

# ENVIROMICS

RESEARCH & TECHNOLOGY FOR THE ENVIRONMENT



**IOF Consortium UAntwerp**  
Active in Environment, Health,  
Food, Agriculture

ENVIROMICS in a nutshell? We're all about nature-based methods for solving environmental and ecological problems. Dr. Freddy Dardenne, IOF Research and Innovation Manager of ENVIROMICS explains more.

► We are a one-stop shop for our partners when it comes to environmental problems.

“Our IOF consortium focuses on all the major niches in environmental sciences and technology: water, air, and soil, but also human risk and health. For this reason, companies from various sectors come to us for greater insight into problems and better solutions.

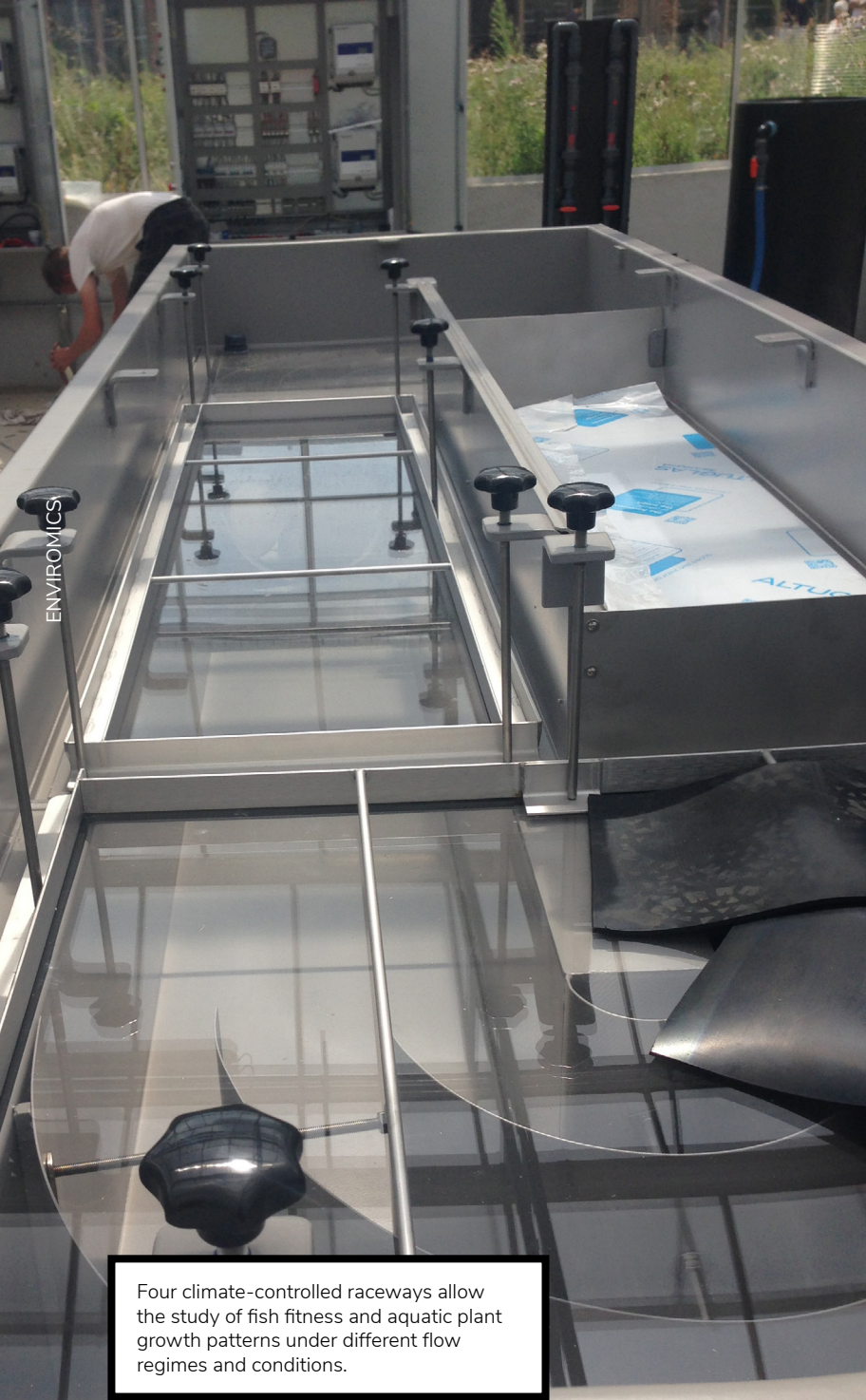
From small start-ups and SMEs to multinationals, from chemicals and pharmaceuticals to food, agriculture and ports: everywhere, people are facing challenges in terms of the

environment, ecology and health. Water purification, CO<sub>2</sub> capture, the human microbiome and flood prevention are just a few examples of the various areas of expertise that our consortium can provide.

Our solutions focus on both prevention as well as adaptation of product design and remediation. And they are always the result of measured observations by our team of experts.

We are a one-stop shop for our partners when it comes to environmental problems. An integrated biotechnology platform that provides a unique mix of knowledge and technology. And this includes the fields of (microbial) ecology and ecotoxicology, advanced sensor and detection technology, sustainable product development and social-ecological research.”

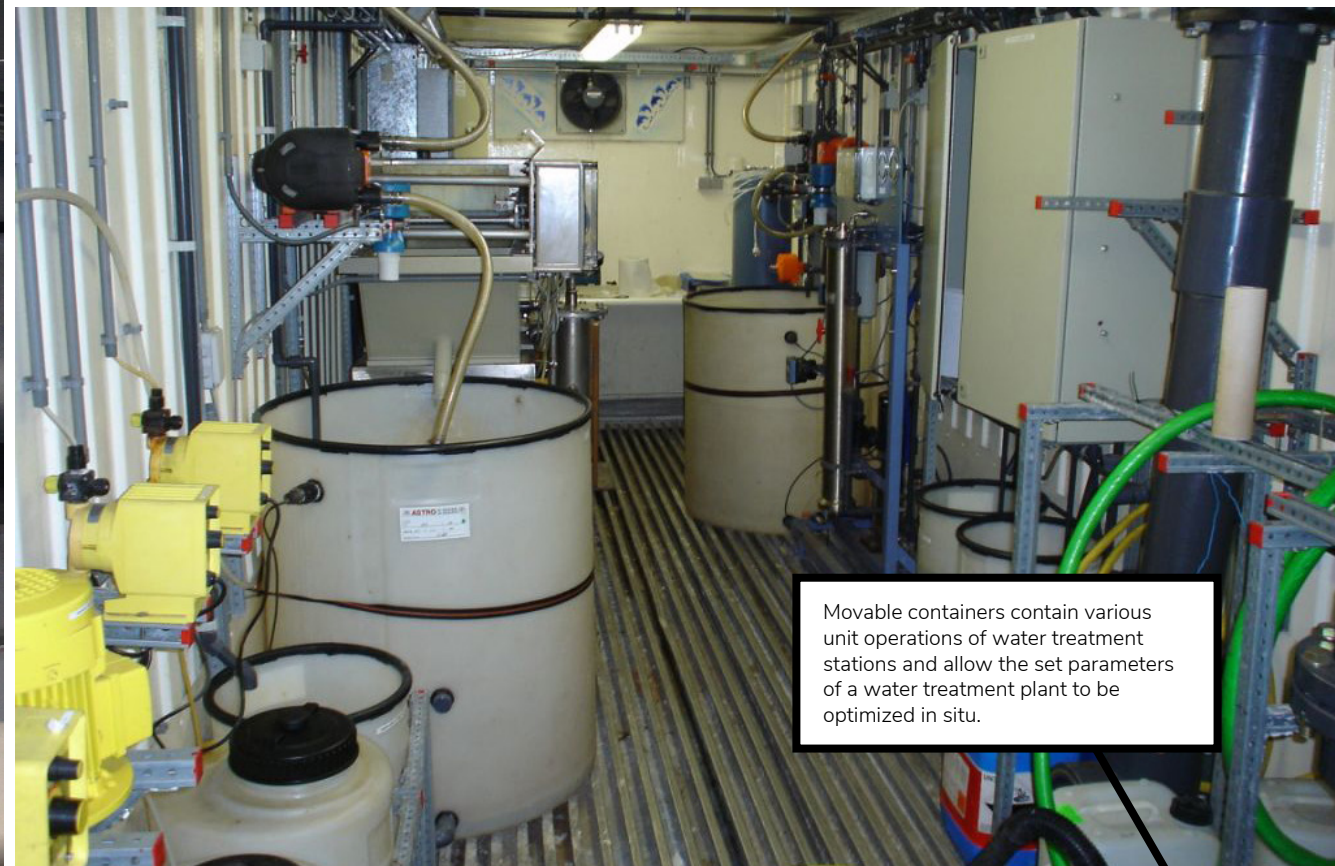
**Curious about what ENVIROMICS has to offer you? Ask Dr. Freddy Dardenne.**



Four climate-controlled raceways allow the study of fish fitness and aquatic plant growth patterns under different flow regimes and conditions.



The large flume, part of the Mesodrome, allows tidal action, dike breaches and repopulation of wetlands to be simulated.



Movable containers contain various unit operations of water treatment stations and allow the set parameters of a water treatment plant to be optimized in situ.

## ENVIROMICS is ...

Environment · Microbiome ·  
Environmental risk assessment ·  
Environmental impact · Ecosystem ·  
Pollution · Climate change mitigation/  
protection · Citizen science · Air quality  
· Water treatment · (bio)Sensors · CO<sub>2</sub>  
capture · Flood prevention · Circular  
water · REACH

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## Research groups and expertise

ENVIROMICS combines the expertise  
of various research groups within  
UAntwerp:

### **A-Sense Lab (Antwerp Electrochemical and Analytical Sciences Lab)**

A-Sense Lab brings fundamental  
innovation in perception and detection  
to a wide range of application fields. In  
everything we do, we are contributing  
to a healthier and safer world.

### **BioWAVE (Biochemical Wastewater Valorization & Purification)**

The research of the BioWAVE group  
is focused on the development and  
application of smart biochemical  
engineering techniques for a  
sustainable water cycle.

The research focuses on the purification  
and valorization of industrial  
wastewater. We use both open (or  
mixed) and closed (or pure) cultures.

### **CRESC (Centre for Research on Environmental and Social Change)**

CRESC is a research center that focuses  
on sociological research into the  
environment and social change, in the  
urban context and in the wider living  
environment.

### **DuEL (Sustainable Energy, Air and Water Technology)**

The research focuses on 4 domains: (1)  
converting solar energy into chemical  
energy, (2) gas treatment and CO<sub>2</sub>  
solutions, (3) water treatment and  
nutrient valorization and (4) systems  
analysis and sustainability assessment.

### **ECOSPHERE**

ECOSPHERE conducts research  
into ecological processes in aquatic  
ecosystems, both at the level of  
individual ecosystems and at the level  
of the coherence between the different  
ecosystems and their management,  
along the river continuum and river-  
coast interactions.

### **EndEMIC (Environmental Ecology & Applied Microbiology)**

ENdEMIC investigates the effects  
of air pollution from an ecological  
and microbial point of view and also  
develops probiotics for human and  
animal use through its own isolates.

### **Product development**

The mission of this research group is  
to advance scientific knowledge that  
enables the creation of innovative  
products to improve human well-being.

In addition, ENVIROMICS works closely  
with the Antwerp Port Authority,  
ILVO, SCK, VITO and the Hydraulic  
Engineering Laboratory (Flanders  
Hydraulics Research) and a large  
number of industrial companies.

## Collaboration is possible through...

Co-development · Contract research · Service contracts · European projects · Doctorates / post-doctorates · Master theses · Use of equipment and facilities

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- ▶ Thanks to the “BioCatcher” research and the synergy with experts from ENVIROMICS, our AMFER technology, which allows ammonia to be extracted from manure or digestate, can be applied without the use of externally purchased chemicals.

Quote from Colsen

## Unique features of our facility

ENVIROMICS uses a unique installation for water research on the Drie Eiken campus. Some 1,000 m<sup>2</sup> of artificial ponds and rivers allow the effects of stress factors to be examined on an environmentally relevant scale. In addition, the consortium has a wide range of high-quality analytical equipment with applications in ecotoxicology and ecology, electrochemistry, microbiome analysis, pilot-scale water purification, ...



### Contact ENVIROMICS

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