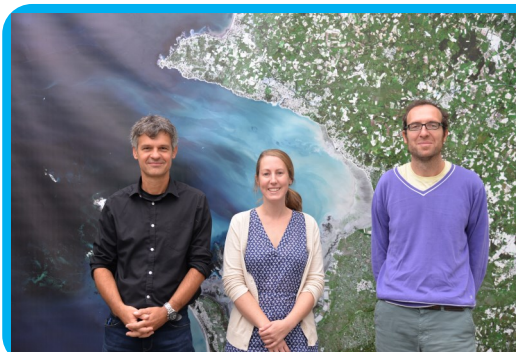


TAPAS SEMINAR AND WORKSHOP IN GALWAY

TAPAS team reunited for a two day seminar in Galway, Ireland on the 22nd and 23rd of August. At the meeting the partners discussed the final model of the TAPAS Smart - Aquaculture Sustainability Toolbox and the results of the Regulatory Requirement survey. The two days seminar, led by Marine Institute and DHI also focused on compiling the project benefits for stakeholders and on the Decision-Making Support Systems in Aquaculture.



The workshop aimed to shine a light on the question of: why has production stagnated? What are the causes of this in the sector that is growing globally, and how do we fix them? Understanding the current bottlenecks and issues is crucial to the development of tools to overcome the identified problems, which enable sustainable and long term growth in the industry. Regulation has been cited as a key bottleneck to growth. It is a crucial and necessary element in production and licensing, but it needs to be workable. A recent review into licensing, regulation and decision making in the aquaculture sector in Ireland, which has also stagnated, was carried out and an Independent Review of the Aquaculture Licensing System was published in June 2017. The main recommendations include a complete root and branch reform of the current licensing system including both short term and long term changes in regulation and legislation.



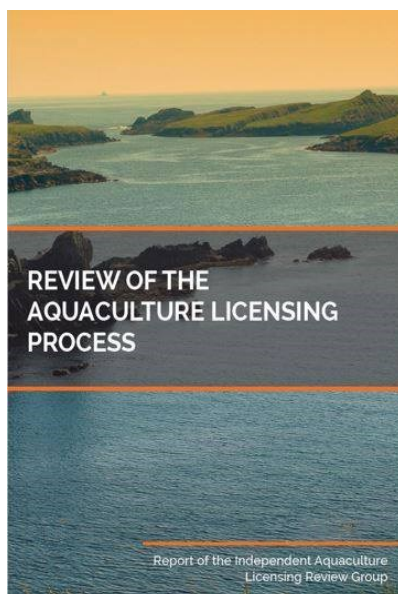
We are delighted to announce that our 2-year postdoctoral position in shellfish ecophysiology and numerical ecology has been filled. We would like to welcome to the TAPAS team Dr. Stephanie Palmer from Canada. Stephanie did her PhD physical geography at the University of Leicester (UK), and as a Marie curie Early Stage Research Fellow in Hungary, she developed algal bloom monitoring program for Lake Balaton. Stephanie also has an expertise in satellite data time-series analysis applied to phenology indicators for phytoplankton. Stephanie will be involved in several work packages within the TAPAS project coupling Earth Observation data with bivalve growth models.

TAPAS IS GAINING POPULARITY



More than 27 thousand visitors attended to AquaNor 2017; 30% more than to the previous event in 2015. The participants came from 71 countries, including Malta, where AquaBioTech Group represented our TAPAS project. TAPAS gained great interest not just from visitors but from exhibitors as well. With such success, we have already started to plan our presentation for AquaNor 2019! This next event will be even more exciting for the TAPAS team, as the project will be approaching its final year in 2020. We can't wait to share our best practices, experiences and experimental results to gain sustainability in European aquaculture. <http://aquaculturedirectory.co.uk/record-breaking-aqua-nor/>

INDEPENDENT REVIEW OF THE AQUACULTURE LICENSING PROCESS IN IRELAND



Current EU policy is urging member states to simplify administrative procedures and national policies in order to sustainably develop the aquaculture industry. The Irish National Strategic Plan for Sustainable Aquaculture Development recommended a "review of the existing aquaculture licensing system". The review group presented its report in May 2017.

As part of the TAPAS project, the Marine Institute have been consulting with fish farmers across the country to try and understand the bottlenecks and sticking points with regulation of aquaculture. <https://t.co/yeOnPtza7d>

AQUACULTURE SUSTAINABILITY TOOLBOX



The innovative methodologies and components emerging from TAPAS will support transparent development and implementation of freshwater, coastal and marine spatial planning. This will enable less costly and more efficient licensing by backing up efficient decision-making in the aquaculture industries as the regulatory bodies granting permissions. The toolbox has two key objectives; to serve as a repository for the models, tools and methods developed in the technical work packages (WP3-WP6) and to provide a flexible TAPAS Decision Support System (TAPAS-smart). TAPAS-smart shall support synthetization and weighting of data emerging from environmental, economic and societal tools/repositories. Applicability of tools from other projects such as AQUA-USERS and AQUASPACE will be considered for inclusion by TAPAS where feasible. Experienced stakeholders will have mandatory involvement in the development and testing of the toolbox to pave the way for post-project implementation and continuity. Often tradition, social acceptance and level of environmental concerns differ between countries and regions: thus, flexibility is needed to ensure the Toolbox is applicable to all areas and aquaculture sub-sectors.



THE USE OF MODELS TO MANAGE AQUACULTURE PRODUCTION IN FRESHWATER LOCH (LAKE) SYSTEMS IN SCOTLAND



The Scottish freshwater loch (lake) case study of the TAPAS project is led by the University of Stirling and aims to investigate the use of models to manage aquaculture production in freshwater loch systems in Scotland. In Scotland there are many freshwater lochs that are used for salmonid aquaculture. Atlantic salmon (*Salmo salar*) is the dominant species farmed in these systems but as Atlantic salmon is a diadromous fish, the freshwater lochs are only used for one stage of the production cycle.

After early stages of development have taken place in a land-based hatchery, cages in freshwater lochs are used for on-growing until the smolts are ready to be transferred to marine cages. Other salmonids that can be produced in freshwater cage systems in these lochs include trout (*Onchorynchus mykiss* and *Salmo trutta*) and Arctic charr (*Salvelinus alpinus*). The loch systems in Scotland can be large, with several different farms operating in the water body, or smaller with a single farm.

This case study will be used to investigate the efficacy and usage of commonly used carrying capacity models for lake systems. In particular, models used to estimate and predict phosphorus loading and the consequences for the environment are being evaluated. Phosphorus is the main limiting nutrient in freshwater systems. A range of different loch systems from simple to complex are being considered as part of this work. The main outcomes of the freshwater loch case study in Scotland are associated with Work Package 5 (Near-field models for regulation and site selection).

The research team will test the appropriateness of models that are currently used for regulatory purpose and evaluate alternative approaches. The modelling approaches can also be included in WP8 (Aquaculture Sustainability Toolbox).

INTRODUCTION OF TAPAS PARTNERS



DHI is an independent research and consultancy organization that builds competence and promotes technological advancement in areas relevant to water, environment, and health. DHI's objective is to help solve the world's toughest challenges in water environments by using global knowledge of water to provide local solutions through a worldwide network of offices and internationally recognized software products. DHI has a total staff of more than 1100, the majority of whom are professional engineers and scientists with post-graduate qualifications - 15% hold a Ph.D. DHI has been authorized as an Approved Technological Service Institute by the Danish Minister of Science, Technology, and Innovation. DHI offers a broad range of consultancy services and reference material as well as software and hardware products and tools. For example, DHI is providing innovative solutions to challenges faced by aquaculture producers and authorities, whether operating in inland waters or at offshore locations.



The Hellenic Centre for Marine Research is a governmental research organization operating under the supervision of the General Secretariat for Research and Technology (GSRT) of the Ministry of Culture, Education and Religious Affairs. HCMR aims to carry out scientific and technological research, and experimental development, dissemination and implementation of produced results, especially in the fields of study and protection of the hydrosphere, its organisms, its interface with the atmosphere, the coast and the sea bottom, the physical, chemical, biological and geological conditions that prevail and regulate. The horizontal missions of HCMR are to conserve the health of the hydrosphere, to promote sustainable exploitation of marine biological and other resources. HCMR also supports the regional development, and provides advice to national, Mediterranean and EU institutional bodies on environmental sustainability and management. HCMR is participating in several WPS-s and also develops a small-sized, IoT-enabled autonomous underwater vehicle for remote monitoring and managing of aquaculture installations.



AQUACULTURE IN TAPAS CASE STUDY COUNTRIES: IRELAND

Aquaculture has been established in Ireland since the mid 1800s. Today, the industry is primarily composed of blue mussel (36% by weight, 52% by value), Atlantic salmon (31% by weight, 34% by value) and oysters (28% by weight, 8% by value).

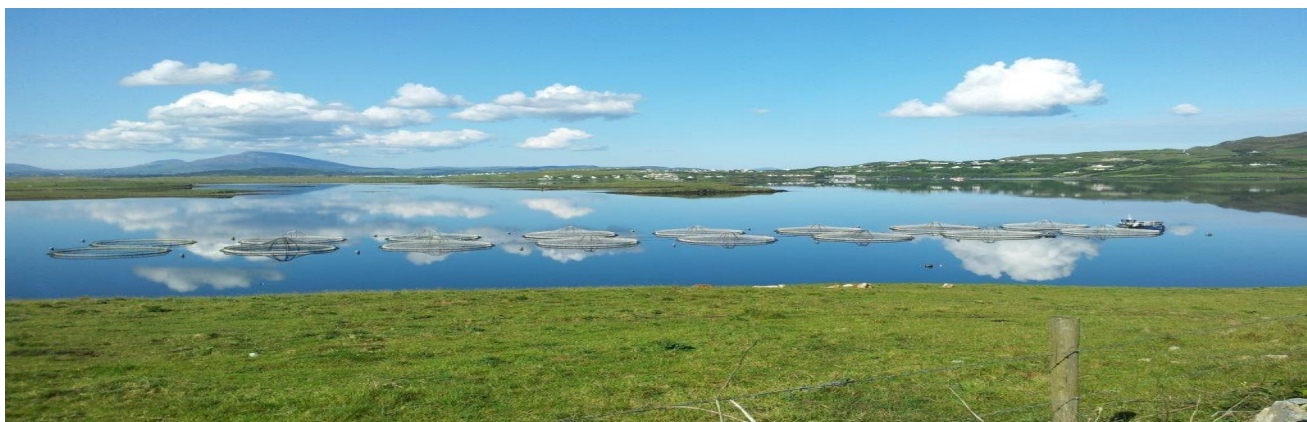


The sector employs a total of 1,950 people (1,030 FTEs). In inland counties there are a small number of freshwater farms and hatcheries, however, employment is predominantly in rural communities in almost all of the coastal counties, with production at its highest on the Atlantic seaboard. Here producers focus on growing high quality, organic products which are distributed worldwide.

Production is slowly rising after a small decrease in 2016, attributed to losses in shellfish sales and delays in the licensing process. The most recent Aquaculture Survey report from, BIM (Bord Iascaigh Mhara/Seafood development agency), showed that aquaculture (fish and shellfish farming) production

increased by 9% in volume to reach 43,900 tonnes and increased in value by 13% to €167 million. The primary driver of this growth is the continued development of the gigas oyster and salmon industries. Production of gigas oysters increased to almost 10,000 tonnes to a value of €41 million, whilst Salmon production reached 16,300 tonnes valued at €105 million in 2016.

Continued increase in production in the aquaculture sector is highlighted in several national and international strategies. Sustainable development in the blue economy remains a primary objective for the country. TAPAS objectives include the creation of tools to focus on this sustainable growth. Through stakeholder analysis, project partners can highlight the bottlenecks and issues currently hindering growth. TAPAS smart aims to forge solutions in line with international development strategies. With fresh steps already being taken to tackle the identified issues in the licensing process, Ireland is set on increasing its current level of total EU production, and TAPAS can support with tools to do so.



Website:
www.tapas-H2020.eu

