

## Highlights

- >100 state-of-the-art Recirculating Aquaculture Systems (RAS)
- State-of-the-art respiration cells housing groups of fish, with online water quality logging
- Simulated ecosystems to study trophic interactions under controlled conditions
- Modern laboratories for water quality and nutritional, genomics, proteomic and microbiome studies



*RESCOPAR project:  
"Rebuilding resilience of coastal populations and aquatic resources"*

### Contact

Aquaculture and Fisheries Group  
T +31 (0) 317 483307  
F +31 (0) 317 483962  
E [office.afi@wur.nl](mailto:office.afi@wur.nl)

### Visiting address

De Elst 1  
Zodiac (building no. 122)  
6708 WD Wageningen  
The Netherlands

### Postal address

P.O. Box 338  
6700 AH Wageningen  
The Netherlands

[www.wur.eu/afi](http://www.wur.eu/afi)

The mission of Wageningen University & Research is "To explore the potential of nature to improve the quality of life". Under the banner Wageningen University & Research, Wageningen University and the specialised research institutes of the Wageningen Research Foundation have joined forces in contributing to finding solutions to important questions in the domain of healthy food and living environment. With its roughly 30 branches, 5,000 employees and 10,000 students, Wageningen University & Research is one of the leading organisations in its domain. The unique Wageningen approach lies in its integrated approach to issues and the collaboration between different disciplines.

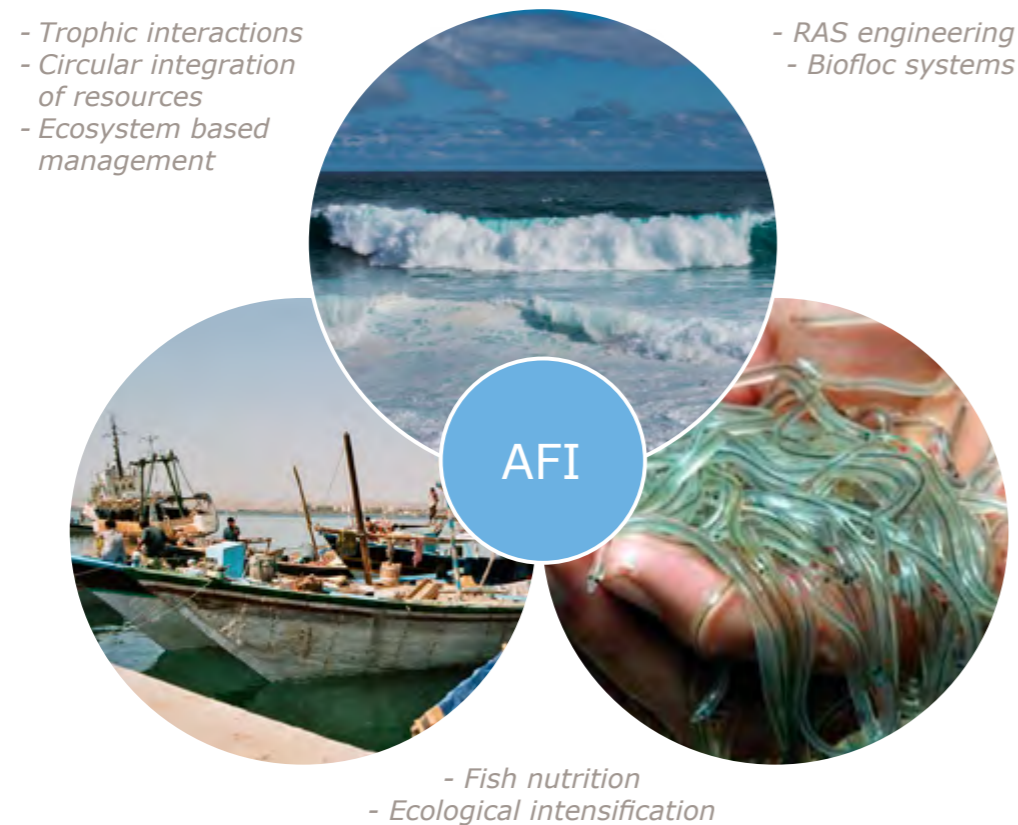
# Aquaculture and Fisheries Group

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The Aquaculture and Fisheries Group (AFI) explores the potential of aquatic animals and aquatic ecosystems to feed the world with sustainably produced fish through academic research and training. New methods, based on principles of animal biology and ecology that contribute to sustained seafood production, are conceptualised, tested and communicated.

## Area of expertise

AFI develops conceptual frameworks for sustainable seafood production by studying resource use efficiencies between fish, feed, food web and the aquatic ecosystem.



*"Unique are the aquatic respiration cells that give us the opportunity to perform continuous measurements on the metabolism of fish"*

## Education

The Aquaculture and Fisheries Group (AFI) teaches in the BSc Animal Sciences and provides key education for the MSc Aquaculture and Marine Resource Management (MAM). AFI also provides a graduation outlet for MSc Biology students and contributes to the BSc Animal Science and Biology programmes.

### Short description of courses

*Aquaculture and Fisheries* gives an overview of seafood production and its use in human nutrition and environmental impacts. Also available as distant learning course.

*Fisheries Ecology* explains principles of fish population and fish community dynamics and gives an overview of ecological principles around fishes and organisms in fisheries systems.

*Life History of Aquatic Organisms* deals with the biology and ecology of aquatic organisms, especially in the light of life history theory.

*Aquaculture Production Systems* focuses on the relationship between aquatic animals and their production environment at animal, community and ecosystem level.

*Nutrition, Welfare and Reproduction* in Aquaculture deals with mechanisms at organ and organism level explaining animal functioning and wellbeing.



*Marine Resources Management* focuses on the management of living aquatic resources in marine, coastal and large freshwater ecosystems.

*Sustainability in Fish and Seafood Production* deals with the economic, ecological and managerial sustainability of fish capture and aquaculture.

*Trends in Aquaculture* explores cross-connections between biological, ecological, economic and governance knowledge in the field of aquaculture.

## Research

Most research is conducted through PhD projects embedded in the Graduate School WIAS. Current research around resource use efficiency encompasses three levels:

- Recycling nutrients in intensive aquaculture systems*
- Fish feeds and nutrition
  - Feeds and Recirculating Aquaculture Systems (RAS)

- Ecological intensification of aquaculture*
- Microbial ecology and food webs in aquatic ecosystems at animal and system level

- Trophic functioning in aquatic ecosystems*
- Functional morphology and life history of fishes
  - Ecosystem-based fisheries management
  - Socio-ecology of aquaculture & fisheries

