



16-18 June  
Dubrovnik  
**Croatia**  
Hilton Imperial Hotel

# OFFSHORE MARICULTURE 2010

**HILTON IMPERIAL HOTEL, DUBROVNIK, CROATIA**

**16-17 June 2010: Two day technical conference**

**18 June 2010: Visit to Sea bass & Sea bream fish farm**

## CONFERENCE PROGRAMME

**‘Exploring the progress and prospects for offshore aquaculture in European and international waters’**

**The Third Offshore Mariculture Conference is a must attend event for anyone involved in this rapidly expanding sector of the aquaculture market.**

Chaired by Arne Fredheim of CREATE/Sintef, the programme will include presentations on key policy and research updates by prestigious speakers from EATiP, FAO and NOAA. In addition papers on practical offshore farming operations, update on manufacturers' latest products, spatial planning and monitoring, spotlight on Croatia and case studies from Croatian and international fish farmers will be included.



Offshore Mariculture is a Mercator Media Ltd event

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# Why you should attend

The third Offshore Mariculture Conference will bring industry experts, manufacturers, academia and fish farmers together to network, discuss topical issues and to exchange information and ideas. In particular: farming companies, research organisations and suppliers looking to update themselves on the latest policies, products, research and case studies within the fin/shell fish and seaweed offshore farming industries. The specific focus on Croatia will enable Government officials from farming nations to learn how they can adapt Croatia's successful spatial planning policy into their own Ministries of Fisheries/Environment and Tourism. International farming companies and suppliers looking to enter/invest in the Croatian market

will also be in attendance. Croatia has a tradition of both freshwater and marine aquaculture; the major species produced are tuna, sea bass and sea bream, carp, rainbow trout and mussels. Mariculture in Croatia intensified in the early 80s and the strategic goal is to massively increase the production of cultivated fish and molluscs in the immediate future, whilst at the same time improving the competitiveness in the European market. Croatia is already leading the way in the very complex issue of spatial coastal planning and can boast being one of the first countries to have reached an agreement between the ministries of fisheries, tourism and environment.

## WEDNESDAY, 16 JUNE 2010

### 08:15 REGISTRATION & COFFEE

**09:00 WELCOME: Representative from Ministry of Agriculture, Fishery and Rural Development, Croatia**

**09:15 CHAIRMAN: OVERVIEW OF THE GLOBAL OFFSHORE SECTOR**

*Arne Fredheim, CREATE/SINTEF*

**09:40 SESSION 1 – Policy, legal framework and key research updates**

**09:40 Europe** *Torgeir Edvardsen, Board Member, EATIP*

**10:00 Americas** *Michael Rubino, Manager, NOAA Aquaculture Program*

**10:20 Asia: Increasing sustainability of marine aquaculture in the Yellow Sea**  
*Dr Mark Walton, Fisheries and Biodiversity Officer, UNDP/GEF Yellow Sea Large Marine Ecosystem Project*

The rapid development and trend towards higher trophic level mariculture is adding to the environmental stress that is being placed on the sea by the region's rapid development. However, there are areas where forward thinking are increasing productivity and reducing environmental impacts and one of these areas is Sanggou Bay, China, where integrated multi-trophic aquaculture is practiced on a massive scale and on the west coast of R. Korea super-intensive heterotrophic shrimp farming is being gradually adopted by farmers.

## QUESTIONS & ANSWERS

**10:55 COFFEE BREAK & EXHIBITION**

**11:20 SESSION 2 – Practical offshore farming operation**

**11:20 Integrated and remotely controlled operations for feeding and harvesting**

*Jone Gjerde, Chief Operating Officer, AKVA Group*

Technology related to the feeding operation of fish farms has developed strongly during the last years. Farmers are focusing hard on obtaining the optimal feeding regime to maximize fish growth and minimize feed waste, and many farms are moving to remotely controlled operations. The speech will give an overview of the state-of-the-art technology used in modern fish farming today.

**11:40 Preventing escapes**

*Dr Tim Dempster, Centre for Research-based Innovation in Aquaculture Technology (CREATE), SINTEF Fisheries and Aquaculture*

Preventing escapes from sea-cage aquaculture: understanding the causes of escape events and fish behaviour post-escape to improve containment technologies and recapture strategies.

**12:00 Interaction between wild and farmed fish: effect of offshore fish farms on wild stocks**

*Professor Pablo Sánchez Jerez, Research Group, University of Alicante*

Coastal fish farms concentrate large numbers of fish species of both ecological and economic importance. High food availability greatly increases feeding opportunities in the vicinity of farms, leading to increases in condition of farm-associated wild fish. Negative effects of aggregation at fish farms are also possible, as consequence for spawning success. Escapes from aquaculture may produce also positive or negative effects on local populations, depending on ecological and genetic interactions. Ecosystem approach management of coastal waters is required for avoiding negative interaction between aquaculture and fisheries.

**12:20 Effects and treatment of hypoxia in cage environments**

*Dr Frode Oppedal, Senior Researcher, Institute of Marine Research, Matre*

Within commercial aquaculture cages large oxygen fluctuations are observed. Recent results show that this hypoxia may have detrimental effects on fish oxygen consumption, physiology, feed intake, growth and well-being. Results will be presented and discussed.

## QUESTIONS & ANSWERS

**12:55 LUNCH & EXHIBITION**

**14:00 SESSION 3 – Equipment update by manufacturers**

**10 minute new product presentations full list of participants tbc**

**15:25 COFFEE BREAK & EXHIBITION**

**15:55 SESSION 4 – Spatial Planning & Monitoring**

**15:55 Code of conduct and best practices for a better integration of aquaculture and the environment**

*Felipe Aguado-Giménez, Instituto Murciano de Investigación y Desarrollo Agrario y Alimentario (IMIDA), Equipo de Acuicultura Marina, Murcia*

Being aware of aquaculture and environment interactions and the assumption of responsibilities are the first steps for the formulation of a code of conduct. Knowing the rearing procedures (husbandry and management) and the response of the environment to this, a best practise guide could be elaborated. In the absence of knowledge, the precautionary principle must prevail over. This presentation summarizes the efforts of producers and environmental organizations to achieve a better integration of aquaculture in the environment.

**16:15 Integrated coastal zone management focusing on marine aquaculture in practice – Croatia**

*Vlasta Franičević, Head of Aquaculture, Directorate of Fisheries, Ministry of Agriculture, Fishery and Rural Development*

**16:35 Spatial Analysis and Remote sensing for the Sustainable Development of off-the-coast and offshore aquaculture from a global perspective**

*Dr. José Aguilar-Manjarrez tbc, (Dr. James McDaid Kapetsky alternate) Fishery Resources Officer, Aquaculture Management and Conservation Service (FIMA), Fisheries and Aquaculture Department, Food and Agriculture Organization of the United Nations (FAO)*

Physical, environmental and economic data are spatially integrated and analysed to estimate the potential for off-the-coast and offshore aquaculture development that is comprehensive of all maritime nations and comparable among them. Applications of satellite data for enhanced operational aquaculture management are demonstrated.

**16:55-17:20 Q&A/Further discussion**

**17:20 Day one round up by Chairman**

**17:30 CLOSE OF CONFERENCE DAY ONE**

**19:15 Meet in reception area of Hilton Imperial for short walk to Revelin Fortress**

**19:30 Reception on the Terrace of the Revelin Fortress**

**20:00 Conference Networking Dinner – Revelin Fortress**

## THURSDAY, 17 JUNE 2010

**09:00 REGISTRATION & COFFEE**

**09:30 Introduction to day two - Chairman**

**SESSION 5 – Spotlight on Croatia**

**09:35 Current state and prospects for offshore mariculture in Croatia**

*Prof Ivan Katavić, PhD, Head of Aquaculture Laboratory Institute of Oceanography and Fisheries, Split, Croatia*

**09:55 Kali Tuna and the future of Bluefin Tuna Aquaculture**

*Dino Vidov, General Manager, Kali Tuna*

With rising international scrutiny of Bluefin Tuna fishing and farming, big questions remain regarding the future. This paper will give a history of Kali Tuna and also offer views on the future of the industry.

# The Conference Networking Dinner

The Conference Networking Dinner will take place on the evening of Wednesday, 16 June 2010 at the fabulous Revelin Fortress which was built in 1462 to provide protection to the Eastern City Gate Place. Overlooking the Old City Harbour, the Revelin's terrace offers what are probably the best views of the Old City. Following a short stroll from the Hilton Imperial Hotel through the beautiful Old City, the evening will start with drinks on the terrace and will then be followed by a three course, sit-down dinner. A highlight of the meal will undoubtedly be Riba Mljet's superb Sea bream, which they have very kindly agreed to supply for the main course. Riba Mljet is Croatia's only certified organic fish farm. The dinner is an excellent opportunity for all attendees to network with their industry colleagues in an informal setting. The conference registration fee will include a place at the dinner and additional places can be purchased for partners and guests, see the booking form for more information.



## 10.15 Investing in/setting up an organic fish farm in Croatia

*Ana Milina*, General Manager, Riba Mljet

Riba Mljet was founded in 2004 with investment from private individuals from the US, Netherlands and Mljet Island. In 2006 on Fibl's (Research Institute of Organic Agriculture) recommendation, the company turned to organic production. In 2008 the company was certified by the prestigious European certification companies Naturland (Germany) and BioSuisse (Switzerland). Riba Mljet is unique as it is the only organic fish farm in Croatia and one of only five in the whole of Europe. Fish raised are: Seabream, Seabass and Meagre. Generally, the target market is German-speaking countries such as Switzerland, Austria and Germany.

## QUESTIONS & ANSWERS

### 10:45 COFFEE BREAK & EXHIBITION

#### SESSION 6 – Ecological monitoring and future technologies

#### 11:15 Use of Biological and Chemical Indicators for Monitoring Offshore Marine Fish Farms: Italian Case Studies

*S. Porrello, P. Tomassetti, E. Persia, I. Mercatali, P. Gennaro, D. Vani.*

ISPRA Institute for Environmental Protection and Research

The aims of the present study were to evaluate the spatial and temporal changes produced in the environment, in two fish farms located along the Italian coasts, during fattening cycle using chemical and biological indicators. The results showed a different impacts detected in the two fish farms connected with different environmental, hydrodynamic and zootechnical features.

#### 11.35 Offshore cultivation of Seaweed

*Pål Bakken*, CEO/Founder, Seaweed Energy Solutions AS

Bioenergy production utilizing the Earth's vast oceans offers tremendous opportunity as a worldwide renewable energy resource. Current advanced and proven technologies in marine biology, offshore structures, aquaculture and biomass processing are bringing this promise ever closer to commercial reality. Offshore cultivation of seaweed can make a major contribution for coastal regions to meet their CO<sub>2</sub> emission targets and to obtain a sustainable supply of biofuels and a wide range of co-products.

#### 12.05 Meeting the quest for spatial efficiency: progress and prospects of extensive aquaculture within offshore wind farms in Europe

*Professor Bela H Buck*, Alfred Wegener Institute for Polar and Marine Research

The presentation on offshore wind farming and the co-use with open ocean aquaculture gives an overview on the current state of trans-disciplinary research on a potential implementation of such a multifunctional use concept on a showcase basis, covering biological, technical, economic and social/policy aspects as well as addressing issues of private-public partnerships and the relevant institutional bodies.

## QUESTIONS & ANSWERS

### 12:35 LUNCH & EXHIBITION

#### 13:35 Session 7 – International Case studies

#### 13:35 Aquaculture Insurance: What do I need to do to get my fish insured

*Tim Sangster*, Managing Director, Aquarius Insurance

Traditionally Insurers have offered two types of cover. Firstly, what is described as 'All Risks', though such cover does in fact involve standard exclusions and may well involve specific exclusions depending on the information pertaining to a farm. Secondly, 'Named Perils' cover, which only covers against 'specific named perils defined in the policy.

## 13.55 Environmental NGO's and Aquaculture

*Karl Pétur Jónsson*, CEO, GRD Consulting & Consultant, Atlantis Group

Do environmental groups pose a threat to Aquaculture or should we work with them to create a sustainable future? How can this threat be met? Karl Pétur Jónsson shares his experience of defending the Bluefin Tuna industry in the global media.

## 14:15 Danish Plans for Developing Off-Coastal and Offshore Mariculture Systems

*Karl Iver Dahl-Madsen*, Chairman, Danish Aquaculture

Denmark is a global leader in producing healthy and tasty food with a low ecological footprint. The Danish Society is proposing to establish a platform for development of off-coastal and offshore aquaculture technology. The development should primarily focus on cost-efficient and robust culture installations to be situated at open sea, cultivation technology and fully automated farms using state-of-the-art robot and information technology. Secondly, advanced biotechnology should be used for refining culture species methods and usage of the produced biomass. An investment and demonstration program for risk-sharing in the pioneering installations should be implemented too.

## QUESTIONS & ANSWERS

### 14:45 COFFEE BREAK & EXHIBITION

#### 15:10 Session 8 – International Case studies cont

#### 15:10 Cost-effective technologies increase mussel yields: it's just a little farther to go!

*John Bonardelli* (PhD), Shellfish Solutions AS

Professional growers seek cost-efficient technologies to increase yields with higher market value. Field examples show how investment in adapted floatation gear, quality socking, and risk management strategies produce higher biomass and value.

#### 15:30 From fishing to farming

Speaker tbc, Pescanova

#### 15:50 The implications of ITQ on the creation of new sea space for farms within NZ legislation

*Mark L. Soboil* (PhD), Aotearoa Fisheries

This paper discusses the implications of ITQ on the creation of new sea space for marine farming within NZ legislation, and the resolution of potential coastal space conflicts using markets forces.

## QUESTIONS & ANSWERS

#### 16.20 Panel debate: 'So what is stopping us?'

Panel members:

*Torgeir Edvardsen*, EATIP

*Prof Ivan Katavić*, PhD, Head of Aquaculture Laboratory, Institute of Oceanography and Fisheries, Split, Croatia

*Dr Mark Walton*, Fisheries and Biodiversity Officer, UNDP/GEF Yellow Sea Large Marine Ecosystem Project

## 17.20 CONCLUSION BY CHAIRMAN

## 17.30 CONFERENCE ENDS

## 18 JUNE 2010 – Visit to Sea bass & Sea bream fish farm

