SUMMARY

Worldwide, the aquaculture industry is growing rapidly and playing an increasingly important role in ensuring global food supply, accounting for almost half of all fish and seafood consumption.

In the EU, by contrast, the industry has not been part of this global upsurge, but has steadily lost ground despite the fact that the EU is heavily dependent on imports to meet strong consumer demand for fish and seafood.

The aquaculture sector in the EU faces a number of challenges which hamper its development or expansion. These include the difficulty of competing with third countries with lower costs and less stringent regulatory standards, the fragmented nature of the sector, competition between economic actors for space, difficult administrative procedures in relation to licensing/start-up and obstacles in accessing finance and investment.

Measures to give more prominent support to aquaculture as a separate pillar in the reformed Common Fisheries Policy (CFP), and the publication in April 2013 by the European Commission of strategic guidelines on the development of sustainable aquaculture in the EU, aim to address these issues and provide a fresh impetus for development of the sector.

Under the proposals, Member States have been asked to draw up multi-annual national aquaculture plans, to be implemented via the open method of coordination.

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The EU and wider contexts

What is aquaculture?

Aquaculture is the rearing or cultivation of aquatic organisms (such as fish, shellfish, seaweed or algae) in any type of water environment, i.e., in saltwater, brackish water or freshwater, and in either natural or artificial environments. Aquaculture output is principally used for food for direct human consumption, but may also serve a range of other uses, including supplying catches for sports fishing, bait or ornamental fish, restocking populations of fish species in the wild or providing material for the pharmaceutical and biotechnology industries.

The sector is diverse in many respects. Aquaculture can be practiced on land, inshore and offshore, in both cold and warm water environments. A wide variety of production means and techniques are employed, including closed and open, extensive and intensive systems. In the EU, three main sub-categories of fish or seafood are produced: marine finfish (e.g. sea bream or sea bass), shellfish (e.g. mussels, oysters) and freshwater finfish (e.g. carp, trout).

Certain species may be captured in the wild and fattened or grown in captivity to marketable size, a process defined by the FAO as ‘capture-based aquaculture’.
An industry gaining importance globally
Aquaculture is practised all over the world. The global industry has been characterised by exceptionally fast rates of expansion in recent decades. According to the FAO, between 1980 and 2010, world fish production from aquaculture for food grew at an average annual rate of 8.8%, with total aquaculture production reaching a value of US$125 billion in 2010. The OECD and FAO estimate that aquaculture will soon (by 2015) overtake supply from capture fisheries to account for more than half of the fish and seafood produced for human consumption. Factors contributing to increased demand for aquaculture products include rapid population growth, higher incomes among consumers and the finite capacity of wild fish stocks. Under these circumstances, aquaculture is regarded as an important bulwark in efforts to ensure future global food supply and food security.

A further characteristic of the global aquaculture industry is its dominance by Asian countries, which account for 91% of world production in weight and 81% in terms of value. In contrast, the EU's share of global production has been steadily decreasing over time. EU output in 2010 represented an estimated 1.6% of world production in volume and 3.3% in value.

Aquaculture in the EU - facts and figures
The EU's aquaculture industry was worth circa €3.6 billion in 2010. Around 80 000-85 000 people are employed in the sector, which has a high proportion of part-time workers. The great majority of EU aquaculture enterprises are SMEs; 75% of them employ five or fewer employees, while only about 10% have more than 10 employees. Five Member States (MS) – Spain, France, the UK, Italy and Greece – account between them for three-quarters of the EU's total production.

The principal species farmed in the EU are (by value, in descending order) Atlantic salmon, rainbow trout, mussels, gilthead sea bream, oysters, sea bass and carp. While the (labour-intensive) shellfish sector accounts for 50% of production by volume, marine fish (a more capital-intensive sector) account for 46% of production by value, as opposed to 29% and 25% for shellfish and freshwater fish respectively.

Figure 1: Structure of the EU aquaculture industry, 2010

Data source: The Economic Performance of the EU Aquaculture Sector (STECF)

Key imports to the EU (chiefly from Norway, south-east Asia and South America) include salmon, shrimp and pangasius.

Opportunities and challenges in the EU
As the EU is heavily dependent on imports to fulfil strong consumer demand for fish and seafood, increasing the internal supply of such products from aquaculture sources would appear to be a logical policy choice. But EU aquaculture faces various challenges which hamper its development or expansion. These include the difficulty of competing with third countries with lower wage costs and regulatory standards, the fragmented nature of the sector (dominated as it is by SMEs), competition with other economic actors for space in coastal or inland areas, burdensome licensing procedures, difficulties in accessing finance and investment, and sometimes negative consumer perceptions of the industry.

Previous EU-level initiatives on aquaculture – including the introduction of an aquaculture strategy in 2002 (see below) – have achieved progress in certain respects but could not be said to have successfully overcome these obstacles. It is in this
context that new efforts are currently being made to renew and improve governance structures, and provide a new impetus for supporting and developing the sector.

The EU policy and financial frameworks

Aquaculture strategy within the Common Fisheries Policy (CFP)

At EU level, aquaculture is administered and financially supported as an element of the CFP, even though as an economic activity its systems and processes are more easily comparable with agriculture than with capture fisheries.

In this framework, various specific initiatives on aquaculture have been developed in recent years. A 2002 strategy for the sustainable development of aquaculture in the EU placed a focus on consumer standards, environmental protection and employment creation in the sector, aiming among other things to achieve growth in production of 4% per year. In 2009, a "new impetus" for the aquaculture strategy was launched, with acknowledgement from the Commission that this objective had not been realised. Indeed, an EP evaluation of the 2002 strategy noted a decline in fish farming activities in most MS over the period 2001-08 and concluded that while some progress had been made on, for example, consumer and environmental issues, other core objectives relating to the sector's economic development had not been achieved.

The Commission's 2011 package of proposals on reform of the CFP incorporated a number of dedicated support measures for the aquaculture industry, foreseeing the establishment of a separate pillar for aquaculture within the CFP. A new Aquaculture Advisory Council will bring together representatives of the different stakeholders concerned (hitherto aquaculture has been covered within the remit of the Advisory Committee on Fisheries and Aquaculture). The proposals also included the introduction of strategic guidelines (detailed below) on the sustainable development of the sector.

The wider EU framework

Horizontal policy objectives of relevance to the sector include those set out in the EU's Integrated Maritime Policy (IMP) and its associated action plan, which aim for better coordination at EU level of all aspects of marine governance, and the 'blue growth' strategy. This strategy identifies aquaculture as one of five areas to be targeted for support with a view to contributing to innovation and employment creation in the framework of the Europe 2020 Strategy for smart, sustainable and innovative growth.

Aquaculture touches many policy areas, including trade, animal health and welfare, food safety, and environment and consumer protection. It is regulated within the scope of various EU legislative acts, including in relation to:

- animal health – Framework Directive 2006/88/EC establishes animal health requirements for aquaculture animals and products. While proposals for a comprehensive health law overhaul of EU animal health law are currently under consideration, major changes to the key

Environmental issues

Questions are frequently raised in relation to the aquaculture industry's performance in terms of environmental or sustainability indicators. Key concerns revolve around issues such as waste management and disease control, the threat of contagion of wild stocks by escapees, and a reliance on fish meal and fish oil (sourced from capture fisheries) for feed for carnivorous species.

EU industry operators, however, point to the high environmental standards with which they must comply and which may cause specific difficulties for them. The requirements of the Habitats and Birds Directives, and the Natura 2000 conservation network are regularly cited in this regard (see, for example, a recent EP study on the impact of cormorants upon fisheries and aquaculture).
principles of the aquaculture regime are not foreseen.


**Financial support for aquaculture**

The principal source of EU funding or co-funding for the specific development of aquaculture in the 2014-20 programming period will be the European Maritime and Fisheries Fund (EMFF), which with a proposed allocation of €6.6 billion will cover both the CFP and the IMP. It is envisaged that this instrument may be used in support of a broad range of aquaculture-related measures, such as development of new aquaculture sites, investment in human capital, skills and innovation, assistance for start-ups, promotion of diversification and development of advisory services.

The other major funds in the EU’s 2014-20 Multiannual Financial Framework will provide additional potential sources of funding, notably, as far as the research agenda is concerned, Horizon 2020, the successor to the Seventh Research Framework Programme. EU policy initiatives to improve access to finance for SMEs could also be of benefit to the aquaculture sector, in which SMEs predominate.

**Strategic guidelines for EU aquaculture**

In April 2013, in line with the proposals for reform of the CFP, the Commission issued strategic guidelines for the sustainable development of EU aquaculture. The guidelines identify four areas for priority action:

1) **reduction of administrative burdens**, particularly in relation to licensing – the situation varies from MS to MS, but in some countries it can take three years or more for new licences for aquaculture projects to be issued. This – especially if combined with the fact that it may take some years before enterprises initially become profitable – dissuades new operators and investors from the sector.

2) **coordinated spatial planning** – improved planning to secure allocation of suitable water and space for freshwater and marine aquaculture, while ensuring environmental sustainability, is seen as essential for expansion of the industry, including on offshore sites. A proposal in March 2013 for a Directive establishing a framework for Maritime Spatial Planning and Integrated Coastal Management is currently under consideration by EP and Council (EP rapporteur Gesine Meissner, ALDE, Germany). The Commission also published a Green Paper on Marine Knowledge in 2012; an EP report on this issue (rapporteur Maria do Céu Patrão Neves, EPP, Portugal) is foreseen for plenary vote in October 2013.

3) **competitiveness** – a focus on the related issues of improved research and development and business diversification among operators in the sector. Reforms to the organisation of the market and stronger structures for aquaculture producer organisations should contribute to improved competitiveness.
4) **a level playing-field** - while EU operators face difficulties in competing directly on costs with imports from low-wage economies, it is argued that the industry in the EU should highlight its high standards in food safety, animal health and the environment, which are positive factors for consumers in Europe.

Specific targets for action by the MS, the Commission and the new Aquaculture Advisory Council are set out under these four headings. MS are asked to draw up multiannual national plans for aquaculture by the end of 2013, tailoring them to their specific domestic conditions and focusing on areas with potential for growth. These plans should be compatible with the Operational Programmes which MS are required to submit in the framework of the EMFF for the period 2014-20. Oversight of the national aquaculture plans will be implemented via the open method of coordination – a system of policy coordination by MS based on peer review, benchmarking and voluntary cooperation.

**European Parliament position**

**CFP reform and strategic guidelines**

In adopting its **first reading position** in February 2013 on the basic regulation on reform of the CFP (rapporteur Ulrike Rodust, S&D, Germany), Parliament expressed support for simplification of legislation and reduction of administrative burdens in the sector, as well as underlining the importance of sustainability concerns and of integration of aquaculture activities into relevant policy areas, including sea strategies and spatial planning. Following subsequent trilogue negotiations between the EP and Council, political agreement on the reform (basic regulation and revision of the Regulation on the Common Market Organisation, rapporteur Struan Stevenson, ECR, UK) has been reached and awaits a final vote on Parliament's **position** on the EMFF (rapporteur Alain Cadec, France, EPP) is expected in October 2013, while the strategic guidelines on aquaculture have been **referred** to the EP for consideration.

**Other EP activities and positions**

The EP has expressed itself on aquaculture on a number of occasions, including in a **resolution** of 17 June 2010, which, in reviewing the state of play of the EU’s aquaculture strategy, identified a number of shortcomings to be addressed. In March 2012, Parliament's **intergroup** on climate change and sustainable development organised a **hearing** focusing on the role of aquaculture in the reform of the CFP. Other events in Parliament have focused on specific issues such as **the development of freshwater aquaculture** or the role of women in fisheries and aquaculture **(hearing on 14 October 2013, in the context of an initiative report on developing the role of women in the CFP (rapporteur, Dolores Garcia-Hierro Caraballo, S&D, Spain).**

**Stakeholders and other EU bodies**

The Federation of European Aquaculture Producers (FEAP), in its **position paper** on CFP reform, underlined the importance of providing comprehensive consumer information, urging that imports should be assessed to the same quality standards as have been achieved within the EU. On the EMFF, it called inter alia for a reduction in bureaucracy – a call which was echoed by Europêche/CopaCogeca - as well as support for the creation and development of aquaculture animal health groups, and more financing to be made available for grouped actions and associative structures in the profession. FEAP has also issued **indicative views** on the aquaculture strategic guidelines, in advance of an event on this topic in November.

The European Bureau for Conservation and Development held a **workshop** on 8 October 2013 on the theme of boosting European aquaculture.
In its **draft opinion** on the aquaculture strategic guidelines, the Committee of the Regions underlined the need to promote application of EU environmental legislation without imposing unnecessary burdens on operators in the production chain.

### A research agenda for EU aquaculture

EU institutions and stakeholders have consistently underlined the importance of support for research and development in efforts to improve the performance of the aquaculture sector. A 2009 EP **study** stressed that innovation was a critical component of competitiveness, and needed to be better supported and conducted throughout the industry. It also noted, however, that there could be an inherent tension between, on the one side, efforts to increase capacity via investment in improved technology and, on the other, the drive to keep overall cost bases in the sector down as far as possible.

In 2012, **EATIP**, the European Aquaculture Technology and Innovation Platform which brings together stakeholders from research and industry (including from Norway), published a **strategic vision** for European aquaculture. Its research priorities focus inter alia on product quality and consumer safety, systems and technology, sustainable feed production, and aquatic animal health and welfare. The importance of knowledge management and training and skill development for those working in the sector is also highlighted.

In June 2013, **EFARO**, the European Fisheries and Aquaculture Research Organisation, proposed **key topics** for research in support of aquaculture policy. These range from improved governance on spatial planning and environmental management to issues surrounding biodiversity, genomics, breeding and hatching, feed and nutrition and new species.

### Further reading


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### Endnotes

1. In relevant EU legislative acts, aquaculture is defined as the "the rearing or cultivation of aquatic organisms using techniques designed to increase the production of the organisms in question beyond the natural capacity of the environment; the organisms remain the property of a natural or legal person throughout the rearing or culture stage, up to and including harvesting."


5. The abovementioned STECF report, from which these statistics are principally drawn, provides an overview of the sector in the EU. On imports, see also EP Policy Department Study (2013) on Compliance of imports of fishery and aquaculture products with EU legislation.

6. FEAP is a European representative body including operators from most but not all EU Member States, as well as non-EU states such as Norway and Iceland.