

Green Aquaculture Intensification in Europe



The project

Photo by GIFAS, Norway

GAIN is a collaborative project funded by the European Union (EU), designed to support the ecological intensification of aquaculture in the EU and the European Economic Area (EEA), with the dual objectives of increasing production and competitiveness of the industry, while ensuring sustainability and compliance with EU regulations on food safety and environment. Eco-intensification of European aquaculture is a challenge that requires the integration of scientific and technical innovations, new policies and economic instruments, as well as addressing social considerations, in order to promote the implementation of the principles of circular economy in aquaculture.

Objectives

- 1- Develop and optimize sustainable feeds, without increasing the pressure on wild fish stocks and ingredients from land which can be used to ensure food security;
- 2- Add value to cultivation through innovations in both by-products and side-streams, ensuring improved secondary materials, increased profit and minimisation of the environmental footprint;
- 3- Improve the management of aquaculture farms, in terms of feed conversion (FCR), fish welfare and reduction of wastes, by combining sensors, biomarkers, Big Data and predictive mathematical models;
- 4- Support integrated policies and address current barriers to the implementation of the principles of circular economy in aquatic production.

Facts

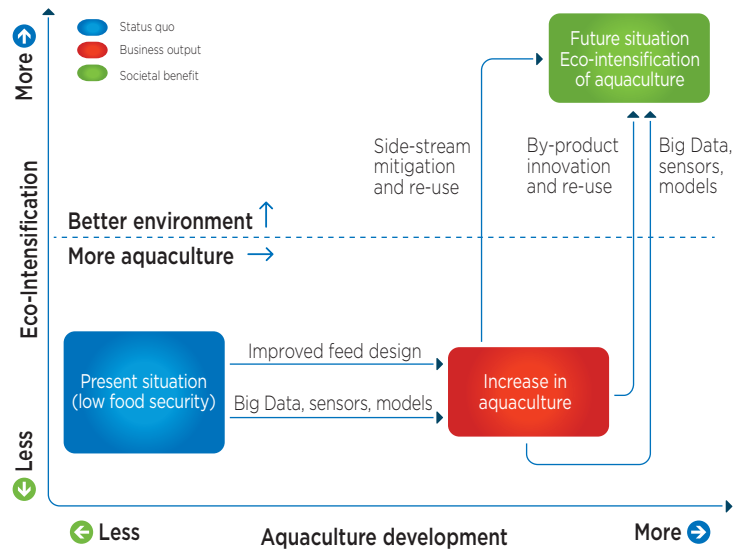
- **PROGRAMME: HORIZON 2020 (Topic SFS-32-2017)**
- **TYPE OF ACTION: RIA (RESEARCH AND INNOVATION ACTION)**
- **GRANT AGREEMENT 773330**
- **DURATION: 42 MONTHS**
- **CONSORTIUM: 20 PARTNERS FROM 11 COUNTRIES**
- **COORDINATOR: CA' FOSCARI UNIVERSITY OF VENICE (UNIVE)**

Approach

GAIN supports aquaculture production and communities by providing cost-effective innovative solutions and technologies based on the principles of circular economy.

GAIN considers the sustainability of the whole production process, starting from the main inputs to aquaculture, and applying a systemic approach through resource accounting methodologies, towards to an ecological intensification, including re-use of aquaculture side-streams by other sectors and of by-products of fish and shellfish processing.

GAIN will strengthen aquaculture sustainability by implementing new and emerging technologies, innovations in monitoring and management systems, and focusing on economic reduction of operational costs related to innovative aquaculture production systems, while enhancing fish health and welfare.



Expected results

- 1- Bring to market new and cost-effective commercial applications, from feeds to by-products and side-streams, and from sensors to biomarkers, big data and predictive mathematical models, in order to assist aquaculture producers;
- 2- Secure EU/EEA markets by increasing the offer of high quality seafood from a continuous supply of European aquaculture products, reducing the dependency of the EU on imports from international markets;
- 3- Improve the sustainability of European aquaculture by optimizing production systems and profitability, and minimizing environmental impact;
- 4- Consolidate eco-efficient aquaculture practices to ensure access to high-value niche markets within the circular economy;

Industry (8 partners)

IBM Ireland Limited (IE)
 Longline Environment Limited (IE)
 SPAROS Lda (PT)
 Salten Havbrukspark AS (NO)
 Multivector AS (NO)
 Gildeskål Forskningsstasjon AS (NO)
 Lebeche Spain SLU (ES)
 Sagremarisco-Viveiros de Marisco Lda (PT)

NGOs (2 partners)

ANFACO - CECOPECA (ES)
 FEM - Fondazione Edmund Mach (IT)

International partner:

National Oceanic and Atmospheric Administration (US)

Academia (10 partners):

Universita Ca' Foscari Venezia (IT)
 University of Stirling (UK)
 AWI - Alfred-Wegener-Institut (DE)
 CSIC - Consejo Superior de Investigaciones Científicas (ES)
 Wageningen University (NL)
 Thünen-Institut: Startseite (DE)
 AFBI - Agrifood and Biosciences Institute (UK)
 ZUT - Zachodniopomorski Uniwersytet Technologiczny w Szczecinie (PL)
 Dalhousie University (CA)
 South China Sea Fisheries Research Institute, CAFS (CN)



More info:

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