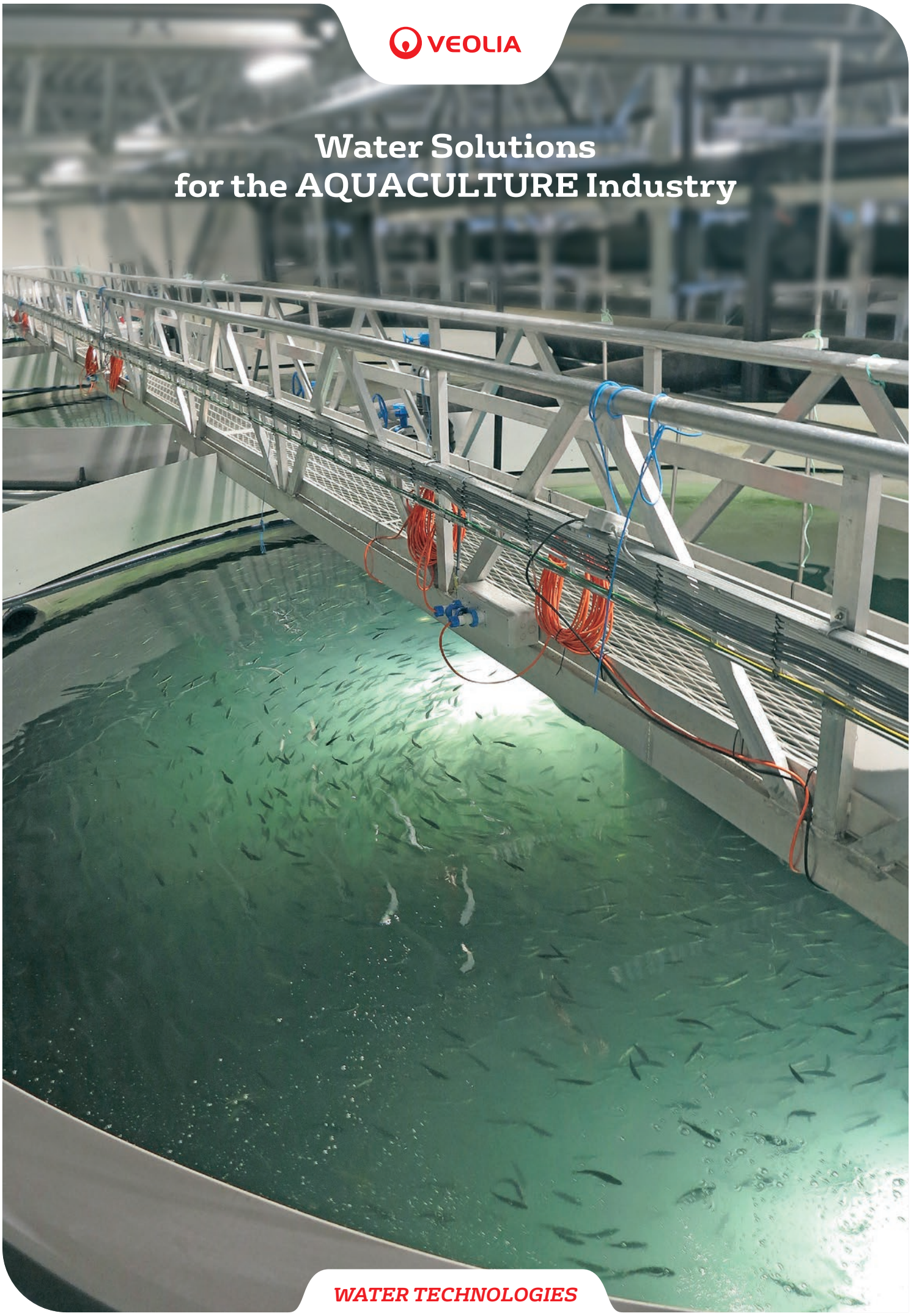
VEOLIA

Water Solutions for the AQUACULTURE Industry

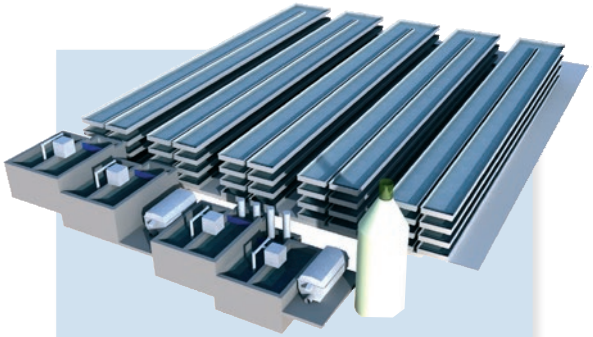


WATER TECHNOLOGIES

Increase productivity, increase profitability...

The Recirculating Aquaculture System (RAS) is designed to increase productivity and profitability. Its water treatment components are capable of accommodating the high feed inputs, growth rates and stocking densities required for the operation's financial viability.

- Increased production, lower mortality and more efficient use of fish tanks
- Applicable to a wide variety of species
- Reduced costs: installation, operation, energy
- Reduced physical footprint



- 250 to 500 litres water used per kg of fish produced
- Up to 99% water reused through closed-loop system
- Reduced water and carbon footprints ▸ reduced environmental impact
- Conforms to the most stringent regulations

... in a sustainable way

Veolia's sustainable RAS solution reduces water consumption, reusing water through continual treatment and delivery to support a wide variety of species, including cold water, tropical, fresh and salt water.

The RAS plant removes organic matter, total ammonium nitrogen, suspended solids, CO_2, N_2 and harmful bacteria/virus and optimises pH and alkalinity.

Up to 99% of water reuse

Meeting the highest standards

Through its world-class water purification technologies and expertise, Veolia Water Technologies offers a wide range of solutions that can be tailored to meet the highest standards providing high quality, energy efficient, operationally friendly water treatment systems.

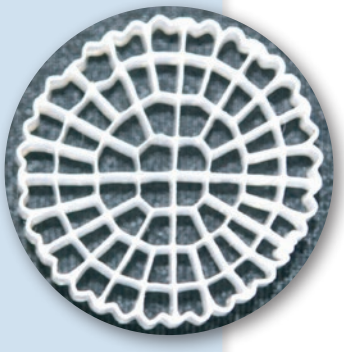
For more than 20 years, our **experienced teams** have been supplying the aquaculture industry with solutions and technologies for high quality water treatment. Our **strong R&D capabilities** and worldwide network of business units work with clients from project concept to implementation to aftersales support.

A state-of-the-art technological solution

Our **Kaldnes® RAS** semi-closed loop system, with aeration and particle removal, is designed to maximise production while reducing pollution and water consumption.

Biological treatment:

Our **AnoxKaldnes™ MBBR** (Moving Bed Biofilm Reactor) allows micro-organisms to grow on sheltered surfaces inside moving, plastic carriers, creating a continuous biofilm process without any risk of clogging and without any need for back flushing.

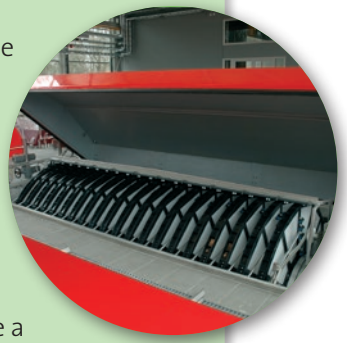


The MBBR process is compact and well suited for treatment of large water flows while being very robust and easily operated, with a minimum need for maintenance.

AnoxKaldnes invented the MBBR process in 1985. So far, there are in excess of 500 installations in more than 50 countries.

Solids removal:

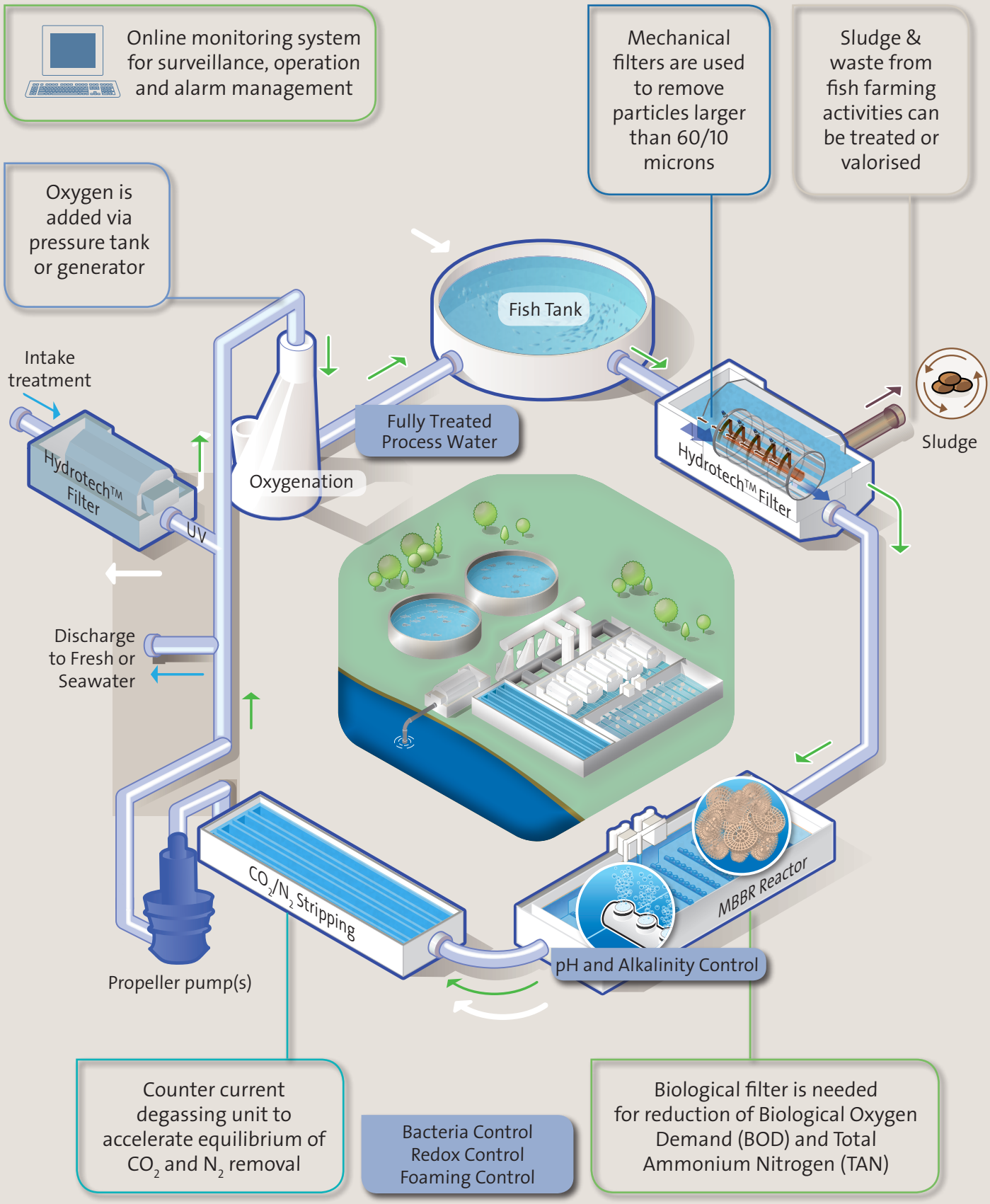
Following biological treatment, particle separation is achieved through our globally recognised **Hydrotech™ Drumfilters,** specifically designed for Aquaculture applications and initially introduced to the market more than 25 years ago.



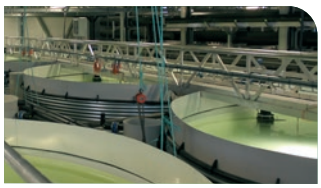
Hydrotech™ is the reference in the aquaculture market, with more than a thousand installations worldwide.

Hydrotech™ filters have a high hydraulic capacity, are easy to operate and provide a predictable result our clients can rely on.

Unique combination for impressive performance



Veolia: aquaculture industry experts

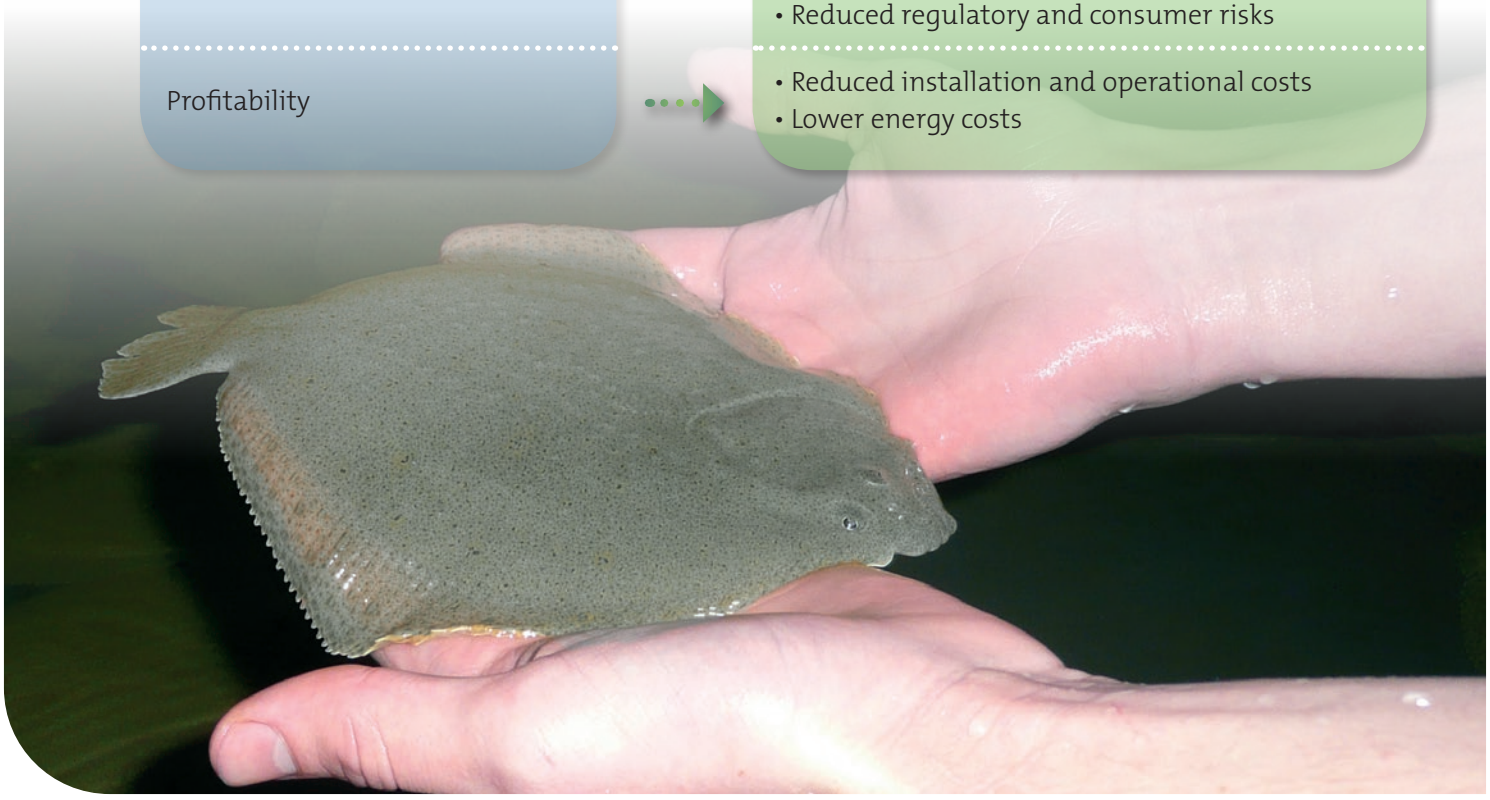


Aquaculture is a critical food source to meet current and future global consumption requirements. One billion people around the world depend on fish today as their primary means of animal protein. In providing farm-raised fish to replace declining wild species, the aquaculture industry supplies more than 50% of the fish consumed by humans worldwide today.

Veolia Water Technologies offers the industry's leading solutions for environmentally responsible and sustainable aquaculture.

Productivity increases by 30%

Industry challenge	Veolia's response
Land and water availability	• Significantly reduced water consumption • Less land required due to reduced footprint
Animal welfare and performance	• Healthier and more disease resistant fish • Better animal welfare due to improved overall conditions
Operational conditions and technical risk	• Reduced exposure towards outside influences • Improved control over biological performance • Reduced technical risk
Environmental impact, sustainability and regulatory and consumer risks	• Reduced impact and load on the natural environment • Sludge and effluent recovery • Reduced physical and carbon footprints • Reduced regulatory and consumer risks
Profitability	• Reduced installation and operational costs • Lower energy costs



Resourcing the world

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