



Focus on Aquaculture

2014 – 2015

BLUE GROWTH AND SUSTAINABLE FOOD SECURITY PROJECTS

Societal Challenge 2

HORIZON 2020

The Horizon 2020 logo, which consists of a small globe of the Earth centered on the Atlantic Ocean, positioned between the words "HORIZON" and "2020". The globe is surrounded by a bright, glowing aura of light rays that radiate outwards, creating a sense of energy and innovation. The background of the entire page is a deep blue gradient with a subtle pattern of light rays emanating from the globe.





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Call for Blue Growth: Unlocking the potential of Seas and Oceans

H2020-BG-2014

Rapid technological progress in working offshore in ever-deeper waters, the need to reduce greenhouse gas emissions, and the need to look at how the 71 % of the planet that is seas and oceans can deliver human necessities such as food and energy in a sustainable way have opened up an opportunity for blue growth with the aim to harness the huge potential of Europe's oceans, seas and coasts for jobs and growth. This focus area addresses this overall challenge through five cross-cutting priority domains supporting the Blue Growth Agenda: valorising the diversity of marine life; sustainable harvesting the deep-sea resources; new offshore challenge; ocean observation technologies; and the socioeconomic dimension. The aim of the focus area is to improve the understanding of the complex interrelations between various maritime activities, technologies, including space enabled applications, and the marine environment to help boost the marine and maritime economy by accelerating its potential through R&I in a sustainable manner. It will enhance sectorial and cross-sectorial cooperation by building on major international, national and regional initiatives.

The Blue Growth economy in the EU is expected to grow to 7 million people employed by 2020. Actions in this area will support the EU 'Blue Growth' strategy and relevant EU policies (e.g. Sea Basins Strategies and Action Plans) as well as provide support for international cooperation.

To maximize the impacts of activities undertaken under this Focus Area, the 2014 WP of Horizon 2020, focuses on key priorities for the EU, so as to mobilize the necessary critical mass to tackle these large cross-cutting challenges with adequate scale and scope.

The 2014 Work – Programme under the Societal Challenge 2 (Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy) of Horizon 2020, puts emphasis on the sustainable exploitation of the diversity of marine life, on valuing and mining marine biodiversity.

In this 2014 Programme, the new offshore challenges were tackled through a support action (CSA) preparing potential further large-scale offshore initiatives and one initiative focused on sub-sea technologies. Also a large-scale initiative on improving ocean observation systems/technologies is supported in the 2014 Programme as well as one activity on acoustic and imaging technologies. Finally, several horizontal activities regarding socio-economic issues, valorising research outcomes or engaging with society as well as projects targeting SMEs were promoted in 2014. In terms of international cooperation, the 'Blue Growth' Focus Area will support the new Atlantic Ocean Research Alliance launched by the Galway Statement in May 2013¹.

¹ Galway Statement on Atlantic Ocean Cooperation Launching a Canada- European Union- United States of America Research Alliance (Galway, 24th of May 2013)



AORAC-SA **Atlantic Ocean Research** **Alliance Support Action**

HORIZON 2020

At a glance

Acronym: AORAC-SA

Title: Atlantic Ocean Research Alliance Support Action

Call: H2020-BG-2014-2

Topic: BG-14-2014

Instrument: Coordination & support action

Start date: 01/03/2015

End date: 29/02/2020

Duration: 60 months

Total Cost: € 4,295,137.50

EC Contribution: € 3,447,000.00

Consortium: 9 partners

Project Coordinator: Marine Institute, IE

Abstract

The Atlantic Ocean Research Alliance Coordination and Support Action (AORAC-SA) is designed to provide scientific, technical and logistical support to the European Commission in developing and implementing trans-Atlantic Marine Research Cooperation between the European Union, the United States of America and Canada.

Work Package 7 of the AORAC-SA project is dedicated to support the Atlantic Ocean Research cooperation on Aquaculture among EU (DG RTD), Canada (DFO) and US (NOAA).

The Coordination and Support Action (CSA) is carried out within the framework of the Atlantic Ocean Research Alliance as outlined in the Galway Statement on Atlantic Ocean Cooperation (May 2013). Recognising the evolving nature of the Atlantic Ocean Research Alliance, the hallmark of this action is that it is flexible, responsive, inclusive, efficient, innovative, value-adding and supportive.

The CSA, reporting to the Commission representatives of the Atlantic Ocean Research Alliance, will be responsible for the organisation of expert and stakeholder meetings, workshops and conferences required by the Atlantic Ocean Research Alliance and related to identified research priorities (e.g. marine ecosystem-approach, observing systems, marine biotechnology, aquaculture, ocean literacy, seabed and benthic habitat mapping), support actions (e.g. shared access to infrastructure, dissemination and knowledge transfer, establishment of a knowledge sharing platform) and other initiatives as they arise, taking into account related Horizon 2020 supported trans-Atlantic projects (e.g. BG1Atlantic marine ecosystems, BG8 Atlantic Ocean observation and BG13 Ocean literacy) and on-going national and EU collaborative projects (e.g. FP7).

To support the Commission in negotiations with the USA and Canada on trans-Atlantic Ocean Research Cooperation, the AORAC-SA support and governance structure comprises a Secretariat and Management Team, guided by a high-level Operational Board, representative of the major European Marine Research Programming and Funding Organisations as well as those of the USA and Canada. This structure is further able to draw on significant marine research expertise and experience through its partner organisations.



Project's Participants List

AORAC-SA

***Atlantic Ocean Research
Alliance Support Action***

Project's partners	Name	Country
1	MARINE INSTITUTE (MARINE INSTITUTE)	IE
2	INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA (ICES)	DK
3	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	FR
4	CONSORCIO PARA EL DISEÑO, CONSTRUCCIÓN, EQUIPAMIENTO Y EXPLOTACION DE LA PLATAFORMA OCEANICA DE CANARIAS (PLOCAN)	ES
5	CIENCIA VIVA-AGENCIA NACIONAL PARA A CULTURA CIENTIFICA E TECNOLÓGICA	PT
6	WOC - WORLD OCEAN LIMITED	UK
7	HAVFORSKNINGSINSTITUTTET	NO
8	THE ICELANDIC CENTRE FOR RESEARCH (RANNIS)	IS
9	MINISTERIO DA CIENCIA E TECNOLOGIA (MCTI)	BR



MARIBE

Marine Investment for the Blue Economy

HORIZON 2020

At a glance

Acronym: MARIBE

Title: Marine Investment for the Blue Economy

Call: H2020-BG-2014-1

Topic: BG-05-2014

Instrument: Coordination & support action

Start date: 01/03/2015

End date: 31/08/2016

Duration: 18 months

Total Cost: € 1,977,951.25

EC Contribution: € 1,977,951.25

Consortium: 10 partners

Project Coordinator: University College Cork, National University of Ireland, Cork (UCC), IE

Abstract

The primary aim of the MARIBE project is to unlock the sustainable growth and jobs potential of Blue Growth (BG). This aim will be fulfilled by identifying the most promising business models in the BG economy (in particular multi-purpose platforms). Plans will be developed to overcome their challenges, propose how these models can be advanced to large scale pilot stage and test the feasibility of the recommended business models. The pilots will be enabled by securing support from the investment community and liaising with the EC to implement the outcomes of the project and continue funding support via H2020. The project will produce toolkits and guidelines for BG stakeholders and the investment community with regards to the BG socio-economic trends and technical and non-technical challenges as well as reports on best business models for BG.

The MARIBE consortium has connections to H2-Ocean, TROPOS and MERMAID but has the desired degree of independence and impartiality to ensure neutral business model assessment. The partnership comprises the full spectrum of academic and SME partners, including expertise from all relevant BG sectors. It includes the Food and Agriculture Organisation of the United Nations as a key global partner to secure a Trans-Atlantic pilot and Business Models Inc. as the business model expert. Business models will first be mapped according to best practice methodology, cognisant of their value chains. The technical and non-technical challenges of the business will be measured based on their life cycle stage and proposals made for their mitigation. Key stakeholders from all sectors of Blue Economy to BG will be engaged, as well as key investors. Following these reviews and engagements, four Think Tank workshops will be organised to envision innovative new business models, in particular considering multipurpose platforms. A final workshop will then define implementation plans for best business model for each of the four basins.



Project's Participants List

MARIBE

Marine Investment for the Blue Economy

Project's partners	Name	Country
1	UNIVERSITY COLLEGE CORK, NATIONAL UNIVERSITY OF IRELAND, CORK (UCC)	IE
2	STICHTING DIENST LANDBOUWKUNDIG ONDERZOEK (DLO)	NL
3	ECOAST RESEARCH CENTRE OSTEND BVBA (ECOAST) BVBA	BE
4	SWANSEA UNIVERSITY (PRIFYSGOL ABERTAWE)	UK
5	HERIOT-WATT UNIVERSITY (HWU)	UK
6	UNIVERSIDAD DE CANTABRIA (UC)	ES
7	AQUABIOTECH LIMITED (ABT) LTD	MT
8	FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)	IT
9	BUSINESS MODELS INC BV (BMINC.) BV	NL
10	BVG ASSOCIATES LIMITED (BVG Associates Ltd.)	UK

***Developing Innovative Market Orientated Prediction
Toolbox to Strengthen the Economic Sustainability
and Competitiveness of European Seafood on Local
and Global markets***

Abstract

Two thirds of seafood consumed in EU is imported from third countries. Although capture fisheries in Europe have declined, the aquaculture sector has not grown to meet the increased demand for seafood. Seafood producers in Europe are in fierce competition with imports; prices of seafood products fluctuate and destabilise markets; unsuitable regulations influence the competitiveness of seafood producers; some producers are unable to meet the demands and expectations of consumers and many new fish products fail on markets. These and other challenges affecting the economic sustainability of European seafood producers are addressed in PrimeFish, a four year Horizon 2020 funded research project with 14 participants from Europe. For comparative investigation outside Europe, PrimeFish has participants from Vietnam and Canada. To improve economic sustainability and competitiveness, information will be gathered and analysed to generate new knowledge and insights into the performance of European/Canadian fisheries and aquaculture sectors on local, European and international markets.

The outcome of the project will be models that can be used to compare competitiveness and to predict possible “boom and bust” price cycles, for strategic positioning within the value chain, on success analysis for new products and for innovation and price analysis for specific species. PrimeFish will assess the non-market value associated with aquaculture and captured fisheries as well as the effectiveness of regulatory systems and thereby provide a basis for improved societal decision making in the future. The implementation of the simulation and prediction models into a web-based market intelligence toolbox for seafood operators and policymakers is one of the key concepts of the project. The toolbox will provide peer comparison to fishermen, aquaculture producers and processing companies (on a supply-chain level) and to public stakeholders on a country or species level. The toolbox should also support producers in product development and in spotting market needs. By improving strategic decision making for industry players and policymakers the long term economic sustainability of EU fisheries and aquaculture sectors will be enhanced. As there is a lack of appropriate production and socio-economic data, the project will gather data not only on aggregate level obtained from publically available sources, but also from individual production companies, industry organisations, sales organisations and marketing channels. To facilitate data access for the specific case studies and to create added value, PrimeFish has a large industry reference group within Europe and Canada. PrimeFish is the ideal platform for strengthening the Trans-Atlantic alliance between EU and Canada by providing comparative studies and benchmarking on economic viability and competitiveness of the fisheries and aquaculture sectors across the Atlantic.



HORIZON 2020

At a glance

Acronym: PrimeFish

Title: Developing Innovative Market Orientated Prediction Toolbox to Strengthen the Economic Sustainability and Competitiveness of European Seafood on Local and Global markets

Call: H2020-BG-2014-2

Topic: BG-10-2014

Instrument: Research and Innovation action

Start date: 01/03/2015

End date: 28/02/2019

Duration: 48 months

Total Cost: € 5.275.426,25

EC Contribution: € 4.997.912,50

Consortium: 16 partners

Project Coordinator: MATIS OHF, IS



PrimeFish

Project's Participants List

Developing Innovative Market Orientated Prediction Toolbox to Strengthen the Economic Sustainability and Competitiveness of European Seafood on Local and Global markets

Project's partners	Name	Country
1	MATIS OHF	IS
2	AALBORG UNIVERSITET	DK
3	SP/F SYNTESA	FO
4	INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE	FR
5	UNIVERSITE DE SAVOIE	FR
6	VEREIN ZUR FOERDERUNG DES TECHNOLOGIETRANSFERS AN DER HOCHSCHULE BREMERHAVEN E.V.	DE
7	HASKOLI ISLANDS	IS
8	UNIVERSITA DEGLI STUDI DI PARMA	IT
9	UNIVERSITA DEGLI STUDI DI PAVIA	IT
10	KONTALI ANALYSE AS	NO
11	NOFIMA AS	NO
12	UNIVERSITETET I TROMSOE	NO
13	CENTRO TECNOLOGICO DEL MAR - FUNDACION CETMAR	ES
14	THE UNIVERSITY OF STIRLING	UK
15	TRUONG DAI HOC NHA TRANG	VN
16	MEMORIAL UNIVERSITY OF NEWFOUNDLAND	CA



HORIZON 2020

At a glance

Acronym: SUCCESS

Title: Strategic Use of Competitiveness towards Consolidating the Economic Sustainability of the European Seafood sector

Call: H2020-BG-2014-2

Topic: BG-10-2014

Instrument: Research & Innovation action

Start date: 01/04/2015

End date: 31/03/2018

Duration: 36 months

Total Cost: € 5,207,821.75

EC Contribution: € 4,998,290.25

Consortium: 24 partners

Project Coordinator: Université De Bretagne Occidentale (UBO), FR

SUCCESS

Strategic Use of Competitiveness towards Consolidating the Economic Sustainability of the European Seafood sector

Abstract

SUCCESS is bringing together an integrated team of scientists from all fields of fisheries and aquaculture science with industry partners and key stakeholders to work on solutions which shall improve the competitiveness of the European fisheries and aquaculture sector. The supply-side of seafood markets is limited from both sea fisheries and aquaculture. At the same time demand for seafood products is increasing. In a globalised economy, the conjunction of these two trends should generate high opportunities for any seafood production activity. However, both fisheries and aquaculture companies are facing key challenges, which currently hinder them reaping the full benefits of seafood markets expansion, and even question their sustainability. As a whole, the EU fisheries sector remains at low levels of profitability and sustainability. The SUCCESS project will examine two strategies to improve the competitiveness of the sector: (i) increasing demand for EU seafood products, especially improving the awareness of the advantages of European production (including sustainability requirements and adjustment to market evolution); and (ii) cost reduction in certain production segments. For both strategies development on world markets as well as consumer preferences and awareness will be analysed. Additionally, SUCCESS will explore the different sectors along the value chain (from fisheries and aquaculture producers via processing companies, wholesalers, retailers to direct marketing to mobile fishmongers and restaurants) and their potential for improvements in competitiveness. These analyses also include long term predictions about the viability of certain production systems and will be considered in specific case studies on for example mussel production, shrimp fisheries, whitefish, traditional pond aquaculture and new aquaculture production systems.




SUCCESS

Project's Participants List

***Strategic Use of Competitiveness
towards Consolidating the Economic
Sustainability of the European
Seafood sector***

Project's partners	Name	Country
1	UNIVERSITE DE BRETAGNE OCCIDENTALE (UBO)	FR
2	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER (IFREMER)	FR
3	HASKOLI ISLANDS (IoES)	IS
4	STICHTING DIENST LANDBOUWKUNDIG ONDERZOEK (DLO)	NL
5	UNIVERSIDAD DE CANTABRIA (UC)	ES
6	JOHANN HEINRICH VON THUENEN-INSTITUT, BUNDESFORSCHUNGSINSTITUT FUER LAENDLICHE RAEUME, WALD UND FISCHEREI (TI)	DE
7	NISEA SOCIETA COOPERATIVA (NISEA) SC	IT
8	MARKMAR EHF (MM) EHF	IS
9	Alexander Technological Educational Institute of Thessaloniki (TECHNOLOGIKO EKPAIDEFTIKO IDRYMA THESSALONIKIS) (ATEITH)	EL
10	MORSKI INSTYTUT RYBACKI - PANSTWOWY INSTYTUT BADAWCZY (NMFRI)	PL
11	FISHOR CONSULTING LTD (Fishor) LTD	UK
12	UNIVERSITA DEGLI STUDI DI PALERMO (UNIPA)	IT
13	Luonnonvarakeskus (RKT)	FI
14	ICELAND SEAFOOD INTERNATIONAL EHF (ISI) EHF	IS
15	PECHEURS DE MANCHE ET D'ATLANTIQUE SA (PMA)	FR
16	DUCAMAR SPAIN SL (Ducamar)	ES
17	RODECAN SL (RODECAN) SL	ES
18	FRIGORIFICOS ORTIZ SA (FRIGORSA) SA	ES
19	KILIC DENIZ URUNLERI URETIMI IHRACAT ITHALAT VE TICARET AS (Kilic) AS	TR
20	FISH-PASS (Fish-Pass) SARL	FR
21	WEMAKE SARL (wemake)	FR
22	FUNDACION CENTRO TECNOLOGICO ACUICULTURA DE ANDALUCIA (CTAQUA)	ES
23	ASOCIACION DE MAYORISTAS DE PESCADOS DEL PRINCIPADO DE ASTURIAS (AMPPA)	ES
24	BUNDESVERBAND DER DEUTSCHEN FISHINDUSTRIE UND DES FISCHGROSSHANDELS E.V. (BVFisch)	DE



At a glance

Acronym: UTOFIA

Title: Underwater Time Of Flight Image Acquisition system

Call: H2020-BG-2014-2

Topic: BG-09-2014

Instrument: Research & Innovation action

Start date: 01/02/2015

End date: 30/04/2018

Duration: 39 months

Total Cost: € 5,716,971.00

EC Contribution: € 5,716,971.00

Consortium: 7 partners

Project Coordinator: STIFTELSEN SINTEF,

UTOFIA

Underwater Time Of Flight Image Acquisition system

Abstract

UTOFIA will offer a compact and cost-effective underwater imaging system for turbid environments. Using range-gated imaging, the system will extend the imaging range by factor 2 to 3 over conventional video systems, while at the same time providing video-rate 3D information. This will fill the current gap between short-range, high-resolution conventional video and long-range low-resolution sonar systems.

UTOFIA offers a new modus operandi for the main targeted domains of application: marine life monitoring, harbour and ocean litter detection, fisheries and aquaculture stock assessment, and seabed mapping.



Project's Participants List

UTOFIA

Underwater Time Of Flight Image Acquisition system

Project's partners	Name	Country
1	STIFTELSEN SINTEF	NO
2	BRIGHT SOLUTIONS S.R.L.	IT
3	ODOS IMAGING LIMITED	UK
4	SUBSEA TECH SAS	FR
5	FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V	DE
6	FUNDACION AZTI - AZTI FUNDAZIOA	ES
7	DANMARKS TEKNISKE UNIVERSITET	DK





Call for supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth

HORIZON 2020 dedicated SME instrument

The potential of Europe's Oceans, seas and coasts is significant for job and growth creation if the appropriate investments in research and innovation are made. SMEs contribution to the development of the 'Blue Growth Strategy' (COM (2012) 494) can be significant in particular in the fields of marine biotechnology (related applications, key tools and technologies) as well as aquaculture related marine technologies and services. However, SMEs lack access to finance to develop their activities and the economic and financial crisis has made access to finance even more difficult. This is particularly true in the previously mentioned maritime sectors, where access to finance for SMEs is considered as one of the most important barriers for the development of innovative maritime economic activities².

The SME instrument consists of three separate phases and a coaching and mentoring service for beneficiaries. Participants can apply to phase 1 with a view to applying to phase 2 at a later date, or directly to phase 2.

In phase 1, a feasibility study shall be developed verifying the technological/practical as well as economic viability of an innovation idea/concept with considerable novelty to the industry sector in which it is presented (new products, processes, design, services and technologies or new market applications of existing technologies). Bottlenecks in the ability to increase profitability of the enterprise through innovation shall be detected and analysed during phase 1 and addressed during phase 2 to increase the return in investment in innovation activities. The proposal should contain an initial business plan based on the proposed idea/concept. Funding will be provided in the form of a lump sum of EUR 50,000. Projects should last around 6 months.

In phase 2, innovation projects will be supported that address the specific challenge of Blue Growth and that demonstrate high potential in terms of company competitiveness and growth underpinned by a strategic business plan. Activities should focus on innovation activities such as demonstration, testing, prototyping, piloting, scaling-up, miniaturisation, design, market replication and the like aiming to bring an innovation idea (product, process, service etc.) to industrial readiness and maturity for market introduction, but may also include some research. Proposals shall contain a specification for the outcome of the project, including a first commercialisation plan, and criteria for success. The Commission considers that proposals requesting a contribution from the EU of between EUR 0.5 and 2.5 million would allow phase 2 to be addressed appropriately. Projects should last between 12 and 24 months.

² Blue Growth Study - Scenarios and drivers for Sustainable Growth from the Oceans, Seas and Coasts – Ecorys, 2012



In addition, in phase 3, SMEs can benefit from indirect support measures and services as well as access to the financial facilities supported under Access to Risk Finance of this work programme.

The expected impacts for this type of calls are the following:

- Enhancing profitability and growth performance of SMEs by combining and transferring new and existing knowledge into innovative, disruptive and competitive solutions seizing European and global business opportunities.
- Market uptake and distribution of innovations tackling the specific challenge of Blue Growth in a sustainable way.
- Increase of private investment in innovation, notably leverage of private co-investor and/or follow-up investments.
- The expected impact should be clearly described in qualitative and quantitative terms (e.g. on turnover, employment, market seize, IP management, sales, return on investment and profit).

HORIZON 2020

At a glance

Acronym: BLUE IODINE

Title: Boost BLUE economy through market uptake an innovative seaweed bioextract for IODINE fortification

Call: H2020-SMEINST-1-2014

Topic: BG-12-2014-1

Instrument: SME Instrument Phase 1

Start date: 01/02/2015

End date: 31/07/2015

Duration: 6 months

Total Cost: € 71,429.00

EC Contribution: € 50,000.00

Project Beneficiary: UBQ II LDA, PT

BLUE IODINE

Boost BLUE economy through market uptake an innovative seaweed bioextract for IODINE fortification

Abstract

The main objective of the project is to produce in a cost effective way high quality seaweed iodine products and become market leaders in this niche market. The expected revenue in 5 years will be 3.3 million euro and we expect to increase our staff in 20 people.

Iodine deficiency is one of the three most common nutritional deficiencies and is spread all over the world and 40% of the world's population remains at risk for iodine deficiency.

Seaweed is the most reliable source of natural iodine. However, seaweed creation is dominated by larger players, mainly from Asia. Our strategy is not to compete with them, but target for a niche market that is yet incipient – high quality seaweed creation for the development of natural protein products, rich in essential aminoacids and natural iodine.

The seaweeds created in the fish aquaculture farms are autochthonous from our region and have high iodine content and a high degree of stability. They are better than the products in the market (iodine composition 30% higher and vitamin C 300% higher than usually commercialized seaweed products) and with our already tested innovative biorefinery process we will be able to put the product in the market at a competitive price (10% to 30% lower). A nutritional analysis has been done. The biorefinery process has been developed for small production. This has now to be better defined in order to process a higher amount of products UBQ is a high-tech company, and are specialize in the production of natural extracts obtained from marine seaweed.

For the first stage project, the objectives are to study the:

- 1.1. Refinement of the nutritional and biochemistry analysis of the selected seaweed
- 1.2. Requirements for upscale the innovative biorefinery process for a higher production
- 2.1. Refinement of the Market analysis at EU global level
- 2.2. Business Plan, including defining in detail the prices, commercialization strategy, possible partnership.



At a glance

Acronym: CryoPlankton

Title: A replacement of the sub-optimal live feeds used at hatcheries today with a new cryopreserved live diet for the improved and efficient production of juveniles in marine aquaculture

Call: H2020-SMEINST-1-2014

Topic: BG-12-2014-1

Instrument: SME Instrument Phase 1

Start date: 01/10/2014

End date: 31/03/2015

Duration: 6 months

Total Cost: € 71,429.00

EC Contribution: € 50,000.00

Project Beneficiary: PLANKTONIC AS, NO

CryoPlankton

A replacement of the sub-optimal live feeds used at hatcheries today with a new cryopreserved live diet for the improved and efficient production of juveniles in marine aquaculture

Abstract

The most important innovation in marine fish aquaculture is the improvement of survival rate and development during the larval stage of the fish. Reasons are that the current nutritional quality of most common live food organisms (rotifers and *Artemia nauplii*) is inadequate leading to high mortality, deformations and sub-optimal growth during the larval phase of these fish species which limit the overall production. This project's primary objective is to cryopreserve targeted natural zooplankton harvested from the sea, which will be revived for the use as live feed organisms in marine aquaculture. The SME Planktonic has succeeded in cryopreserving marine crustacean nauplii in relatively large scale (entities of up to 200 ml), and to revive them as free swimming organisms (revival rate up to 90%). Because fish larvae are evolutionary adapted to graze on the sea plankton organisms, it is believed and also documented that it is an optimal diet with respect to nutritional value and performances on the fish growth and survival. Present cryopreservation protocols owned by Planktonic will be further optimized for large scale of fish larvae cultivation of both current successful aquaculture species (sea bream and sea bass) and those with requirements of prey of high nutritive value and appropriate size in their early larval phase (e.g. Bluefin tuna, long fin yellow tail and Ballan wrasse). Logistics systems for economically feasible shipping of cryopreserved product within and outside the EU will be assessed, besides procedures for removing market barriers. The world-wide market of *Artemia nauplii* and rotifers is estimated to about 450 million €. Planktonic is aiming at 10% of this market, which will result in a turnover of 45 million €.

Planktonic will in the proposed project perform a feasibility study with the focus of a business plan, potential partners to succeed with the commercialization and evaluate technologies for upscaling of the production.



HORIZON 2020

At a glance

Acronym: FLOTA

Title: Floating Offshore Photovoltaic systems

Call: H2020-SMEINST-1-2014

Topic: BG-12-2014-1

Instrument: SME Instrument Phase 1

Start date: 01/11/2014

End date: 30/04/2015

Duration: 6 months

Total Cost: € 71,429.00

EC Contribution: € 50,000.00

Project Beneficiary: Active Innovation

FLOTA

Floating Offshore Photovoltaic systems

Abstract

The innovation project consists in a system of floating photovoltaic panels for the decentralized generation and stocking energy at offshore fish farms (and more generally sea activities with necessity of electricity). The project FLOTA (Floating Offshore systems) addresses the industrial problem of the autonomous supply of sustainable and green energy for the quickly increasing industrial branch of fish farms.

Goals of this feasibility study is to finalize the business plan for the development of a new company of a spin-off fully dedicated to sea advanced systems, the finalization of specific design activities on the system and the creation of a small scale demonstrator that will be the key element of the dissemination for this system.





Call for Sustainable Food Security³

H2020-SFS-2014

Ensuring the availability of and access to sufficient safe and nutritious food is a key priority that impacts all EU citizens and needs to be ensured today and in the future. At the same time the production and processing of food is a key economic activity providing jobs, skills and training, attracting investments, supporting rural and urban economies and also shaping landscapes. Given the economic scale of the food sector, the potential gains from research and innovation, and the structure of the sector with a strong participation of SMEs, this focus area will develop competitive and resource-efficient aquatic and terrestrial food production systems covering: eco-intensification of production (i.e. without worsening environmental conditions); sustainable management of natural resources, including the accurate valuation of ecosystems services, while addressing climate change mitigation and adaptation; technologies for a sustainable food chain; safe foods and healthy diets for all; and a global food security system. Enabling technologies and space-enabled applications, adequately set in a societal context, will be an important element in achieving these goals. Overall, research and innovation actions within the Societal Challenge 2 (Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy) of Horizon 2020 will cover the whole food chain, including both the supply and demand sides.

The following section of this brochure, aims to present 4 projects selected from the 2014 call for Sustainable Food Security, that focus on the aquaculture and fisheries sectors. WP 2014 concentrates its efforts on key priorities for the EU to ensure that the critical mass needed to tackle the different sub-challenges is attained, while focusing on the main policy needs.

In particular, to progress towards sustainable food production systems, priority will be given in 2014 to minimising pre-harvest losses also in aquaculture and fisheries and to support the production of safe food and healthy diets, priority will be given to food safety and to sustainable and competitive food production.

³ The World Summit on Food Security in 2009 defined food security as existing 'when all people at all times have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life'.

Ecosystem Approach to making Space for Aquaculture

Abstract

The central goal of the AquaSpace project is to provide increased space of high water quality for aquaculture by adopting the Ecosystem Approach to Aquaculture (EAA) and Marine Spatial Planning (MSP) and so to deliver food security and increased employment opportunities through economic growth. MSP is strategic, forward-looking planning for regulating, managing and protecting the marine environment, including through allocation of space that addresses the multiple, cumulative, and potentially conflicting uses of the sea. The three pillars of EAA are ecological sustainability, social equity, and harmonization of multiple uses. We will achieve this goal by identifying the key constraints experienced by aquaculture development in a wide range of contexts and aquaculture types, taking into account all relevant factors and advised by a Reference User Group. We will then map these constraints against a wide variety of tools/methods that have already been developed in national and EU projects for spatial planning purposes, including some that have been designed specifically for aquaculture. In the freshwater sector only, we will also consider ecosystem services provided by aquaculture that are relevant to integrated catchment planning and management. At 16 case study sites having a variety of scales, aquaculture at different trophic levels with different environmental interactions and most importantly with a range of key space-related development constraints as defined by local stakeholders, we will assess appropriate tools using a common process so as to facilitate synthesis and comparison. This case study approach will generate a large amount of information and is allocated about a third of the project's resources.

The project will develop the outcomes leading to a set of evaluated tools for facilitating the aquaculture planning process by overcoming present constraints. This information will be presented on an interactive web-based platform with tailored entry points for specific user types (e.g. planners, farmers, public) to enable them to navigate to the tools most appropriate to their application.

The knowledge and information gained during this process will be developed into an on-line module at Masters Level which will also be developed into a short Professional Development course aimed at aquaculture planning professionals. The public will be engaged by an innovative school video competition and a vehicle to ensure project legacy will be established.



HORIZON 2020

At a glance

Acronym: AquaSpace

Title: Ecosystem Approach to making Space for Aquaculture

Call: H2020-SFS-2014-2

Topic: SFS-11a-2014

Instrument: Research and Innovation action

Start date: 01/03/2015

End date: 28/02/2018

Duration: 36 months

Total Cost: € 3,198,914.00

EC Contribution: € 3,198,914.00

Consortium: 22 partners

Project Coordinator: The Scottish Association For Marinescience LBG (SAMS), UK



Project's Participants List

AquaSpace

Ecosystem Approach to making Space for Aquaculture

Project's partners	Name	Country
1	THE SCOTTISH ASSOCIATION FOR MARINESCIENCE LBG (SAMS)	UK
2	AGRIFOOD AND BIOSCIENCES INSTITUTE (AFBI)	UK
3	FUNDACION AZTI - AZTI FUNDAZIOA (AZTI-TECNALIA)	ES
4	BLUEFARM SRL (BLUEFARM)	IT
5	CHRISTIAN MICHELSEN RESEARCH AS (CMR)	NO
6	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	ES
7	FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS FAO (FAO)	IT
8	NEMZETI AGRARKUTATASI ES INNOVACIOSKOZPONT (NARIC)	HU
9	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER (IFREMER)	FR
10	HAVFORSKNINGSINSTITUTTET (IMR)	NO
11	THE JAMES HUTTON INSTITUTE (JHI)	UK
12	LONGLINE ENVIRONMENT LTD (LLE)	UK
13	MARINE SCOTLAND (MSS)	UK
14	SAGREMARISCO-VIVEIROS DE MARISCO LDA (SGM)	PT
15	JOHANN HEINRICH VON THUENEN-INSTITUT, BUNDESFORSCHUNGSINSTITUT FUER LAENDLICHE RAEUME, WALD UND FISCHEREI (TI-SF)	DE
16	UNIVERSITY COLLEGE CORK, NATIONAL UNIVERSITY OF IRELAND (UCC)	IE
17	PANEPISTIMIO KRITIS (UNIVERSITY OF CRETE) (UOC)	EL
18	BIHARUGRAI HALGAZDASAG MEZOGAZDASAGI TERMELO ERTEKESITO ES TERMESZETVEDELMI KFT (BHG)	HU
19	DALHOUSIE UNIVERSITY (DAL)	CA
20	YELLOW SEA FISHERIES RESEARCH INSTITUTE, CHINESE ACADEMY OF FISHERY SCIENCES (YSFRI)	CN
21	THE UNIVERSITY OF WESTERN AUSTRALIA (UWA)	AU
22	THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)	US

ParaFishControl

Advanced Tools and Research Strategies for Parasite Control in European farmed fish

At a glance

Acronym: ParaFishControl

Title: Advanced Tools and Research Strategies for Parasite Control in European farmed fish

Call: H2020-SFS-2014-2

Topic: SFS-10a-2014

Instrument: Research & innovation action

Start date: 01/04/2015

End date: 31/03/2020

Duration: 60 months

Total Cost: € 8,104,133.75

EC Contribution: € 7,800,000.00

Consortium: 30 partners

Project Coordinator: Agencia Estatal Consejo Superior de Investigaciones Científicas (CSIC), ES

Abstract

European aquaculture production provides direct employment to 80,000 people and a 3-billion € annual turnover.

Parasites cause severe disease outbreaks and high economic losses in finfish aquaculture. The overarching goal of ParaFishControl is to increase the sustainability and competitiveness of European Aquaculture by improving understanding of fish-parasite interactions and by developing innovative solutions and tools for the prevention,

control and mitigation of the major parasites affecting Atlantic salmon, rainbow trout, common carp, European sea bass, gilthead sea bream and turbot. To achieve these objectives, ParaFishControl brings together a multidisciplinary consortium comprising 30 partners possessing world-leading, complementary, cross-cutting expertise and drawn from public and private research organisations, and the aquaculture industry. The consortium has access to excellent research facilities, diverse biological resources including host-parasite models, and state-of-the-art vaccinology, genomic, proteomic and transcriptomic technologies. The project will: 1) generate new scientific knowledge on key fish parasites, including genomics, life-cycle, invasion strategy and host-parasite interaction data, with special emphasis on host immunity, pathogen virulence and immunomodulation, providing a scientific basis for improved prophylaxis; 2) determine the transfer of parasites between farmed and wild host populations; 3) develop a wide range of novel prophylactic measures, including vaccines and functional feeds; 4) provide a range of advanced or alternative treatments for parasitic diseases; 5) develop cost-effective, specific and sensitive diagnostic tools for key parasitic diseases; 6) assess the risk factors involved in the emergence, transmission and pathogenesis of parasitic diseases; 7) map the zoonotic risks due to fish helminths and; 8) provide a catalogue of good husbandry practices to obtain safe and high-quality fish products.



ParaFishControl

Project's Participants List

Advanced Tools and Research Strategies for Parasite Control in European farmed fish

Project's partners	Name	Country
1	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	ES
2	AARHUS UNIVERSITET (AU)	DK
3	Biologické centrum AV ČR, v. v. i. (BCAS)	CZ
4	THE SECRETARY OF STATE FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS (CEFAS)	UK
5	DANMARKS TEKNISKE UNIVERSITET (DTU)	DK
6	HELLENIC CENTRE FOR MARINE RESEARCH (HCMR)	EL
7	Institute of Oceanography and Fisheries (IOR)	HR
8	Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA)	ES
9	KOBENHAVNS UNIVERSITET (KU)	DK
10	MAGYAR TUDOMÁNYOS AKADEMIA AGRARTUDOMÁNYI KUTATÓKÖZPONT (MTA)	HU
11	UNIVERSIDADE DE SANTIAGO DE COMPOSTELA (USC)	ES
12	UNIVERSITA DEGLI STUDI DI UDINE (UNIUD)	IT
13	ALMA MATER STUDIORUM - UNIVERSITA DI BOLOGNA (UNIBO)	IT
14	UNIVERSITETET I BERGEN (UiB)	NO
15	THE UNIVERSITY COURT OF THE UNIVERSITY OF ABERDEEN (UNAB)	UK
16	THE UNIVERSITY OF STIRLING (UoS)	UK
17	WAGENINGEN UNIVERSITY (WU)	NL
18	FUNDACION AZTI - AZTI FUNDAZIOA (AZTI)	ES
19	SKRETTING AQUACULTURE RESEARCH CENTRE AS (SKRET)	NO
20	INRA TRANSFERT S.A. (IT)	FR
21	PANAGIOTIS CHRISTOFILOGIANNIS - IOANA TAVLA (AQUARK)	ES
22	VERTEBRATE ANTIBODIES LIMITED (VAL)	UK
23	KALLIERGEIES YDROVION ORGANISMON ANONYMOS ETAIREIA (ANDRO)	EL
24	ACQUA AZZURRA SPA (AA)	IT
25	ZF-SCREENS BV (ZF-S)	NL
26	W42 INDUSTRIAL BIOTECHNOLOGY GMBH (W42)	DE
27	INMUNOLOGIA Y GENETICA APLICADA SA (INGENASA)	ES
28	STIFTELSEN INDUSTRIELABORATORIET (ILAB)	NO
29	KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN – KNAW (KNAW)	NL
30	AquaTT UETP Ltd (AquaTT)	IE





Call for Blue Growth: Unlocking the potential of Seas and Oceans

H2020-BG-2015

Rapid technological progress in working offshore in ever-deeper waters, the need to reduce greenhouse gas emissions, and the need to look at how the 71 % of the planet that is seas and oceans can deliver human necessities such as food and energy in a sustainable way have opened up an opportunity for blue growth with the aim to harness the huge potential of Europe's oceans, seas and coasts for jobs and growth. This focus area addresses this overall challenge through five cross-cutting priority domains supporting the Blue Growth Agenda: valorising the diversity of marine life; sustainable harvesting the deep-sea resources; new offshore challenge; ocean observation technologies; and the socioeconomic dimension. The aim of the focus area is to improve the understanding of the complex interrelations between various maritime activities, technologies, including space enabled applications, and the marine environment to help boost the marine and maritime economy by accelerating its potential through R&I in a sustainable manner. It will enhance sectorial and cross-sectorial cooperation by building on major international, national and regional initiatives.

The Blue Growth economy in the EU is expected to grow to 7 million people employed by 2020. Actions in this area will support the EU 'Blue Growth' strategy and relevant EU policies (e.g. Sea Basins Strategies and Action Plans) as well as provide support for international cooperation.

The 2015 Work – Programme under the Societal Challenge 2 (Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy) of Horizon 2020, puts emphasis on the sustainable exploitation of the diversity of marine life, on the preservation and sustainable exploitation of marine ecosystems and climate change effects on marine living resources.

In this 2015 Programme, a large scale initiative was planned on response to oil spill and maritime pollution. Finally, several horizontal activities regarding socio-economic issues, valorising research outcomes or engaging with society as well as projects targeting SMEs were promoted in 2015.

In terms of international cooperation, the 'Blue Growth' Focus Area will support the new Atlantic Ocean Research Alliance launched by the Galway Statement in May 2013⁴.

⁴ Galway Statement on Atlantic Ocean Cooperation Launching a Canada- European Union- United States of America Research Alliance (Galway, 24th of May 2013)

CERES

Climate change and European aquatic RESources



HORIZON 2020

At a glance

Acronym: CERES

Title: Climate change and European aquatic
RESources

Call: H2020-BG-2015-2

Topic: BG-02-2015

Instrument: Research and Innovation action

Start date: 01/03/2016

End date: 29/02/2020

Duration: 48 months

Total Cost: € 5,586,851.25

EC Contribution: € 5,586,851.25

Consortium: 26 partners

Project Coordinator: UNIVERSITAET
HAMBURG, DE

Abstract

CERES advances a cause-and-effect understanding of how future climate change will influence Europe's most important fish and shellfish populations, their habitats, and the economic activities dependent on these species. CERES will involve and closely cooperate with industry and policy stakeholders to define policy, environment, social, technological, law and environmental climate change scenarios to be tested. This four-year project will: 1. Provide regionally relevant short-, medium- and long-term future, high resolution projections of key environmental variables for European marine and freshwater ecosystems; 2. Integrate the resulting knowledge on changes in productivity, biology and ecology of wild and cultured animals (including key indirect / food web interactions), and 'scale up' to consequences for shellfish and fish populations, assemblages as well as their ecosystems and economic sectors; 3. Utilize innovative risk-assessment methodologies that encompass drivers of change, threats to fishery and aquaculture resources, expert knowledge, barriers to adaptation and likely consequences if mitigation measures are not put in place; 4. Anticipate responses and assist in the adaptation of aquatic food production industries to underlying biophysical changes, including developing new operating procedures, early warning methods, infrastructures, location choice, and markets; 5. Create short-, medium- and long-term projections tools for the industry fisheries as well as policy makers to more effectively promote blue growth of aquaculture and fisheries in different regions; 6. Consider market-level responses to changes (both positive and negative) in commodity availability as a result of climate change; 7. Formulate viable autonomous adaptation strategies within the industries and for policy to circumvent/prevent perceived risks or to access future opportunities; 8. Effectively communicate these findings and tools to potential end-users and relevant stakeholders.



Project's Partners List

CERES

**Climate change and European
aquatic RESources**

Project's partners	Name	Country
1	UNIVERSITAET HAMBURG	DE
2	THE SECRETARY OF STATE FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS	UK
3	CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE SCIENZE DEL MARE	IT
4	DANMARKS TEKNISKE UNIVERSITET	DK
5	HELLENIC CENTRE FOR MARINE RESEARCH	EL
6	INSTITUTO ESPANOL DE OCEANOGRAFIA	ES
7	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	FR
8	Longline Environment Ltd	UK
9	NATIONAL UNIVERSITY OF IRELAND, GALWAY	IE
10	PLYMOUTH MARINE LABORATORY	UK
11	SVERIGES METEOROLOGISKA OCH HYDROLOGISKA INSTITUT	SE
12	UNIVERSITY OF HULL	UK
13	RODGER HAMISH	IE
14	ZACHODNIOPOMORSKI UNIWERSYTET TECHNOLOGICZNY W SZCZECINIE	PL
15	INSTITUTO PORTUGUES DO MAR E DA ATMOSFERA IP	PT
16	STICHTING DIENST LANDBOUWKUNDIG ONDERZOEK	NL
17	HAVFORSKNINGSINSTITUTTET	NO
18	INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE DELTA DUNARII	RO
19	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES
20	JOHANN HEINRICH VON THUENEN-INSTITUT, BUNDESFORSCHUNGSINSTITUT FUER LAENDLICHE RAEUME, WALD UND FISCHEREI	DE
21	MERSIN UNIVERSITESI	TR
22	PELAGIC FREEZER TRAWLER ASSOCIATION	NL
23	KILIC DENIZ URUNLERI URETIMI IHRACAT ITHALAT VE TICARET AS	TR
24	COOPERATIVE KOTTERVISSERIJ NEDERLAND UA	NL
25	INSKIE CENTRUM RYBACTWA SPOLKA ZOO	PL
26	Sagremarisco-Viveiros de Marisco Lda	PT

ClimeFish

Co-creating a decision support framework to ensure sustainable fish production in Europe under climate change

HORIZON 2020

At a glance

Acronym: ClimeFish

Title: Co-creating a decision support framework to ensure sustainable fish production in Europe under climate change

Call: H2020-BG-2015-2

Topic: BG-02-2015

Instrument: Research and Innovation action

Start date: 01/04/2016

End date: 31/03/2020

Duration: 48 months

Total Cost: € 5,195,216.25

EC Contribution: € 5,000,000.00

Consortium: 21 partners

Project Coordinator: UNIVERSITETET I TROMSOE, NO

Abstract

The overall goal of ClimeFish is to help ensure that the increase in seafood production comes in areas and for species where there is a potential for sustainable growth, given the expected developments in climate, thus contributing to robust employment and sustainable development of rural and coastal communities. The underlying biological models are based on single species distribution and production, as well as multispecies interactions. Forecasting models will provide production scenarios that will serve as input to socio-economic analysis where risks and opportunities are identified, and early warning methodologies are developed. Strategies to mitigate risk and utilize opportunities will be identified in co-creation with stakeholders, and will serve to strengthen the scientific advice, to improve long term production planning and the policy making process. ClimeFish will address 3 production sectors through 16 case studies involving 25 species, and study the predicted effects of 3 pre-defined climate scenarios. For 7 of these cases ClimeFish will develop specific management plans (MPs) coherent with the ecosystem approach and based on a results-based scheme that will allow regulators, fishers and aquaculture operators to anticipate, prepare and adapt to climate change while minimizing economic losses and social consequences. A guideline for how to make climate-enabled MPs will be produced, and published as a low-level, voluntary European standard after a consensus-based open consultation process. As a container for the models, scenarios and MPs ClimeFish will develop the ClimeFish Decision Support Framework (DSF) which also contains the ClimeFish Decision Support System (DSS); a software application with capabilities for what-if analysis and visualization of scenarios. The presence of key international stakeholders in the project will ensure quality and relevance of the project outputs thus ensuring uptake and significant impact also after project and other technologies.



ClimeFish

Co-creating a decision support framework to ensure sustainable fish production in Europe under climate change

Project's Partners List

Project's partners	Name	Country
1	UNIVERSITETET I TROMSOE	NO
2	Memorial University of Newfoundland	CA
3	AVS CHILE SOCIEDAD ANONIMA	CL
4	Biologické centrum AV ČR, v. v. i.	CZ
5	INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA	DK
6	SP/F SYNTESA	FO
7	Fédération Européenne des Producteurs Aquacoles	FR
8	BRANDENBURGISCHE TECHNISCHE UNIVERSITÄT COTTBUS-SENFTENBERG	DE
9	HELLENIC CENTRE FOR MARINE RESEARCH	EL
10	NEMZETI AGRARKUTATASI ES INNOVACIOSKOZPONT	HU
11	MATIS OHF	IS
12	FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS FAO	IT
13	UNIVERSITA CA' FOSCARI VENEZIA	IT
14	HAVFORSKNINGSINSTITUTTET	NO
15	NOFIMA AS	NO
16	CENTRO TECNOLOGICO DEL MAR - FUNDACION CETMAR	ES
17	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES
18	STOCKHOLMS UNIVERSITET	SE
19	THE UNIVERSITY COURT OF THE UNIVERSITY OF ABERDEEN	UK
20	THE UNIVERSITY OF STIRLING	UK
21	TRUONG DAI HOC NHA TRANG	VN





Call for supporting SMEs efforts for the development - deployment and market replication of innovative solutions for blue growth

HORIZON 2020 dedicated SME instrument

The potential of Europe's Oceans, seas and coasts is significant for job and growth creation if the appropriate investments in research and innovation are made. SMEs contribution to the development of the 'Blue Growth Strategy' (COM (2012) 494) can be significant in particular in the fields of marine biotechnology (related applications, key tools and technologies) as well as aquaculture related marine technologies and services. However, SMEs lack access to finance to develop their activities and the economic and financial crisis has made access to finance even more difficult. This is particularly true in the previously mentioned maritime sectors, where access to finance for SMEs is considered as one of the most important barriers for the development of innovative maritime economic activities⁵.

The SME instrument consists of three separate phases and a coaching and mentoring service for beneficiaries. Participants can apply to phase 1 with a view to applying to phase 2 at a later date, or directly to phase 2.

In phase 1, a feasibility study shall be developed verifying the technological/practical as well as economic viability of an innovation idea/concept with considerable novelty to the industry sector in which it is presented (new products, processes, design, services and technologies or new market applications of existing technologies). Bottlenecks in the ability to increase profitability of the enterprise through innovation shall be detected and analysed during phase 1 and addressed during phase 2 to increase the return in investment in innovation activities. The proposal should contain an initial business plan based on the proposed idea/concept. Funding will be provided in the form of a lump sum of EUR 50,000. Projects should last around 6 months.

In phase 2, innovation projects will be supported that address the specific challenge of Blue Growth and that demonstrate high potential in terms of company competitiveness and growth underpinned by a strategic business plan. Activities should focus on innovation activities such as demonstration, testing, prototyping, piloting, scaling-up, miniaturisation, design, market replication and the like aiming to bring an innovation idea (product, process, service etc.) to industrial readiness and maturity for market introduction, but may also include some research. Proposals shall contain a specification for the outcome of the project, including a first commercialisation plan, and criteria for success. The Commission considers that proposals requesting a contribution from the EU of between EUR 0.5 and 2.5 million would allow phase 2 to be addressed appropriately. Projects should last between 12 and 24 months.

⁵ Blue Growth Study - Scenarios and drivers for Sustainable Growth from the Oceans, Seas and Coasts – Ecorys, 2012



In addition, in phase 3, SMEs can benefit from indirect support measures and services as well as access to the financial facilities supported under Access to Risk Finance of this work programme.

The expected impacts for this type of calls are the following:

- Enhancing profitability and growth performance of SMEs by combining and transferring new and existing knowledge into innovative, disruptive and competitive solutions seizing European and global business opportunities.
- Market uptake and distribution of innovations tackling the specific challenge of Blue Growth in a sustainable way.
- Increase of private investment in innovation, notably leverage of private co-investor and/or follow-up investments.
- The expected impact should be clearly described in qualitative and quantitative terms (e.g. on turnover, employment, market seize, IP management, sales, return on investment and profit).



HORIZON 2020

At a glance

Acronym: ClearSalmonLice

Title: ClearSalmonLice

Call: H2020-SMEINST-1-2015

Topic: SFS-08-2015-1

Instrument: SME Instrument Phase 1

Start date: 01/02/2016

End date: 31/07/2016

Duration: 6 months

Total Cost: € 71,429.00

EC Contribution: € 50,000.00

Project Beneficiary: SPF FRAMA, FO

ClearSalmonLice

ClearSalmonLice

Abstract

Frama is seeking phase 1 funding in order to assess the commercial feasibility of ClearSalmonLice - a new sustainable solution to combat the dreaded Sealice and Salmon lice. ClearSalmonLice is aiming to offer a sustainable, cost-efficient and highly scalable solution to meet producers' demand for combatting lice in aquaculture production of Atlantic salmon. At present, producers lose 9 per cent every year to lice, equivalent to an annual loss of € 400 mill. At the same time, producers spend more than € 300 mill.

To combat sea and salmon lice by using chemical and biological remedies with very severe consequences for nature in coastal zones, especially shell fish such as lobster and shrimps. Frama provides a natural solution without use of chemical and biological remedies. By utilising physical features of mass and density the salmon is guided through a low cost floating device containing fresh water in which lice cannot live. A patent application of our prototype has already been filed. The feasibility study is intended to assess the commercial viability and marketability of the prototype system. In particular, client feedback to optimize the solution and establish key operational parameters, verifying the appropriate business model and searching potential partners. If the study is positive, a Phase 2 application will be considered to take the project into scale.



EASY

ECO-INNOVATE-AQUACULTURE-SYSTEM

HORIZON 2020

At a glance

Acronym: EASY

Title: ECO-INNOVATE-AQUACULTURE-SYSTEM

Call: H2020-SMEINST-1-2015

Topic: SFS-08-2015-1

Instrument: SME Instrument Phase 1

Start date: 01/07/2015

End date: 30/11/2015

Duration: 5 months

Total Cost: € 71,429.00

EC Contribution: € 50,000.00

Project Beneficiary: JARDINERIA Y VIVEROS
LA NORIA SL, ES

Abstract

The EASY Project has as its main objective the establishment of a technology that reflects the strategic guidelines for sustainable and profitable development of aquaculture in the EU. In order to follow these guidelines, this project has developed an innovative focused on the development of organic aquaculture feed formula. This formula completely excludes fishmeal and fish oil in its composition, and makes up to 50% cheaper production costs in our product (Tilapia fresh), allowing us to provide the end user, a product with high quality, traceability and profitability. Although Global aquaculture production is increasing, particularly Asian production, European production is stagnated. In EU Countries there is a strong trend in healthier and higher quality fish consumption, furthermore, consumer are requesting fast and comfortable food products without compromising its quality and safety. Obtaining raw material (spirulina and quinoa) inside of our facilities for the production of feed, along with the use of new technologies in the field of aquaponic, is undoubtedly the main key to the viability (feasibility) of EASY Project. The opportunity that this tool SME (Horizon 2020) offers drives the growth of the European inland aquaculture, create new jobs and position us as a world-leader in sustainable aquaculture. Analyzed by University of Murcia the results describe our fish as a very high quality due to the organoleptic properties, and perfectly suitable for the new market challenges. In Phase I our principal aim is to conduct a feasibility study including a business plan and market research with our partners regarding commercialization of the products, specially V range products (new formats), taking advantage over our Asian competitors, thus, becoming a leader in this growing market.

Fishtimator

Continual Acoustic Based Multifunctional Cage Mounted Fish estimator Deigned To Reduce Feed Waste, Fish Mortality, and Predator and Fish Escape Control

At a glance

Acronym: Fishtimator

Title: Continual Acoustic Based Multifunctional Cage Mounted Fish estimator Deigned To Reduce Feed Waste, Fish Mortality, and Predator and Fish Escape Control

Call: H2020-SMEINST-1-2015

Topic: BG-12-2015-1

Instrument: SME Instrument Phase 1

Start date: 01/07/2015

End date: 31/12/2015

Duration: 6 months

Total Cost: € 71,429.00

EC Contribution: € 50,000.00

Project Beneficiary: OTAQ LIMITED, UK

Abstract

The growing demand for sea food has resulted in the depletion of natural fisheries and it is estimated that 62% of the sea food will come from aquaculture farms by 2030. The profitable operation of aquaculture farms is being hindered by unbalanced and unpredictable fish feed amount, unreliable biomass estimation, fish escape and fish mortality. Fish feed alone represents 50% of the total operating costs of the fish pans and cages. Permanent and accurate estimation of fish size and weight is of significant importance in the fish farming industry for the provision of key data with which feeding, grading and harvesting operations are controlled. Ocean Tools Aquaculture (OTAQ) is an industry leader in providing predator control and acoustic technologies for the aquaculture industry. Our solution is to develop an acoustic based permanent in-cage biomass estimator system (FISHSTIMATOR) that will deal with the problems being faced by aquatic fish farmers. The solution is intended to reduce fish feed waste by 3-5% by giving recommended amount of feed that matches the number of fish and their growth rate. Fish mortality and escape due to predators, anomalies in the cage structure and thieves will be eliminated by close monitoring of the cage environment. FISHSTIMATOR will be sold to farmers at €26'000 per cage and leased for €13'000 per cage. With this pricing model we envisage to clinch to 16% of the global aquaculture monitoring market which is estimated to reach €5.24 billion at a compound annual growth rate of 5.24% by 2020 (3% of €175billion - global aquaculture market) and increase our revenue from €2.5M to €84M by 2022. In Phase 1 we will validate FISHSTIMATOR prototype, develop Intellectual Property strategy, and carry out a market study, search and recruit partner and draft a business plan in a period of 6 months. In Phase 2, we will finalise the design and operability of FISHSTIMATOR allowing us to match the requirements of the targeted customers.

NEMAQUA

Nematodes as the world first pathogen free, ready-to-use and sustainable live feed for larval aquaculture industry

At a glance

Acronym: NEMAQUA

Title: Nematodes as the world first pathogen free, ready-to-use and sustainable live feed for larval aquaculture industry

Call: H2020-SMEINST-1-2015

Topic: BG-12-2015-1

Instrument: SME Instrument Phase 1

Start date: 01/10/2015

End date: 31/03/2016

Duration: 6 months

Total Cost: € 71,429.00

EC Contribution: € 50,000.00

Project Beneficiary: E-NEMA GESELLSCHAFT
FUER BIOTECHNOLOGIE UND
BIOLOGISCHEN PFLANZENSCHUTZ mbH, DE

Abstract

The project addresses the global need for a reliable mass production of a pathogen free live feed for the larval aquaculture industry. The new ready-to-use solution will be produced sustainably to supplement or replace Artemia, the most important current live feed. Mainly produced in USA, the only existing storage stable live feed, Artemia, is limited in supply, threatening future growth of the aquaculture industry. Hatcheries are eagerly looking for new ready-to-use and pathogen free solutions as all live feeds are potential carriers or vectors for diseases causing severe losses per year. E-nema has produced and successfully tested nematodes as live feed. This new protein feed, made in Europe, is produced in bioreactors using cost effective and readily available feedstock from land bound agriculture. Contrary to state of the art solutions no fish oil or fishmeal is required to enhance the feed to proper nutritional value. The storage stable new European live feed is ready-to-use within 1-hour rehydration in water, requiring minimal labour and facility. Existing live feeds are complicated to use, requiring treatment with chemicals, incubation periods and dedicated equipment. This consumes space, energy, skilled labour and produces waste. Manufactured under sterile conditions, the new feed eliminates the need for prophylactic or curative use of antibiotics in hatcheries. Hatcheries provide aquaculture farms with fingerlings that are then grown to market size in tanks, ponds or open water installations. Aquaculture is the fastest growing food production sector, requiring reliable feed sources to sustain this growth. A strong potential for sales into aquaculture of current and high-value emerging European aquatic species has been identified. Next step is to choose and verify methods for technical upscale as well as building an in depth researched business case. A high level investigation has so far found the project financially viable.

SILGEN

Sustainable farming of European catfish (*Silurus glanis*) for innovative, resource efficient and eco-friendly pond farm production

At a glance

Acronym: SILGEN

Title: Sustainable farming of European catfish (*Silurus glanis*) for innovative, resource efficient and eco-friendly pond farm production

Call: H2020-SMEINST-1-2015

Topic: SFS-08-2015-1

Instrument: SME Instrument Phase 1

Start date: 01/02/2016

End date: 31/05/2016

Duration: 4 months

Total Cost: € 71,429.00

EC Contribution: € 50,000.00

Project Beneficiary: ARANYPONTY HALASZATI ZRT, HU

Abstract

Today over 70% of world fish stocks are fully exploited or are already overfished. It is a trend since 1990s that capture fisheries production is stagnating, while aquaculture production is expanding. A European citizen consumes 17.56 kg seafood and freshwater products of untraceable origin yearly in the EU, while 57% of the total consumption is imported mainly from China and Southeast-Asia. There is a growing demand for fish products which can only be filled by aquaculture products while health and environmental concerns are raised due to aquaculture products originating from heavily contaminated geographical areas containing mercury, PCBs and other harmful substances. Sustainable aquaculture - fish farming - is needed to provide fresh, high-quality, local supply of healthy products which follows strict rules to protect the consumer, the fish and the environment. Fresh water fish comes in second after seafood products; however in the landlocked countries of Europe (Hungary, Czech Republic, Slovakia, etc.) freshwater fish consumption is traditional and provides a stable market which will stay so until 2030 according to recent statistics. Although common carp, as the traditional product of Central and Eastern European fish farmers, has a stagnating market with very low potential for growth. Our company, Aranypony Halászati Zrt. is one of the biggest freshwater producers in Central Europe and we are one of the first private companies in operation since 1989. We have full-scale fish farm system of over 1500 hectares at Retimajor, operating a high standard fish hatchery and a number of wintering ponds. Our quality assurance system grants high-quality, local product traceable from egg to plate.



At a glance

Acronym: SubCage

Title: Submersible Tension Leg Fish Cage for Mariculture in Unsheltered and Offshore Areas

Call: H2020-SMEINST-1-2015

Topic: BG-12-2015-1

Instrument: SME Instrument Phase 1

Start date: 01/12/2015

End date: 31/05/2016

Duration: 6 months

Total Cost: € 71,429.00

EC Contribution: € 50,000.00


Project Beneficiary: REFA MED SRL, IT

SubCage

Submersible Tension Leg Fish Cage for Mariculture in Unsheltered and Offshore Areas

Abstract

Aquaculture has done reasonably well to supplement the expanding consumption of fish and seafood in the EU but has still been unable to have the desired impact because of the high set up, operating and maintenance costs; lack of space along the coastal shores; pollution and threats of diseases and eutrophication. Hence, we developed SubCage – a working proof of concept prototype to TRL 6 which is based on a patented Tension Leg Cage (TLC) technology capable of submerging fish cages to depths of up to 55 m at a controlled velocity based on the principle of wave dispersion. This prototype is a 12 m diameter fully submersible fish cage, which has been tested for 2 years in Crete using red porgy. This was successfully demonstrated as there were no issues during the operation and thus confirmed that SubCage satisfies all customer needs, such as: cost benefit solution for fish farming in unsheltered area; increase of fish quality; improvement of fish health and mortality rate. Despite the risk surrounding aquaculture in the unsheltered regions due to its environment; we proved that, by using SubCage, expanding production capabilities in such areas is feasible, commercially beneficial to farmers and can increase the value of the fish species. With the help of the SME instrument in scaling up our prototype to a 30-55 m diameter commercially acceptable fish cage, we would expect to contribute to an increase in fish price of up to 20% and additional increase in yield of up to 2% in comparison with surface cages. In comparison with competitor technologies, our prices will be several times lower by 30-40% as well as an estimated ROI being achievable in approximately 3 years. Within 5 years, we can humbly anticipate to enhance the production capacity of the EU by 2%. This translates to Refa Med Srl. deploying 402 SubCage units in the EU within 5 years, generating a revenue stream of over €80 million and helping create between 300 and 400 product-related full-time jobs.



HORIZON 2020

At a glance

Acronym: CryoPlankton2

Title: Cryopreservation of marine planktonic crustacean nauplii for innovative and cost-effective live feed diet in fish juvenile aquaculture

Call: H2020-SMEINST-2-2015

Topic: BG-12-2015

Instrument: SME Instrument Phase 2

Start date: 01/02/2016

End date: 30/04/2018

Duration: 27 months

Total Cost: € 2,004,250.00

EC Contribution: € 1,402,975.00

Project Beneficiary: PLANKTONIC AS, NO

CryoPlankton2

Cryopreservation of marine planktonic crustacean nauplii for innovative and cost-effective live feed diet in fish juvenile aquaculture

Abstract

The SME Planktonic has succeeded in cryopreserving marine crustacean nauplii (hereafter called CryoProduct) in large user-friendly entities, and to revive them as live individuals after thawing. The ease-of-use CryoProduct meets the nutritional requirements of fish larvae. A doubling in growth rate and a 25-30% shortening of the live feed period compared to a diet of the suboptimal live feed diets commonly used at marine hatcheries have been demonstrated (large-scale industrial trial, TRL6). With a well-functioning feeding protocol to be developed in the project period, it is expected that performances of the fish larvae will be even better. It will be put effort on optimizing the cryopreservation protocols to achieve a CryoProduct with even better quality than today for improving the performances of fish juveniles. A bio-security evaluation will be performed, and a screening of microorganisms will be needed for the registration of the CryoProduct. To successfully launch the CryoProduct into the EU market, it will be of major importance to scale up the production, to establish efficient logistic systems, identify end-users needs and to provide a reliable commercialisation plan for the best possible market introduction. As the CryoProduct has outstanding performances compared to today's alternatives, we expect a market share of 50% of the live feed market on a longer term. This corresponds to a revenue of more than 100 million €. As the market grows 3-4% per year, the market size will double in about 20 years. It is a considerable aquaculture production in the EU. If the products meet the expectations, it will most probably be a major contribution to realize the production potential of marine fish in aquaculture in the EU. This will result in many thousand new jobs, and primarily in the Mediterranean region. The business innovation project fits well to the business strategy of Planktonic, and to the Horizon2020 SME-2 programme under the topic BG-12-2015.



At a glance

Acronym: ELOXIRAS

Title: Electrochemical Oxidation in the Recirculating Aquaculture Systems Industry

Call: H2020-SMEINST-2-2015

Topic: SFS-08-2015

Instrument: SME Instrument Phase 2

Start date: 01/12/2015

End date: 30/11/2017

Duration: 24 months

Total Cost: € 2,033,154.78

EC Contribution: € 1,423,208.33

Consortium: 3 partners

Project Coordinator: APRIA SYSTEMS S.L., ES

Beneficiaries:

Magneto Special Anodes BV, NL;

RODECAN SL, ES

ELOXIRAS

Electrochemical Oxidation in the Recirculating Aquaculture Systems Industry

Abstract

Recirculating aquaculture systems (RAS) operate by filtering and removing water pollutants from the fish tanks so it can be reused. Since its introduction, RAS production has increased in volume and species with a CAGR of 14%/year, and has a worldwide market estimated in €6.4 billion. Marine RAS is expensive to purchase and operate, and requires high biomass culture density (kg/m³) that implies fast accumulation of toxic metabolized compounds in low water volume, implying significant volumes of fresh water. Thus, RAS end-users need cost-efficient technologies that can work in these conditions. Market available solutions are mainly bio-filtration and ozone treatments, and cannot work under these challenging conditions, showing efficacy fluctuations and start-up periods that increase the production stages and their costs. That scenario has encouraged APRIA SYSTEMS, a SME with more than 9 years of experience in water treatment process, to develop ELOXIRAS. Its first prototype is based on new advanced electrochemical oxidation technology, allowing to increase production (30%), reduce fresh water consumption (20%), and increase the efficacy on removing pollutants (>90%). It can be adjusted to different RAS facilities (modular & versatile), and is easy to operate without efficacy fluctuations and start-up periods, then can be also used on logistics operations to guarantee best fish transport conditions and efficiencies. ELOXIRAS will be upgraded by APRIA supported by key technology partners as MAGNETO SPECIAL ANODES (reactor specialist) and 2 RAS end-users: RODECAN and TIMAMENOR (industrial validation tests). This approach will allow APRIA to commit on achieving a RAS EU market share of 7% for 3 marine species (seabream, seabass, turbot) primary over key RAS EU countries (Spain, France, UK, Italy, Denmark, The Netherlands). That conservative market share will permit a total ELOXIRAS sales of 1385 modules in the first 5 years of commercialisation.



HORIZON 2020

At a glance

Acronym: OCEANFISH

Title: Open Ocean Fish farms

Call: H2020-SMEINST-2-2015

Topic: BG-12-2015

Instrument: SME Instrument Phase 2

Start date: 01/08/2015

End date: 31/07/2017

Duration: 24 months

Total Cost: € 3,354,000.00

EC Contribution: € 2,347,800.00

Project Beneficiary: GILLI OCEAN TECHNOLOGY LTD, IL

OCEANFISH

Open Ocean Fish farms

Abstract

Gili Ocean Technologies aims to become the leading off-shore (Open Ocean) aquaculture company. This will be achieved through the operation of fish farms as well as through the delivery of turn-key projects for other fish farmers based on our extensive off-shore fish farming expertise and advanced technologies. Aquaculture is rapidly growing. The FAO estimates that aquaculture will grow to over 62% of the worldwide supply of fish protein by 2030. However, the currently near-shore aquaculture faces significant problems e.g. relatively slow growth rate for the fish, high death rates, low stocking densities in the cages and intensive use of antibiotics in order to fight diseases. In addition, significant pollution in the coastal areas is very common as there is hardly any dispersing of organic matter in the ocean. This impacts the local ecology as well as the industry itself. OCEANFISH aims to finalize the development and start the commercialisation of the various technologies necessary to transform Gili's existing Subflex Classic systems to advanced and sophisticated open ocean systems improving growth rates, reducing ecological impact and providing the aquaculture industry with the tools necessary to meet the market demands. This is a significant market opportunity. To capture this opportunity, the OCEANFISH project aims to 1) increase the cost-efficiency of the Subflex aquaculture platform, 2) enable real off-shore farming, 3) enable growth of additional fish species and 4) commercialize the technology. The OCEANFISH system is a flexible submerged system of cages. The original technology was developed with the Technion, Israel's leading technological university. OCEANFISH is an excellent example of how humans can take better advantage of oceans in a highly sustainable manner and at the same time solve significant ecological challenges.

HORIZON 2020

At a glance

Acronym: SELAM

Title: Large-scale piloting and market maturation of a novel process for sustainable European lobster aqua- and mariculture

Call: H2020-SMEINST-2-2015

Topic: BG-12-2015

Instrument: SME Instrument Phase 2

Start date: 01/10/2015

End date: 30/09/2017

Duration: 24 months

Total Cost: € 1,673,283.75

EC Contribution: € 1,171,298.63

Project Beneficiary: NORSK HUMMER DRIFT AS, NO

Large-scale piloting and market maturation of a novel process for sustainable European lobster aqua- and mariculture

Abstract

The objective of SELAM is to commercialise and bring to market our exclusive and high-quality EU lobsters based on our disruptive and fully automated production process for lobster aqua and mariculture. The fully automated SELAM process is combining land-based aquaculture of hatched eggs through the larval (1-3) and juvenile (4-5) stages before released into sea-ranching ocean mariculture, where growth happens without human interference and at no cost. Combined with our novel business model for shellfish sea ranching this will allow us to bring a new product to the market – sustainable and high-quality farmed EU lobster with significant added value for the customer compared to existing wild-caught alternatives. The SELAM concept was developed during our Phase I-type Feasibility Study - the FP7 NEPHROPS project, GA286903 - where the outcome was a novel production process with optimal production parameters (feed, light, temperature & water quality) at TRL7. Now we seek to develop our Commercialisation Plan and final Business Innovation Plan (BIP). We have assembled a highly competent team holding all required resources, skills, facilities and networks to advance SELAM into a successful commercial product. To successfully introduce SELAM to the market, we have created 5 sequential and quantifiable Commercialisation Objectives focusing on overcoming remaining barriers hampering successful commercialisation: 1. Technology maturation, elevating our SELAM process from TRL7 to TRL8 (WP1) 2. Large scale piloting bringing SELAM to TRL9 (WP2) 3. Supply chain development, up- and downstream (WP3) 4. Product exploitation strategy development, market research and post-project funding (WP4) 5. Innovation management and BIP development, IP management and stakeholder engagement (WP5) SELAM will significantly boost our growth - quantified as accumulated revenues exceeding €151m for the 10-years post project with accumulated gross profit €94.9m and employment growth of 52 FTEs.



Call for Sustainable Food Security⁶

H2020-SFS-2015

Ensuring the availability of and access to sufficient safe and nutritious food is a key priority that impacts all EU citizens and needs to be ensured today and in the future. At the same time the production and processing of food is a key economic activity providing jobs, skills and training, attracting investments, supporting rural and urban economies and also shaping landscapes. Given the economic scale of the food sector, the potential gains from research and innovation, and the structure of the sector with a strong participation of SMEs, this focus area will develop competitive and resource-efficient aquatic and terrestrial food production systems covering: eco-intensification of production (i.e. without worsening environmental conditions); sustainable management of natural resources, including the accurate valuation of ecosystems services, while addressing climate change mitigation and adaptation; technologies for a sustainable food chain; safe foods and healthy diets for all; and a global food security system. Enabling technologies and space-enabled applications, adequately set in a societal context, will be an important element in achieving these goals. Overall, research and innovation actions within the Societal Challenge 2 (Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy) of Horizon 2020 will cover the whole food chain, including both the supply and demand sides.

The following section of this brochure, aims to present 2 projects selected from the 2015 call for Sustainable Food Security, that focus on the aquaculture and fisheries sectors. WP 2015 concentrates its efforts on key priorities for the EU to ensure that the critical mass needed to tackle the different sub-challenges is attained, while focusing on the main policy needs.

In particular, to progress towards sustainable food production systems, priority will be given in 2015 to tackle disease related challenges and threats faced by European farmed aquatic animals and to the implementation of an Ecosystem-based approach for European aquaculture, consolidating its environmental sustainability.

⁶ The World Summit on Food Security in 2009 defined food security as existing 'when all people at all times have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life'.



TAPAS

Tools for Assessment and Planning of Aquaculture Sustainability

Abstract

Aquaculture is one of five sectors in the EU's Blue Growth Strategy, aimed at harnessing untapped potential for food production and jobs whilst focusing on environmental sustainability. TAPAS addresses this challenge by supporting member states to establish a coherent and efficient regulatory framework aimed at sustainable growth. TAPAS will use a requirements analysis to evaluate existing regulatory and licensing frameworks across the EU, taking account of the range of production environments and specificities and emerging approaches such as offshore technologies, integrated multi-trophic aquaculture, and integration with other sectors. We will propose new, flexible approaches to open methods of coordination, working to unified, common standards. TAPAS will also evaluate existing tools for economic assessment of aquaculture sustainability affecting sectorial growth. TAPAS will critically evaluate the capabilities and verification level of existing ecosystem planning tools and will develop new approaches for evaluation of carrying capacities, environmental impact and future risk. TAPAS will improve existing and develop new models for far- and near-field environmental assessment providing better monitoring, observation, forecasting and early warning technologies. The innovative methodologies and components emerging from TAPAS will be integrated in an Aquaculture Sustainability Toolbox complemented by a decision support system to support the development and implementation of coastal and marine spatial planning enabling less costly, more transparent and more efficient licensing. TAPAS partners will collaborate with key industry regulators and certifiers through case studies to ensure the acceptability and utility of project approach and outcomes. Training, dissemination and outreach activities will specifically target improvement of the image of European aquaculture and uptake of outputs by regulators, while promoting an integrated sustainable strategy for development.

HORIZON 2020

At a glance

Acronym: TAPAS

Title: Tools for Assessment and Planning of Aquaculture Sustainability

Call: H2020-SFS-2015-2

Topic: SFS-11b-2015

Instrument: Research and innovation action

Start date: 01/03/2016

End date: 29/02/2020

Duration: 48 months

Total Cost: € 6,918,512.50

EC Contribution: € 6,918,512.50

Consortium: 15 partners

Project Coordinator: THE UNIVERSITY OF STIRLING, UK



Project's Partners List

TAPAS

Tools for Assessment and Planning of Aquaculture Sustainability

Project's partners	Name	Country
1	THE UNIVERSITY OF STIRLING	UK
2	NORSK INSTITUTT FOR VANNFORSKNING	NO
3	DHI	DK
4	WATER INSIGHT BV	NL
5	STICHTING DIENST LANDBOUWKUNDIG ONDERZOEK	NL
6	PLYMOUTH MARINE LABORATORY	UK
7	UNIVERSIDAD DE MURCIA	ES
8	UNIVERSITE DE NANTES	FR
9	HELLENIC CENTRE FOR MARINE RESEARCH	EL
10	SZENT ISTVAN UNIVERSITY	HU
11	AQUABIOTECH LIMITED	MT
12	MARINE INSTITUTE	IE
13	KOZEP ES KELET EUROPAI AKVAKULTURAKOZPONTOK EGYESULET	HU
14	AQUACULTURE STEWARDSHIP COUNCIL	UK
15	FUNDACION IMDEA AGUA	ES



At a glance

Acronym: VIVALDI

Title: Preventing and mitigating farmed bivalve diseases

Call: H2020-SFS-2015-2

Topic: SFS-10b-2015

Instrument: Research and innovation action

Start date: 01/03/2016

End date: 29/02/2020

Duration: 48 months

Total Cost: € 5,414,417.50

EC Contribution: € 4,503,082.50

Consortium: 21 partners

Project Coordinator: INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER, FR

VIVALDI

Preventing and mitigating farmed bivalve diseases

Abstract

The overarching goal of VIVALDI is to increase the sustainability and competitiveness of the European shellfish industry by improving the understanding of bivalve diseases and by developing innovative solutions and tools for the prevention, control and mitigation of the major pathogens affecting the main European farmed shellfish species: Pacific oyster (*Crassostrea gigas*), mussels (*Mytilus edulis* and *M. galloprovincialis*), European flat oyster (*Ostrea edulis*), clams (*Venerupis philipinarum*) and scallops (*Pecten maximus*). The project addresses the most harmful pathogens affecting either one or more of these shellfish species: the virus OsHV-1, *Vibrio* species including *V. aestuarianus*, *V. splendidus*, *V. harveyi* and *V. tapetis*, as well as the parasite *Bonamia ostreae*. The project is committed to provide practical solutions based on the most advanced knowledge. VIVALDI will dissect the disease mechanisms associated with pathogen virulence and pathogenesis and host immune responses, develop *in vivo* and *in vitro* models, and apply “omic” approaches that will help the development of diagnostic tools and drugs against pathogen targets, and breeding programmes in a collaborative effort with industrial partners. The proposal will include a global shellfish health approach, recognising that cultured bivalves are often exposed to several pathogens simultaneously, and that disease outbreaks can be due to the combined effect of two or more pathogens. The proposal will also investigate advantages and risks of the use of disease-resistant selected animals in order to improve consumer confidence and safety. VIVALDI will be both multi- and trans-disciplinary. In order to cover both basic and applied levels from molecules to farm, the proposal will integrate partners with a broad range of complementary expertises in pathology and animal health, epidemiology, immunology, molecular biology, genetics, genomics and food safety.



Project's Partners List

VIVALDI

Preventing and mitigating farmed bivalve diseases

Project's partners	Name	Country
1	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	FR
2	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	FR
3	SYNDICAT DES SELECTIONNEURS AVICOLES ET AQUACOLES FRANCAIS	FR
4	LABOGENA DNA	FR
5	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES
6	INSTITUT DE RECERCA I TECNOLOGIA AGROALIMENTARIES	ES
7	UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK	IE
8	MARINE INSTITUTE	IE
9	NATIONAL UNIVERSITY OF IRELAND, GALWAY	IE
10	ATLANTIUM TECHNOLOGIES LTD	IL
11	UNIVERSITA DEGLI STUDI DI GENOVA	IT
12	UNIVERSITA DEGLI STUDI DI PADOVA	IT
13	UNIVERSITA DEGLI STUDI DI TRIESTE	IT
14	NOFIMA AS	NO
15	HAVFORSKNINGSINSTITUTTET	NO
16	STICHTING DIENST LANDBOUWKUNDIG ONDERZOEK	NL
17	THE SECRETARY OF STATE FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS	UK
18	THE QUEEN'S UNIVERSITY OF BELFAST	UK
19	ALFRED-WEGENER-INSTITUT HELMHOLTZ- ZENTRUM FUER POLAR- UND MEERESFORSCHUNG	DE
20	DANMARKS TEKNISKE UNIVERSITET	DK
21	THE UNIVERSITY OF LIVERPOOL	UK



EUROPEAN COMMISSION

Director-General for Research and Innovation
Directorate F – Bioeconomy
Unit F.4 – Marine Resources

European Commission
Building COV2 - 9th floor
B-1049 Brussels

Contact Person: Paola Reale
E-mail: paola.REALE@ec.europa.eu

Horizon 2020 website: <https://ec.europa.eu/programmes/horizon2020/>

Bioeconomy website: <https://ec.europa.eu/research/bioeconomy>

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HORIZON 2020

