

Partners

Universities



research institutes



SME's and International Organisations



Advancing European Aquaculture by Genome Functional Annotation

Stakeholders

A key strength of AQUA-FAANG is industrial engagement across a portfolio of the six most important European farmed fish species. This engagement will allow co-development of commercially relevant outputs with long lasting impacts in European aquaculture.

Exploitation Working Group (EWG)

The EWG is a platform for cooperation and collaboration between AQUA-FAANG and relevant stakeholder groups including the aquaculture breeding companies/SMEs and other relevant industry that would uptake the results of the project.

Knowledge Exchange Platform (KEP)

The KEP consists of project coordinators leading the three H2020 projects funded in the same call as AQUA-FAANG. This includes GENE-SWitCH, focused on chicken and pigs, and BovReg, focussed on cattle. This group will liaise with broader initiatives, including the main FAANG consortium, and aims to enhance coordination of relevant activities across the different projects to maximize knowledge exchange, encourage collaboration, and facilitate standardization of functional annotation.

Are you interested in the AQUA-FAANG project?

The project results and tools will be available on our website.

You can visit us at <https://www.aqua-faang.eu/> and on Twitter [@AQUA_FAANG](https://twitter.com/AQUA_FAANG)

Are you a stakeholder and do you want to know more about AQUA-FAANG?

Please subscribe to our stakeholders mailing list on our website!



Contact

Please send all your inquiries to aqua.faaang@gmail.com



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Key facts

Project Coordinator:	Sigbjørn Lien/NMBU
Project Deputy Coordinator:	Daniel J. Macqueen/UEDIN
Project Manager:	Lise Marie Fjellsbø/NMBU
24 partners:	11 SME & industry, 4 Research Institutes and 9 Universities
	Partners from 9 European countries: Norway, UK, France, Spain, Italy, Poland, the Netherlands, Greece, Germany
Budget:	€6,355 million
Duration:	1 May 2019 – 30 April 2023

The AQUA-FAANG (Advancing European Aquaculture by Genome Functional Annotation) project aims to greatly improve our understanding of genome function in the six most commercially important European farmed fishes namely *Atlantic salmon*, *Rainbow trout*, *European seabass*, *Gilthead seabream*, *Turbot*, and *Common carp*. Genome-wide functional annotation maps will be generated for each species and used to develop an understanding of their contribution to variation in traits of commercial relevance, exploiting comparative approaches to enhance transferability of findings.

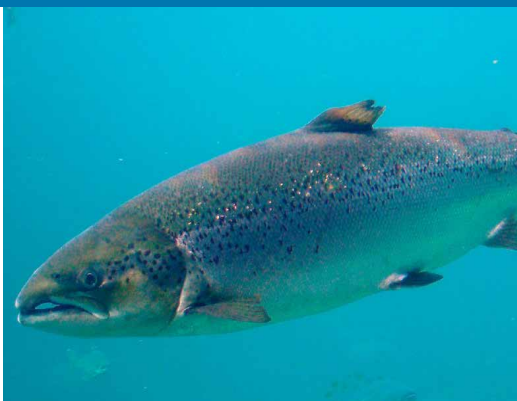
The project brings together world-leading interdisciplinary scientific expertise with industry, providing direct pathways to commercial exploitation. An important aim is to enhance phenotype prediction using genomic information, paving the way for precision breeding to improve *disease resistance and other commercial traits* in aquaculture.



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Why?

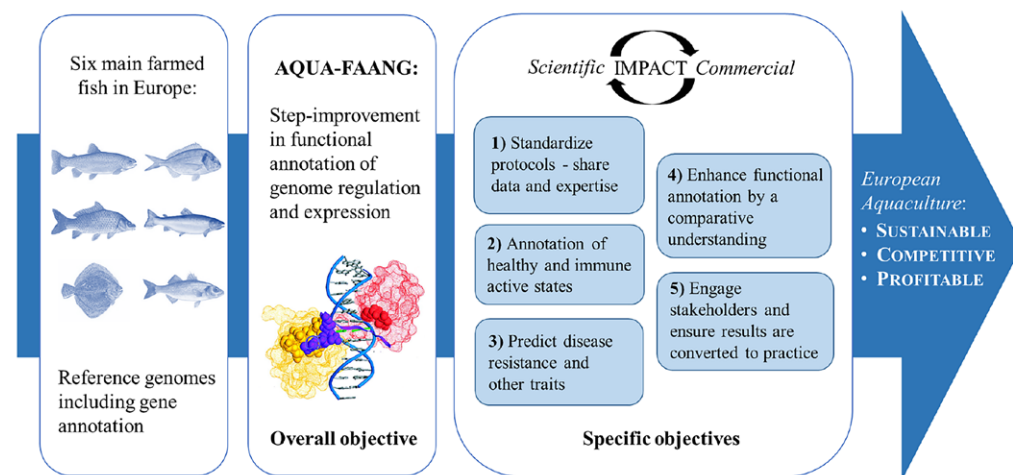
- A new phase of research, in close collaboration with end users, is needed to build on the recent advances in genomics for a **sustainable, competitive and profitable European aquaculture**. Thus the well-annotated reference genomes have a fundamental importance as a resource for the research community in both academic and industry.
- The application of functional genomics is needed to improve genomic selection, including traits like disease resistance in farmed fish stocks to address the **economic impact of infectious diseases and welfare problems**.



How?

- Development of standardized functional annotation protocols and implement them to generate functional annotation maps
- Establishment and coordination of standardized bioinformatics tools and data processing to identify and characterize functional genome elements
- Generation of standardized ImmunoMaps in the six selected AQUA-FAANG species to help understanding fish immune responses and disease resistance mechanisms
- Enhancement of accuracy of genomic prediction for disease resistance by incorporation of functional genomic data
- Exploitation of comparative analyses to enhance the impact of functional annotation maps
- Translation of AQUA-FAANG results into aquaculture practice and increase the uptake of tools and expertise by scientific and commercial communities

Figure: Overall concept of AQUA-FAANG



Impact

AQUA-FAANG has created an internationally leading consortium for excellence and innovation in farmed fish genome biology. The cluster of world experts from both academia and industry, combined with extensive training and dissemination activities, will create a long-term interactive hub expected to outlast the duration of the project. Main impact of the project will be the release of all the data produced openly to facilitate academic and commercial research across Europe and around the world.