

Deliverable D3.3

# The institutional framework for organic aquaculture – Critical development constraints and the potential for improvement

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## Table of contents

Summary .....	3
Objectives.....	4
1 Introduction .....	5
2 Method.....	5
3 Background and development of the management regime for organic aquaculture in Europa .....	5
3.1 Stimulation systems .....	10
4 Implementation and practices of organic aquaculture in four countries in Europe .....	11
4.1 The Czech Republic – Common Carp.....	11
4.1.1 Organic carp production in the Czech Republic .....	11
4.1.2 Organic certification and labels.....	12
4.1.3 Compliance with the EU Regulation.....	12
4.2 Greece – Sea bass/Sea bream .....	12
4.2.1 Organic Sea bass and Sea bream production in Greece.....	12
4.2.2 Organic certifications and labels .....	12
4.3 France – trout .....	13
4.3.1 Organic trout production in France.....	13
4.3.2 Compliance with the EU Regulation.....	14
4.4 Norway – salmon.....	15
4.4.1 Organic salmon production in Norway.....	15
4.4.2 Organic certification and labels.....	15
4.4.3 Compliance with the EU Regulation.....	15
5 Some identified challenges and room for improvement in the organic aquaculture regime in Europe.....	16
5.1 Main findings from the Thünen evaluation of the EU legislation on organic farming.....	16
5.2 Defining objectives for organic aquaculture production .....	18
5.3 Bureaucracy .....	18
5.4 Regulation without reference to practical and economic realities.....	19
5.5 Limited national support .....	19
5.6 Lack of statistics and information on national implementation .....	19
6 References.....	20

## Summary

The aim of this task is to explore critical development constraints and potential improvements in the institutional system for organic aquaculture, and to provide input to regulatory bodies for an increased organic aquaculture production. The background and development of the management regime for organic aquaculture in Europe is described and the organic production and implementation of the Regulation in four European countries (France, Greece, Norway and Czech Republic) evaluated, with the aim of exploring to what extent the experiences can be used to improve the governmental management systems for organic aquaculture. The work is based on screening available sources, such as international statistics banks, registers of approved operators, nongovernmental overviews, and relevant literature. There has however been little data available, especially on national implementation and functioning of the control regime.

Organic farming and production has been regulated at EU level since 1991, and in 2007 a regulation on organic aquaculture was introduced and established on a step-wise basis. The aim of the EU Regulation on organic aquaculture is to set a minimum standard for organic production in (and import to) the EU. The implementation rules on organic aquaculture were developed at a time when European aquaculture was diversified and fragmented, and the production standards differed and sometimes conflicted with each other. The coexistence of private and governmental certification standards adds compliance costs to the farmers and cause confusion among consumers. A regulation that created a common basic standard was therefore welcomed. The regulation of organic production is an ongoing process and it has been supplemented with more and more detailed rules for production, certification and controls. However, in the process of developing the standard, many deeply problematic issues have been revealed, which have yet not found their resolution. The European Commission presented a legislative proposal for a new Organic Regulation and a European Organic Action plan in March, 24<sup>th</sup>, 2014, which it is claimed to address addresses some of these problems.

### Main findings:

- The complexity of production rules and control provisions seems to slow down the transition to certified production.
- Little predictability and high uncertainty in production rules and transition periods.
- There seems to be limited national support programs for organic aquaculture production
- The lack of relevant statistics and information regarding organic aquaculture production and control makes it difficult to have a good understanding of the past and current status of production and the functioning of the Regulation.
- Concerns regarding the cost of certification were identified, especially for small-scale aquaculture producers
- Organic aquaculture production may be challenged by stricter regulation for conventional production, which may wipe out some of the differences between organic and conventional production.
- The regulations and standards are characterised by stakeholders to be devised without reference to economic reality
- There is more than one set of objectives and these are not always possible to attain at the same time, i.e. the balancing between minimal environmental impact, animal welfare and health, and product quality/“pure product”.

## Objectives

The overall aim of WP3 is to collect and review available information on economic, market and consumer related issues, and regulatory and institutional frameworks related to organic aquaculture.

The specific objective for this deliverable is to explore critical development constraints and potential improvement in the institutional systems, to provide input to regulatory bodies for an increased organic aquaculture production.

## 1 Introduction

This report is the deliverable related to task 3.3 in OrAqua project. The aim of this task is to

- Explore critical development constraints and potential improvements in the institutional system,
- Provide input to regulatory bodies for an increased organic aquaculture production.

The aim of task 3.3.1 was to describe the background and development of the management regime for organic aquaculture in Europe. The work is based on the collection of the available governmental and nongovernmental documents and reports, and relevant literature on the subject. Governmental systems, standards and scope will be emphasized, but also private standards will be included.

The aim of task 3.3.2 was to clarify how the regime for organic aquaculture production is implemented and practiced in Europe. The work is mainly based on an evaluation in four European countries (France, Greece, Norway and Czech Republic). The countries were chosen in agreement with WP2 and PMB of the OrAqua project. The work is based on screening available sources, such as international and national statistics banks, registers of approved operators, nongovernmental overviews, available market data and relevant literature.

## 2 Method

A literature search was conducted related to regulations of organic aquaculture and development constrains. There is very little scientific literature available about these issues. Therefore, the work is based on governmental and non-governmental documents and reports, grey literature and other relevant information on the subject. Governmental systems, standards and scope were emphasized, but also private standards were included. Also, a report from The Thünen Institute of Farm Economics on evaluation of the EU legislation on organic farming was used to identify challenges, although the report is related to agriculture (Sanders et al., 2013).

The literature search did not reveal any scientific studies or reviews of the implementation of the regulation on organic aquaculture production in Europe. Most studies on organic aquaculture focus on the biological and technical issues related to the production rules. Information on implementation, especially regarding the experience with the administration and control system, is generally lacking. Furthermore, there is no available statistics or updated information on European organic aquaculture production, on the availability and use of economic support, or on national control tasks and sanctions. The study of how the four countries have implemented the regulation on organic aquaculture has therefore been dependent on information from partners and platform participants in the OrAqua project from the case countries.

## 3 Background and development of the management regime for organic aquaculture in Europa

The first European Community regulation of organic farming was the **European Organic Regulation (EEC) No 2092/1991** of 1991. It set criteria and production rules for organic agriculture, but contained no provisions on organic aquaculture. In 2004, the European Action Plan for Organic Food and Farming initiated a revision of the organic regulation, including “completing the standards for areas not yet covered such as aquaculture” (EUCOM(2004), 2004).

At the time, there were 17 private and national standards for different aquaculture productions. The standards often varied significantly from place to place, certifier to certifier, and species to species. Many programs only

certified organic production in one country and/or a limited number of species. Others, like Naturland (Germany) and Soil Association (UK) certify a large amount of species, and are considered to have the most international scope of the European standards (Bergleiter, Berner, Censkowsky, & Julià-Camprodon, 2009). For instance, Naturland certifies production in over twenty countries, amongst other organic sea bass and sea bream in Greece and Croatia, organic trout in Germany, France, Italy and Spain, organic salmon in Ireland and Scotland, organic shrimps, tilapia and pangasius in Latin America and Asia. Today there are 19 private labels set up by organic farmers' associations and certification bodies and four national standards operating in Europe (see table 1).

Table 1 European standards for organic aquaculture, Source: (Bergleiter et al., 2009)

European standards	Certification programme	Country (implementation year)
<b>Supranational</b>	EC Reg. No 834/2007; 710/2009	European Union (2009)
<b>National</b>	Österreichischer Lebensmittel Codex Økologisk Agriculture Biologique Junta de Andalucia Ireland – draft rules in 2007	Austria (1997) Denmark (2004) France (2000) Spain (2007) awaiting the EU rules
<b>Private</b>	Bioland Naturland Gää Biokreis Biopark Demeter Bio Austria Soil Association OFF BioSuisse KRAV Debio Vottunarfstofan Tún ehf CAAE Biokontroll Hungária QC&I AIAB IOFGA IQS	Germany (1995) Germany (1996) Germany (1998) Germany (2000) Germany (2006) Germany (2003) Austria (1995) UK (1999) UK (2002) Switzerland (2000) Sweden (2001) Norway (2001) Iceland (2001) Spain (2001) Hungary (2002) Italy (2003) Italy (2004) Ireland (2006) Ireland (2007)
<b>International</b>	IFOAM1	Basic standards (2005)

Many companies are certified by more than one program, because different programs are preferred in different markets/countries (Bergleiter et al., 2009). The different standards cover a great diversity regarding geography, species and production concepts. Even though similar in many regards, there are differences in the production rules, for instance, whether they allow some conventional feed or not. The coexistence of private and governmental certification standards adds compliance costs to the farmers. In combination with the higher costs to meet organic standards, this makes it even more difficult to achieve a profitable organic aquaculture sector.

<sup>1</sup> IFOAM - the International Federation of Organic Agriculture Movements - is an international umbrella-organisation for about 800 organisations in 117 countries promoting organic agriculture. Besides setting international standards for organic production it supports farmers, especially in developing countries in converting to organic production and facilitates the development of the market for organic products. The IFOAM EU Group represents more than 300 member organisations in Europe.

A regional initiative to harmonize standards was taken by Norway and Sweden in 2001, where the Norwegian standard, Debio, was developed in cooperation with the Swedish standard, KRAV. The standards are similar, and there is mutual recognition between the two standards. However, altogether it is a very complex and fragmented management regime, which can be hard to deal with, both for producers, authorities and consumers.

The absence of a common standard or certification of organic is by FAO considered one of the reasons for the low output of organic aquaculture (FAO, 2014, pp. 47-48). Despite agreement on the need for common standards, there were different views on how to do this. Some would like EU rules, while some argued that this would be difficult with all the different species and different productions in different countries. Others argued for an international standard, especially not to negatively affect organic production in developing countries. However, an agreement was reached on developing a new comprehensive organic regulation, replacing the 1991 Regulation (EUCOM, 2005). The development of a new organic regulation aimed at harmonising certification, and standardising the control and inspection procedures. By establishing common production rules across the EU, a minimum standard was to be established.

The development of the regulation of organic production has been a stepwise process, where the basic regulation has been continuously supplemented with new and more detailed rules for production, certification and controls as well as prolongations of timeframes. Below is a short description of the development of the regulations relevant for organic aquaculture (see also table 2).

Table 2 EU Regulation on organic aquaculture

Main EU Regulations	In force
<i>Council Regulation (EEC) No. 2092/1991</i> of 24 June 1991 on organic production of agricultural products and indications referring thereto on agricultural products and feedstuffs.	24 June 1991
<b><i>Council Regulation (EC) No. 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No. 2092 / 91.</i></b>	1 January 2009
<i>Council Regulation (EC) No 967/2008</i> of 29 September 2008 amending Regulation (EC) No 834/2007 on organic production and labelling of organic products	1 January 2009
<i>Commission Regulation (EC) No. 889 /2008</i> of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No. 834 / 2007 on organic production and labelling of organic products with regard to organic production, labelling and control.	1 January 2009
<b><i>Commission Regulation (EC) No. 710/2009 of 5 August 2009 amending Regulation (EC) No 889/2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007, as regards laying down detailed rules on organic aquaculture animal and seaweed production</i></b>	1 July 2010
<i>Commission Implementing Regulation (EU) No 1030/2013</i> of 24 October 2013 amending Regulation (EC) No 889/2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control	1 July 2013
<i>Commission Implementing Regulation (EU) No 1364/2013</i> of 17 December 2013 amending Regulation (EC) No 889/2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 as regards the use of non-organic aquaculture juveniles and non-organic seed of bivalve shellfish in organic aquaculture	31 December 2013
<i>Commission Implementing Regulation (EU) No 1358/2014</i> of 18 December 2014 amending Regulation (EC) No 889/2008 laying down detailed rules for the	1 January 2015

Main EU Regulations	In force
implementation of Council Regulation (EC) No 834/2007 as regards the origin of organic aquaculture animals, aquaculture husbandry practices, feed for organic aquaculture animals and products and substances allowed for use in organic aquaculture	
<b>Proposal</b> for a Regulation of the European Parliament and of the Council on organic production and labelling of organic products, amending Regulation (EU) No XXX/XXX of the European Parliament and of the Council [Official controls Regulation] and <b>repealing Council Regulation (EC) No 834/2007</b> , 24 March 2014	Tentatively 1 July 2017

Initiated by the European Action Plan in 2004 the process of developing a new organic regulation underwent a thorough process with negotiations between the Commission and the EU Member States in the Standing Committee of Organic Farming (SCOF). Changes and amendments of the Regulations require the positive opinion of the Member States in the (SCOF) by qualified majority (IFOAM, 2010). The new organic regulation - **Council Regulation (EC) No 834/2007** - was adopted in 2007 (EU, 2007), and this for the first time included aquaculture. It provided objectives and principles for organic agriculture production and labelling. Article 15 provides general provision for aquaculture animals, including provisions on origin of animals, animal welfare, definition of organic farming areas, breeding, feeding and veterinary treatment. All products labelled as organic and sold in the EU must be produced in accordance with these regulations. The regulation constituted a consensus “minimum” standard, while other existing standards could be stricter in their requirements.

Council Regulation (EC) No 834/2007 introduced rules for compulsory use of a logo on organic products from January 1<sup>st</sup>, 2009. However this was postponed one year by *Council Regulation (EC) No 967/2008* (EU, 2008b) because the old logo could be confused with other logos in place for products with protected designations of origin. The logo could be used on a voluntary basis, but the postponement allowed time to design a new Community logo – the leaf - and make it known to the public.



Title V of the Regulation EC No 834/2007 deals with the establishment of inspection and certification systems with the purpose of verifying compliance with the prescribed organic standards. Member States are required to set up a system of controls and to designate one or more competent authorities responsible for ensuring compliance with the EU organic rules. The Regulation identifies minimum conditions for establishing such a system at the national level.

Before the Member States could translate the regulation into practice, implementing rules needed to be developed. Organic agriculture is managed by DG Agri, whereas DG Mare is responsible for aquaculture issues. DG Mare therefore prepared the organic aquaculture implementing rules, where the first stakeholder meeting was held in December 2005. Three expert meetings were held from October 2007 to May 2008. DG Mare presented the first working document on organic aquaculture implementing rules in June 2008 (IFOAM, 2010). By the end on January 2009, the Commission issued the draft organic aquaculture implementing rules. Disagreement within a committee DG Agri committee of national experts on organic farming delayed the process, originally planned to be ready in 2008 (IFOAM, 2010). According to IFOAM the diversified organic aquaculture production,

with actors operating throughout Europe, producing a number of animals and plant species (even more animal species than agriculture), and at different scales, makes it a challenge when seeking to achieve consensus on a number of issues, like stocking densities, origin and feed (IFOAM, 2010).

Meanwhile, on January 1<sup>st</sup>, 2009, the New Organic Regulation (EC) No 834/2007 came into force together with the implementing rules for agriculture products (the EC Regulation No. 889 /2008). The regulation states: “the evolution of new detailed production rules on organic aquaculture will require more time and therefore should be elaborated in a subsequent procedure. It is therefore appropriate to exclude those products from the scope of this Regulation. However, the Community rules provided for production, controls and labelling should apply *mutatis mutandis*” (EU, 2008a, preamble and art. 1). The implementation rules for aquaculture were adopted in 2009 and came into force 1 January 2010 (Commission Regulation (EC) No 710/2009).

Parallel processes: The International Federation of Organic Agriculture Movements (IFOAM) started a process to develop basic common standards for organic aquaculture in the late 1990ies, the same way they had developed principles for organic farming. A draft was presented in 2000, an Aquaculture group was formed in 2003 and the standard was fully accepted as a standard in 2005 (IFOAM, 2000, 2010). IFOAM Europe, with members from European certification and producer organisations and grassroots organizations, was also active in the process to develop the EU Regulation.

At the same time ‘FAO guidelines for the production, processing, labelling and marketing of organically produced foods’ (FAO 2002) and the guidelines on food labelling in Codex Alimentarius (FAO/WHO 2001) were formulated, and later revised and amended a number of times. All these processes were relevant for the development of the Regulation. Parallel with these processes, governmental bodies and private companies at a national level were formed and produced organic standards for various species in aquaculture.

**Commission Regulation (EC) No 710/2009** (EU, 2009) provides detailed production rules for the different organic aquaculture species. The Regulation contains transition rules to give existing organic aquaculture operators certified under private and national programmes time to adjust production to the new rules. Several amendments have also been adopted prolonging several of the transition rules. Originally, the transition period for when aquaculture farms producing under nationally accepted organic rules before 1 January 2009 had to operate under the Regulation (EU) No 834/2007 was July 1<sup>st</sup>, 2013. With the amendment in Regulation No 1030/2013 (EU, 2013a) the period was prolonged until January 2015. Due to practical difficulties to meet the standard also the opportunity and conditions for using non organic aquaculture juveniles has been extended, by the amendment Regulation No 1364/2013 (EU, 2013b) and the permission to use feed from non-organic fish certified as sustainable was extending by Regulation No 1358/2014 (EU, 2014a).

In March 2014 a legislative proposal for a new organic regulation, to replace Council Regulation (EC) No 834/2007, was presented (EUCOM, 2014b), together with a new European Organic Action plan (EUCOM(2014), 2014) and an impact assessment (EUCOM, 2014a). The proposal is now under discussions in the Commission, the European Council and the European Parliament. The proposal is based on a process that started in 2012 when the Commission decided to review the current regulation. The new regulation is expected to enter into force in 2017. As with the previous regulation, the new proposal is based on stakeholder hearings, consultations and meetings. An Expert Group for Technical Advice on Organic Production (EGTOP) was established. Based on the most recent technical and scientific information, the group has provided technical advice on requested issues, like use of non-organic juveniles, permitted feed sources and additives, stocking density and substances for cleaning and

disinfection (EGTOP, 2013, 2014). However, this work has been time consuming and some of the information has been made available after the new regulation was presented.

Many actors in the industry preferred to continue to improve the current legislation rather than developing an entirely new regulation. This was also the conclusion of the evaluation of the organic regulation commissioned by the Commission, stating that the rules in most respects are adequate, but there is a lack of harmonised interpretation and enforcement in member states (Sanders et al., 2013).

In addition, here there have been parallel processes. In 2011, the work started to revise the Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods: Organic Aquaculture. The new guidelines are to be discussed in July 2015 (COMMISSION, 2014). The IFOAM norms and standards have been revised and updated several times (IFOAM, 2007, 2014b).

### 3.1 Stimulation systems

The European Fisheries Fund (EFF) (EU, 2006) and the European Maritime and Fisheries Fund (EMFF) (EU, 2014b) provide guidelines for stimulating organic aquaculture production in the European Union.

In the former European Fisheries Fund (Council Regulation (EC) No 1198/2006) support could be provided for conversion to organic aquaculture. A one-off compensation could be allocated for a maximum of two years during the period of the conversion of the enterprise to organic production (Article 30).

In the new European Maritime and Fisheries Fund adopted in 2014, (Council Regulation (EU) No 508/2014) support can be given for a maximum of three years during the period of the conversion of the enterprise to organic production. In addition, the Regulation gives some criteria for support, where support only shall be granted to beneficiaries who commit themselves to comply with the requirements of organic production for a minimum of five years. There is also some general guidance on how to calculate the support (Article 53).

The Action plan proposes: “as part of the renewed focus on aquaculture promotion within the Common Fisheries Policy (CFP), the European Maritime and Fisheries Fund (EMFF) will also provide support for organic aquaculture practices”. There is however no timeframes or budgets for the proposed action.

The Scientific, Technical and Economic Committee for Fisheries (STECF) on the Economic Performance of the EU Aquaculture Sector in 2013 concluded: “Where producers have engaged in organic production and certification they have often benefitted from increased profit margins especially when supported by Member State schemes such as those used in Ireland.” It is however also stressed that caution is needed to prevent cycles of organic 'rebranding' as a form of product differentiation. In some Member States there is little demand for organic products and suppliers view the subsector as too niche for major investment” (STECF13-29, 2013). As shown below in the presentation of the case studies, there seems to be limited use of support schemes in many countries.

According to the IFOAM, the period of uncertainty about the new production rules, awaiting the adoption of the new organic regulation, may halt investment in organic production over the coming years. Further, if the scheduled timeline were followed, the new regulation would come into force in the middle of the 2015-2020 period for the new organic subsidy scheme. This means that farmers will have to apply for support for the entire five-year period without knowing how the production rules will be during this time (EUCOM, 2014a). As shown below, there has been limited use of the support system. Interviews with the producers and national authorities could provide information about the reasons, and the needs of the operators.

## 4 Implementation and practices of organic aquaculture in four countries in Europe

Four case countries were selected – France (Rainbow trout), Greece (Sea bass/Sea beam), Norway (Atlantic salmon), and the Czech Republic (Common carp). The selection was based on the desire to study different species in different countries to give a broad overview. There is no official statistics on organic aquaculture production volumes in Europe. The European Aquaculture Production Report 2004-2013 prepared by the Federation of European Aquaculture Producers (FEAP) (FEAP, 2014) does not contain any information on organic production. Some countries provide information on organic aquaculture in their reports to the European Joint Research Center - Scientific, Technical and Economic Committee for Fisheries (STECF), published in the “Economic Performance of the EU Aquaculture Sector” (STECF13-29, 2013; STECF14-18, 2014). However, information is generally scarce. A study on organic aquaculture production in Europe, published by Zubiaurre (2013) provides the best overview on volume (table 3) and certification programmes for organic production in Europe. This is used as a basis for the presentation of the organic production in the four case studies.

Table 3 Organic and non-organic production, by species, Europe 2012 (Source: Zubiaurre 2013)

2012	Organic	Non-organic	Organic as % of total
Atlantic Salmon	20 600	1 459 966	1,4 %
Rainbow Trout	2 017	106 683	1,9 %
Seabass	684	118 832	0,6 %
Seabream	630	154 900	0,4 %
Totalt	23 931	1 840 381	1,3 %

There is no available information in English about how the four countries have implemented the regulation on organic aquaculture. It has therefore not possible to conduct a review of the literature. Data has been scarce, and the presentation is based on information from partners and platform participants in the OrAqua project from the case countries. A survey in selected case countries, gathering information from producers, national authorities and control bodies could provide valuable insight into the achievements and challenges of implementation in the different countries, especially regarding the experience with the administration and control system, but this has been outside the scope of the project.

### 4.1 The Czech Republic – Common Carp

#### 4.1.1 Organic carp production in the Czech Republic

In Europe, common carp is mainly produced in the Czech Republic, Hungary and Poland, amounting to 60,000 tons in 2012. The total carp production in the Czech Republic was in 2012 20,800 tonnes (STECF14-18, 2014). The Czech carp production takes place in natural pond systems with very little or no feeding. It is therefore generally perceived as organic. Still, no Czech carp farms are certified as organic. The producers have not been willing or seen the benefit of paying extra for organic certification (Zubiaurre, 2013). This in contrast to Lithuania where more than half of the carp production of 3 300 tons is certified as organic (STECF14-18, 2014). For this project, Zdeněk Adámek at the Institute of Vertebrate Biology (USB) examined more thoroughly the reasons why there is no certified carp production in the Czech Republic. The information below is also provided by Zdeněk Adámek.

#### 4.1.2 Organic certification and labels

Even though Czech carp is considered an ecological or “natural” product, it is not labelled as such. “Czech carp” is a registered protected brand, and two producers are marketing carp as a regional product - třeboň carp and pohořelice carp - according to the EU Regulation no. 1151/2012.

There is no national regulation on organic aquaculture. Any future organic production will follow the Commission Regulation No.710/2009, and no incorporation into Czech regulations will be necessary. There are no stimulation systems for increased organic aquaculture production in the Czech Republic.

There are four control bodies in the Czech Republic accepted as certifiers of organic products by the European Commission, as provided for in Article 35(B) of Council Regulation (EC) No 834/2007 (DGAgri, 2013), which would be able to undertake the required control and certification tasks.

#### 4.1.3 Compliance with the EU Regulation

The current, non-certified, Czech carp pond farming practice does not comply with the EU regulation on organic aquaculture because of use of hormones and conventional feed. *Hormones* are used on fish of both natural (hypophysis - majority of Cases) and artificial (analogues - minority) origin in artificial spawning. Consequently, the *stock fish* are not considered to be of organic origin. Further, the *cereals* used for carp supplementary feeding are not of organic origin. Use of fertilizers and stocking density are however in compliance with the EU Regulation. *Fertilizers* applied are quite often from “factory farming”. The limit of 20 kg n per ha is however in accordance with the EU Regulation, the amounts of nitrogen applied in carp pond fertilization do not exceed 5 (max 7) kg per ha. The same goes for *stocking density*. The average of Czech pond production is around 500 kg per ha (max around 1200 - 1400 kg per ha), well within the limits of 1500 kg per ha set by the EU Regulation.

## 4.2 Greece – Sea bass/Sea bream

#### 4.2.1 Organic Sea bass and Sea bream production in Greece

The total production of sea bass and sea bream in Europe in 2012 was about 275,000 tons. The main producers are Greece and Turkey, with a production of 113,500 and 90,000 tons respectively, but several other have production of some size. Of the total production 1,614 tons or 0.59 % were certified to organic standards (Zubiaurre, 2013).

The organic sea bass and sea bream are mainly produced in Greece, France and Croatia. Croatia and France produced about 300 tons each in 2012, amounting to 6% and 9% of their total production, whereas Greece produced 1,000 tons. This amounts to less than 1% of the Greek sea bass and sea bream production (Zubiaurre, 2013). The information about the Greek implementation of the organic regulation is provided by Filippos Papageorgiou at Kefish.

#### 4.2.2 Organic certifications and labels

At present three Greek farms are certified and produce organic sea bass and sea bream (Zubiaurre, 2013), one is certified with the EU scheme and two with Naturland. One producer did not renew its licence and has returned to conventional production. One of the organic farms also has an accredited hatchery, the first sea bass and sea bream hatchery in Europe certified for organic production (Christofilogiannis, 2011). There is no organic feed production in Greece. It is all imported. Availability is not a problem, but the price is about 25-30% higher than for conventional feed.



There is no national organic label or regulation on organic aquaculture in Greece. Following EC Reg 710/2009 the Greek government adopted the Ministerial Decision for organic aquaculture MD 95767/ 31-8-2010 “Principles of Organic Production, Reg (EC) arith.710/2009” with an interpretation of the EC Regulation. The use of the stimulation for increased organic production is reported to be marginal. This is explained by the small market for organic aquaculture. The producers therefore see no reason for switching to organic. It is also noted that “a significant portion” of organic production is sold as conventional because there is not always a market for the organic fish.

There are 15 control bodies in Greece accepted as certifiers of organic products by the European Commission, as provided for in Article 35(B) of Council Regulation (EC) No 834/2007 (DGAgri, 2013). Two of them, the Bio Hellas (EU code Gr-Bio-03) and TUV Austria Hellas (EU code Gr-Bio-15), are currently providing certification of the three sea bass and sea beam producers.

Most of the organic sea bass and sea beam is exported. The choice of certification program is therefore based on the preferences in the import countries, i.e. whether there is an established consumer or retailer preference to a specific labelling program (for instance Naturland in Germany), or if it the fish would sell equally well under the EU logo, rather than being based on the local production conditions in Greece. Naturland certifies two of the sea bass productions. Some production rules are stricter with Naturland than the EU Regulation This is however not reported as decisive.

Complicated bureaucracy is pointed out as one of the barriers to further development (Zubiaurre, 2013), but the lack of market demand is considered equally critical (Perdikaris & Paschos, 2010). According to one producer, “Producers will turn to organic when they see a market opportunity. At the moment the opportunity is quite low, only as a small part of a niche market with low rate of development”. This is supported by the government, who also considers that the market segment for organic fish is to remain a niche production (STECF14-18, 2014).

Lack of a national standard and the different private and foreign labels have different criteria for what is considered organic, e.g. whether it is process oriented (i.e. more friendly to the environment) or product oriented (i.e. closer to the ‘natural’), and there are significant conceptual as well as production differences amongst these two. The EU Regulations have attempted to compromise between different requirements of the various existing labels.

## 4.3 France – trout

### 4.3.1 Organic trout production in France

Out of a total production of 86,000 tons trout in Europe in 2012, 1,600 tons was certified as organic. The main producers are France with 950 tons and Denmark with 530 tons, in addition to Ireland and the UK, which produced 120 and 100 tons organic trout respectively in 2012. The total French production of trout was in 2012 36 000 tons. So even though France is the major organic producer of trout and produces 60% of the organic trout production in Europe, only 2, 7 % of the total French production is organic (Zubiaurre, 2013).

Information about the French implementation of the organic regulation is provided by information from Marine Levadoux at the French producers' organization CIPA - Comité Interprofessionnel des Produits de l'Aquaculture.

#### *Organic certification and labels*



The national French certification for organic production is Agriculture Biologique (AB). In addition, the European "feuille", the leaf, is used. The AB is a public standard, implemented in 2000. AB has developed criteria for all major species, including trout. The governmental regulation, besides setting criteria for organic aquaculture, also sets an annual limitation of the total production volume per certified species (Bergleiter et al., 2009). There are eight control bodies in France that are accepted as certifiers of organic products by the European Commission (DGAgri, 2013).

The economic support provided for stimulating organic production in the European Union European Fisheries Fund (EFF) (2006) has been used in France on the same scheme as in agriculture to help the sites in conversion to organic aquaculture. Only a few could benefit of this system since France took quite a long time to define the procedures. The new European Maritime and Fisheries Fund (EMFF) (2014) is not yet operational in France (as of January 2015).

#### **4.3.2 Compliance with the EU Regulation**

Since January 1<sup>st</sup> 2015, the AB is equivalent to the EU specifications, in line with the Regulation (EU) No 1030/2013 of October 2013, which extended the opportunity of national authorities to authorize those aquaculture production units that were established and produced under nationally accepted organic rules before 1 January 2009 to keep their organic status under specified conditions. The "AB" is now in full correspondence with the EU specifications.

Before, some differences existed between the former organic national specifications in France (AB) and the European regulation. The French regulation:

- provided water quality criteria, whereas there are none in the European regulation
- allowed use of triploid fish, but not mono-sex fish
- had criteria for minimal distances between organic and non-organic units
- maximal production limit on different species
- allowed use of external treatments (i.e. the use of cleaning and disinfecting substances to be used in the presence of fish, such as hydrogen peroxide, peracetic and peroctanoic acids).

This is however, since January 2015, also allowed in the European Regulation.

According to the French producers' organization CIPA, the biggest obstacles right now for organic aquaculture in France are the restraint on the raw materials allowed in the feed and the uncertainty concerning the production constraints of juveniles. The control rules were not mentioned in this regard.

## 4.4 Norway – salmon

### 4.4.1 Organic salmon production in Norway

80% of the European organic aquaculture production is salmon. Total production in 2012 was 20 600 tons. This, however, only amounts to 1,4% of the total salmon production in Europe in 2012 of nearly 1 500 000 tons (Zubiaurre, 2013). In both volume and relative production, Ireland is the biggest organic producer. In 2012, it produced 9 600 tons organic salmon. This represents close to 70% of the total production of salmon in Ireland and nearly half (46%) of the organic production in Europe. Norway is the biggest producer of conventional salmon for the European market (1 240 000 tons or 80%), but only 0.07% of the Norwegian production is produced as organic. The 8 060 tons organic salmon however amounts to 40% of the European production (Zubiaurre, 2013).

Information about the Norwegian organic production and certification is provided by Jan-Widar Finden at Debio.

### 4.4.2 Organic certification and labels

There is one inspection and certification body for organic aquaculture in Norway, Debio (Debio, 2013; DGAgri, 2013; FOR2009-02-02, 2009). The Debio standard was developed in cooperation with the Swedish inspection and certification body, KRAV, in 2001. The standards for Debio and KRAV are similar, and there is mutual recognition between the two standards. Hence, the Norwegian organic salmon farms are certified by Debio.



In 2009, the government allocated five licenses for organic salmon production to stimulate Norwegian organic producers. These licenses were given to four companies. Through mergers and purchases, the licenses are today owned by one of the companies, which has concentrated its production to one area. In addition, there is one company with a smaller organic production. In this company, the entire production is organic, with organic fry, while earlier conventional fry were used. Organic feed is imported from Scotland.

### 4.4.3 Compliance with the EU Regulation

There is no national organic label or regulation on organic aquaculture in Norway. Awaiting the entering into force of the EU Regulations EC No. 834/2007 and EC No. 710/2009, the Norwegian government adopted in 2009 a regulation on recognition of the Debio standards or equivalent standards for certification of organic aquaculture production (FOR2009-02-02, 2009). Europe is an important market for the Norwegian organic salmon, and the Debio standard is in accordance with the production rules of the EU Regulation.

Following the Regulation (EU) No 1030/2013 of October 2013, which extended the opportunity of national authorities to authorize production under nationally accepted organic until January 1<sup>st</sup>, 2015, the Norwegian government started preparing a national Regulation on organic aquaculture. The Norwegian regulations are at present (April 2015) subject to public consultation. It is identical with the EU Regulation, except some national adjustments regarding control provisions and import of organic aquaculture products to be sold in Norway. The national regulations will apply until the new EU regulations are incorporated into the EEA Agreement. Decision and supervisory authority will be delegated to Debio ("Utkast til forskrift om økologisk akvakulturproduksjon og

merking av økologiske akvakulturprodukter (Draft proposal for regulations of organic aquaculture production and labelling of organic aquaculture products) ", 2015).

According to Debio, the biggest challenge for organic salmon production in Norway will be the requirement for 100 percent organically sources juveniles from 2016. Another important issue is the restrictions related to number of chemical treatments against sea lice. The challenges related to organic and sustainably sourced feed for carnivore fish like salmon has been solved by Regulation No 1358/2014 (EU, 2014a).

There is no economic support for organic production or compensation for converting to organic production in Norway. Neither is there any public supervisory body directed at organic production, besides the supervision provided by Debio. Both Debio and the Irish government report to the STECF report that the market for organic salmon is bigger than the supply (STECF14-18, 2014).

## 5 Some identified challenges and room for improvement in the organic aquaculture regime in Europe

This chapter summarises the identified challenges for the institutional framework for organic aquaculture in Europe. First, issues identified in the Thünen evaluation of EU legislation on organic farming will be discussed. Although it deals with organic agriculture, some of the issues are relevant also for aquaculture. Further, issues identified in the OrAqua project, specifically for organic aquaculture will be discussed.

### 5.1 Main findings from the Thünen evaluation of the EU legislation on organic farming

The Thünen Institute of Farm Economics in 2013 coordinated an evaluation for the Commission of the EU legislation on organic farming (Sanders et al., 2013). This study examined the "adequacy and effectiveness of the Council Regulation (EC) 834/2007 and its implementation rules" (Sanders et al., 2013). It provides a thorough evaluation of the EU legislation of organic farming, including the scope, production rules, control system, import regime, consumer perception, and administration of the legislation. The study covers the period from 2009 onwards and is based on document analysis; 13 national case studies; semi structured interviews (in the case studies and with representatives from the EC DG Agri, importers, control bodies, members of EGTOP and UNCTAD); stakeholder survey (to 1.025 persons and a response of 265 (26%)); and a consumer survey. The study addresses organic farming in general, and has no a special focus on aquaculture.

Production rules:

- The Regulation has led to a harmonized concept of organic production in the EU
- All Member States have implemented the existing EU legislation on organic farming in national law
- There is only a limited number of national additional provisions
- Lack of clarity of some terms in the Regulation has resulted in differences in interpretation and hence variations in national implementation
- The system of exceptional rules appear to hinder rather than support the development of organic supplies

Control system:

- The distribution of responsibilities among the main actors involved in the control system is found to be adequate

- Competent authorities in some Member States do not fulfil their supervisory role fully due to insufficient procedures for supervision and limited resources
- Different national implementation of control: Different interpretation of the regulations, different sanctions are being applied for the same infringement, residue testing varies greatly
- Annual on-site controls is considered adequate to ensure compliance with the Regulation, but a risk-oriented approach are suggested to be more cost effective

#### Administration and management:

- The new Regulation (Council Regulation (EC) 834/2007) has contributed to greater transparency
- The new regulatory regime has not significantly reduced administration and management for operators, control bodies or competent authorities, because there is lack of precision and clarity on many issues, resulting in control bodies and competent authorities spending more time on clarifying interpretations and granting authorisations under the exceptional rules
- Bureaucracy remains a barrier for operators to become organic, especially for small-holders
- The formation of the expert group (EGTOP) has been positive in providing evidence-based recommendations, but the process is time consuming and labour intensive.
- Expert recommendations cannot replace a political process for more complex decisions

#### Recommendations:

- Simplification of the legal text and clarification of ambiguous terms
- Information and capacity building, including more guidance and clarifications to national authorities and control bodies
- Guidance at EU level may be necessary to ensure a harmonized approach
- Phasing out several of the exceptional rules
- Collecting and publication of consistent and EU-wide statistics and market data, and monitoring of national implementation
- Shifting to a risk based control system, accompanied with national supervision systems and improved exchange of information
- Research covering all Member States to examine the role of the production and control rules for organic operators deciding to enter or leave the sector

Aquaculture is not specifically mentioned in the report, but it is reasonable to assume that most of these findings are also relevant for organic aquaculture production.

Most studies on organic aquaculture focus on the biological and technical issues related to the production rules. No studies or reviews of the implementation or impact of national implementation of the regulation on organic aquaculture has been identified. The most thorough evaluations and continuous feedback are from the IFOAM – the International Federation of Organic Agriculture Movements. The most recent is their evaluation and feedback on the Commission’s proposal for a new organic regulation, but there is no particular focus on aquaculture (IFOAM, 2015).

Below is a short summary of the identified challenges facing the organic aquaculture sector, based on the available information.

## 5.2 Defining objectives for organic aquaculture production

The implementation rules on organic aquaculture were developed at a time when European aquaculture was diversified and fragmented, and the production standards differed and sometimes conflicted with each other. A regulation that created a common basic standard was therefore welcomed. However, in the process of developing the standard many deeply problematic issues were revealed and have yet not found its resolution (IFOAM, 2010). Questions related to production rules, like stocking density, organic juveniles and feed, are issues that have been under discussion and revisions several times. The regulation also struggles with agreeing on the objectives of organic aquaculture production, e.g. organic rules have therefore been quite difficult to define, because there is more than one set of objectives and these are not always possible to attain at the same time. Further, this has made it hard to communicate exactly what constitutes organic.

As a response to this, the IFOAM in 2014 launched a public consultation about what “organic aquaculture” should and could be. Acknowledging that for the organic movement, some fundamental questions are still on the table and there are different opinions within the “organic family” on what actually constitutes organic aquaculture (IFOAM, 2014a). Without coming to terms on this issue, the regulation on organic aquaculture will continue to struggle with incompatible goals. This is also pointed out in several of the case studies above, where actors stress that a challenge with the development of the organic aquaculture regulation is to decide whether the production rules and control provision are to be directed at the “organic production system” or “the organic product”.

Related to this is the difference between the standard for organic aquaculture and the “greening” of conventional production. Setting the standard too high will prevent the conversion to organic production. On the other hand, if the standard is not set high enough, it can cause confusion when communicating the difference between organic and conventional (and sustainable) aquaculture. Organic aquaculture production may therefore be challenged by stricter regulation of conventional production, which may wipe out some of the differences between organic and conventional production. Further, lack of detailed organic production rules for the phase of the life stage between hatching and weaning of juveniles makes it difficult to distinguish organic and non-organic hatcheries.

## 5.3 Bureaucracy

A common comment on the organic aquaculture regulation is that the complexity of production rules and control provisions slow down the transition to certified production. Further, it is argued that the transition period postpones harmonisation and delays implementation of the common standard for organic aquaculture (IFOAM, 2010), which is also a conclusion of the Thünen report on organic farming.

Similarly, the vague provisions give room for different interpretations. This is in many ways positive, because the control bodies are allowed to make local adjustments. The UN Food and Agricultural Organisation FAO states in a study on organic aquaculture regulations that “when compared to other national legislations, the EU provisions are significantly less detailed” and the task of setting up an organic inspection and certification system is largely delegated to the member states (FAO, 2012). In the aquaculture sector, concerns are expressed that this discretion of the national competent authorities might result in different interpretation and different practise. This can cause unequal frameworks and unfair competition, as different approaches are applied in different states (IFOAM 2012). It is therefore suggested to develop guidelines for the qualification of inspection and certification personnel for organic aquaculture, as this is an animal production system very different from other organic productions (IFOAM, 2010), also in line with the Thünen report.

## 5.4 Regulation without reference to practical and economic realities

The regulations and standards are said to be devised without reference to practical and economic realities. For instance, the EU did not manage to meet its own requirements for organic juveniles and feed production, necessitating an amendment extending the period and conditions for use of non-organic juveniles were necessary. This causes uncertainty for the producers and makes the regulation a “moving target. It can be hard for producers to decide whether to convert to or continue to produce organically. The predictability is perceived as too low.

It is argued, however that the extension of the transition period slows down the conversion to organic production of juveniles and feed. On the other hand, the organic regulation is also affected by the EU legislation on other policy areas. Small national markets have not made it profitable to develop production of organic juveniles in many countries. At the same time, movement of organic juveniles across borders is restricted by the Council Directive (EC) No 88/2006 on animal health (STECF13-29, 2013).

The regulation is easier to comply with for big, industrial producers compared to small-scale producers (IFOAM 2012). Concern is also raised regarding the cost of certification, especially for small-scale aquaculture producers, both related to the certification and control provision and if the standards are set too high.

## 5.5 Limited national support

In many countries, there seems to be limited public support programs for organic aquaculture production, and this slows down the conversion to organic production. The data is however, limited, and the reason for the lack of or limited use of different support programs are not certain. Information on this could provide insight into the challenges of both small and big scale actors in different productions.

## 5.6 Lack of statistics and information on national implementation

There is lack of relevant statistics and updated information regarding organic aquaculture production and control. This makes it difficult to have a good understanding of the past and current status of production and the functioning of the Regulation. For instance, in the Reports on the Economic performance of the EU aquaculture sector, which are presented annually on the basis of reporting from the Member States, by the Scientific, Technical and Economic Committee for Fisheries (STECF), organic aquaculture is not treated in particular and the Member States report to a varying degree on their organic production (see for instance (STECF13-29, 2013; STECF14-18, 2014). Deliverable D3.2. in OrAqua presents some results from economic modelling of organic aquaculture, but a systematic, pan-European overview is lacking.

The Impact Assessment, accompanying the proposal for a new organic regulation (EUCOM, 2014a) stresses that data available from Eurostat is quite limited. For example, in 2010 only 12 member states provided replies and only 10 in 2011. Furthermore, there is no available data for organic carp production. Most replies relate only to the total number of production units, which averaged 75 in total over this two-year period. Data for the assessment was therefore mostly based on a study “The current status and future perspectives of European Organic Aquaculture” by Zubiaurre (2013). This is a reoccurring issue, for instance, it was noted at the “Thematic Conference on Organic Aquaculture in the European Union: Current Status and Prospects for the Future” in Brussels in 2005 (EUCOM, 2005), but so far no decisions have been made to rectify these problems.

In addition to collecting and publication of production data and input factors, case studies similar to the ones conducted on organic farming with interviews with producers and control bodies would provide valuable insight into the implementation and functioning of the organic regulation for aquaculture. This could contribute to identifying bottlenecks and success factors for organic aquaculture production, both for big-scale and small-scale

producers. Successful harmonisation of standard and production of organic aquaculture would require an overview of the implementation in Member States, and also closer monitoring and control by the Commission.

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