

# NewTechAqua - New Technologies, Tools and Strategies for a Sustainable, Resilient and Innovative European Aquaculture

**Duration:** From 1 January 2020 to 31 December 2023

## Project summary

The vision of the EU aquaculture industry is to grow substantially in the next decade and to provide annually 4.5 million tons of sustainable food products. To this aim, NewTechAqua intends to expand and diversify EU production of finfish, molluscs and microalgae by developing and validating technologically-advanced, resilient and sustainable new solutions. The organizational approach of NewTechAqua is to group the solutions in 6 different categories: feed, Industry 4.0, sustainable farming, genetics, new species and new products. They will be validated on conventional (Atlantic salmon, rainbow trout, seabass and seabream) and emerging (greater amberjack, meagre, Senegalese sole and grey mullet) finfish species, molluscs (Pacific oyster, mussel) and microalgae. NewTechAqua is structured in 9 WPs. WP1 will conceive, formulate, produce and demonstrate three innovative sets of aquafeeds (pro-health, organic, zero waste). WP2 will establish new AI epidemiological models for enhancing the control of parasite outbreaks in Norwegian and Mediterranean farms. Sustainable aquaculture will be also promoted by advanced model systems and technologies for mollusc and in-land fish farm ecointensification. WP3 will develop innovative breeding programmes to improve performance, robustness and quality of farmed fish, molluscs and microalgae, while WP4 will achieve significant advances in reproduction technology of three emerging fish species. High-quality seafood products and sustainable food processing techniques for valorization of by-products will be validated. WP6 will develop a set of indicators to monitor and measure progress towards the expected impacts, while market uptake of NewTechAqua results and outputs will be ensured by a detailed exploitation strategy (WP7). Finally, NewTechAqua will achieve well-targeted communication, dissemination and maximum transfer of generated knowhow and project new technologies (WP8).

## Objectives

NewTechAqua's main goal is to expand and diversify European aquaculture production of finfish, molluscs and microalgae by developing and validating technologically-advanced, resilient and sustainable applications.

## Activities

- Promote health and disease resistance of fish.
- Promote disease resistance of molluscs.
- Promote resilient aquaculture production systems.
- Increase eco-friendly by-product valorization.
- Improve efficiency of fish and microalgae farming.
- Promote organic aquaculture.
- Close the reproductive cycle of emerging fish species.
- Develop innovative and eco-friendly fish and mollusc products.
- Improve professional skills of aquaculture operators.
- Increase consumer awareness and acceptance of European aquaculture products and methods.

## Results, Project impact

- NewTechAqua will lead to increased and diversified aquaculture productions, creating new value chains and new markets and jobs, reducing poverty in the EU and all the Mediterranean countries.
- NewTechAqua will support and strengthen food security in Europe and all the Mediterranean area, increasing overall productivity and valorizing by-products of the aquaculture industry.
- NewTechAqua will increase the availability of affordable, healthy, diversified and nutritious aquaculture products.
- NewTechAqua will address the use of technology, such as AI and informatics tools applied to farming management that will promote the empowerment of women in the aquaculture sector.
- NewTechAqua will develop sustainable aquaculture production system, RAS, biofloc technology, aquaponics to improve water treatment, reducing waste and increasing resources efficiency.
- NewTechAqua will lead the production of new products and HiTech solutions exploited in the market paving the way for new jobs at EU level, with the creation of new professional expertise along the entire aquaculture value chain.
- NewTechAqua solutions will bring technological progress at the service of sustainable development, lower environmental impact and increased resource- and energy- efficiency.
- NewTechAqua solutions match sustainable practices from industry to consumers and will ensure that people have the relevant information and awareness relating to the importance of the development of sustainable EU aquaculture practices.
- NewTechAqua will adopt feed, genetic, farming, and new products solutions, which valorize new and resilient feed ingredients, improve feed efficiency, reduce feed losses and waste and produce food with low carbon footprints.

- NewTechAqua solutions will contribute to reducing spread of disease in marine ecosystems, reduce pollution from nutrients and chemicals to reduce ocean acidification supporting shellfish farming and preserving wild fish stocks by promoting fishmeal-free diets.
- NewTechAqua will adopt and promote new farming solutions such as aquaponics or biofloc, will contribute to the conservation and sustainable use of inland freshwater.
- NewTechAqua will use government, the private sector and civil society to mobilize, redirect and unlock resources toward a sustainable development of aquaculture.

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Role of CIHEAM Zaragoza in the project: dissemination, communication and training activities, as a third party.

Coordinator: Alma Mater Studiorum - Università di Bologna (UNIBO), Italy.

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#### Partners:

- Alma Mater Studiorum - Università di Bologna (UNIBO), Italy
- Università Ca' Foscari Venezia (UNIVE), Italy
- Institut De Recerca i Tecnologia Agroalimentaries (IRTA), Spain
- Hellenic Centre for Marine Research (HCMR), Greece
- Università degli Studi di Bari Aldo Moro (UNIBA), Italy
- Nofima AS (NOFIMA), Norway
- A.I.A. Agricola Italiana Alimentare S.P.A. (AIA), Italy
- Acuicultura Balear S.A.U (ABSA), Spain
- Cromaris Dionicko Društvo Za Marikulturu (CROMARIS), Croatia
- Mowi (MOWI), Norway
- Irida Ae-Products for Animal Production-Services (IRIDA), Greece
- Rara Avis Biotec, S.L. (RARA), Spain
- Aquanetix Ltd (AQUANETIX), UK
- Fédération européenne des producteurs aquacoles (FEAP), France
- Centre international de hautes études agronomiques Méditerranéennes (CIHEAM), France
- Il Vigneto Soc Agricola Arl (VIGNETO), Italy
- Greenovate! Europe (G!E), Belgium
- Institut français de recherche pour l'exploitation de la mer (IFREMER), France
- Syndicat des selectionneurs avicoles et aquacoles français (SYSAAF), France
- Ichthyokalliergeies Argosaronikou Anonymi Etairia (ARGO), Greece
- Ministry of Agriculture, Rural Development and Environment of Cyprus (DFMR), Cyprus
- Universidad de Las Palmas de Gran Canaria (ULPGC), Spain
- The Seafood Innovation Cluster As (TSIC), Norway
- Galaxidi Marine Farm Ae (GMF), Greece
- Consiglio Nazionale Delle Ricerche (CNR), Italy
- Economia Del Mare (EMAR), Italy