Greek aquaculture as the basic pillar for the development of the national economy
INTRODUCTION

“Aquaculture Congress 2018” functioned under the auspices of the Presidency of the Hellenic Republic and took place in June 22-23, Athens, Greece, at Domotel Hotel. The Congress, which was organized jointly, by the University of Thessaly, AMBIO Development Consultants and Dome Consulting Firm, with the support of the Hellenic Aquaculture Producers Organization (HAPO), was attended by H.E. the President of the Hellenic Democracy, Mr. Prokopis Pavlopoulos himself, who addressed a greeting speech launching the event and, at the same time, emphasized that “aquaculture is an important factor in stimulating the national economy”.

The plenary session was also addressed by Mr. Karmenu Vella, Commissioner of DG MARE, via a videotaped message, by Mr. Kostis Hatzidakis, Vice President of the main opposition party New Democracy, Ms. Fofi Gennimata, President of the Democratic Alliance (DYS) and Head of the Movement of Change (KINAL), Mr. George Petros, Chancellor of the University of Thessaly and Mr. Dimitris Valakis, President of the Hellenic Aquaculture Producers Organization (HAPO).

Moreover, the conference was attended by many government officials such as Mr. Yiannis Tsironis, Alt. Minister of Rural Development and Food, Mr. Stergios Pitsiorlas, Deputy Minister of Economy and Development, Dr. Giorgos Chourdakis, Director of the Office of the Deputy Minister of Education for Research and Innovation and Mr. Giorgos Kyrtos, Member of the European Parliament with the party of the New Democracy.

The participation of representatives of international organizations and relevant Community directorates, was also significant, including executives of DG Mare, FAO / GFCM and UNEP / MAP. Thus, the conference was attended by Mr. Bernhard Friess, Director A, DG Mare Maritime Policy and Blue Economy and Ms. Clara Eugenia Aguilera Garcia, Member of the European Parliament (Group of the Progressive Alliance of Socialists and Democrats, Vice-Chair Committee of Committee on Agriculture and Rural Development, Member of Committee on Fisheries). Also, the First Vice-Chairperson of the General Fisheries Commission for the Mediterranean (GFCM) Committee on Aquaculture (CAQ), Mr. Hussam Hamza, gave a speech and was followed by the Head of Unit for Economic Analysis, Markets and Impact Assessment of DG MARE, Mr. Frangelos Nikolian. Moreover, the line-up of the high-profile speakers continued with Dr. Elias Mavroidis, Governance Officer of UNEP / MAP, Ms. Jelena Knezevic MED POL Programme Officer (Monitoring and Assessment) of UN Environment/MAP and Mr. Spiros Kouvelis former Deputy Minister of Foreign Affairs.

Mr. Dimitris Valakis, the President of the Hellenic Aquaculture Producers Organization (HAPO) was also present at the event and was joined by Mr. Yiannis Hekimoglou, Vice President of HAPO, Mr. Antonis Chachlakis, Secretary General of the Organization and Mr. George Bitsakos, representative of the Board of Directors.

Regarding Public Administration, Ms. Irini Klabatsea, Secretary-General of Regional Planning and Urban Development from the Ministry of Environment and Energy, as well as, Ms. Angeliki Kallaras Head of Directorate of Aquaculture, from the Ministry of Rural Development and Food, were joined by a number of public officials.

Last but not least, a number of high-ranked academics, researchers and fish farming scientists were also present. Overall, more than 400 delegates from the private and public sector joined the two-day conference exchanging ideas, practices and opinions.

It is important to mention that the timing of the Conference proved to be appropriate, since all delegates unanimously have agreed that aquaculture can indeed function as one of the key pillars for the development and the restart of the Greek economy. In order to reach such goal, it is essential to have an organized, repeated and open institutionalized process of exchanging views and experiences from within and outside Greece. In other words, the success of the congress raised many expectations for the next steps of the industry and set out the foundations for the establishment of a platform that will contribute in formulating common goals, in collaboration with all stakeholders.
The Aquaculture Sector is currently the most dynamically growing animal food production industry. The average annual growth rate since 1970 is 8.8%, when for collective fisheries the corresponding average growth rate is only 1.2%, while for livestock and poultry farming it is 2.8%.

According to the Food and Agriculture Organization (FAO) and the World Bank forecasts, by 2030 more than 65% of fishery products will come from aquaculture. It is noted that, according to The World Bank, the average of the annual per capita consumption of fish has been around 19 kg. thanks to aquaculture products. However, regarding regional annual per capita consumption this varies according to the economic growth of each region from 7 kg. in developing countries to 28 kg. in the most developed ones.

Regarding employment, aquaculture is a productive activity with significant socio-economic implications, supporting the economic and social cohesion of entire regions, particularly in Asia. According to The Food and Agriculture Organization (FAO), aquaculture employs directly 19 million people, worldwide. It is worth noting that 95% of jobs in aquaculture are based in Asia and the remaining 5% in Latin America and the Caribbean, Africa, Europe, North America and Oceania.

The increase in production is a general trend prevailing in all continents with the sole exception of Oceania. However, the unequal distribution of activity still remains since 92% of world production (97.56 million tons) takes place in Asia, with China, Indonesia and India at the top of the world rank.

The European Union produces 2.8% of the world production (2.98 million tons) with an almost stable output, since the year of 2000, and a spectacular increase in imports from countries of competitive low-cost products. Indicatively, 68% of seafood consumption comes from imported products and only 10% from aquaculture.

In Greece, according to the latest available data, 63% of seafood comes from aquaculture and the remaining 37% from wild catches.

The Aquaculture industry in Greece is export oriented as, approximately, 78 % of the production is sold overseas while the remaining 22% is sold in the domestic market. According to the National Statistics Agency (ELSTAT), in 2016 Greek sea bream and sea bass were exported to 32 countries, globally.

By far the largest market for Greek products is the EU since more than 90% of fish products are sold there and a small percentage is exported to North America and other countries.

Concerning the international environment, third-country competition is still growing, particularly from Turkey, which is constantly increasing its production.

As a result, in 2016 Greek producers witnessed the biggest difference in the selling price between Greek and Turkish products, especially in sea bream.

Therefore, for all above reasons, it has been important to have an organized, open and - at the same time- institutionalized process of exchange views and experiences from within and outside Greece in order for conclusions to be drawn, for proposals to be made and for momentum to be created by one of the fastest-growing sector in the public domain. This will effectively offer added value to the promotional activities of the sector and the, overall, position of the industry.

Sources:
• Federations of Greek Maricultures, Annual Report – Aquaculture in Greece 2017
• Food and Agriculture Organization (FAO), 2016. The state of world fisheries and aquaculture
• European Union (EU), 2016. Trade Fair of Aquaculture Products Produced in Greece


**PROGRAMME**

**Day 1. June 22nd, 2018**

**10.00-10.30** – Registrations

**10.30-11.30** – **Greeting Speeches**

**Coordinator:** Ms Mariana Pirgioti, DOME Consulting

Welcome speech by His Excellency the President of the Hellenic Republic Prokopis Pavlopoulos  
Mr. Karmenu Vella (Speech via Video), Commissioner DG MARE  
Mr. Giannis Tsironis, Alternate Minister, MRDF  
Mr. Kostis Hadjidakis, Vice-President, New Democracy  
Ms Fotini (Fofi) Gennimata, President of Democratic Coalition  
Mr. George Petrakos, Dean, University of Thessaly  
Mr. Dimitris Valachis, President HAPO

**11.30-12.00** BREAK

**12.00-14.00** **First Panel**

**Title:** Challenges and Prospects for Greek Aquaculture: The 2020 milestone and the day after

**Coordinator:** Mr. Nikos Andritsos, Director SKAI 100.3

**Dr Giorgos Chourdakis, Director of the Office of Deputy Minister of Education for Research and Innovation**

“The Knowledge Economy: a New Paradigm for Development in Greece”

**Mr Bernhard Friess, Director A, Maritime Policy & Blue Economy, DG MARE.**

“The Potential of Aquaculture in the European Union”

**Mr Stergios Pitsiorlas, Deputy Minister, Ministry of Economy and Development.**

“Restructuring the Greek Economy”

**Mr. Kostis Hadjidakis, Vice-President, New Democracy.**

“Prospects of Greek Economy. The Role of Aquaculture”

**Ms Stefania Georgakakou – Koutsonikou, CEO, CMFO S.A.**

“The Role of Central Markets and Fishery Organization in Promoting the Greek Fisheries Production”

**Mr. Filippos Petridis, CEO, AMBIO S.A.**

“Economic, Social and Environmental Impact of Greek Aquaculture”

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1 HAPO - Hellenic Aquaculture Producers Association  
2 CMFO - Central Market and Fishery Organization
Mr. Dimitris Valachis, President, HAPO.
“Greek Fish Farming Moves Ahead into a New Era. Opportunities and Challenges for the Future of the Sector”
HAPO Video.

14.00-14.30 – LUNCH BREAK
14.30-17.00 Second Panel
Title: Aquaculture Regulatory Framework: Are we on the right track?
Coordinator: Mr. Nikos Ipofantis, Financial Editor SKAI

Mr Giannis Tsironis, Alternate Minister, MRDF
“Integration of Legal Framework: Sustainable Development and Extroversion”
Dr Irini Klabatsea, Secretary-General, Regional Planning & Urban Development, MEE.3
“Spatial Planning and Aquaculture”
Mr Houssam Hamza, First Vice-Chairperson of GFCM4 Committee on Aquaculture (CAQ).
“Sustainable Development of Aquaculture in the Mediterranean. The Need for Coastal Spatial Planning and the Potential Benefits of Allocated Zones for Aquaculture (AZAs)”
Dr Dimitris Oikonomou, Professor of Planning, University of Thessaly.
“Special Spatial Planning for Aquaculture: Axes of a Future Revision”
Dr Manolis Tsapakis, Research Director, Institute of Oceanography HCMR5.
“The Good Ecological Status as A Requirement for The Further Development of The Aquaculture”
Ms Jelena Knezevic, MED POL Programme Officer (Monitoring and Assessment), UN Environment/MAP.

3 MEE - Ministry of Environment and Energy
4 GFCM - General Fisheries Commission for the Mediterranean
5 HCMR - Hellenic Center for Marine Research

Mr. Spyros Kouvelis, Programme Director, EPLO & University of Cambridge - SDGs Center on Governance, Former Vice Minister of Foreign Affairs.

“Sustainability Considerations: SDG14 and Aquaculture in the Mediterranean”

Mr. Giannis Hekimoglou, Vice-President, HAPO.


17.00 – End of first day
Day 2. June 23rd, 2018

09.00-10.00 – Registrations

10.00-12.00 – Two simultaneous Workshop Sessions

1st Workshop Session

Title: Spatial Planning and Environment as Basic Parameters for Aquaculture Development

Coordinator: Ms Mariana Pirgioti, DOME Consulting

Ms Maria Zifou, Special Advisor to the Minister of Environment and Energy.

"Spatial Planning for the Sustainable Development of Aquaculture: Conditions and Changes"

Mr. Antonis Zambelis, Environmental Licensing Division, MEE.

"Integration of the Environmental Dimension into Development Planning through the Environmental Permits. Basic Aspects, Institutional Framework”

Mr. Anestis Gourgiotis, Spatial and Urban Planning Engineer, PhD Head of National Spatial Planning of the Spatial Planning Directorate, MEE.

"Spatial planning, the Catalyst for the Aquaculture Development: Challenges and Weaknesses. Role of Spatial Planning in Aquaculture Development: From Special to Regional Spatial Frameworks”

Ms Foteini Stefanis, Surveying Engineer MSc, Head of Metropolitan Planning of Athens - Attica of Metropolitan, Urban and Periurban Areas Planning Directorate, MEE.

"Spatial planning, the Catalyst for the Aquaculture Development: Challenges and Weaknesses. Spatial Planning and Aquaculture: "Good Practices". Case Study: Attica Region”

Mr. Emmanuel Damanakis, Spatial and urban planning engineer, MSc. Head of Local Level Spatial Interventions of the Spatial Planning Directorate, MEE.

"Spatial planning, the Catalyst for the Aquaculture Development: Challenges and Weaknesses. Experience to date from Aquaculture Managed Areas (AMAs) as a Tool for Implementing Spatial Planning”

Mr. Georgios Bitsakos, Representative of the Board of Directors HAPO.

"Maritime Spatial Planning and Environment, Pillars of Aquaculture Growth”

Ms Ioanna N. Argyrou, Senior Biologist / Ichthyologist, Founder & General Manager "NAYS Ltd”, Project Planning and Development Consultants.

"The Rational and Integrated Spatial Development of Aquaculture”

Ms Eva Pasakalidou, Senior Consultant, Primary Sector Department, AMBIO S.A.

"Management Tools Used in the Decision-making Process and in Environmental Impact Assessment (EIA) Documentation”
Title: Research and Technological Innovation in Greek Aquaculture

Coordinator: Ms Andromachi Pavlou, Editor in.gr

Mr. Dimitris Papapanagiotou, Member of the Board of Directors, HETEPA6.
“Technology & Innovation in Greek Aquaculture”

Mr. Vasilios Stratopulos, Mechanical Engineer, ENERGY PLUS S.A.
“Energy Savings in Lighting Systems, Application in Aquaculture Environments”

Dr. Panos Efstathiou, Scientific Consultant, Hellenic Copper Development Institute.
“Advantages of Innovative Application in Aquaculture by the Use of Copper Alloys Fish Cages”

Mr. Alessandro Ciattaglia, Sales and Marketing Manager – EMEA, BADINOTTI GROUP.
“OCEANIS – Submersible Cage for Offshore Fish Farming”

Mr. Panagiotis Psychogyios, Head of Engineering Department, AMBIO S.A.
“Optical Fibres for Subsea Applications. Smart Monitoring in Aquaculture”

Mr. Kostas Seferis, Business Development Manager, I2s S.A.
“Information and Communication Technologies for Efficient Production Management and Sustainability”

12.00-12.30 – Discussion
12.30-13.00 – Closing remarks – Proposals

13.00-13.30 – LUNCH BREAK

6 HETEPA – Hellenic Technical Platform for Aquaculture
13.30-16.00 – Two simultaneous Workshop Sessions

3rd Workshop Session

Title: Aquaculture and Economic Growth: The Role of HAPO

Coordinator: Ms Maria Tsivgeli, Editor of Athenian – Macedonia News Agency

Ms Angeliki Kallara, Head of Directore of Aquaculture, Directore General of Fisheries, MRDF.

“Policy Implementation for Aquaculture Development”

Mr. George Amaxidis, Consultant of Alternate Minister, MRDF.

“Special Policy Directions. Improvements and Problems”

Dr. Michael Chatziefstathiou, Head of the Department of Common Fisheries Policy & Common Market Organisation, Directorate of Fisheries Policy & Development of Fishery Products, Directorate General for Fisheries, MRDF.

“Implementation of Common Market Organisation Framework for Producers Organisations”

Mr. Giorgos Kirtsos, Member of the European Parliament.

“Developing Aquaculture after the Greek Economic Crisis and the Sectoral Adjustment Process. Opportunities and Risks”

Ms Clara Eugenia Aguilera Garcia, Member of European Parliament, Group of the Progressive Alliance of Socialists and Democrats, Vice-Chair Committee of Committee on Agriculture and Rural Development, Member of Committee on Fisheries.

Video Presentation on Agenda 2030

Mr. Frangiscos Nikolian, Head of Unit Responsible for Economic Analysis, Markets and Impact Assessment, DG MARE.

“EU Aquaculture and the Place of Producer Organisations”

Mr. Antonis Chachlakis, Secretary-General, HAPO.

“HAPO: National Vision of Greek Aquaculture Producers”

Mr. Giannis Pelekanakis, Head of Institutional Affairs, HAPO.

“Production and Promotion Plan: Midterm Goals and Implementation Risks”
4th Workshop Session

Title: Research as a Necessary Component in the Development of Greek Aquaculture

Coordinator: Mr Michalis Savvakis, Publisher of Alieftika Nea

Dr. Sotiris Pavleas, Special Advisor of the Secretary-General of Research and Technology, MERRA. 7

“Programs of General Secretariat for Research and Technology Supporting Research and Innovation”

Mr. Leonidas Papacharisis, Chairman of HETEPA8.

“HETEPA, Cooperation to Shape the Research Agenda in Mediterranean Aquaculture”

Dr. Nikos Papandroulakis, Research Director, Institute of Marine Biology Biotechnology and Aquaculture (IMBBC), HCMR.

“Towards 2030: R&D Challenges and Goals for the Greek Aquaculture”

Ms Helen Miliou, Associate Professor, Department of Applied Hydrobiology, Faculty of Animal Science and Aquaculture, Agricultural University of Athens.

“Education and Research for a Sustainable and Responsible Aquaculture”

Dr. Michalis Pavlidis, Professor, Biology Department, University of Crete.

“Education, Training, Research and innovation in Aquaculture: the Role of University of Crete, Greece”

Mr. Panagiotis Berillis, Assistant Professor, Department of Ichthyology and Aquatic Environment, School of Agricultural Sciences, University of Thessaly.

“Building on Scientific Research to Promote the Growth of Greek Aquaculture to International Distinction”

Mr. Andreas Brezas, Technical and R&D Director, ZOONOMI S.A.

“Mediterranean Fish Nutrition: Past, Present and Future - Current Trends and Perspectives”

16.00-16.30 – Discussion
16.30-17.00 – Closing remarks – Proposals

17.00 – End of second day

7 MERRA - Ministry of Education, Research and Religious Affairs
8 HETEPA – Hellenic Technical Platform for Aquaculture

4th workshop
CONCLUSIONS

The 1st industry Congress on Hellenic Fish Farming was a unique opportunity to confirm the industry’s leading role and its importance for the Greek economy.

One important element of the conference, was the fact that Greek fish farming was represented by all industry bodies, including the Hellenic Aquaculture Producers Organization (HAPO), which was also the Conference’s main supporter.

The conclusions drawn on both days of the Conference, which are presented below, constitute a guide for the growth of fish farming in Greece, and a benchmark for the next conference.

STATE OF THE INDUSTRY - FIGURES

According to data from the Food and Agriculture Organization and the Federation of Greek Maricultures, Greek aquaculture and fish farming in particular, is one of the most important sectors of domestic agricultural production and the top animal export sector in Greece, with almost 80% of overall production going to foreign markets, thus making a positive contribution to the trade balance.

In 2015 global farmed fish consumption exceeded consumption of wild catches, for the first time. This was the first time that there was an official record to the effect that most fish consumed globally originate from fish farming; the latter is now the fastest growing industry in the primary sector, on a global level.

It appears that the effects of demographic changes will make aquaculture necessary, since it is one of the sole ways of ensuring the production of adequate quantities of high-quality animal protein. Currently, the contribution of fish farming products exceeds the supply of wild catches, at a rate of around 70% to 30%, while Greece regularly finds itself on the top two positions in fish farming production in the Mediterranean basin. At the same time, the benefits of fish farming are not only limited to reinforcing Greek exports, overall; they also include controlling of overfishing, protecting water resources, ensuring maritime sustainability, and reducing unemployment, since around 12,000 people are employed by the sector, directly and indirectly, in Greece - one of the highest local employment rates in the aquaculture sector, in Europe.

Attention was drawn, for the first time, by Mr. Filippos Petridis (organizer of the Congress and CEO of AMBIO S.A.) that fish farming is often the only activity, besides tourism perhaps, that has a documented economic activity at Greece’s borders. This dimension is related to the presence of fish farming units in remote and sensitive parts of the country.

This is especially important in areas that share borders with countries such as Turkey and Albania, since aquaculture units can constitute tools in the event of a diplomatic incident. The presence of fish farming units (which take up both maritime space and uninhabited land) in these areas function as a proof of productive and economic activity, while also maintaining local populations in areas where very few productive activities can be sustainable.
However, in order to maintain and potentially expand activities in these areas, there is a requirement for special measures to confront the difficulties that arise and can be attributed mainly to the lack of infrastructure.

The Greek industry has been practically inert for the last five years, due to the economic crisis, naturally, but also due to the absence of a national growth strategy. In 2012, production in Greece amounted to 145,000 tons/year, and in currently estimated at around 115,000 tons/year, representing 32% of Mediterranean production. This places us second among the Mediterranean countries, after Turkey. However, despite changes to the growth rate of Greek fish farming, it is considered a given that there is still room for us to match pace with the international trends. This need is becoming more and more pressing as aquaculture plays a growing role in covering global demand, and due to the ongoing development of our competitors.

**INSTITUTIONAL FRAMEWORK - PLANNING - ENVIRONMENT**

The presence of H.E. the President of the Hellenic Republic, Mr. Prokopis Pavlopoulos, who placed the Congress under the Aegis of the Presidency of the Republic, was a strong indication of the state’s desire to promote the sector, and a recognition of its importance to the National Economy. As mentioned earlier, practically all Greek public entities involved in the establishment and operation of the industry’s companies were represented, with interventions by DG Mare and speeches by the DG Mare Commissioner, Mr. Karmenu Vella, and Director A for Maritime Policy & Blue Growth, DG Mare, Mr. Bernhard Friess. At the same time, the Congress was attended by international bodies, such as the UN’s Food and Agriculture Organization (FAO) and foreign Embassies, including the embassies of Israel, Kazakhstan and France.

In his speech, H.E. the President of the Republic referred to one of the industry’s permanent demands, i.e. the establishment of an adequate, contemporary legal framework that will govern Hellenic Fish Farming. In particular, Mr. Pavlopoulos stressed that fish farming is "lege artis, which means that if it takes place within the institutional framework foreseen, legally and according to rules for the protection of the environment, it can only have beneficial results for the national economy, and more". 

H.E. the President of the Hellenic Republic, Mr. Prokopis Pavlopoulos during his speech
It was pointed out, in many different ways during the conference, that the institutional framework for aquaculture must be completed before anything else. Without an institutional framework, it will be very difficult for fish farming to advance legally and consistently with environmental protection. The Congress showcased three (3) strategic challenges that need to be confronted at a national level. Thus, the state was asked to assist in the following:

- Firstly, the completion of the institutional framework for the establishment and operation of farming units, in view of creating the conditions for productive growth with a competitive cost, on the basis of fair competition;
- Secondly, the completion of planning for the sector, through finalization of the twenty-five (25) organized Aquaculture Management Areas (AMA) by November 2019 at the latest;
- Thirdly, the immediate activation of the institutional framework that will allow use of the resources of the Fisheries Operational Programme 2014-2020, prioritizing such measures as are intended to reinforce the industry’s competitiveness, and measures for trading and financing Production & Trade Plans.

It is true that the Special Framework for Planning and Sustainable Development for aquaculture (JMD 31722/4-11-2011 – GG 2505B) has become a benchmark for other European countries, as Greece was invited by the European Commission to present the law in question as a model of good practice.

As mentioned before, in many presentations, despite expectations for resolution of long-term issues relating to the placement of fish farming units, not even a single AMA has yet been approved. What this proves, beyond doubt, is the deficit in applying the above framework with respect to the institutional establishment of the AMA, which constitute the main tool for confronting the licensing issues faced by the industry's companies.

Experience from the implementation of the above framework has indicated the existence of a series of weaknesses and ambiguities. The problems are compounded by the multi-level planning framework applied in Greek, which leads to conflict between local and regional planning, and the Special Planning Frameworks. It is considered imperative that the national strategy for the development of aquaculture be incorporated in the lower-level planning frameworks, i.e. the regional and local spatial plans.

Another need was also identified, to include in the institutional framework concepts that are applicable to new forms of aquaculture, such as open-sea farming and polyculture; the introduction of issues regarding climate change to spatial and environmental planning is another, especially critical parameter. All of the above will affect the industry's growth and sustainability in the years to come.

The above reasons create the need for a review and modernization of the Special Planning Framework for Aquaculture, although this must not lead to a suspension in the current procedure for approval of the AMA. The revised planning framework must also incorporate a degree of flexibility, so as to allow the confrontation of new challenges and needs.
One of the weaknesses indicated with respect to completion of spatial and environmental planning for aquaculture, is the under-staffing of the competent services.

The need to reinforce the administrative capacity of the entities involved, can be covered either by increasing staffing levels, or by improving-amending existing procedures to ensure the improved coordination of all entities involved in the licensing process. The aim will always be to ensure the timely and efficient resolution of any problems, within specific time constraints.

As regards the environment in which Greek aquaculture takes place, it was found that maritime fish farming is by far the largest aquaculture activity in the country. In the past, and mainly in the past decade, a large number of national and European research programmes have been elaborated, on the subject of the interaction between fish farms and the environment, with a focus on their effect on the water column, benthos and sediment, macroalgae (Posidonia) meadows, parasites, etc. These, and particularly a research programme implemented by the Biology Department of the University of Crete on behalf of the Hellenic Ministry of Agricultural Development and Food, have shown that fish farming activities do not leave a significant environmental footprint.

Suggestions for the future include the incorporation of management tool in the elaboration of environmental impact surveys, and particularly the monitoring of changes to environmental parameters on a large time-space scale, in view of developing a central database that will be accessible to all parties involved. The ulterior goal is to use the data collected, in order to configure management tools on the basis of the local characteristics of the Greek seas. Moreover, suggestions have been made to develop a standard environmental monitoring tool for fish farms, as well as to establish environmental criteria and quality targets according to the framework directive for waters and the integrated management of coastal zones.

**SUSTAINABILITY - THE ROLE OF HAPO - FUNDING**

During the Congress and in the presence of representatives from European Organizations and Directorates, requests were made for a re-examination of European Legislation, to ensure fair competition between European and third-country producers, given the negative example of Turkey. The national strategy for promoting Greek fish farming and ensuring sustainability in view of unfair practices, mainly from third countries such as Turkey, recognizes the need to establish a Common National Identity for fish farming products.

The role of the Hellenic Aquaculture Producers Organization (HAPO) was recognized in this framework; HAPO began as a first initiative four (4) years ago, with the sector’s professional producers aiming at the recognition of the advantages and value of Greek fish. The aim of this initiative is to confront competition from third countries, and to take advantage of the industry’s capacity, due to the ever-increasing demand for aquaculture products, by offsetting and reinforcing the quality advantage and high value of Greek fish. One of HAPO’s main priorities is also to promote reforms, on a legal and administrative level, in view of achieving the target of increasing Greek production by at least 4% per annum.
It is noted that HAPO’s members include twenty-one (21) Greek producers, who represent almost 80% of the volume and value of Greek fish farming production. A common point of reference for all its activities is the promotion of the Greek identity of its members’ fish farming products, using the "Fish from Greece" brand name.

During the conference, it was pointed out that the competitiveness of Greek products, and therefore European fish farming products, cannot depend only on a reduction of the cost of production. Even though it is an important parameter, it is not an adequate tactic, especially when faced with unfair competition from third countries. As a result of this conclusion, attention was drawn to the need for Greek fish farming to focus on the quality and diversification of products. This is where a significant advantage is thought to lie, in comparison to the competition; it can be further improved through sound cooperation between collective entities, companies and the state.

Reinforcing competitiveness must be included in a collective national growth plan, so as to avoid fragmented actions, with emphasis on extroversion, innovation, and of course research. The solution will come from a new productive model, which will be based on knowledge and supported by the twin pillars of research and innovation.

Greece has a unique maritime natural environment which, combined with the application of European farming specifications, can ensure the superior quality of farmed fish, opening the way for the creation of name-of-origin product. These elements, combined with the sector’s human resources, which have the necessary specialization and know-how, add yet another competitive advantage to Greek fish farming.

Companies in the sector, whether small, medium-sized or large, take on risks and continue to invest in Greece and abroad, to develop their trading activities and to aim exclusively at profitable growth. At the same time, hundreds of millions of euros in foreign investments have been attracted, which will help the sector even further.

There are delays and shortcomings, on a national level, in the use of financing tools, while a particularly favorable environment is developing at the European level. There are already specific European policies and strategies linked to blue growth or sustainable fisheries, which provide significant support to the industry, aiding its subsequent steps. The challenges of the future, for Greek fish farming, include responding to the requirements of this competitive environment, so as to maintain its leadership on the European market. At the same time, the objective should be to increase its competitiveness in order to lay the foundations for the evolution and restructuring of the sector.

Regarding financing and secure sustainability, particularly important observations were made by Bernhard Friess, Director for Maritime Policy & Blue Growth at the European Commission’s DG Mare, in his speech.
Among other things, Mr Friess mentioned that:

"The message I wish to convey from Brussels today, from the European Union, is that we are here to support and encourage you, to the extent that you need such support. You are in the driver’s seat. But if you need our support, we will try and provide it. It is likely that the effects of demographic changes will make aquaculture a necessity. A necessity because there is no other may to produce animal protein and diverse food sources. We cannot produce because we don’t have the space. It also contributes a lot to the European market. Around 60% of the bass and bream consumed in Europe, comes from Greece...

...Another challenge, perhaps the most important one, is getting to the market. And I think you are very good at this, at marketing I mean. Otherwise, you would not have the market shares you currently enjoy. However, I believe that there is more to be done. We are very happy to see that you have created HAPO. That is a recent development. It is a major step and I congratulate you. That is something that we can support, both financially and with marketing plans. Financing of marketing plans, if you will. And we will do whatever we can to accelerate the process. But the biggest opportunity lies in creating a brand name. A qualitative value that will be your proposal to the market. ‘Fish from Greece” is excellent”.

During the discussion, it was agreed that the European Commission must provide the member-states with any possible assistance, to encourage the establishment and reinforcement of Producers’ Organizations, particularly for implementation of production and trading plans. Producers’ Organizations, as foreseen in the regulation for the joint organization of fishery and aquaculture product markets, are the most important tool for enhancing the sector’s productivity. Of the active producers’ organizations in Europe, 194 involve fisheries, and 24 are from the aquaculture sector. There is one producers’ organization in Greece, whose main objective is to protect geographical origin, implement activities that reduce environmental impact, and improve the framework for the trading and promotion of its products.

In awareness of the value of Greek fish, synergy and collaboration constitute the necessary framework for the future of fish farming. With the strategic objective of reinforcing its extroversion and competitiveness,
and with respect for the environment, Greek fish farming is paving the way for its establishment as a primary
growth mechanism at the regional, national and international level, while ensuring sustainable development.

RESEARCH AND INNOVATION
Universities and research bodies (Universities of Thessaly, Crete, Agricultural University, ELKETHE) were well-
represented at the conference, with delegates joining representatives of corporate R&D departments, who
provided information about the development and prospects of research and innovation schemes in the sector.
Greece is among the top ten countries as regards the production of scientific knowledge on fish farming in
Europe. In fact, it is among the top two or three countries with significant know-how regarding bass and
bream.

Representatives of ETEPY (Hellenic Technology Platform for Aquaculture), an important, industry-driven
initiative, were also present at the conference. The ETEPY is a technology platform that creates common
ground for cooperation between industry, the academic community and the research community. It operates
within the same framework as European technology platforms, and currently has 88 members from industry,
the academic field and the research community. The aims of the platform include:

- Establishing an agenda for research in aquaculture;
- Setting medium- and long-term objectives for research and development in Greece;
- Resolving major technical difficulties that restrict the technological development of aquaculture, and
  opening up new horizons for business;
- Mobilizing private and state capital to support research in the field of aquaculture.

CHALLENGES AND PROSPECTS
A process of institutional reforms was initiated in 2013, when the European Commission published its
“strategic guidelines for the sustainable development of EU aquaculture”, which focussed on four priorities
that require attention in order to ensure that aquaculture’s full potential is exploited:

- simplifying administrative procedures;
- coordinated spatial planning;
- competitiveness, and particularly linking the industry with science and with promotional actions; and
- promoting a level playing field for EU operators by exploiting their competitive advantages.

Shortages of maritime goods and restrictions with respect to fisheries are recorded today, while the European
Union is the number one global market for fisheries and fish farming products. EU member-states import
60% of their total consumption, thus proving the important role that the aquaculture sector can play. In
2030, demand for fisheries products will reach 30,000,000 tons, a quantity that goes hand in hand with the
increase in the global population, and with the need to consume protein with a high nutritional value and
quality. According to data from the FAO (Food and Agriculture Organization), the increase in demand for
animal protein is expected to be covered by aquaculture.
CONCLUSION

The first Congress on Greek Fish Farming is the beginning of a concerted effort to establish a systematic process for the exchange of positions, views and experience, with the participation of senior State and Government officials, institutional players, Greek and foreign companies, as representatives of Academic and Research bodies.

Economic reform and the restructuring of the large companies in the sector over the past three years, the investment capital attracted and the know-how developed, all constitute suitable conditions for Greece to become a key player in the growth of Mediterranean fish farming once again. The Congress has demonstrated the will and desire of the industry to play a vital role in the collective effort required in order to achieve significant benefits, not only for fish farming, but for the national economy overall.

The joint organization of fishery and aquaculture product markets through the operation of HAPO sets up the challenges of the future, aiming at further growth of the sector, with estimated exports of € 1 billion over time, while more than 4,000 new jobs are expected to be created throughout Greek territory.

The success of the conference, combined with the prestige of the speakers, chief among which was H.E. the President of the Hellenic Republic, and the presence of important representatives of the state and the EU, provided the necessary gravitas for the establishment of an institution.

The establishment of this institution, in turn, lays the foundations for development of a systematic dialogue and for a platform for communication between all parties involved, not just in Greece, but in the entire Mediterranean basin, to say the least.

To this end, the aim is to organize a new Congress in 2020, so as to expound on important sectoral issues and establish Greece as a centre for the development of Mediterranean fish farming.