New large-scale aquaponics project funded by the EU – optimized food and water management

How can we cope with the global future challenges? The growing world population induces competition for water, land, food, and energy. But resources are limited, and unsustainable agricultural practices and climate change are aggravating these problems. Therefore, the European Union (EU) decided to fund a visionary project: for the next 4 years, 18 partners from 8 countries will work on an auspicious new green technology. About 6 million Euros are granted to implement an innovative aquaponics system that has the potential to contribute remarkably to global food security for the 21st century.

Aquaponics is a portmanteau word, including aquaculture (fish rearing) and hydroponics (soilless plant breeding). An aquaponics system allows the double-use of water, nutrients, energy, and space. Wastewater from the aquaculture section is used for the nutrition of the plants. The newly started collaborative project INAPRO ("Innovative model & demonstration based water management for resource efficiency in integrated multitrophic agriculture and aquaculture systems") aims at achieving a real breakthrough towards implementation and commercialization of this promising technology.

The project coordination of INAPRO is located at the Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB) in Berlin, Germany. Scientists at IGB have developed the technology "ASTAF-PRO" (aquaponics system for (nearly) emission free tomato- and fish production in greenhouses) that provides ideal growth conditions for both fishes and vegetables at the same time – a challenge that traditional aquaponics systems cannot overcome. "ASTAF-PRO offers sustainable value-added chains, with special regards to a significantly reduced water and carbon footprint compared to currently existing systems", explains Prof. Dr. Werner Kloas, one of the developers.

"ASTAF-PRO is the technological basis for INAPRO. Together with our international, highly qualified and experienced project partners from science and industry, we aim at covering the whole value chain from research to market, from modeling and experimental research at pilot scale to communication and knowledge transfer to policymaking, business and the public at large", outlines Dr. Georg Staaks, project coordinator for INAPRO.

In the project, four large-scale demonstration facilities – each at about 500m² – will be modeled, built, and evaluated. The sites will be located in Spain, Belgium, Germany, and China. Additionally, an artist will design several smaller mobile showcases to present the aquaponics system to the public. "Thereby, all stakeholders will have the possibility to experience this innovative technology", says Staaks.

"We want to prove the economic viability of the system, and develop modular solutions of the system scalable and adaptable to local conditions. INAPRO will open new market opportunities for innovative aquaponics both inside and outside Europe, for producers and technology suppliers from the manufacturing industries as well as for the end-users", summarizes Kloas.

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IGB provides further information (fact sheet) and graphical material for the media.

Contact:
Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB)
Müggelseedamm 310
12587 Berlin
GERMANY

Questions concerning the project
Dr. Georg Staaks
Project coordinator
Tel. +49 (0)30 641 81 625
Mobile: +49 (0)162 21 18 229
E-mail: oki@igb-berlin.de

Questions concerning the technical system:
Prof. Dr. Werner Kloas
Head of the department ecophysiology and aquaculture
Tel. +49 (0) 641 81 630
E-mail: werner.kloas@igb-berlin.de

INAPRO online:

Homepage: www.inapro-project.eu (under construction)

Facebook: www.facebook.com/inaproproject

Twitter: INAPRO – @INAPRO_EU

List of project partners:

Participant no. *	**Participant organisation name**	**Country**
1	Leibniz-Institute of Freshwater Ecology and Inland Fisheries-IGB	Germany
2	PAL-Anlagenbau GmbH	Germany
3	autosoft (SME)	Germany
4	CAUIOT ltd. (SME)	China
5	Tilamur (SME)	Spain
6	Müritzfischer	Germany
7	EUROVIX	Italy
8	Inagro	Belgium
9	Fytagoras	Netherlands
10	AliénorEU	Belgium

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11	Ctopia	Austria
12	Fraunhofer- Gesellschaft - Fraunhofer AST	Germany
13	Wageningen University - WUR	Netherlands
14	China Agricultural University - CAU	China
15	Yellow Sea Fisheries Research Institute	China
16	Institute of the Marine research - IMR	Norway
17	Stichting DLO	Netherlands
18	IFQ GmbH Wismar	Germany

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