



SUPERIOR  
**CRUSTA  
NOVA**  
SEAFOOD

**Urban Aquaculture: High-Tech and sustainability in the food industry of the future**

June 2021



## Meeting the world's protein needs

Proteins are the basic component of body cells and vital for muscle building and fat loss





# Alternative protein sources: plant-based meat substitutes

Plant protein sources: Lupins, soy or peas are used in the production of vegan products or as a meat substitute.





## Alternative protein sources: In vitro meat

Laboratory meat as a source of protein: Artificially bred meat cells in the laboratory make conventional livestock farming obsolete?





# Alternative protein sources: Insect proteins

Alternative animal protein sources: Insects for human consumption?



FLYING SPARK

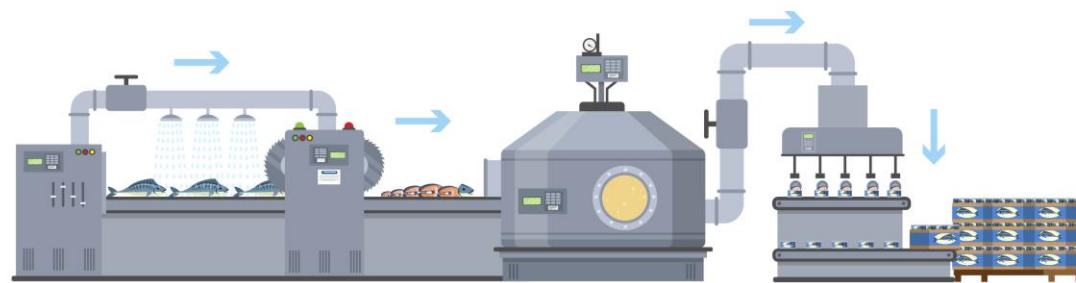
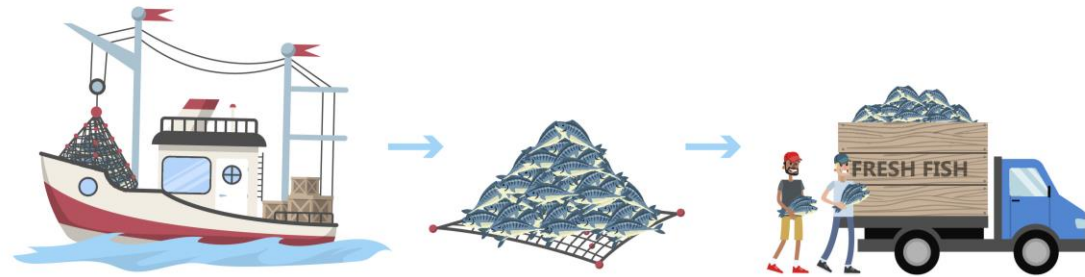




# The boom in the global fishing industry



Until the middle of the last century, human consumption based on fish & seafood from inland fisheries and wild catches. As the world population grew, the demand for fish and seafood grew rapidly in the 20th century and a highly industrialized seafood industry emerged.





## The boom in the global fishing industry

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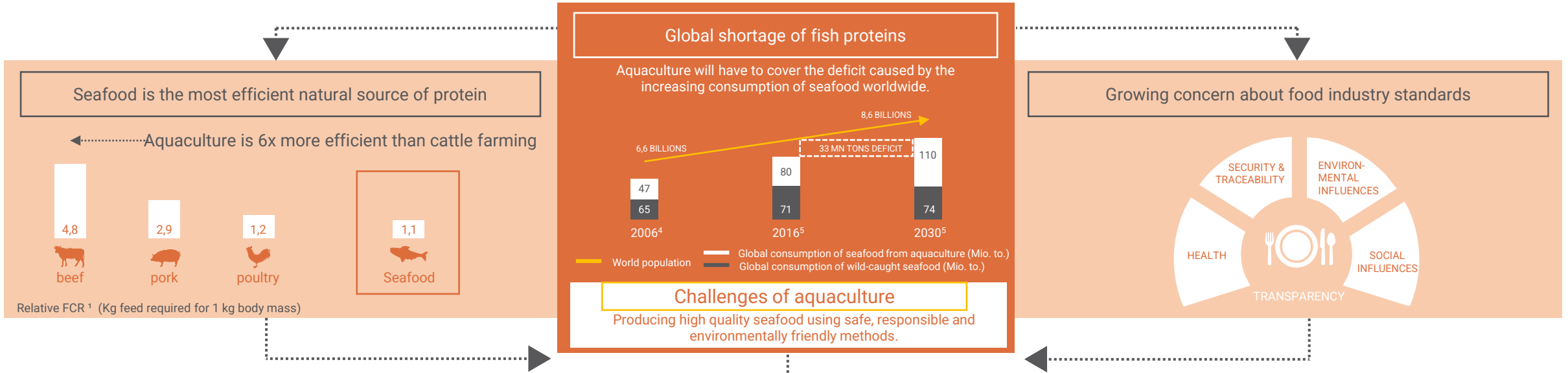
As catches from the sea diminished more and more, a rapidly developing aquaculture industry for pangasius, tilapia and shrimp emerged from the 1970s onward.





# High-tech aquaculture for the food industry of the future

Innovative aquacultures enable the controlled and sustainable farming of the highest qualities with value creation from larva to consumer.



**Wild-caught fish** are often not sustainable and environmentally friendly

- 90% of the world's marine life is overfished or on the verge of overfishing
- Destruction of the sea, corals and marine organisms
- Pollution and chemical contamination: pollution from fertilisers, microplastics and non-degradable wastes
- Spread of parasites threaten many species

**Conventional aquacultures** exacerbate risks and can not be the only solution for world nutrition

- Significant consumer doubts: no food safety & traceability, poor composition of feeds
- Unhealthy and uncontrollable breeding conditions, poor social standards, considerable damage to nature
- Food retailers are paying more and more attention to high qualities: no chemicals, no pesticides, no antibiotics and hormones





## Aquaculture 2.0: Optimising conventional fish farms

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Optimisation of conventional aquaculture and high tech farms (off shore or deep sea):

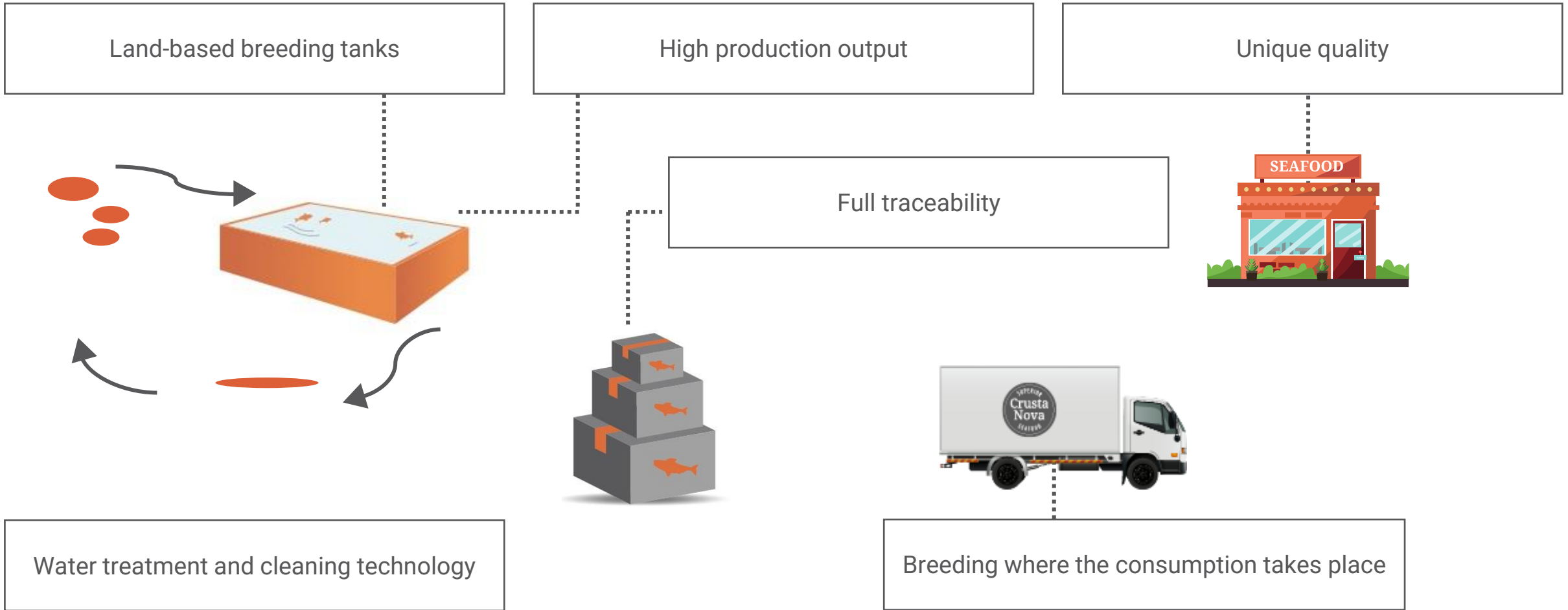
- Substitution of animal proteins by plant proteins in feed (or insect proteins) (Evonik, BASF)
- Reduction of chemical additives and antibiotics (Cargill)
- Use of big data to improve production processes such as feed management (CageEye)





# Aquaculture 2.0: Land-based Aquaculture in Recirculating Aquaculture Systems (RAS)

The efficient, biologically safe, flexible and sustainable aquaculture technology





# RAS technology in salmon farming

Worldwide projects for breeding salmon in RAS farms





# RAS-Technology in shrimp farming

Landbased shrimp farming with RAS-Technology





# Crusta Nova RAS-Technology

Land-based prawn farming





# Crusta Nova RAS-Technology

Land-based prawn farming





# Crusta Nova RAS-Technology

Land-based prawn farming





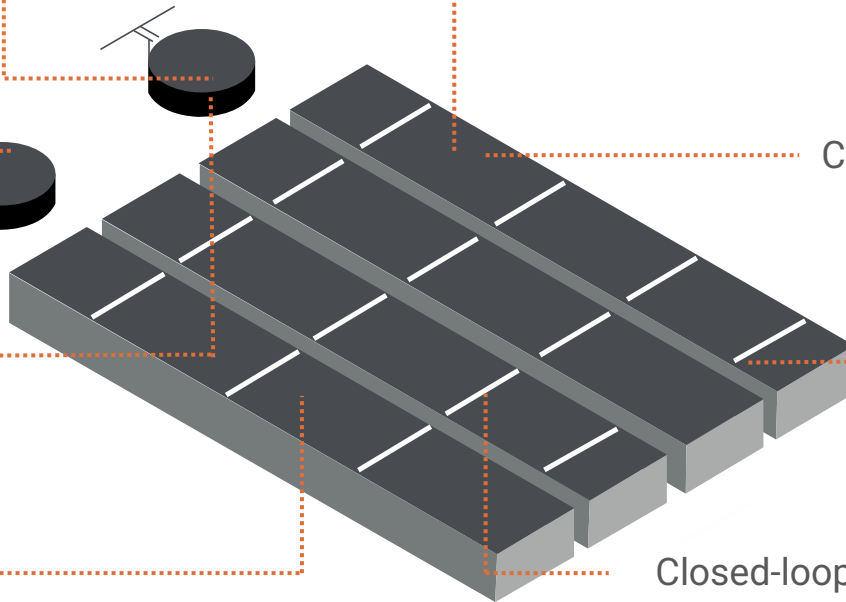
# Crusta Nova RAS-Technology

Filtration technology with mechanical and biological cleaning processes

Oxygen enrichment system

Energy-efficient breeding with re-use of heat + use of solar energy

Scalable and modular construction



Software-controlled breeding

Control of biological metabolic processes

Lightweight breeding tanks

Closed-loop technology with minimal waste

IMPACT ON THE ENVIRONMENT,  
PEOPLE AND SOCIETY







# Crusta Nova RAS-Technology & Genetic



## SOFTWARE CONTROLLED BREEDING

30 t/year in 4 water raceways with 8 tanks on 2 levels



**SERVICE FROM "FARM TO TABLE"**  
regional distribution, short transport routes



## HIGH QUALITY ALL YEAR ROUND

regardless of the season, the weather and the location



## LOW WATER EXCHANGE

Careful use of natural water resources – 98% reused



## NO CHEMISTRY

Sustainable breeding with mechanical and biological cleaning techniques



Development of the world's most advanced genetic program for commercial breeding of White Tiger shrimp in RAS-farms:

- Selection of different genetics / shrimp families
- Big-data driven analysis of performance
- Mating of best performing animals for RAS-technology





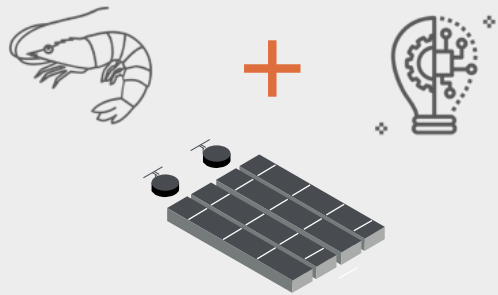
# Crusta Nova Business Areas

Crusta Nova is a pioneer in land-based farming of saltwater prawns using state-of-the-art RAS technology, a B2B seafood platform for the world's best seafood brands and a B2C E-Commerce portal in German-speaking countries.

1

## Food-Tech Company RAS-Technology & Premium-Prawn

The leading european prawn, sustainably farmed with RAS technology



Crusta Nova is "first mover" in Europe in a growing and technology driven market

2

## B2B Wholesaler Retail and HORECA

High-quality and sustainable seafood for retail and HoReCa in Germany & Austria



Crusta Nova is a Seafood House of Brands for the demands of today's consumers.

3

## B2C Brand E-Commerce and Retail

The world's best & most sustainable seafood products & brands, exclusively for modern consumers.



Crusta Nova is the first vertically integrated seafood platform for sustainable seafood products in Europe.



# Crusta Nova Overview

## HUMAN RESOURCE 2021

Purchase & Sales

Production

Marketing & PR

Quality management

E-Commerce

Management & administration

## PRODUCTS & TONNAGE 2021

300 trade products  
80t trading volume

30t breeding volume  
Bavarian Prawn

## CUSTOMERS 2021

25% HoReCa

25% Food retailer

50% Private customers

+10.000 B2C customer in GER & AT

+ 1.000 B2B customers in GER, AT & CH  
+ National listings with the largest supermarket chains in GER & AT  
~ 30% of the german star chefs

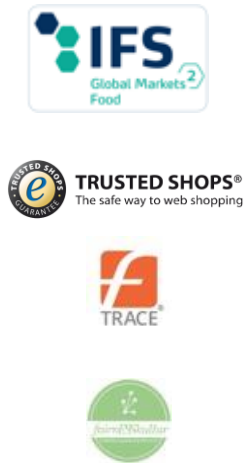
## Awards



## Membership



## Certificate



## Press



# Thank you for your attention!

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