

Press release – 7 December 2020

## AQUAEXCEL3.0: A project to boost European aquaculture research

**Where does your seafood come from? In Europe, some 75% of such products are imported, so it is important to ensure the long-term sustainable growth of aquaculture in Europe. That is the mission of the H2020 AQUAEXCEL project, which began in 2011 and is now evolving into its third incarnation: AQUAEXCEL3.0. This INRAE-coordinated European research infrastructure project brings together 22 partners, including Ifremer and the University of Lorraine, which coordinate a network of 40 aquaculture experimentation facilities in 11 different countries. The network makes it possible to carry out biological and technological experiments on all the species and farming systems used by European aquaculture. Research infrastructure projects play a vital role in structuring European research efforts.**

At the current time, Europe is not self-sufficient in terms of its seafood product supply, with imports accounting for more than 75% of the supply. While fisheries cannot produce more due to overfishing, such is not the case for aquaculture, which now provides more than 50% of the fish eaten worldwide, but only 22% in Europe. So aquaculture development is a priority for Europe, but such development must occur within a framework of environmental, social and economic sustainability, while also ensuring the animals' welfare. To reach those objectives, Europe is investing in aquaculture research.

AQUAEXCEL3.0 is a follow-up to AQUAEXCEL and AQUAEXCEL<sup>2020</sup>. It involves a network of 40 aquaculture research experimentation facilities, managed by 22 partners - including INRAE, Ifremer and the University of Lorraine - in 11 countries, i.e. France, Spain, Portugal, Italy, Greece, United Kingdom, the Netherlands, Denmark, Norway, the Czech Republic and Hungary. INRAE has coordinated the AQUAEXCEL projects from the very start, and four INRAE aquaculture facilities are part of the AQUAEXCEL3.0 network<sup>1</sup>. Thanks to this network, top-notch biological and technological experiments can be carried out on all the species and farming systems used in European aquaculture. The newest version of the project will carry out three types of action at the same time:

- The first will be to provide transnational access (TNA) to the network's facilities so that outside partners, both academic and industrial, can conduct experiments with the best scientific support possible. This will help rationalise academic and industrial partners' use of the most effective experimentation facilities offering unique services, and, in that way, ensure progress on issues that are vital to the sector. Some 200 transnational access projects are planned over this five-year programme.
- Further improvements to the research support services provided by the facilities will also be a core feature of AQUAEXCEL3.0. Particular emphasis will be placed on the 3Rs principle<sup>2</sup>, by, on the one hand, implementing innovative biotechnologies to help limit the number of animal specimens used in experiments (cell culture,

stem cell transplants) while enhancing the welfare of such specimens; and, on the other, developing models for computer-simulated experiments (setting up virtual laboratories).

- Another part of the project will be to disseminate knowledge, through an extension of the existing website (<https://www.aquaexcel2020.eu/>), in particular by creating online courses on the major topics in aquaculture research. Plans are underway to cover themes such as welfare indicators for aquaculture species or algae and mollusc production in experimental facilities.

### Project snapshot

AQUAculture infrastructures for EXCELlence in EUropean fish research 3.0 (2020 – 2025)

Coordination: INRAE – partners: INRAE (FR), INRAE-Transfert (FR), IFREMER (FR), UNIVERSITE DE LORRAINE (FR), IMR (NO), UoS (UK), CSIC (SP), HCMR (GR), NAIK (HU), NOFIMA (NO), JU (CZ), NTNU (NO), SO (NO), ULPGC (SP), WU (NL), WR (NL), INTRIGO (IR), DTU (DK), CCMAR (PT), IEO (SP), EATIP (BE), UNITO (IT)

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<sup>1</sup>The following units are involved: PEIMA (INRAE's experimental fish farms in Monts d'Arrée), NUMEA (Nutrition, Metabolism, Aquaculture), LPGP (fish genomics and physiology laboratory) and IERP (experimental rodent and fish infectology unit).

<sup>2</sup>The 3Rs principle consists of replacing, reducing and refining the use of research animals.

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