



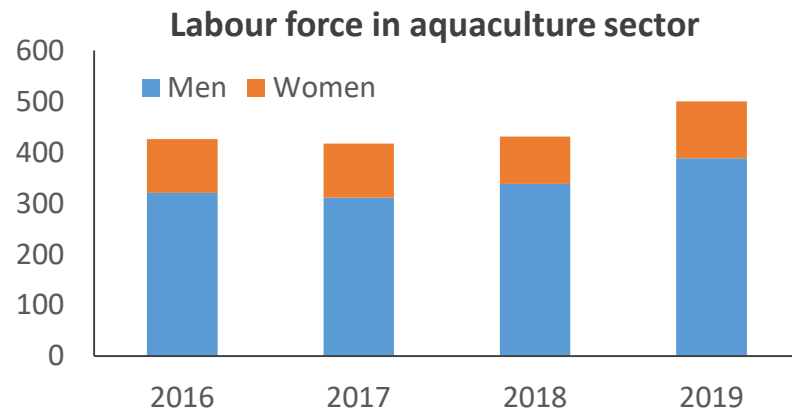
State-of-play of innovative technologies in aquaculture in Lithuania

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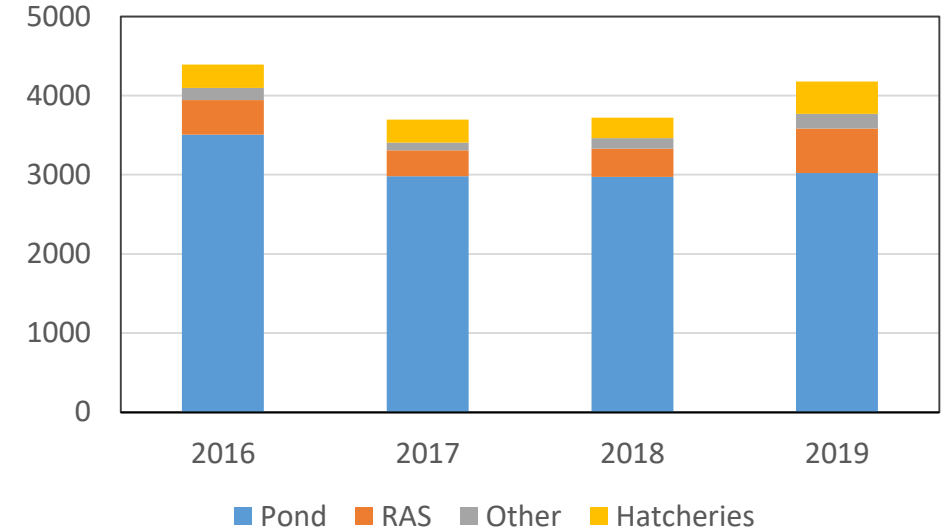
Lithuanian aquaculture profile

- Fish consumption in Lithuania is around 16-18 kg per capita (world average is 20 kg per capita, European average – 24 kg per capita)
- 22 traditional pond aquaculture companies, using 9891 ha of ponds
- ~40 RAS farms, 6562 m³ of volume in 2019 (3614 m³ in 2017)

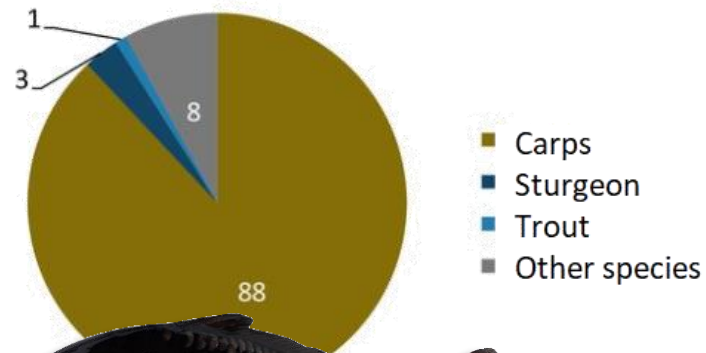


Lihtuanian aquaculture profile

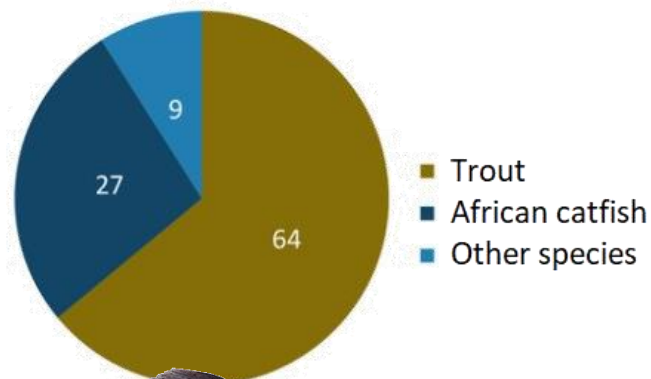
- **Pond aquaculture**
- Species: carp, grass carp, silver carp, tench, catfish, pike, sturgeon, rainbow trout, pikeperch,
- **RAS aquaculture**
- Species: rainbow trout, African catfish, Arctic charr, whiteleg shrimp, pikeperch, eel, sturgeon, tilapia



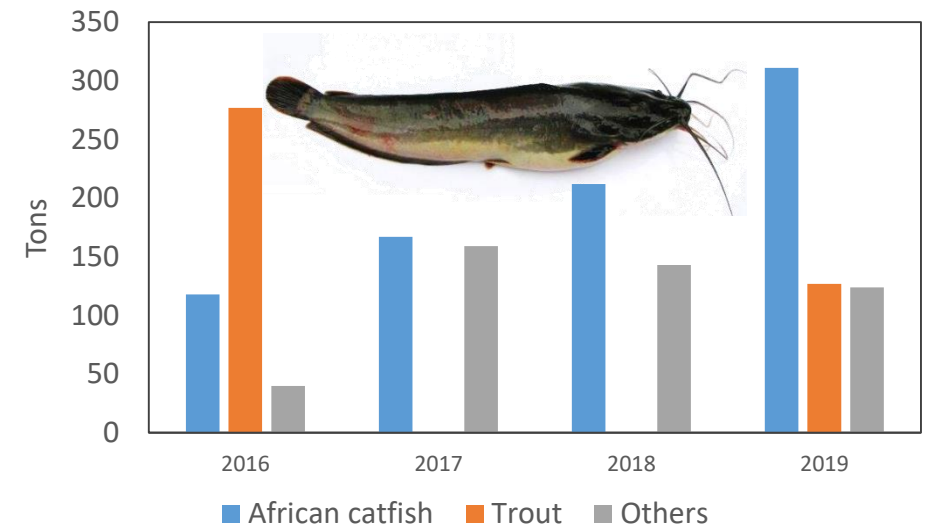
Pond aquaculture 2016



RAS aquaculture 2016



Significant growth in African catfish production



Development of the sector



Klaipeda
University

Marine Research
Institute

- National aquaculture sector development plan 2014-2020
- Development is supported from Fisheries and Maritime Fund
- Potential of the sector directly depends on skilled personal
 - Šilutė Professional Training Centre
 - Vytautas Magnus University
 - Klaipeda University
- Other scientific facilities:
 - Hatcheries of Fisheries Service
 - Nature Research Center



VYTAUTO
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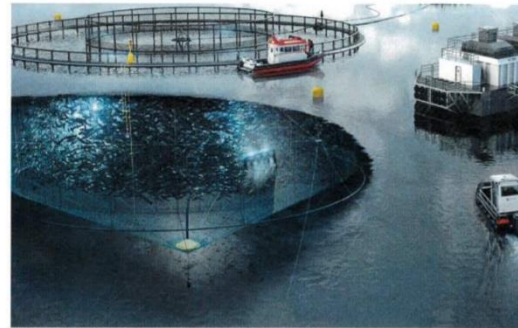
NACIONALINĖ AKVAKULTŪROS IR
ŽUVŲ PRODUKTŲ GAMINTOJŲ ASOCIACIJA



Marine aquaculture in Lithuania?

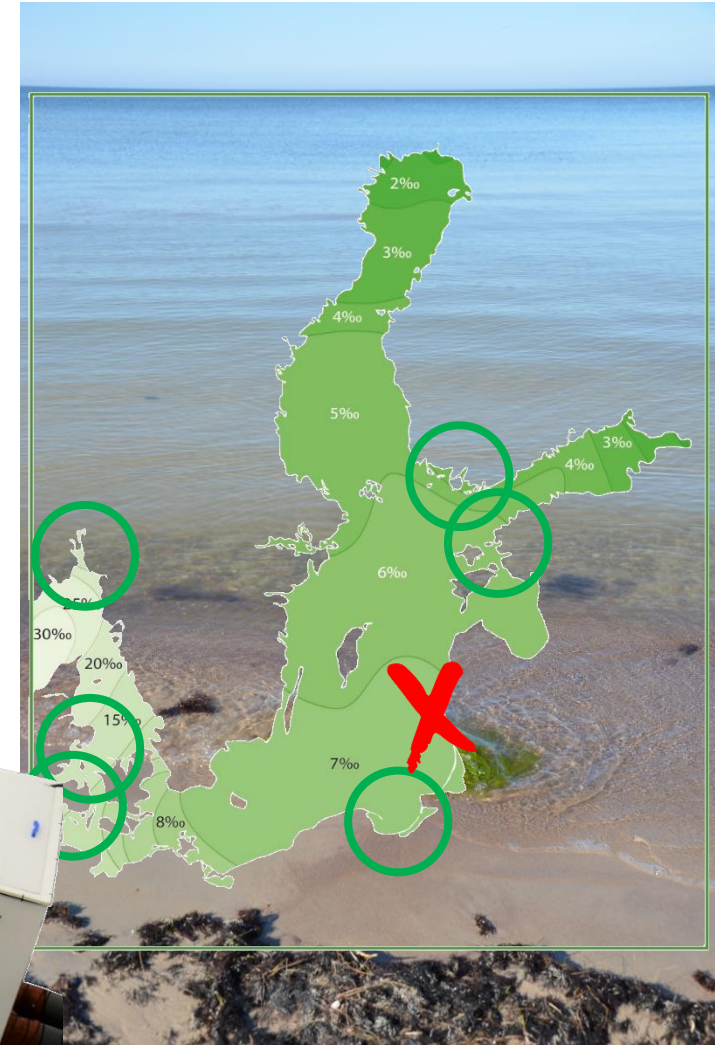
- Low salinity for the algae and mussel farming
- Challenges for fish mariculture in Lithuanian marine waters:
 - Exposed coast - rough hydrological conditions and short wave period
 - Low salinity
 - Other environmental constraints
 - High eutrophication and commitments to Helcom
 - Bioinvasions

Solution – land-based marine aquaculture!



2.3.1 pav. Zuvininkystės ūkio vizualizacija virš vandens ir po vandeniu.

Pedersen Line (DK) plans for off-shore farming of rainbow trouts



Aquaculture in Klaipeda University

- Innovative, blue biotechnology based aquaculture – one of priorities in **Klaipeda blue economy development Strategy 2030**;
- **Fisheries and Aquaculture Laboratory** in MRI – new infrastructure for aquaculture experiments, development of unique competences and student training
- **Aquaculture Competence Center** established in collaboration with Klaipeda Science and Technology Park
- **Aquaculture Research Programme** based on KU high competences in aquatic ecology, hydrobiology, chemistry, fish biology, also on close collaboration with scientific institutions, aquaculture and biotechnology business.

- **Marine Recirculating Aquaculture**
- **Probiotics**
- **Aquaponics**



KLAIPĖDOS MOKSLO IR
TECHNOLOGIJŲ PARKAS




MĒLYNĀSIS

PROVERŽIS


Probiotic application in aquaculture

- Effects on fish and functioning of aquaculture systems
- Pathogenic microorganisms control efficiency
- Application methodologies and recommendations for partners about product development





Smart Fishery



A biological preparation for improving the quality of water in fish farms

INGREDIENTS:
Lactobacillus and yeast cultures, sugar cane molasses, natural minerals, sea salt, herbs extracts, chlorine-free water.




STORAGE:
Store at 5° – 50° C temperature and out of direct sunlight. Natural fermentation process may cause sediments or floating materials to form. This does not affect the efficiency and quality of Smart Fishery.



SMART FISHERY is produced through a natural fermentation process and it is not chemically synthesized or genetically modified (Non-GMO). It is biodegradable and safe for humans, animals and plants.

RECOMMENDATION FOR USAGE:
1 : 100 – 500 m³ depending of existing conditions

SMART FISHERY – A biological preparation containing effective microorganisms and phyto-ferments for improving the microbiological quality of water:

- limit the spread of pathogens and fish diseases;
- eliminates the causes of pollution;
- inhibits the formation of ammonia and hydrogen sulfide;
- creates favorable conditions for increasing fish weight and reproductive function.





This product was supported by the Baltic Blue biotechnology Alliance project.

baltic probiotics

PRODUCER:
Ltd. Baltic Probiotics
Reg. No. 42103066259
Address: „Ceptuvs”, Rucavas pagasts, Rucavas novads, LV-3477, Latvia
www.balticprobiotics.lv

1L 5L 10L





Within **Interreg BSR Alliance** after surveys in recirculating and pond aquaculture systems project partner **Baltic Probiotics** developed and released to the market new probiotic product for sustainable aquaculture „**Smart Fishery**“

Noras LT - Arctic char innovative RAS farm



- Lithuanian-Norwegian JSC Noras LT operates one of the most innovative cold-water RAS farms for Arctic char production
- The company uses state-of-art RAS technology to grow fish from eyed eggs to market size, up to 1.5 kg
- Arctic char is the newest aquacultured species in Lithuania
- Close collaboration with Norwegians, constantly increasing their production capacity and developing new technological solution in expanding farm
- The capacity of farm is increased from initial 75 tons to presently developing infrastructure for 1500 tons of production per year.



Šamūkis – leaders in catfish production

- African catfish is produced using warm-water recirculating technology and automated water control systems for low environmental impact and sustainable production.
- The African catfish is still mostly cultivated species in RAS aquaculture in Lithuania, however most of the producers face the lack of knowledge in sustainable marketing and creation of high-value products.
- Šamūkis were praised several times for its innovations and success in marketing of their catfish production.



Local Ocean - Whiteleg shrimp bio-floc technology

- Modern, so far the only in Lithuania commercial shrimp farm
- Operates 24 tanks of various sizes (from 3 to 54 cubic meters)
- Farm is running an intensive biofloc-based process
- Farm is also partially using RAS technology for rearing of post-larvae
- Plans for further development



**JEI MŪSŲ KREKETĖS
KALBĖTŲ, JOS KALBĖTŲ
LIETUVIŠKAI!**

Pagal unikalią, Lietuvoje sukurtą vandenyno vandens ir kitų sąlygų kopijavimo technologiją dirbantis krevečių ūkis prie Rumšiškių, patenkins šalies gurmanų poreikius.



Thank You!

