Spain: opportunities in aquaculture

Madrid, February 2017
Reasons to invest in the Spanish aquaculture

- Huge seafood market in Europe and in Spain. Increasing seafood demand in other EU countries due to “health reasons”.
- Importance of the Aquaculture in the new Common Fisheries Policy.
- New “Multi-year Strategic Plan of the Spanish Aquaculture 2014 – 2020”.
- The aquaculture production will increase by 120% from now to 2030.
- Simplification of the administrative licensing and authorization process.

- 35KG per person from 2015 to 2030 +120%
- Licenses in less 6 months
Why Spain? Why now?

✓ The Spanish authorities are in a process oriented to the reduction of the application and licensing proceedings to facilitate the start up of the activities to the companies.

✓ The objectives of the new EU Common Fishery Policy include:
  - Promote the competitiveness of the aquaculture sector
  - Support its development and innovation
  - Ensure equal and fair conditions to the aquaculture companies.

✓ The funding has been included in the MFF 2014-2020 (Multiannual Financial Frame) which includes the European Development Fund and the European Social Fund. The MFF counts with 960,000 million euros for the period 2014-2020.

✓ Now is the right time to consider possible investments in the Spanish Aquaculture sector.

✓ There are also opportunities in technology. The Norwegian technology is perceived as the best, but also the most expensive.
Increase in Aquaculture production from now to 2030

The Plan estimates an important development and growth the marine fish farming species (moderate scenario):

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine fish (tons)</td>
<td>55,500</td>
<td>69,000</td>
<td>91,300</td>
<td>121,800</td>
</tr>
<tr>
<td>Marine fish (Million €)</td>
<td>340</td>
<td>475</td>
<td>660</td>
<td>937,8</td>
</tr>
</tbody>
</table>

www.innovationnorway.no
Significant increase in bass & bream even in pessimistic scenarios

The Aquaculture Strategic National Plan estimates an **important increase in the production of these species**. The forecast for the production for the different fish species and scenarios are shown in the charts in this slide and in the following.
Steady growth in turbot and sharp increase in meagre from now to 2030

Turbot production estimates 2015-2030

Meagre production estimates 2015-2030
The plan foresee a significant growth in sole and tuna productions.

**Sole production estimates 2015-2030**

**Tuna production estimates 2015-2030**
Main farmed fish species in 2015 (tons)

Sea bream = Dorada
Sea bass = Lubina
Turbot = Rodaballo
Red tuna = Atún rojo

Maigre = Corvina
Sole = Lenguado
Eel = Anguila
Spanish bream = Besugo

www.innovationnorway.no
Aquaculture installations are located along the Mediterranean coast, Cadiz, Galicia and Canary Isl.

- **Sea bream**: Valencia, Murcia and Canary islands
- **Sea bass**: Murcia, Canary Islands, Valencia and Andalucia
- **Turbot**: Galicia and Cantabria
- **Sole**: Galicia, Canary Islands and Andalucia
- **Meagre**: Valencia
- **Tuna**: Andalucía and Murcia
- **Spanish bream**: Galicia
Regional production of sea bream in 2014

Valencia and Murcia count for 77% of the production of sea bream
Regional production of sea bass in 2014

Murcia and Canary Islands count for 61% of the production of sea bass
Regional production of sole in 2014

Production of sole is concentrated in Galicia and Andalusia
Productions of other fish species in 2014

- **Turbot** and Spanish bream are concentrated in **Galicia**.
- Production of **Maigre** (Corvina) is located in **Valencia and Murcia**.
- **Tuna** production is located in **Cadiz and Murcia**.
Licences, authorizations and challenges

- **Aquaculture** is an activity where it is necessary to obtain licenses, authorizations, concessions and permits. The actual situation shows a distortion of the market due to important differences in the licensing process in the different Regions, as well as to the long period that takes to receive the license, concession or authorization.

- The sector demands a **simple and fast proceeding** to obtain the licenses and authorizations for the fish farms. There is vast amount of norms regulating the different aspects related to the farms: water intake, water use, discharge of water, use of areas, biomass, taxes, fees, etc. The companies require a one-stop shop in each region where to apply for licenses, authorizations and concessions.

- Most Regions are in the process of planning the **simplification of the processes**. At this moment the situation differs from Region to Region, but all are aiming at reducing the time of granting licenses, concessions and authorizations.
Opportunities
Investments and Technology
Opportunities in technology

Opportunities can be found (among other) in:
- Cages
- Feeding systems
- Fish feed
- Water treatment, water filtering
- Etc.

Investment Opportunities

We see Investment Opportunities in:
- Traditional species (sea bass, sea bream, turbot)
- New species (sole, tuna, yellowtail, sturgeon)
- And in the Regions of Andalusia, Murcia, Cataluña, Galicia and Canary Islands.
Futuna Blue España, S. A.
Meeting in El Puerto de Santa Maria, Cadiz on November 13th, 2015

Futuna Blue España

Web: http://www.futunablue.com/
Activity: Production of tuna, yellowtail, and sole juveniles. They also produce copepods for own consumption.
Futuna is one of the most important private business ventures in the Mediterranean for bluefin tuna juvenile production with methods of sustainable aquaculture. They also work yellowtail (greater amberjack) and sole (Solea senegalensis).

Challenges:
• Tuna. They have achieved all the objectives at the hatchery level. The main problem so far has been the transportation to the sea cages. Now they are in the process of passing the sea cage barrier.
• Yellowtail. They have achieved satisfactory results up to commercial size. In 2015 they produced 100,000 juveniles.

Contact details:
Dársena Comercial S/N
11500 El Puerto de Santa María, Cádiz
Miguel Llerena, CEO
Phone: +34 956560657
Email: info@futunablue.com

Investment opportunities:
• Sole. The company is planning an investment of 5.7€ million in installations and 3€ million in working capital. The objective is to produce 480 tons of sole. Today the company produces 60 tons.
• Yellowtail. Futuna plans an investment of 5€ million in installations and 2€ million in working capital, with a production objective of 480 tons of yellowtail.

In both cases the new/external investor could have up to 51%
Futuna Blue España, S.A. (continued)

Meeting with Mr. Miguel Llerena, CEO

- **Tuna fish.** They collect tuna eggs from the cages where they on-grow the tuna catch in “Almadraba”. They have passed all the barriers, and now they have to invest in the sea i.e. floating cages at sea to on grow the tuna. So far the main problem has been the transportation from the hatchery to the sea. They have developed a feed together with Skretting, CSIC (Research Council) and Futuna Blue.

- **Seriola (yellowtail).** They have researching the yellowtail and already obtained satisfactory results to the commercial size. This year have produced 100,000 juveniles, sold to other companies (Andromeda Spain).

- **Sole.** They are producing some 40 tons of sole and want to expand to 400.

**OPPORTUNITIES:**

- Sole. They are looking for investor(s) partner with possibility of subsidy from the Regional Government. The financial partner should invest 3 million euros for on growing sole. They have a commercial partner that sells all the fish produced by the farm. This partner would also participate with 0,5 million euros.
Futuna Blue España, S.A.

✓ In order to produce 480 tons of sole they have to invest 5,7 millions euros in installations and 3 million working capital

→ Yellowtail: to produce 480 tons of yellow tail they would invest 5 million euros in installations and 2 million in working capital. The production cost is much lower and the time is shorter. The price for yellowtail juvenile is 3€ per unit. The wholesale price for the yellowtail is 14€ per kg. In 1 year it is possible to get a 2 kg fish.

✓ Opportunities in technology. Mr. Llerena considers that Norway and Denmark have the best technology available. But it is also very expensive, therefore is cheaper to develop it in Spain.

✓ Licencing. No problems in their area because they are located in an industrial area with concessions up to 30 yeas renewable every 10 years. They applied before the Regional government and it took around 1 year to get the authorization. Pumping sea water into the installation is part of the concession.
Fortuna Mare
Meeting in Cartagena, Murcia, January 13th, 2016

Fortuna Mare

Information: Jan-Helge Dahl has more than 30 years experience in fish farming: salmon, trout, halibut, cod and tuna. In 2011 the company started with tuna, together with the Spanish Institute of Oceanography (IEO), following the Japanese protocol. In 2012 the company purchased several litres of tuna eggs from the IEO and sent it to Norway for testing with different protocols, processes and feeds. One of the feeds were developed by SINTEF: copepods.

Challenges:
- Important differences between the Norwegian and the Spanish administrative licensing and authorisation proceedings.
- It is necessary a simplification and speed up the administrative processes.

Contact details:
Jan-Helge Dahl, CEO
+47 905 92 023
Email: jhd@davess.com

Investment and technology opportunities:

Fortuna Mare SL is planning an investment of 8€ million. The company plans to build a new hatchery, new nets, catamaran, etc. The cost of the hatchery is 2.5€ million and the cost for the catamaran is 0.8€ million.

In this project, 70% of the technology in the hatchery will be from Norway or from Denmark: tanks, water quality control and monitoring systems, cleaning systems, protocols.
Other opportunities for the Norwegian technology are water recycling and filtering for both water discharged and water pumped in.
Fortuna Mare

Meeting with Jan-Helge Dahl, CEO

✓ Interesting Norwegian technologies for the hatcheries are tanks, water quality control and monitoring systems, cleaning systems, and protocols, water treatment/recycling (for both water used and water pumped into the hatchery) and feeding systems.

✓ It is also possible to produce the equipment in Spain under license in order to reduce the production costs.

✓ According to Mr. Jan H. Dahl there are important differences in the administrative licensing proceeding in Norway and in Spain. According to Mr. Dahl it is necessary to simply and speed up the formalities, and thus to reduce the time required to receive the concession for a project.
Investment Opportunity in Catalonia

Information from the project leader (former Technical director of CONEI Aquaculture group)

Opportunity in Catalonia

Proposal: The promoters have developed a Business Plan for establishing a vertically integrated aquaculture project, by purchasing existing assets with all permit granted.

Assets: Assets to be purchased:
- On-shore facilities for the hatchery (40,000 sq. m.)
- Sea Cages for grow-out, composed of basements for 12 x 21m & 2 x 16m nets & cage structure, and machinery, including a boat with crane and a maintenance boat.

Production: Initial production would be:
- Sea bass juveniles (10-12g): 1 million for own consumption and 1.3 million for sale.
- Sea bass (400-600g): 417 tons
- Meagre (1kg): 288 tons
- Sole Fingerlings (12-14g): 719,000 units

Contact details:
Antonio Mateos
email: antmv@telefonica.net
+34 606 436 369

Investment opportunity
- Catalonia with more than 7.5 million population does not has any production of bass, meagre or sole.
- Additional values are short distance to the market, freshness, low carbon footprint due to proximity to local market, together with low transport costs.
- Investment for immediate purchase of the assets is estimated at around 2€ million. Additional investment to cover start up costs and working capital will require additional 2€ million.
- The assets are at 40% of its value, and has all the permits to operate. The infrastructure also includes processing, storing, and logistics.
- Growth potential. Today the authorisations is for up to 2,000 tons/year, with the possibility of increasing the production up to 7,000 tons/year.

Investment

<table>
<thead>
<tr>
<th>Asset Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td>1,597,000</td>
</tr>
<tr>
<td>Upgrading</td>
<td>356,000</td>
</tr>
<tr>
<td>Working Capital</td>
<td>1,600,000</td>
</tr>
<tr>
<td>Startup cost</td>
<td>700,000</td>
</tr>
<tr>
<td>Total</td>
<td>4,253,000</td>
</tr>
</tbody>
</table>
Other Opportunities in Murcia
Information from the Head of the Fisheries and Aquaculture Department in the Regional Government

Opportunities in Murcia

Fish feed:
The region of Murcia could be of high interest for investment in fish feed due to the fact that Cartagena is very important port for cereals. At this moment there is a feed plant on sale (CEFUSA).

Exchange program (hospitering):
Exchange programs between local institutions like IMIDA (San Pedro del Pinatar) or like the “Manuel Tárrega Aquaculture Institute” and SINTEF.

**IMIDA** is a Research and Development Institute of the Region of Murcia. They have a Department for Aquaculture with the following lines of action:

- Economic optimization of marine farms. Decreased production costs particularly food. Increased consumption and selling price. food quality.
- Diversification of species and marine aquaculture products.
- Interaction aquaculture and the environment. environmental impact of marine aquaculture facilities in floating cages. environmental mitigation of the impact of marine farms.
- Technology, economy and technology transfer.
- Crops in floating cages in the open sea.
- Recirculation systems in marine aquaculture.
- Training of researchers and technicians.

The I. M. Tárrega offers technical education for persons that want to work in the fish farms. They offer two programs:
- Fish farming (Medium Grade)
- Aquaculture (Superior Grade)
Sturgeon breeding plant in SPAIN
Asturias

Production:
- MEAT: 100 Tons/year
- CAVIAR: 6 Tons/year

Formalities: Finished
With construction licenses ready

System: RAS

Investment: 7,000,000,00€

The project:
- Ship Fish: 6.200M2
- Restaurant and Museum: 450M2
- Offices: 200M2
- Parking: 3.700M2
- Green Areas: 7.000M2

Investment value includes permits and the assessment of both the plant breeding and buildings with tourist, commercial and administrative uses.
Conclusion and way forward
Species of interest

✓ We find investment opportunities in Andalucía, Cataluña, Galicia, Asturias and Murcia, by participating in existing projects that want to increase the scale, or by investing in new projects and new installations.

✓ Most of the companies we met consider that the development of the aquaculture will depend on the solution of the Administrative “bottlenecks and challenges”. The solutions is on the way.

✓ “I still see a huge potential in aquaculture species that are conducive to our environment, as sea bream, sea bass, turbot, sole, meagre and Spanish bream”, says Mr. Gustavo Larrazabal, Chairman of Tinamenor.

✓ “Species of interest and potential are meagre, tuna, and yellowtail” says Mr. Emilio María Dolores, Head of the Fisheries and Aquaculture Service of the Regional Government of Murcia.

✓ The “Multi-year Strategic Plan of the Spanish Aquaculture 2014 – 2020”, the new Common Fisheries Policy, the availability of funds in the new MFF 2014-20, together with the high demand of seafood in Spain and the EU will facilitate the expansion of the aquaculture production in Spain.
Technologies of interest

- We also foresee opportunities in technology. Norway has a good and high reputation in this field. “We need technology and we are not going to develop it. We will always be customers in technology” says Mr. Gustavo Larrazabal.

- “Technologies of interest are cages, tanks, water recirculation, feeding systems, feed, water quality control and monitoring systems, cleaning systems, protocols, fish handling” says Mr. Jan-Helge Dahl, CEO of Fortuna Mare, S.L.

- Norwegian companies having interest in some of the opportunities given in this report may contact directly with the Spanish companies.

IN Madrid is at your disposal if you need further research or information. We can also assist in your contacts with the companies, setting up meetings, assisting during the initial contacts or follow up.
For further information please contact:

Innovation Norway
Plaza de Colón, 2  Torre 2  Planta 20
28046 Madrid, Spain
Juan Bergas-Negre
Phone: +34 913 440 987
Email: juber@innovationnorway.no

www.innovationnorway.no