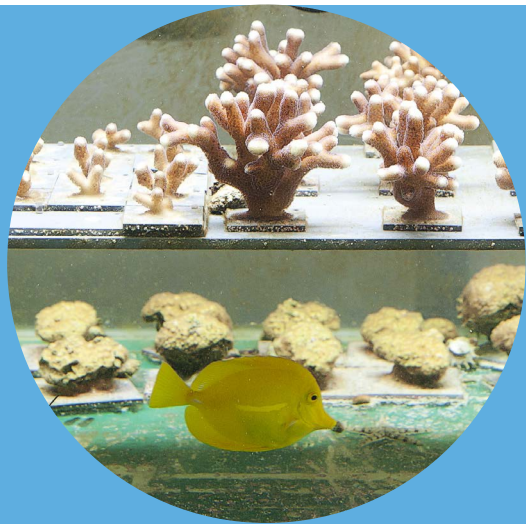
Aquaculture and Fisheries Group



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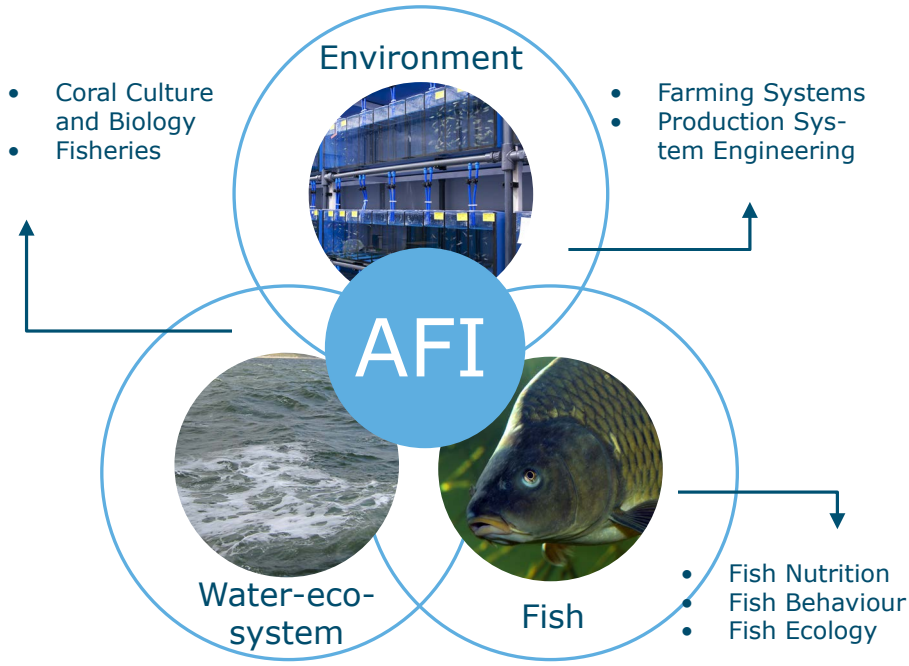
The Aquaculture and Fisheries Group (AFI) studies the resilience of aquatic organisms and systems in an world dominated by changing production goals, environmental (ecosystem) conditions and changing human needs. We have the ambition to use this knowledge to contribute to the sustainability of the organism that make up our seafood as well as their aquatic environments, freshwater and marine.

Area of expertise

- From organism to population to ecosystem
- Combining physiology with ecology
- Informed by the social and environmental setting



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

Highlights

- The Aquatic Research Facility (ARF)
- Respiration cells
  - Multiple system experimental RAS, fresh & marine, cold & warm-
  - Coral culture systems
  - Experimental Denitrification reactors
  - 16 digital camara's for behavioural studies
- Partner in world-wide collaboration projects: EU-FP7 (AQUA EXCEL, AqASEM, ARRAINA, , FORCE), WU-INREF (RESCOPAR, BEST TUNA), Tropical projects (SEDEC, SUPA)

Education

The Aquaculture and Fisheries Group (AFI) teaches in the BSc Animal Sciences and provides key-education for the MSc Aquaculture and Marine Resources Management (MAM). AFI is also one of the "biological" chairs at WU, providing a graduation outlet for Biology students.

Short description of courses

Aquaculture and Fisheries gives an overview of Fish and other seafood and the use in the human food package and the aquatic environment. Also available as distance learning course.

Fisheries Ecology gives an overview of categories of fishes and organisms involved in fisheries ecology and explain principles of fish population dynamics.

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 relation between aquatic animals and their production space within the environment a farm operates.

Nutrition, Welfare and Reproduction in Aquaculture deals with mechanisms at organism level and organ level in an integrative approach in various disciplines.

Marine Resources Management focuses on the management of natural resources in marine, coastal and large freshwater lake ecosystems.

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

Building with nature deals with the inclusion of natural processes in coastal development.

"More than 30 years of world class experience in warmwater aquaculture and nutrition makes AFI an ideal research partner for us"

Nutreco

Research

Most research is conducted as PhD projects with PhDs embedded in the Graduate School WIAS. Current research study levels:

1. Organism level

The adaptive capacity of fish, shrimp and coral are studied under various environmental conditions. This is done by accessing the interplay between (inherent) fish factors, feed and water quality regarding performance, health, metabolism and the physiological/endocrine regulation.

2. Production system level

Systems are studied from a biological perspective, integrating metabolic processes from microbiota to fish and shrimp. The aim is to make all types of aquaculture into self-contained recirculation systems (RAS) with negligible environmental impacts, providing excellent water quality and an environment supportive to the welfare of farm animals.

3. Populations and aquatic ecosystems level

Studies at the Population level focus on the dynamics of fish populations in natural ecosystems in relation to human use in the broadest sense, by analyzing complex feeding and life-history interactions between species.

"Rebuilding resilience of coastal populations and aquatic resources"

RESCOPAR project, 2012

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