition

European Aquaculture - 2014

Introduction

This section provides 2014 data on fish aquaculture in Europe (figures either confirmed officially or as estimates), distinguishing 3 key production sectors, namely

- Marine cold water species
- Marine Mediterranean species
- Freshwater species

Since FEAP is not restricted to the European Union, the term 'European aquaculture' refers to the geographical area of Europe. The data collected by FEAP is published in the 'Facts & Figures' section of its website (www.feap.info).

As in the full production report, some countries that have a total production of less than 1,000 tons or without reliable data supply have not been included (e.g. Belgium/Luxembourg and Malta). Within the criteria of species selection, some minor freshwater species and tuna have not been entered due to the lack of reliable data..

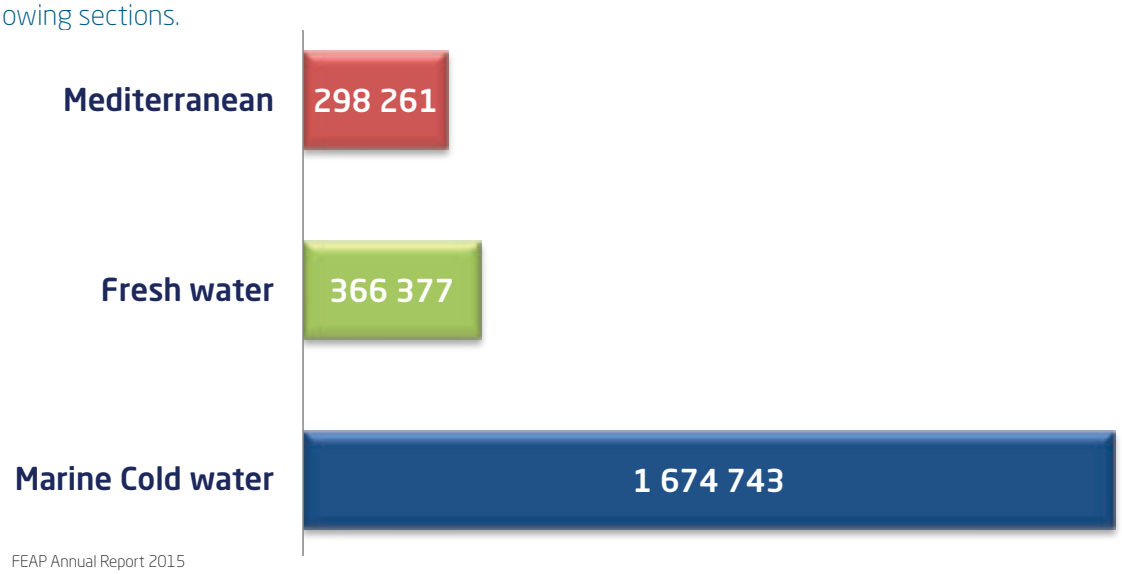
European Aquaculture 2014

The total European aquaculture production reached **2 339 381 tons**, a 5.6% increase compared to 2013, the biggest increase coming from the cold water marine sector, with other sectors showing just a small rise.

Cold water marine species now represent **71.5%** of the total production, fresh water species **15.7%** and the marine Mediterranean species **12.8%**.

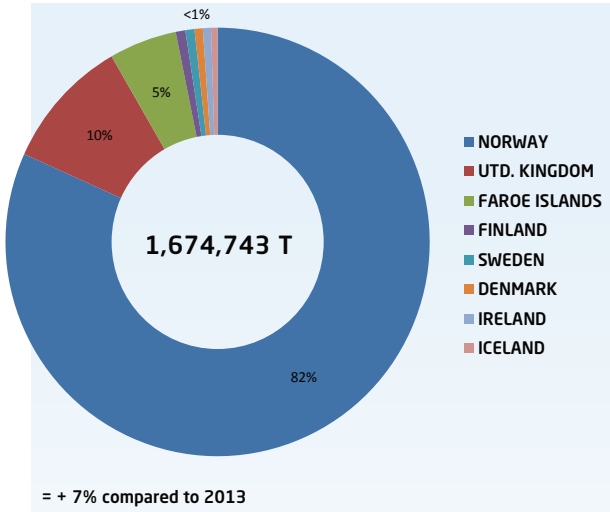
Norway alone represents 58% of this total production; the other countries that produce more than 100,000 t. annually are UK, Greece and Turkey.

The main species produced: salmon, trout, seabream, seabass and carp represented **94%** of the total European production in 2014. The production split up per country and per species is presented in the following sections.

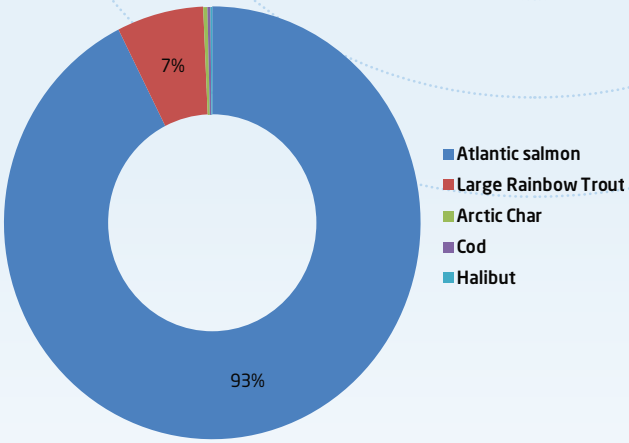


Marine Coldwater

Marine Cold Water Production in 2014 per Country & per Species



= + 7% compared to 2013



Key observations

Production increased by 7% compared to 2013, mainly attributable to Norway. Proportionally, the biggest increase comes from Iceland and the Faroe islands. Production is back to the peak level of 2012

Farmed salmon is the dominant cold water species in Scotland, with a continual steady increase in production, at a sustainable level. Market demand for the product continues to grow, giving healthy prospects for the future. Changing environmental conditions and parasites, such as sea lice, continue to challenge the sector. Research and new technologies are continually being developed and assessed to counter these challenges.

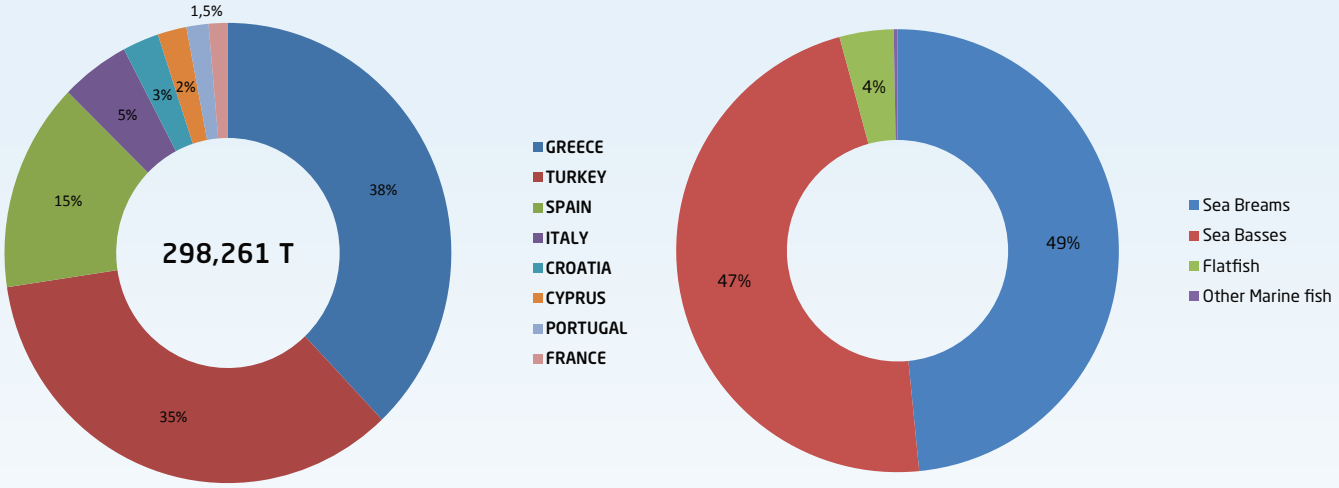
In Norway, good production conditions were present overall for salmon and rainbow trout, where production in 2015 is expected to be in the same range as 2014. Countering sea lice is a major concern of the profession. The number of cod producers is declining and the same situation is expected for cod production; there could however be an increase in holding and feeding wild catches (not from aquaculture). Also, a slight increase in halibut production is expected.


courtesy of FHL, Norway

Marine Mediterranean

Marine Mediterranean Production in 2014 per Country & per Species

While termed 'Mediterranean', this component covers the coastal production of the southern European countries and incorporates a completely different range of fish species to those reared in northern waters.



= +2,1 % compared to 2013

Key Observations

Production in the Mediterranean was stable compared to 2013 – a small decrease seen in Greece was compensated by an increase of Spanish production

Greece: 2014 was a relatively stable year marked by the start of the industry restructuring, as in the case of Selonda Aquaculture. The relative decrease in production has resulted in slightly higher prices and lower volatility in the markets especially if one takes into account the cash flow pressures faced by most Greek producers. Overall, the sector is positive on the outlook for 2015 mainly due to stability (and perhaps a small reduction) in production levels in Greece and Turkey, accompanied by more satisfactory market positions

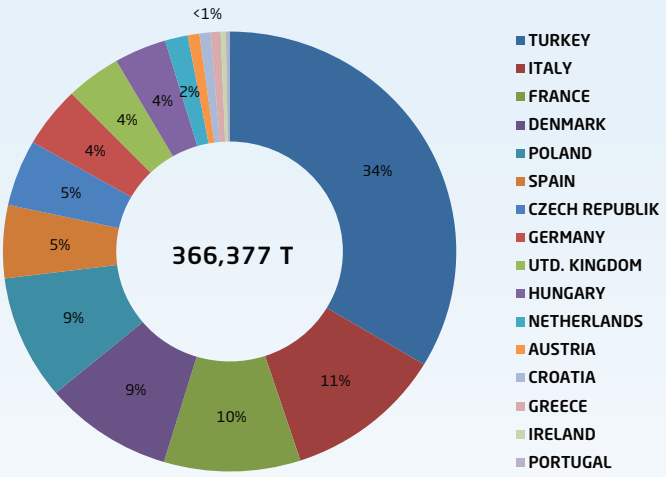
Spain: Production in Spain in 2015 saw a small growth compared to 2014,. Expects to receive lower imports from Greece but perhaps more from Turkey. Whatever the outcome of the situation and restructuring in Greece, this will affect Spanish producers.

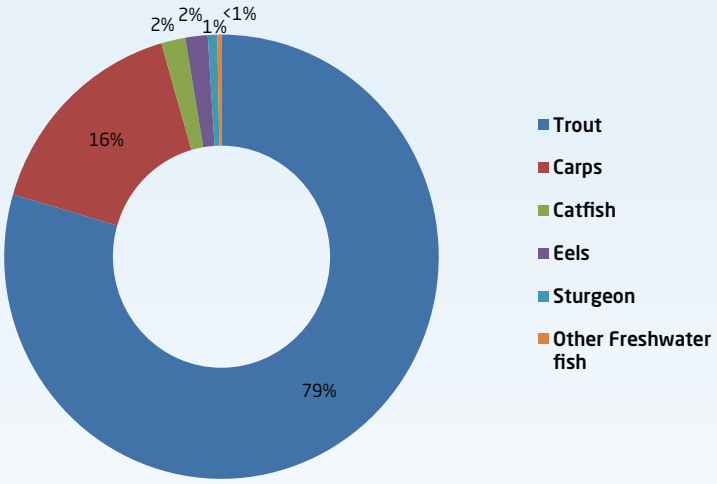
It is hoped that the implementation of Spain's strategic plan will have a positive impact on administrative procedures and reducing red tape.
Sourcing of feed ingredients is a challenging issue. One has to consider both marine ingredients (fish meal and oil) and agricultural developments (e.g. the inevitable use of GM plant ingredients).
The delay in the possible use of EMFF finance in Spain and other States is also a matter of concern to the profession. Nonetheless, the empowering of POs and the possibility of transnational engagement is looked at with interest.

Croatia: expectations are that production in the coming years will grow by around 1.000 tons each year and the climate within the industry is positive..
2014. was a good year for Croatian producers and the growth that happened is a clear follow up to the investments and production increases seen in previous years. However, the costs of feeds are a concern.

Production in Turkey is expected to stabilise or even decrease this year due to reduced stocking levels of juvenile fish in the last two years.

Freshwater Production in 2014 per Country & per Species





= +2,2 % compared to 2013

Key Observations

Production in this segment increased by 2.2% compared to 2013, Spain and UK are mainly responsible for this while other countries kept a stable production position.

In Germany official production figures indicate an increase as more and more farms are being included in the official statistics. There is still a problem with succession from one generation to the next. The EU fish health regulation divides opinions, between agreement and strong disagreement.

The official measures agreed on Turkish imports have shown some effects; more exports have resulted in slowly increasing prices.

Spain: Many trout companies have had poor cash flow - while new farms for trout and sturgeon have been implemented. Recently, there has not been enough trout to cover market needs and prices are rising, in both national and international markets. Nevertheless, in spite of this, production will probably not increase significantly in the short term since farmers are being cautious. There are concerns about feeds with many complaints about conversion efficiency.

Positive developments seen in Poland with increasing consumption of rainbow trout, reflected by higher domestic sales.

In the UK, the traditional table trout market, sold as 400- 500 g. whole fish, is static/ in slow decline - there is no doubt that the trend towards trout fillets will continue as consumers seek simpler cooking solutions. Likewise, demand is growing significantly for larger fish and, in volume terms, this more than makes up for the slight fall in the traditional table product. Larger trout are now being grown in both fresh and salt water and this trend will continue. Smoked trout also continues to show growth. Overall, the trout industry in the UK is cautiously optimistic for the future.

In Italy, production is balanced and more attention is being paid to quality than quantity. The main concerns relate to the cost and quality of feed, bureaucracy and variable selling prices in the marketplace.

Carp production has been fairly stagnant in the Central-Eastern European region – production has been affected by lack of fish stocks due to climatic conditions, predation pressure by cormorants and nature and environment protection restrictions (Czech Rep)

More detailed production data can be found in the production report on the FEAP website: ***www.feap.info***

A case study

Performance of the sea bass and sea bream sector

The Mediterranean mariculture industry is at a crossroads. While the political climate for development has never been better, the industry is under a range of pressures, be these technical, market-oriented, legislative or financial. Choosing the correct route towards blue growth and sustainable development is complex. A proactive approach is needed to tackle these pressures, one element being to ensure that investments in public research are correctly oriented towards providing responses to the industry's challenges, constraints and bottlenecks.

The Mediterranean Aquaculture Commission (MEDAQUA) of the FEAP made a Resolution to this purpose in 2014, a direct result being the organisation of a a special one-day event to address the production performance of the sea bass and sea bream sector. This was a forum for discussion of some of the important underlying technical challenges, taking place on October 16 2014 at Aquaculture Europe 2014 in Donostia-San Sebastian, bringing together more than 220 persons from the aquaculture value chain. The event targeted industry leaders, production, hatchery, technical and health managers, feed manufacturers and other suppliers, scientists and those that follow developments in the sector.

After 2 keynote speeches from Gustavo Larrazábal (EATiP Chairman) and Bjorn Myseth (President-elect of EAS), three expert panels made overviews of the key issues and bottlenecks that led to detailed discussion with participants.

The 3 main topics discussed were genetics, nutrition and health

The debates were summarised by Javier Ojeda of Apromar and the conclusions and recommendations follow.

A. Overview

1) More attention needs to be given by both the EU and relevant Member States to the urgent priority of improving technical performance of the Mediterranean fish farming sector, specifically on sea bass and sea bream.
The absence of improvement over time is marked.

- Individual focused projects or a more holistic, integrated programme are required to address this, on both a short and longer term basis
- EATiP is committed to monitoring progress and compliance of project funding with its Vision and Strategic Research and Innovation Agenda (SRIA)..
- Industry and Research should review together the EATiP Vision and SRIA with a specific view for adoption or adaptation to Mediterranean fish farming and its priorities.

2) Sectorial cooperation and collaboration is almost inexistent in the Mediterranean but this is an issue that has to be resolved by the production sector itself

- Establishing trust and improving communication are key to establishing viable cooperation through a participative process.
- Options include use of the pan-European Federation, the development of an association of Producer Organisations or a specific Mediterranean structure.

3) The profession needs access to large-scale experimental facilities for a range of research and testing purposes, backed up by scientific substantiation, so as to reflect true farm conditions for validation purposes.

4) Financing from the industry is needed to put many of the actions discussed into place, be they research, monitoring or testing. It is urgent to agree on a financing model to enable their realisation, which should be discussed with the European Commission and other funding sources, including Member States and the European Investment Bank.

- Options could include a levy on production or feed use
- Such a funding mechanism could also be applied for marketing purposes

B. Practical Measures

5) Improved site management measures require a new legislative approach, both from EU and Member State positions

- Year class separation of fish stocked in cage sites is essential
- Site rotation and fallowing after year class harvest should be imposed
- 3 sites for 2 growing licenses needed, leaving one for fallowing purposes

6) Establishment and definition of the nutrient requirements of sea bass and sea bream are needed for each lifestage/age.

- Research to provide the best quality feed is needed for each species and for each stage of development

7) The profession needs healthier fish throughout their lifetime, so as to reduce mortalities and improve related KeyPerformance indicators.

- Better governance for monitoring and management systems
- Vaccine developments for existing and emerging health issues are a priority

8) Benchmarking and reference points are needed in many aspects of aquaculture operation and development

- Scientifically designed and supported measures are needed
- Sectorial cooperation must improve to allow this approach to be successful

C. Developments & Investments proposed

9) Breeding programmes – for improved stock performance – appear to be too big a task for individual companies, although the benefits are clearly recognized

- An industry-led and supported genetic improvement programme is needed
- Investment (in a breeding/genetics entity) and operations that required to implement a programme for the Mediterranean needs identification for further development

10)Investment in (an) industry-led experimental pilot marine farm(s) for scaled-up testing requires consideration so as to improve efficiency and competitiveness measures of research and innovation; ideally, one centre for the Mediterranean industry

- Allowing testing of feeds, treatments, processes
- Examining biosecurity, zootechnology, genetics and husbandry
- Verified through scientific validity

As regards the supply of Ω3 long-chain polyunsaturated fatty acids (Ω3 LC-PUFA) essential for fish, there is also much potential through proper exploitation of existing sources from the aquatic trophic chain and through genetic improvement of plants or even from transgenic plants tuned to produce these long-chain PUFAs so important for human health.

Benchmarking and reference points are needed in many aspects of aquaculture operation and development

The conclusions and recommendations of this workshop have been widely circulated and it is hoped that the recommendations for action will be taken up by all stakeholders concerned.

FEAP'S PRIORITIES

Courtesy of Aranyponty (Hungary)

Product Environmental Footprint

Human activities use and consume resources and produce waste. As populations grow and global consumption patterns rise, it is essential to understand and adapt to meet these demands. The Environmental Footprint is an evolving measure of a product or a sector's demand on nature and resources, addressing how to identify and adapt to optimised use.

The European Commission – within the scope of the initiative for the SINGLE MARKET FOR GREEN PRODUCTS - is proposing EU-wide methods to measure the environmental performance of products and organisations, and encouraging Member States and the private sector to take these up. Today, companies that wish to highlight the environmental performance of their products have to choose between different methods promoted by governments and/or private initiatives. Providing environmental information often comes with high costs of mapping environmental performance and developing communication means to use such data. In addition, one has to be aware of the distrust of consumers, who are confused by too many labels with information that makes products difficult to compare.

The Product Environmental Footprint (PEF) is used to measure environmental performance throughout the product's lifecycle. A 3-year testing period is in place so as to develop product- and sector-specific rules through a multi-stakeholder process. An open call for volunteers was published by the Commission, inviting companies, industrial and stakeholder organisations in the EU and beyond to participate in the development of product-group specific and sector-specific rules.

PEF methodology has been drafted by the EC Joint Research Centre and is based on Life Cycle Assessment (LCA), covering environmental impacts and pointing to improvement opportunities from the extraction of raw materials to the disposal of a product.

PEF Category Rules (PEFCR) complement this methodological guidance for environmental footprinting by providing further specifications at the product level, increasing reproducibility and consistency of PEF studies.

The end goal of this exercise is to be able to provide a measured PEF for consumer goods, food and drink products, giving a certified position for individual companies and products. The full list of Pilot phases can be seen at ec.europa.eu/environment/eussd/smgp/pef_pilots.htm.

For aquaculture, work was initiated by the livestock feed sector, coordinated by FEFAC – the European Federation of Feed Manufacturers, which invited FEAP to participate for the part relative to fish feeds. This initial effort was recognised as the FEED Pilot Phase.

FHL, the Norwegian Seafood Federation, took the initiative to promote a FISH Pilot, covering fish farming (marine and freshwater) and fishing – since it represents both activities in Norway. FEAP was invited and accepted to participate in this, chairing the Technical Secretariat, which includes SINTEF as the technical adviser on LCA methodologies.

Discussions with the Commission led to the inclusion of shellfish – represented by the European Mollusc Producers' Association – and renaming of the initiative as the SEAFOOD Pilot.

In 2014, work was undertaken on defining the scope of the Pilot – which had to be officially presented to the Commission, Member State representatives and other Pilots in the scheme. This was successfully achieved in early 2015.

This work demonstrated that, for fish aquaculture, one of the principle inputs is feed – but in different formulations and volumes, hence the dependency on the FEED pilot for data. On the other hand, aquaculture uses many different systems for production – earthen ponds, concrete raceways, plastic tanks, cages – with different water supply routes (rivers, groundwater, sea, recirculation systems...). Account also has to be taken on manpower, buildings, energy use – indeed, all system inputs.

A similar approach is used for fisheries, where it is the nature of the vessel, the fishing gear (>10 types) and energy that a critical points. One can note that similar pilots are being applied to meat (bovine, pigs and sheep) and pet food.

The base methodology to be developed will cover the different technologies used so as to have comparable LCA data between these.

Product Environmental Footprint

To date, little work has been done on fish and aquaculture products. The differences between individual fish species will only emerge once adequate screening studies have been achieved.

To achieve process comparability, both the scope of the pilot, its functional unit and representative product have to be agreed and, in the case of the SEAFOOD pilot, these are:

Scope: "fish and molluscs for human consumption" obtained from marine fisheries and aquaculture

Functional Unit: "1 kg of edible seafood plus necessary packaging"

- For fish = the meat, liver and roe
- For molluscs = everything except the shell and parts that are not recommended to be eaten due to health risks

Representative Product: this will be a 'virtual' product, defined as 1 kg edible of seafood, composed of products from the most important production systems that supply the EU seafood market. These systems are used to provide the connection between species/products and the technologies covered by the screening studies. The Environmental footprint is determined mainly by how the seafood is produced.

In the screening studies, allocation of inputs/outputs will be performed using 'mass allocation' methodology noting that, for outputs that are not actually used in any way, the allocation will be set to zero.

An End-of-Life formula is used for outputs that go to energy or material recovery or other types of waste treatment. This covers, for example, the recovery of processing trimmings and waste water treatment.

Recommendations on such methodologies will be made following the screening studies to be achieved.

In the strategy for data collection from screening studies, the following actions have been proposed;

◊ Open net-pen aquaculture in sea water

◊ Land-based RAS systems

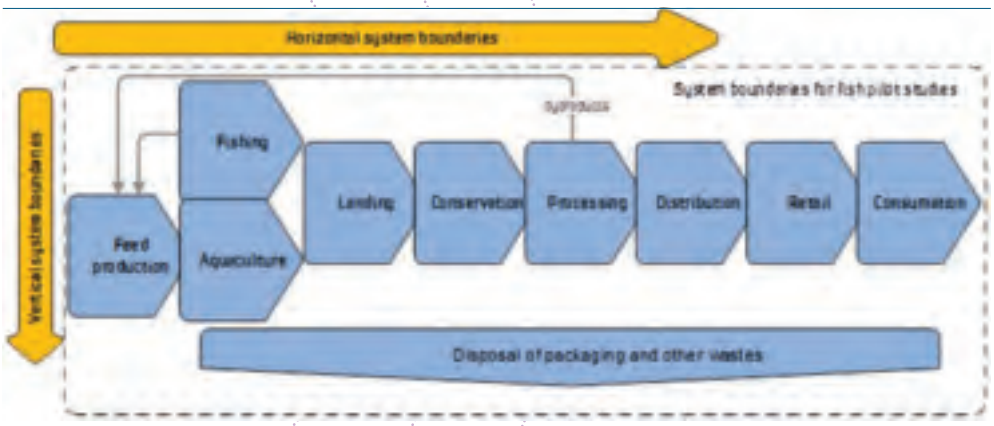
◊ Land-based freshwater flow-through systems

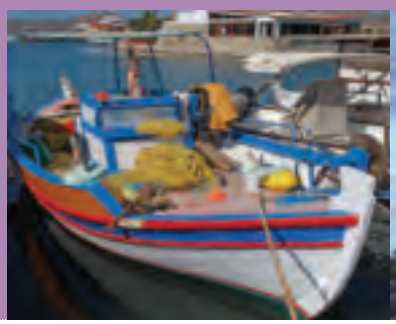
◊ Freshwater pond aquaculture

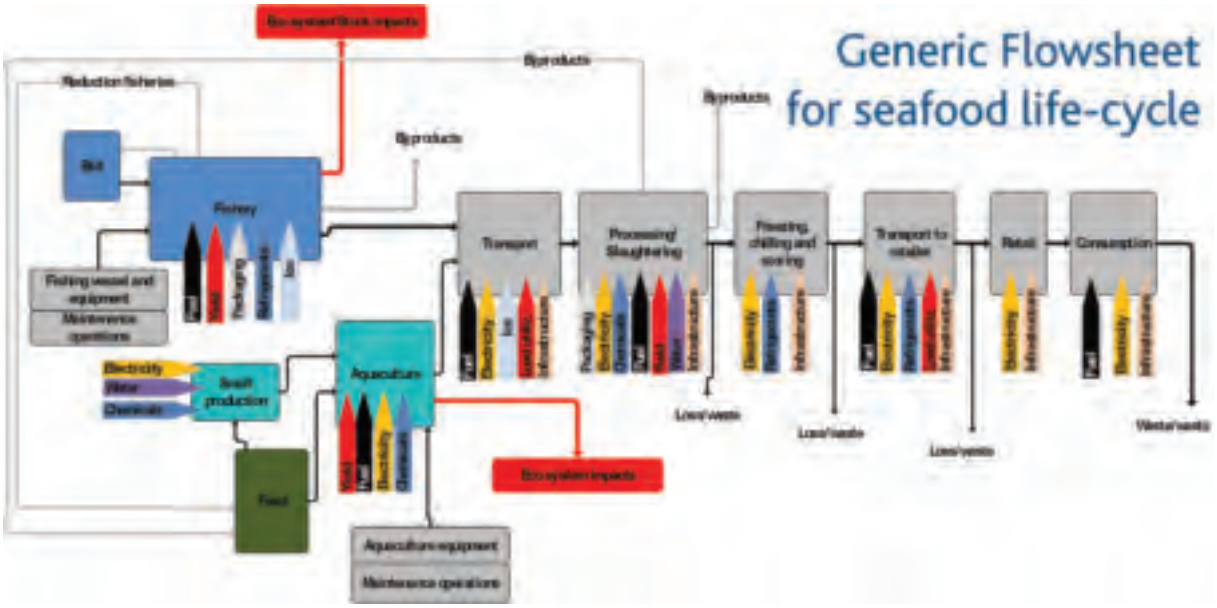
◊ Growing, dredging and bedding of bivalve molluscs

◊ Data on inputs of energy and materials will be covered using Ecoinvent (see www.ecoinvent.org)

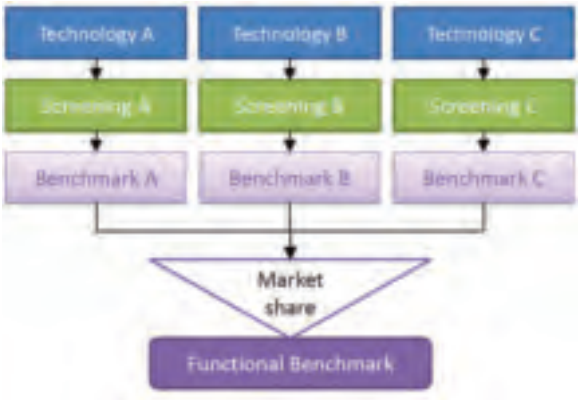
System boundaries of the SEAFOOD Pilot Phase





Screening the different technologies will give important measures for both the technologies used and the products, demonstrated in the diagram below.



By using the same methodology for measurement, reference benchmarks (for a product and a technology) should be possible. It is also necessary to account for the importance of the market share, since this affects the overall environmental impact of the production of individual products.

The selected screening studies will provide a good understanding of environmental hotspots and form the basis for study of the consequences of system and methodology choices. However, the actual environmental impacts will depend on the location of each activity; examples include

- The condition of the specific ecosystem where impact occurs, available or choice of energy systems where energy is used
- How are the resources used?
- Are by-products used/recycled or thrown away as waste?

Within the timeline established by the EC, it is hoped to start screening studies during/after the summer of 2015. In many cases, companies that have achieved environmental audits will have much of the data required already.

How will the PEF for SEAFOOD actually be measured? While this is not completely clear, it appears that any referenced footprint would have to cover a 2-3 year period (due to life-cycle length) and not be a running measure. It is also a concern that such measurements – if communicated as a label - should be easily understandable by the consumer. Inevitably, it appears that this work could initiate the realisation of an ecolabel, as identified by MEP Alain Cadec in his introduction to this Annual Report.

Sustainable aquafeeds - a review

It is well-known that the fish feed industry is putting a lot of effort in its search for alternatives for fish meal and fish oil as ingredients in their formulations for fish feed due to the limited availability and, hence, sustainable use of these protein sources.

In the following review, we will look at the big EU project 'ARRAINA' – that is studying the long term effects of different replacement sources. The upcoming trend of using insects as a new and valuable protein source will be presented as well as the use of algae and transgenic plants as possible alternative materials

ARRAINA *www.arraina.eu*

The overall objectives of ARRAINA are: to develop sustainable alternative aquaculture feeds tailored to the nutritional requirements of European farmed fish species, throughout their respective life cycles, with reduced levels of fish meal and fish oil; to assess the long term physiological consequences by applying targeted predictive tools applicable to multiple species; and to provide flexibility in the use of various ingredients in the formulation of feeds which are cost-effective, environmentally-friendly and that ensure production of seafood of high nutritional value and quality (Kaushik, 2014).

European research has already shown that it is possible to reduce fish meal (FM) and fish oil (FO) levels, individually or in combination, in fish feeds. However, several questions remain to be addressed, such as whether results obtained, e.g. with juvenile fish up to marketable size, can be extended to the whole life cycle; whether such dietary interventions can have effects during specific physiological stages such as very early life stages or with broodstock; whether the supply of nutrients, based on available data on nutrient requirements, are valid for all stages of fish fed diets that are low in FM and FO; whether fish can be tailored to accept such low level marine diets. The ARRAINA project addresses these questions using the top five farmed fish in Europe: Atlantic salmon, rainbow trout, common carp, European sea bass and gilthead sea bream.

A series of studies deals with evaluating and fine tuning data on micronutrient requirements of fish receiving low fish meal/low fish oil (low FM/FO) feeds. Long term studies with fish fed low FM/FO feeds during the different life cycles show the effects on growth, reproductive performance, survival and disease resistance for the different species.

Other work addresses the development of novel nutrient vectors. New research is being made on the application and validation of the concept of "nutritional programming", early in life or through broodstock nutrition, so as to modify the metabolic potential and, possibly, the acquisition of a changed physiological phenotype.

Investigation into the consequences of feeding fish larvae on different types of micro-diets, having different physical properties, is being made - in terms of feed intake, feeding rhythms and digestive function. Additional work looks at the transfer of undesirable contaminants from feed to fish, specifically for Atlantic salmon and sea bream, and the possible interactions between contaminants and dietary vitamin A.

INSECTS TO FEED FISH

Meals and oils made from insect sources could make an important contribution to the sustainable development of the aquaculture industry. A FAO report, entitled 'Edible insects: Future prospects for food and feed security' (2013), examines the potential of using insects as a source of protein and other nutrients in diets for poultry and farmed fish. See **tinyurl.com/FAOinsects**

On a species-specific basis, NIFES studies have shown insect meal to be a good source of protein for farmed salmon. Insects and insect larvae are an important component of the natural diet of salmon, and insect meal is therefore one of the most natural things we can add to fish feed.

NIFES has also shown that insect meal contains all the amino acids that salmon need, containing not only protein but also fatty acids that are beneficial to general animal health.

Experiments have shown that insect protein can replace up to 100 per cent of the fish protein in the salmon diet, without compromising either the growth of the fish or the taste of their flesh.

Insects can transform carbohydrates, for example, from food waste, into nutrients that fish need, and in a form that they can utilise. Today in Europe, we throw out about 20 per cent of all our food. This could instead become a sustainable resource for insect production. On a global scale, insect meal based on organic waste could provide three times as much protein as the entire volume of soya produced today.

To further explore these possibilities, the AquaFly project has been launched, receiving nearly €1.5 million from the Research Council of Norway. Led by NIFES, AquaFly will look at the use of insects as safe and healthy ingredients of future fish feeds, using environmental, social and economic perspectives.

See **nifes.no/en/counting-insects-future-fish-feeds**

These opportunities are receiving increasing investment attention and the recently formed 'International Platform of Insects for Food and Feed' provides new impetus to this approach – see **www.ipiff.org**

ALGAE

Fish oil is currently the most common and major source of omega3 fatty acids - EPA and DHA – largely responsible for the health benefits of eating fish.

There are 2 types of algae: autotrophic or phototrophic algae which grow using light and CO2. Heterotrophic algae are single-cell algae that grow using oxygen and a source of carbon (such as plant by-products). Biomass from heterotrophic algae can be produced in a stable manner, in sterile conditions and in large quantities. Current technology allows heterotrophic algae to be produced far more efficiently than phototrophic algae, which make them a more suitable and economical alternative.

Some of these algal meals, containing DHA up to 3 times more than fish oil, are already commercially produced and tested for their effects on fish health, performance and nutrition (salmon and other fish sp.).

NOFIMA fed the algae-based feed – at concentrations up to 15% - to small salmon.. All fish had more than tripled their weight after 3 months, irrespective of the feed they had received.

The amount of the long-chained marine Ω-3 fatty acids in the fillets was higher in fish receiving the algae meal than it was in salmon that had been given fish oil as their only source of these fatty acids. The use of algae meal was looked at for suitability to ensure a high technical fillet quality of the salmon. The high content of short-chain saturated fatty acids as well makes algae meal suitable as a technical stabiliser in fish feed.

It can be concluded that such algae meals are an excellent source of omega-3 for small salmon, and that it can replace fish oil, based on current levels in feed. However, these are still small-scale tests and upscaling and optimisation of algae production technologies are still needed to prove if this source can be an economic and viable alternative for future use.

TRANSGENIC PLANTS

Another new but, still very experimental, approach is to obtain terrestrial plants that produce omega 3 fatty acids using genetic engineering techniques.

A British collaborative research effort, by University of Stirling and Rothamsted Research, has developed genetically modified (GM) plants that can produce up to 20% of eicosapentaenoic acid (EPA).

In the current work, five microalgal and fungal genes have been used to engineer Camelina plants (Camelina sativa) so as to generate a renewable, terrestrial, sustainable source of omega-3 oils. The extracted oils from plants, grown under glass, were used as a replacement for marine fish oil in feeds for Atlantic salmon. The study's results have shown that growth performance, feed efficiency, fish health and nutritional quality for the human consumer were unaffected when dietary fish oil was substituted with oil from these plants.

Obviously, this activity is still far from commercial exploitation. There are some scientific refinements needed for the oils before a 'final' oil product can be taken through to commercial production. The regulatory and approval processes required are necessary and will make this a long process before successful commercial application can be envisaged.

Read the full article at tinyurl.com/transgenic-plants

SUSAQ PROJECT - background document

SUSAQ is a project commissioned and funded by the Environment Directorate-General (DG ENVI) and Directorate-General for Maritime Affairs and Fisheries (DG MARE). It addresses the interactions, challenges, needs and mutual benefits of aquaculture production and water quality protection, in particular in connection with the requirements of the WFD (Water Framework Directive) and the MSFD (Marine Strategy Framework Directive).

In total, 6 European and regional workshops were organised - involving all stakeholders - to identify challenges, needs, interactions and synergies between aquaculture activities and water quality protection. The main outputs from SUSAQ have been published in a background document and are summarized here (Neil Auchterlonie [CEFAS, UK]).

- The SUSAQ project investigated issues around the implementation of WFD & MSFD and other environmental legislation relevant to aquaculture in the EU
- The SUSAQ project was commissioned to provide background information for Commission Services to develop a guidance document related to environmental legislation
- An overview of the legislative framework that applies was provided
- The project had a strong element of consultation through regional workshops across Europe
- Issues with the implementation of environmental legislation are presented
- Good Practice examples relevant to administrators, regulators and industry are documented
- An overview of future technologies is provided
- Recommendations for national administrators and regulators, industry, future research required in the topic area, and for Commission Services are highlighted.

The approach of this project represented an extensive review across Europe of the issues surrounding the environmental regulation of the aquaculture industry, extensive stakeholder consultation and a look forward at how the sector will develop. It represents a very valuable resource for those who seek good practice in regulation or management of the aquaculture industry, and will be used as the basis for Commission Services to develop guidance on that topic.

find the full document at tinyurl.com/susaqdoc

Aquaculture for the next generation

One of the core values of FEAP's Dublin Declaration on 'Streaming Sustainability' is assuring continuity of the European aquaculture sector by the next generations. To follow this, we asked some young people why they chose to start in this business, what message they have for other potential newcomers and their ideas on the future development of the sector.

OLIVIER COSTE - researcher at IFAPA

tinyurl.com/elifapa

Who ?

Belgian, 30 years old, studied biology in Liège, Belgium, followed by a MSc in Montpellier, France and another one MSc in Cádiz. Currently writing a PhD Thesis.

Company

IFAPA "el Toruño" (Instituto de Formación en Agricultura y Pesca de Andalucía) is a public research institution in aquaculture and my field is finding innovative uses for algae grown in fish aquaculture effluents.

Why ?

I was attracted by the marine world and the animal production so aquaculture fulfills both requirements.

Main issues ?

Spain is a country with fairly good conditions for aquaculture but the administrative problems are constants and it's really hard to get financial support.

Message

I tell people that this is hard, slow, costly and even risky but "hang on" because it is worth it. The work is beautiful, very interesting and there is a lot to do. The most sensible point is definitely the inversion required to start this kind of project. I have seen many young motivated entrepreneurs discouraged by the money it needs to start their project. On the other side there is a lack of technical knowledge in many potentially interesting species.

Future of EU aquaculture ?

Mainstream aquaculture will be done by a fistful of big multinational companies; smaller companies that will survive will have to find their very own niche in the market with different and innovative products.

JULIA FOSSBERG - Biologist at Lerøy Midt

www.leroyseafood.com

Who ?

Norwegian, 25 years old, bachelor in marine biology at NTNU (Norwegian University of Technology and Science) in Trondheim followed by a MSc in Marine Coastal Development with specialisation in aquaculture .

Company

Lerøy Midt at Belsvik, which is the world's largest RAS juvenile facility for Atlantic salmon, located in the middle of Norway. I have the responsibility for fish welfare and water quality .

Why ?

I find the aquaculture industry very fascinating, with many challenges and an impressive willingness to further develop and find solutions. It is a very important industry for my country, and I feel proud of being a part of it.

Message

There are many different ways to get into the industry and many different educations that can lead to a career within aquaculture. Be active and search for summer jobs, internships, go visit farms, attend conferences, and be curious. If you have a great idea, you may just be the one to revolutionize the industry. Many companies are open to test new solutions, and are willing to invest in good ideas, so don't be afraid to get in contact with the right people.

Future of EU aquaculture ?

I believe the EU aquaculture production will increase and improve over the next years as challenges we face today might be solved, and my wish is that the industry will become more open so the whole industry can grow. Many companies struggle with things that have already been experienced and solved by other companies, so if there is more openness and more arenas to share experiences and project results, the industry would benefit as a whole.

European Affairs

2014 has been a year of change in terms of European affairs, with a new Commission, new MEPs and the start of implementation of the new Common Fisheries Policy.

The 'Juncker' Commission took office in November 2014, with new Commissioners and a new structure. For aquaculture, a significant change occurred with Karmenu Vella of Malta taking the position of Commissioner for the Environment, Marine Affairs and Fisheries (including aquaculture). President Juncker highlighted that this Commission is more political, more focused on jobs, investment and growth and a strong desire to have better coordination and bringing citizens closer to Europe.

For European aquaculture interests, which strongly welcomed its visible recognition within the reformed CFP and the accompanying instruments (Common Organisation of the Markets for Fisheries and Aquaculture Products (COM), the European Maritime and Fisheries Fund (EMFF), there has been a lot of activity at National levels – primarily in respect of the preparation of the National Strategic (Multi-annual) plans for aquaculture development. Many delays have been seen in this aspect, original put forward in the Strategic Guidelines for the Sustainable Development of European Aquaculture (2013). Since agreement was only made in 2014, on the EMFF's content and budget, there is little to report on its application. Nonetheless, FEAP has recommended that higher levels of clarity on EMFF national and regional allocations, e.g. whether for aquaculture or for fisheries, be provided.

The EMFF will support European aquaculture so that it can fully develop its potential, providing €6.5 billion that will be used to boost innovation, help communities to diversify their economies, finance projects that create new jobs and improve the quality of life along European coasts and in rural areas.

It is understood that the National Plans will become publicly available during 2015, allowing a better overview of the anticipations for European development. It is appreciated that there are many issues affecting the different sectoral components of European aquaculture that should be reflected in these multi-annnual plans.

The development of new Producer Organisations within the sector is anticipated, where both financial and governance support for their establishment clearly exists.

With an increasing European focus on improving resource use, waste recovery and a 'circular' economy, aquaculture is well placed in respect of its overall 'efficiency' to be appreciated further.

Nonetheless, resolving environmental issues remains a top priority of many of aquaculture's sub-sectors, where water use and waste materials are typical topics. The results of the SUSAQ project will evidently provide guidance for these.

European issues addressed within the FEAP have always included fish health and welfare. The Food and Veterinary Office (DG SANCO) is leading a pan-European review of best practice in aquaculture health management, which should be completed in 2015. Through field visits in at least 8 European countries, a clear view of the European position on establishing best practice and the 'level playing field' in terms of health management will be provided. Access to disinfectants and anaesthetics are included within the scope of this effort.

Aquaculture Advisory Council

Work on the creation of the Aquaculture Advisory Council has continued but experienced a delay in creation, primarily due to the need for publication of the Delegated Act that allows the Commission to proceed with the recognition and financing of the new Councils foreseen in the reformed CFP. This affects both the Aquaculture and Markets Advisory Councils. These Advisory Councils have to be created and managed by stakeholders, drawn from the value-chain representatives and other stakeholder groups, including Civil Society Organisations and NGOs.

FEAP is a member of the Interim Executive Committee which, in coordination with other stakeholders, has prepared draft Objectives of the Aquaculture Advisory Council, its draft Statutes and Rules of Procedure. These are to be submitted, with a provisional member list, in 2015, for approval by both the Commission and Member States. It is anticipated that a founding Assembly will be called in 2015 so as to agree to these proposals, allowing its creation and official registration.

Horizon 2020 - Research & Innovation

Horizon 2020 started in 2014, targeting higher levels of mission-oriented research, to take the best ideas from the laboratory to the market; the programme aims to drive economic growth, create jobs and increase the competitiveness of European business. Excellent science is required, accompanied by industrial leadership while addressing important societal challenges as well. Horizon 2020 conditions have been designed to make it easier for the public and private sectors to work together in delivering innovation, simplifying operating procedures. An attractive SME instrument has been designed, allowing project development by stages, which should encourage active participation. New projects on aquaculture include actions on the production of new species, parasite control measures and spatial planning for farms.

Consumer Information

Since 13 December 2014, the new rules for labels accompanying all fisheries and aquaculture products have become applicable. The Common Organisation of the Markets establishes the specific information that must accompany fishery and aquaculture products sold to consumers and mass caterers. These requirements complement the general EU rules on the provision of food information to consumers, and should contribute to more transparency on the market enabling consumers to make informed choices on the products they buy.

Products may also be accompanied by additional voluntary information, such as the date of harvest, information on environmental, social or ethical matters, production techniques and nutritional content.

The commission has published a handy pocket guide to help to apply the new rules *tinyurl.com/EUpocketguide*

EUMOFA - Market Observatory - www.eumofa.eu

Effective and efficient data collection and communication is a challenge but is a topic that runs through both the Aquaculture Strategic Guidelines and the CFP. The **European Market Observatory for Fisheries and Aquaculture Products** (EUMOFA) provides data on the volume and value of fisheries and aquaculture products from the first sale to the retail stage, including imports and exports. EUMOFA provides weekly prices, monthly trends and annual data. EUMOFA aims to contribute to market transparency and efficiency as well as analysing EU market dynamics that can support business and policy decisions.

Schools awareness project

Within the scope of the 'INSEPARABLE' promotion campaign launched by the Commission in 2014, a new initiative has been launched, with a special booklet, to raise students' awareness of the aquaculture sector, particularly in their own community, and to help them explore issues related to food production, the environment, and the different business and career opportunities that aquaculture offers.

The diverse nature of European aquaculture means there is plenty of scope for student research and discovery of the different marine and freshwater fish, molluscs, crustaceans and algae that are produced through different traditional and more modern production methods. The project is currently being piloted in 20 schools across 10 EU countries (Czech Republic, France, Germany, Greece, Hungary, Ireland, Italy, Poland, Spain, and the United Kingdom).

EU fish farmers who would volunteer to visit or welcome schools to their farms have been invited to declare their interest to the Commission services of DG MARE.

FEAP'S ACTIVITIES

Courtesy of Dansk Akvakultur (Denmark)

Research & Innovation "FindIT"

A cutting edge platform for data management and analysis to assist European fish aquaculture in its development towards higher performance & competitiveness

'FindIT' is looking to translate some of the results of the FP6 Collaborative Project 'Finefish' into an innovative, commercial application in European aquaculture. During the FineFish project, the idea developed to create a systematic approach to collect and analyse aquaculture hatchery data across sites and companies.

As an innovative IT solution, 'FindIT' was designed initially to enable sectorial benchmarking, allowing a hatchery to measure its own performance against consolidated data from other hatcheries. No formal tool existed for this approach before 'FindIT'.

The 'FindIT' prototype led rapidly to the development of a cloud-based data collection and storage system allowing professional aquaculture not only to organise, consolidate and store their monitoring data in a safe infrastructure but also to compute other indicators that are useful for both monitoring and benchmarking of individual aquaculture entities at a European level. Seen as the most complex component of the professional sector, marine hatcheries have appeared as a key potential user.

The malformation rate of juvenile fish produced in hatcheries was the main key performance indicator (KPI) for FineFish but extra KPIs are being integrated into 'FindIT''s capacities. These include criteria such as hatching %, growth rate, survival, etc. - factors that are vital for successful and competitive aquaculture.

With extensive data collection and analysis – accompanied by innovative data mining techniques - critical factors can be discovered that explain the variability of these KPI's. This can lead to the formulation of preventive and corrective actions that will continuously improve the competitiveness of hatchery and ongrowing operations, supporting future strategic decisions.

At present, 'FindIT' is being reviewed and developed further to bring the system to an operational, commercial level so that a widespread community of professionals can use it. To quantify and fill the actual market gap for such a tool, the usefulness and applicability of FindIT is being examined further so that aquaculture operators can fully understand the potential, capabilities and benefits of this innovative solution to the improvement of competitiveness. Training, contributing to life-long learning of qualified personnel, is integral to the project's concept.

FindIT is seen as becoming an innovative market-led application, to become a cloud-based subscription-oriented resource providing analytical and predictive causal analysis in aquaculture, raising the quality of production and contributing to significant improvements in aquaculture processes, planning and management. Both a full market analysis and business plan have to be developed during 2015, prior to decision on how to take FindIT further.

By improving both competitiveness and quality, in hatcheries and ongrowing farms, FindIT will provide a valuable tool that contributes to raising management and economic performance, thus contributing to the sustainable development of European aquaculture.

Research & Innovation

Other EU projects with FEAP involvement

OrAqua - www.oraqua.eu

European Organic Aquaculture – Science based recommendations for further development of the EU regulatory framework and to underpin future growth in the sector

Thanks to highly committed and engaged participants, excellent arrangement and facilitation of the first stakeholder event in Istanbul last year, valuable feedback and inputs were obtained to finalise the legislative and technical review process engaged for organic aquaculture. The event gave a good basis for preparing for the next stakeholder event, which will be organized in Rotterdam on the 19th-20th October 2015 in conjunction with Aquaculture Europe 2015. Before the next event, scientists will finish the methodical and comprehensive state-of-the-art reviews on existing data and literature sources. Together with stakeholder feedback, these will identify factors that may hinder the social and bio-economic development of the European organic aquaculture sector. A first summary has been presented, including preliminary recommendations. Once approved by EC services, this will be published on the OrAqua website. The review reports will be elaborated further before their completion in June 2015. An updated and easy-to-read summary of the results will be shared with stakeholders before final debate at the stakeholder event in Rotterdam..

FishBoost - www.fishboost.eu

Boosting European aquaculture by advancing selective breeding to the next level

During the first months of the FISHBOOST project, a total of 14 experiments have started in six EU-countries. These studies focus on developing tools for the genetic improvement of production efficiency and disease resistance in the main farmed fish species in Europe.

The experiments are based on recording economically-important traits in farmed fish populations with known pedigrees and family structures. This allows the most effective analysis of genomics and quantitative genetics of the traits. The experiments focus on fillet yield, feed utilisation, survival and lipid deposition in common carp, turbot, rainbow trout, gilthead sea bream, and European sea bass. For each species, a large number of families have been produced for the genetic analyses.

The experiments are expected to be completed within 2 years. Using the results from these studies, FISHBOOST will facilitate the implementation of balanced and sustainable breeding programmes, applying a wide set of traits, breeding tools and technologies

TRAFOON - www.trafoon.eu

Traditional Food Network to improve the transfer of knowledge for innovation

The sub-network "Traditional Products of Fish" of TRAFOON, where FEAP is a partner, aims to support SMEs that are producing traditional foods made of freshwater fish in Central-Eastern Europe. In order to do so, TRAFOON interlinks researchers, knowledge transfer agents, and SME associations from the Czech Republic, Poland, Belgium, Ireland, and Germany to foster the transfer of sustainable innovation and entrepreneurship in the sector of traditional foods for the benefit of Europe.

Based on an inventory of needs in the first year, a range of training activities for SMEs and food researchers are developed: 4 training workshops in 2 European countries (Czech Republic, Poland) will be organised including innovations in raw material production, food processing, food safety, certification, labelling, packaging, marketing and entrepreneurship. An open access web-based Information-Shop will be established with all transferred innovations. See the website for more details.

Participation & Promotion

FEAP is actively involved in sectoral discussions on aquaculture as well as broader issues that affect the profession. FEAP representatives also participate in appropriate Conferences, Workshops and project meetings where aquaculture development is a focal point.

In 2014, FEAP participated in

- EU Presidency, Commission and Parliament meetings related to aquaculture
- European Commission workshops on Advisory councils and Technology Platforms
- Animal Health Advisory Committee (AHAC) meetings
- EC BioEconomy panel meetings - Brussels
- Workshops on 'Development of guidance for the sustainable development of European aquaculture in relation to the WFD and the MSFD'
- Product Environmental Footprint (PEF) meetings for FEED and SEAFOOD
- Joint meetings with FVE (Federation Veterinarians Europe) and FEFAC (European Feed Manufacturer's Federation)
- FEFAC workshop on 'Sustainable feeds', Brussels
- 'Euroshell' project workshop, Brussels
- 'Arraina' project workshop, Wageningen, Netherlands
- 'Trafoon' multistakeholder workshop, Vodnany, Czech republic
- Sturgeon Producers meeting at ESE Brussels
- 'Oraqua' multistakeholder project meeting, Istanbul
- EUMOFA – Markets meeting - Brussels
- EATIP AGM, Brussels
- EAS-EATiP farmers day – performance of seabass and seabream in the Mediterranean, Donostia-San Sebastian, Spain
- 'Aquaculture in Motion' – FEAP event, Brussels

- Aquaculture conferences:
  - German fish days - Fulda, Germany
  - International Trout Day, Gdansk, Poland
  - Conference on fisheries and aquaculture products labeling, Brussels
  - Regional Aquaculture conference in Bari "Blue Growth in the Mediterranean and the Black Sea: developing sustainable aquaculture for food security".
  - Aquaculture Europe 2014, Donostia-San Sebastian, Spain

The FEAP organised its 2014 Annual General Meeting in Rovinj (Croatia) in May and its Presidents' Meeting in Brussels (Belgium) in December.

*The **47th Annual General Meeting** will be held in A Coruña (Spain) on May 29-30 2015, hosted by ESACUA, to provide the positions for FEAP's future work.*

*The **Presidents' Meeting** will be in Brussels - Late 2015.*

The Future: what brings 2015?

A range of events will affect FEAP activities in 2015, with the creation of the Aquaculture Advisory Council being a priority. At the European level, we can also anticipate the publishing of the opinion of the Committee of the Regions on the future of European aquaculture, where the role of local and regional administrations will be examined.

The finalisation of mission of the Food and Veterinary Office of the EC will provide a better overview of fish health, welfare and governance throughout the EU.

Consultation on issues affecting professional European aquaculture will continue, where clarification on the position of different sturgeon species that are reared in respect of CITES legislation is to be followed.

Follow-up actions are anticipated to both the Resolution of the Mediterranean Aquaculture Commission on technical performance and the new 'Blue Med' Strategy of the Mediterranean EU States.

FEAP will continue to follow the European projects in which it is engaged, specifically ORAQUA (stakeholder event in October 2015), TRAFOON and FISHBOOST (see projects section).

FEAP representatives will also participate in "Aquaculture in Europe: a model for the future" within the scope of EXPO2015 in Milan that will showcase good practices from across Europe and discuss environmental, economic and social aspects as well as future prospects.

In 2015, FEAP's consultation efforts will thus focus on

- Contribution to the creation of the new Aquaculture Advisory Council
- Continued consultation, with both the FEFAC Fish Feed Committee and IUCN, on the improvement of compound fish feeds
- Consultations on fish health and welfare, including stunning and live transport is anticipated.
- Work on the SEAFOOD and FEED PEF Pilots will continue, where each project has to move towards the achievement of practical screening studies to provide proof of concept
- Integration of aquaculture within the European framework of the development of the BioEconomy
- The FindIT project will finish in late 2015, by which time the market and business plans for commercialisation of the activity will have been completed.

Contact us

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CYPRUS	Cyprus Mariculture Association
CZECH REPUBLIC	Czech Fish Farmers Association
DENMARK	Dansk Akvakultur
FAROE ISLANDS	Faroese Fish Farmers
FINLAND	Finnish Fish Farmers' Association
FINLAND	Ålands Fiskodlarförening
FRANCE	Fédération Française d'Aquaculture
GERMANY	Verband der Deutschen Binnenfischerei
GREECE	Federation of Greek Maricultures
HUNGARY	Hungarian Fish Farmers Association
HUNGARY	Hungarian Aquaculture Association
ICELAND	Icelandic Aquaculture Association
IRELAND	Irish Farmers' Association
ITALY	Associazione Piscicoltori Italiani
MALTA	Federation of Maltese Aquaculture Producers
NETHERLANDS	NeVeVi
NORWAY	Norwegian Seafood Federation
POLAND	Polish Trout Breeders Association
PORTUGAL	Associação de Aquaculturas de Portugal
SPAIN	Asociación Empresarial de Productores de Cultivos Marinos
SPAIN	Organización de Productores de Acuicultura Continental
UNITED KINGDOM	Scottish Salmon Producers Organisation
UNITED KINGDOM	British Trout Association

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