

AT A GLANCE

TITLE:

ENVIGUARD – Development of a biosensor technology for environmental monitoring and disease prevention in aquaculture ensuring food safety

CONSORTIUM:

A multidisciplinary consortium of 18 partners

COORDINATOR:

TTZ Bremerhaven, Germany

PROGRAMME:

FP7-OCEAN-2013

DURATION:

December 2013 - November 2018

TOTAL COST:

€7,177,126.82

EU CONTRIBUTION:

€5,523,461

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 614057



EnviGuard



Development of a biosensor technology for environmental monitoring and disease prevention in aquaculture ensuring food safety

ENVIGUARD PARTNERS

- 1 ALFRED WEGENER INSTITUTE (Germany)
- 2 HELMHOLTZ ZENTRUM GEESTHACHT (Germany)
- 3 ISITEC GMBH (Germany)
- 4 FUNDACION CETENA (Spain)
- 5 UNIVERSIDAD POLITECNICA DE MADRID (Spain)
- 6 BIO OPTICAL DETECTION SL (Spain)
- 7 MULTITEL ASBL (Belgium)
- 8 SOCIETE DES SYSTEMES BIOLOGIQUES SARL (France)
- 9 LIONIX BV (Netherlands)
- 10 THE UNIVERSITY OF HERTFORDSHIRE HIGHER EDUCATION CORPORATION (United Kingdom)
- 11 AQUABIOTECH LIMITED (Malta)
- 12 NORTH BAY SHELLFISH LIMITED (United Kingdom)
- 13 ISTANBUL UNIVERSITY (Turkey)
- 14 ILKNAK SU URUNLERI SANAYI VE TICARET AS (Turkey)
- 15 VIKING FISH FARMS LIMITED (United Kingdom)
- 16 APPLIED ENZYME TECHNOLOGY LIMITED (United Kingdom)
- 17 BIOAZUL SL (Spain)



TECHNOLOGY
TRANSFER



INNOVATION



MARKET
APPLICATION



RESEARCH

ENVIGUARD: Development of a biosensor technology for environmental monitoring and disease prevention in aquaculture ensuring food safety

ENVIGUARD is a response to the growing need for accurate real time monitoring of the seas / ocean and the aquaculture industry's need for a reliable and cost-effective risk management tool. The objective is to develop a highly specific and precise (i.e. quantitative and qualitative) in-situ measurement device for currently hard to measure man-made chemical contaminants and biohazards (toxic microalgae, viruses & bacteria, biotoxins & PCBs) that can be used as an early warning system in aquaculture and for assessing the good environmental status of the sea in compliance with current European policies. The modular system will consist of three different sensor modules (microalgae/pathogens/toxins & chemicals) integrated into a single, portable device, which saves, displays and sends the collected data real time to a server by means of mobile data transmission and the internet. Users of ENVIGUARD can access their data online any time they need to. Potential fields of use are marine environment pollution monitoring, marine research and quality control in seawater aquaculture. The biosensors developed in the ENVIGUARD project combine innovations in nanotechnology and molecular science leading to the development cutting edge sensor technology putting European research and highly innovative SMEs in the forefront of quickly developing markets.

- ✓ *Cost-effective risk management tool*
- ✓ *Environment pollution monitoring*
- ✓ *In-situ real time monitoring*
- ✓ *Marine quality control*

Objectives of ENVIGUARD

- Multi-class, multi-analytic method for the simultaneous determination of harmful microalgae species, *Betanodavirus*, *E. coli*, okadaic acid and the co-planar family of PCBs
- Highly specific, precise and reliable in-situ measurements of biohazards and chemical contaminants in seawater with real-time results
- A modular system (of up to three sensors) integrated in a single, portable, durable device
- Easy access to data from everywhere through internet database
- Automatic sampling in the marine environment

AT A GLANCE

TYPE:

Research SME

LOCATION:

Mosta, MALTA G. C.

CAPABILITIES:

R&D / Consultancy / Engineering

EXPERTISE:

Aquaculture / Marine Research
Blue Growth / Aquatic Environment



Who We Are

The **AquaBioTech Group** is an international research and development, engineering, technology provider and consulting company strategically located in the centre of the Mediterranean on the island of Malta, although operating globally with clients and projects in over fifty-five countries. The **AquaBioTech Group** undertakes a variety of aquaculture, fisheries, marine surveying, aquarium and aquatic environmental projects through its regional offices and partners throughout the world. The vast majority of the company's work is related to the marine or aquatic environment, encompassing aquaculture developments, market research / intelligence, through to project feasibility assessments, finance acquisition, project management, technology sourcing and technical support and training.

Our role in the Enviguard project

The **AquaBioTech Group's** tasks within the ENVIGUARD project include:

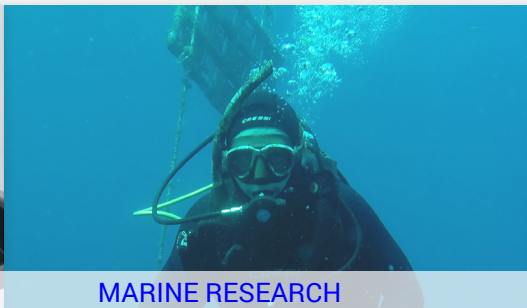
- Provision of market survey and research information regarding the aquaculture sector
- Co-ordination of the testing, optimization and evaluation of the modular system
- Dissemination of project results and participation in networking actions
- The connection of the aquaculture industry and the project objectives
- Support on the development of the special web based platform

AquaBioTech Group Research Activities



AQUACULTURE R&D

Fish & shellfish hatchery technology
Health & disease prevention
Nutraceutical development
New species development
Aquatic nutrition research
Production techniques



MARINE RESEARCH

Environmental Impact Assessments
Geophysical investigations
Marine spatial planning
Marine engineering
Marine surveying
Baseline studies



WATER TECHNOLOGIES R&D

Recirculation Aquaculture Systems
Aquaponics / hydroponics
Wastewater treatment
Energy efficiency
Sustainability
Innovation

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AquaBioTech Group

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