Committee on Fisheries, PANEL II
Research and Innovation in Aquaculture
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The current state and perspective of aquaculture in Croatia

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Short introduction

- Area: 56.578 km²
- Population size: 4.124.531
- Sea area: 31.067 km²
- 6.4 km² of marine area for aquaculture
- 155 producers: 4 tuna, 28 finfish, 123 shellfish
- 400 locations

National Growth Objectives (2014-2020)

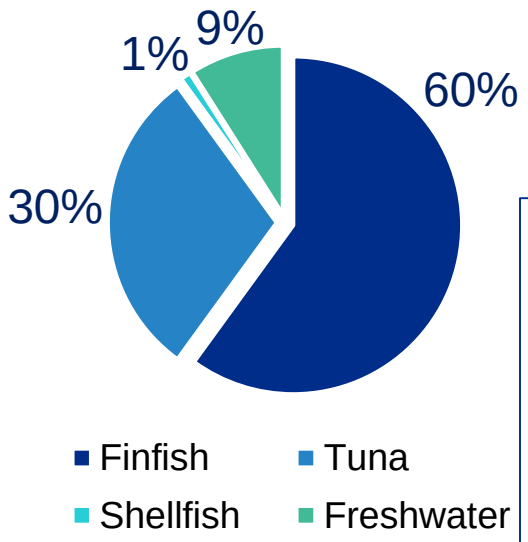
- **Production volume** from 13,916 tonnes (2012) to 24,050 tonnes in **2020** (**73% increase**)
- **Production value** from 78 million euro to 181 million euro in **2023** (**142% increase**)
- Freshwater fish farming **43.7% increase** in volume **by 2020**
- Marine fish farming **98.3% increase** in volume **by 2020**
- Mollusc farming **58.7% increase** in volume **by 2020**

Croatian aquaculture production 2018

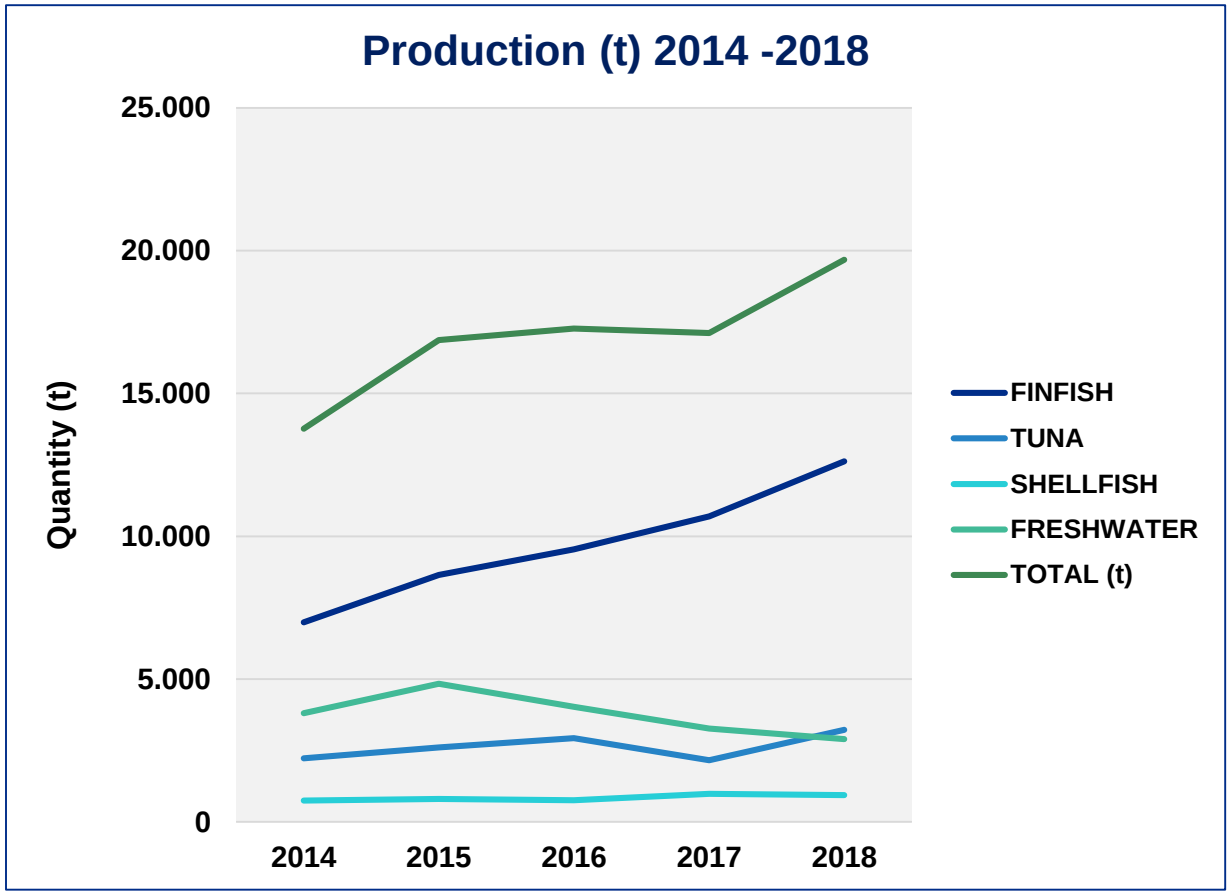
Species	Quantity (t)
European sea bass (*D. labrax*)	6,220
Sea bream (*S. aurata*)	5,591
Atlantic bluefin tuna (*T. thynnus*)	3,227
Meagre (*A. regius*)	808
FINFISH TOTAL	**15,846**
European flat oyster (*O. edulis*)	54
Mediterranean mussel (*M. galloprovincialis)*	882
SHELLFISH TOTAL	**936**
MARINE AQUACULTURE TOTAL	**16,782**
Common carp (*C. carpio*)	1,959
Rainbow trout (*O. mykiss*)	336
Other freshwater species	604
FRESHWATER AQUACULTURE TOTAL	**2,899**
AQUACULTURE TOTAL	**19,681**

European sea bass, sea bream and Atlantic bluefin tuna

Croatian production value 2018 and comparison 2014 - 2018



- Total value 2018: 120 mil. €



Response to the strategic guidelines

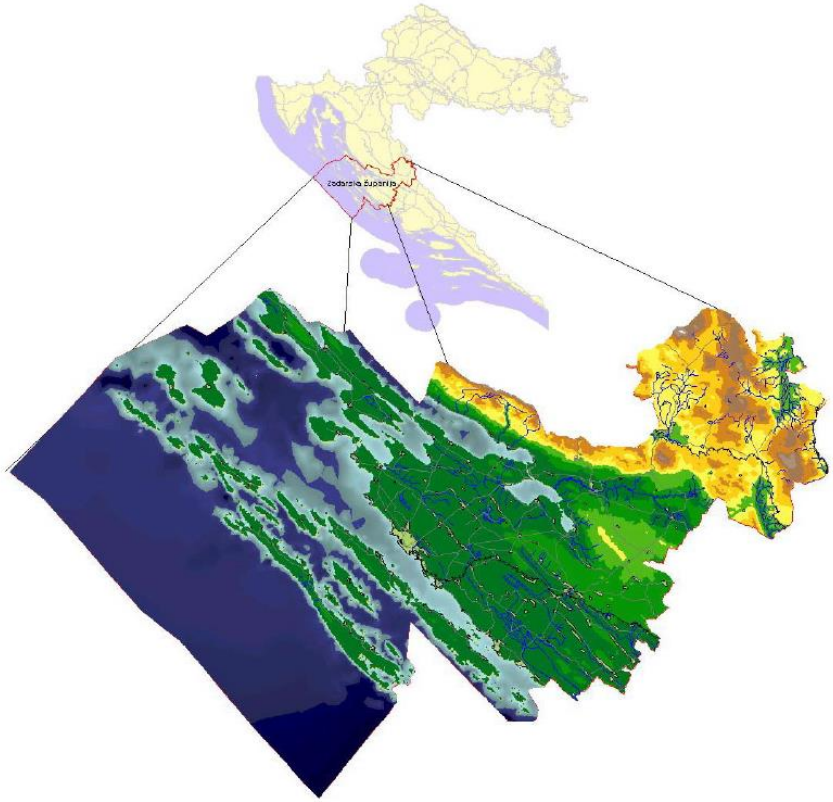
- **Objective 1**: Strengthen the **social, business and administrative environment** for aquaculture development

- **Objective 2**: **40% increase in the total production** while adhering to the principles of economic, social and ecological **sustainability**

- **Objective 3**: Improvement of the **perception** and **increase in the national consumption** of aquaculture products

Best practices

- **Integrated Coastal Zone Management**: determining the possible locations for marine farming and integration into the local marine spatial plan - the case of **Zadar County**
- **Impact assessment of marine aquaculture on the environment**: special procedures introduced to marine farming sites
- A **unified procedure for aquaculture permitting** has been developed



Source: Study on the use and protection of the sea in the Zadar County, in Croatian

Priorities

1) Simplification of legal framework and administration

2) Spatial placement of the activity and **spatial planning** – establishing new locations

3) Environment and nature – **environmental sustainability and resource efficiency**

4) Health of organisms in farming –epidemiological zoning and protocols for **disease control and prevention**

5) Market and competitiveness – better market position; **diversification** (new species and new products)

6) Perception and communication – **branding**, effective planning and domestic consumption increase

7) Education and employment – knowledge and **social sustainability**

Source: www.cromaris.hr

Mussel and oyster farms

- Traditional farming technology of floating parks
- Based entirely on the collection of immature bivalves
- Oyster farming in the Mali Ston Bay (**Special Nature Reserve**) - a challenge for adding greater value to the final product and developing a specific marketing strategy
- Mussel farming requires implementation of new technologies
- Ecological farming

Relevant projects at IZOR

- BICRO project 2011 **Shell guardian**: using non-destructive acoustic technology to alter fish predatory behaviour on mussel farms
- Currently active: Monitoring predation at Mali Ston Bay and performing targeted experimental fishing of sea bream at mussel and oyster farms

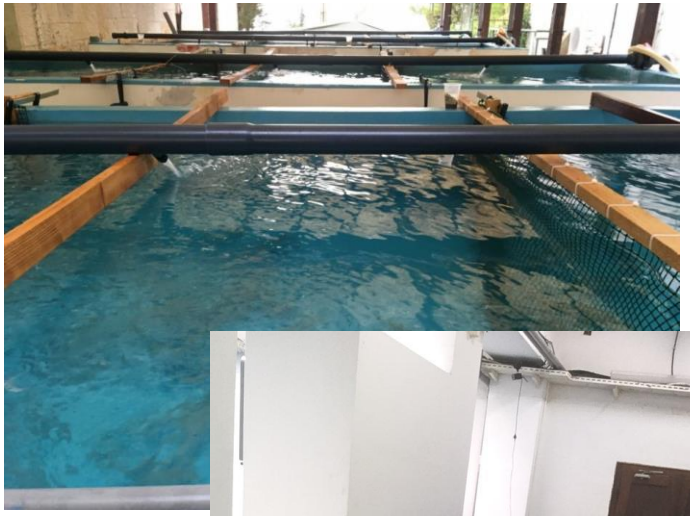
AquaPop (Aquaculture impact on wild marine populations) (2015 – 2019)

- Expansion of marine farming sites raised the concern of potentially adverse impacts on wild populations and ecosystem
- To better understand the complexity of aquaculture impacts on the native populations, this project employed **cutting edge instrumental** and **genetic approaches** to **support aquaculture activity and management**, as well as the **protection of marine environment**

http://jadran.izor.hr/~tsegvic/aquapop/basic.html

Interreg AdriAquaNet (Enhancing Innovation and Sustainability in Adriatic Aquaculture) (2019 – 2021)

- In the recent years, research has shown that farmed fish can grow more resistant to pathogens and environmental stress by changing its feeding.
- By **designing** and **testing new feeds**, we aim at addressing a number of understandable doubts of consumers about the quality of farmed fish.
- Furthermore, by introducing new technology to extract **biofuel** for the wastes accumulating in cages, farms will be able to keep clean their local waters and obtain energy for operating their installations.



https://www.italy-croatia.eu/web/adriaquanet

Thank you for your attention!