

Institute of Agricultural and Food Economics
National Research Institute

AQUACULTURE IN POLAND

MULTIFUNCTIONALITY AND SUSTAINABILITY



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market research department

6th December 2019 , Warsaw

AQUACULTURE IN EU AND NATIONAL POLICIES



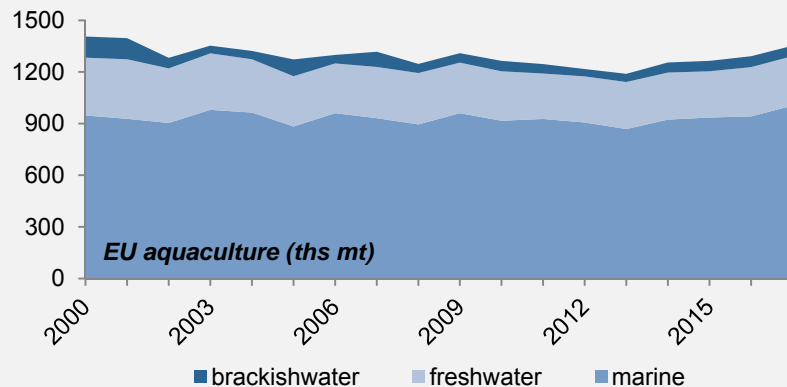
PRIMARY GOALS OF EU POLICY



- promoting sustainability and contributing to food security and supplies, growth and employment

STRATEGIC TARGET

- reducing administrative burdens
- improving access to space and water
- increasing competitiveness
- exploiting competitive advantages due to high quality, health and environmental standards



PRIMARY GOALS OF NATIONAL POLICY



- reach and hold the leading position in inland aquaculture production in the EU

STRATEGIC TARGET

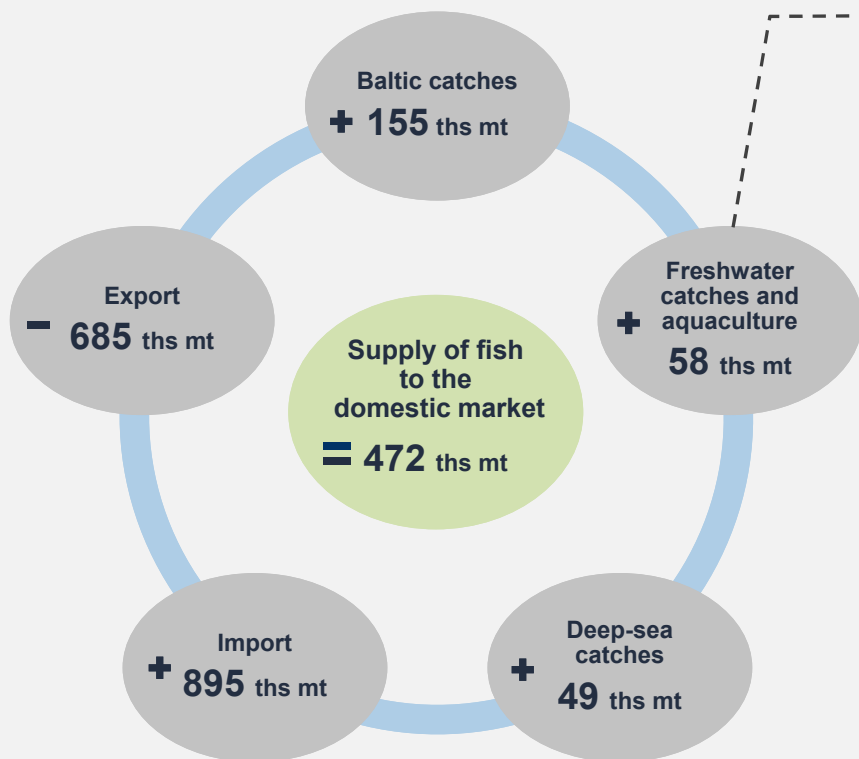
LOW INTENSIVE

- maintain the current area of production for extensive aquaculture
- increase the profitability of pond farms
- strengthening and dissemination of environmental and social importance of carp production

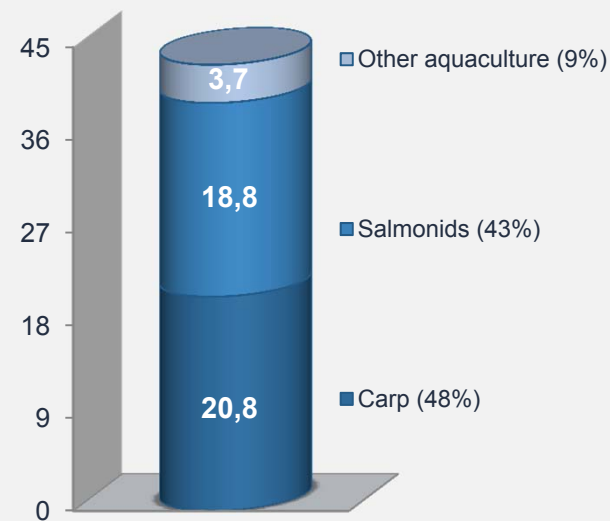
HIGH INTENSIVE

- reach and hold the leading position in inland intensive aquaculture production in the EU
- expand the share of fish from domestic intensive aquaculture in domestic market of fresh fish to at least 35%
- doubling the deliveries of fish out of domestic intensive aquaculture for processing sector

BALANCE OF FISH AND SEAFOOD IN POLAND



Aquaculture 43,3 ths mt (105 million EUR)



[live weight equivalent, 2018]

FORM OF FISH PRODUCTION IN POLISH AQUACULTURE

Production of consumption fish in aquaculture comprises four groups of activities:

- Pond culture of carp and additional production of cyprinids and carnivorous species and crayfish (low intensive farming).
- Farming of salmonids - mainly rainbow trout, european catfish and sturgeons in air ponds, tanks, raceways, cages, enclosures (intensive farming).
- Farming of warmwater and coldwater fishes in recirculating aquaculture system (RAS) - salmonids, african catfish, sturgeons and atlantic salmon (high intensive farming).
- Farming of sturgeons for the egg productions (caviar).

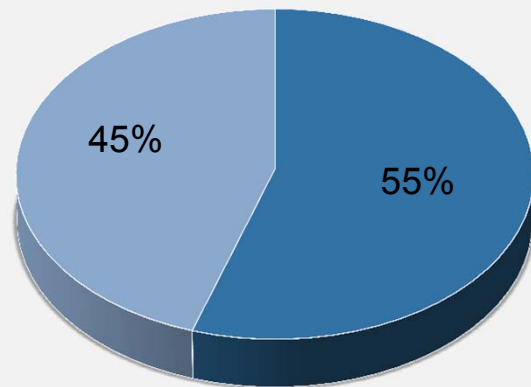
In addition to the production of aquatic organisms intended for consumption, an important and increasingly part of national aquaculture is the production of hatcheries and nurseries at eggs stage and juveniles stage in life cycle.



LOW INTENSIVE VS. HIGH INTENSIVE AQUACULTURE

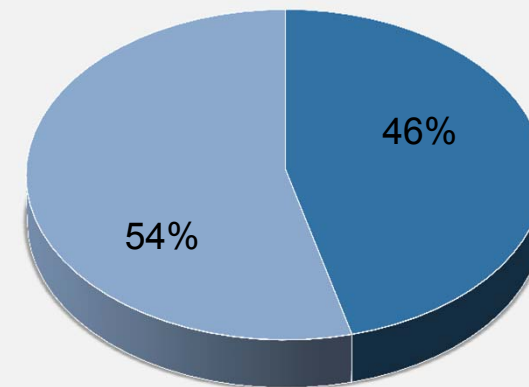


■ low intensive production ■ high intensive production



by volume

■ low intensive production ■ high intensive production



by value

Average production value per employee:

- low extensive farms - ca. 14 ths EUR

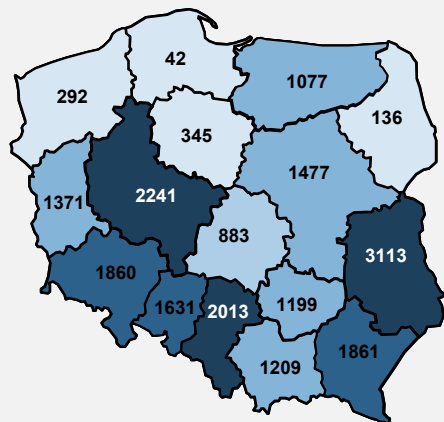
- high intensive farm - ca. 52 ths EUR

CARP PRODUCTION (LOW INTENSIVE AQUACULTURE)



MAIN CHARACTERISTICS [2018]

- production volume – 20,8 ths mt
- production value – 41,5 million EUR
- number of producers – 873
- pond areas cover about 62 ths ha
- number of employees – 4,4 ths
- 1st place in EU production



volume of production by voivodships (mt)

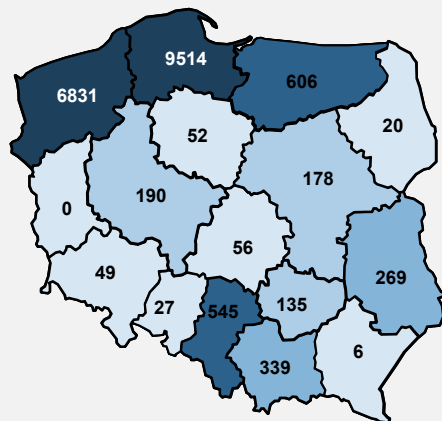


SALMONIDS PRODUCTION (HIGH INTENSIVE AQUACULTURE)



MAIN CHARACTERISTICS [2018]

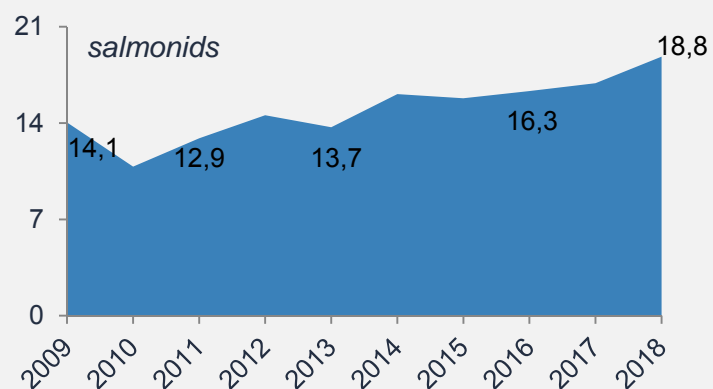
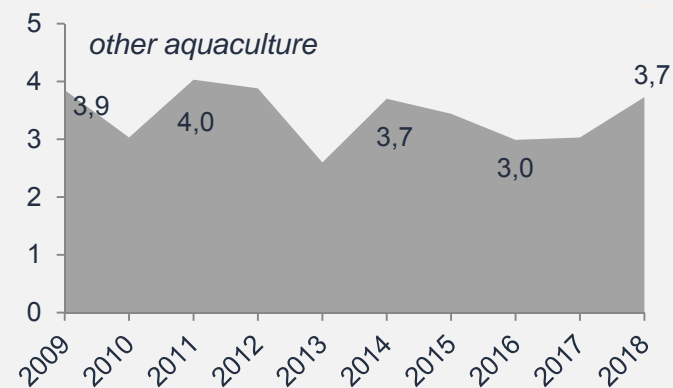
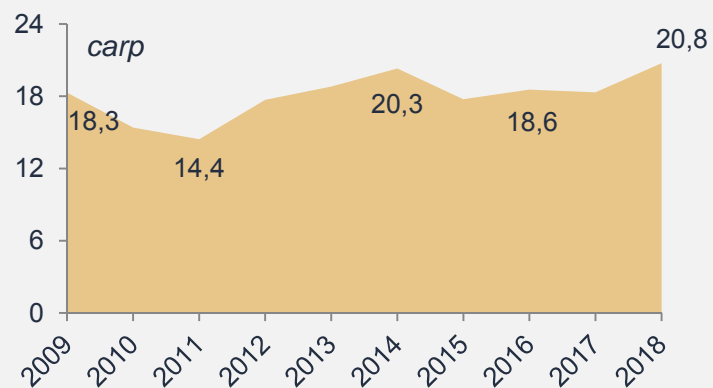
- production volume – 18,8 ths mt (rainbow trout -15,9 ths mt)
- production value – 54,1 million EUR
- number of producers – 127
- number of employees – 850
- 5th place in world export (81 mio EUR)



volume of production by voivodships (mt)



TRENDS IN AQUACULTURE IN POLAND [THOUSAND TONNES]



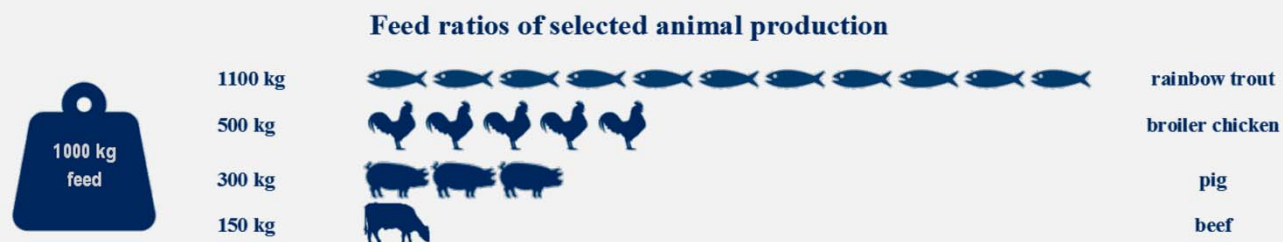
The assumptions of the national strategy are very unlikely to be achieved, which in first turn concerns the strategic goal, i.e. the increase in production of intensive aquaculture to 29 thousand tonnes. Therefore the fulfilment of detailed objectives is also doubtful.

ENVIRONMENTAL IMPACT



Inland fishery creates the smallest threat for the environment among agricultural activities. A properly managed fish farm does not create any ecological costs and moreover brings certain advantages.

The management over manure, slurry, guano, etc., is a basic problem for any livestock products. In the case of fish production the quantity of that increases along with the increase of the feeding efficiency coefficient of feedstuffs. Feeding efficiency of trout at the level of 1:1 and of 1:2-3 in the case of carp (assuming 50% of diet comes from natural sources) makes the burden considerably lower than in other branches of livestock production. In addition the systems of water treatment reduce the quantity of biological wastes to negligible values.

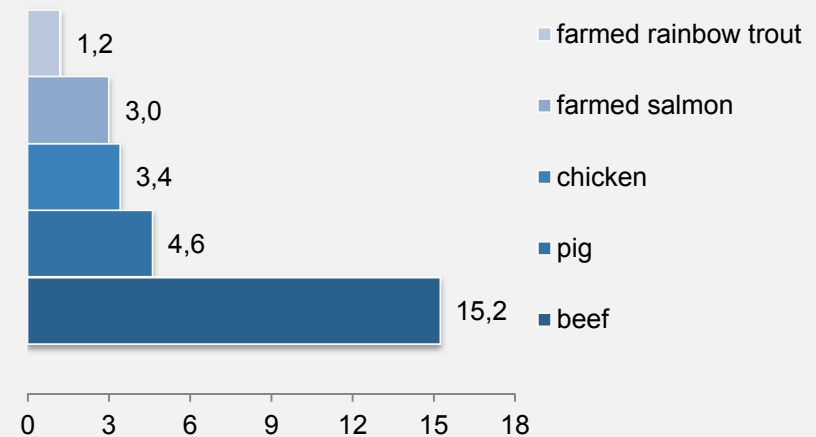


ENVIRONMENTAL IMPACT



The production of animal proteins is the most polluting branch of agriculture. Globally it generates more GHG gas emission than the whole transport sector. In general, meat production out of mammals results in higher emission of GHG gases than aquaculture production. Therefore fish production belongs to the branches creating one of the lowest burdens for the environment.

CO₂ emission in animal protein production (kg CO₂/kg production)



Aquaculture production demands considerably less water than other branches of livestock production. In the case a closed cycle (system RAS) the production of 1 ton of trout demands less ca 10 m³ of water versus over 4 thousand m³ in the case of 1 ton of pork or poultry. Reflecting natural way of production 1 ton of carp demands considerably higher quantities of water (approx. 21 thousand m³).

ENVIRONMENTAL IMPACT



Main environmental advantages of aquaculture fish production are as follows:

- water retention and improvement of water quality
- improvement of water economy in agricultural areas, creation of an unique microclimate
- support for biodiversity
- ponds create a living space for large number plant and animal species
- vital social, educational, environmental and recreational impact
- ponds are a permanent feature of landscape

Despite it the process of investments focused on elimination of negative outcomes or on increase of positive impact on the environment and improvement of efficiency of resource management is still inevitable.

Multifunctional features of ponds are compensated within the framework of the EU operational programs (conditional upon fulfilment of a number of environment supporting activities).

EXAMPLE OF MULTIFUNCTIONALITY AND SUSTAINABILITY



The Milicz Ponds (Polish: Stawy Milickie) are a group of about 285 fish ponds in Lower Silesian Voivodeship, south-western Poland, in the valley of the river Barycz, close to the towns of Milicz and Żmigród. The ponds cover a total area of about 77 square kilometres (30 sq mi). The largest complex of fishing ponds in Europe, 800 year old tradition of fishing farming

Due to their importance as a habitat and breeding ground for water birds, the ponds are a nature reserve (established 1963, area 53 km²), which is protected under the Ramsar convention (one of 13 such sites in Poland). Since 1996 it has also formed part of the larger protected area known as the Barycz Valley Landscape Park.



FOREIGN TRADE OF SEAFOOD BETWEEN POLAND AND USA



Export 59,1 million USD / 9,6 ths mt

2018

Import 79,1 million USD / 19,0 ths mt



salmon 23,4 mio USD



salmon 38,1 mio USD



sprat, sardines 17,0 mio USD



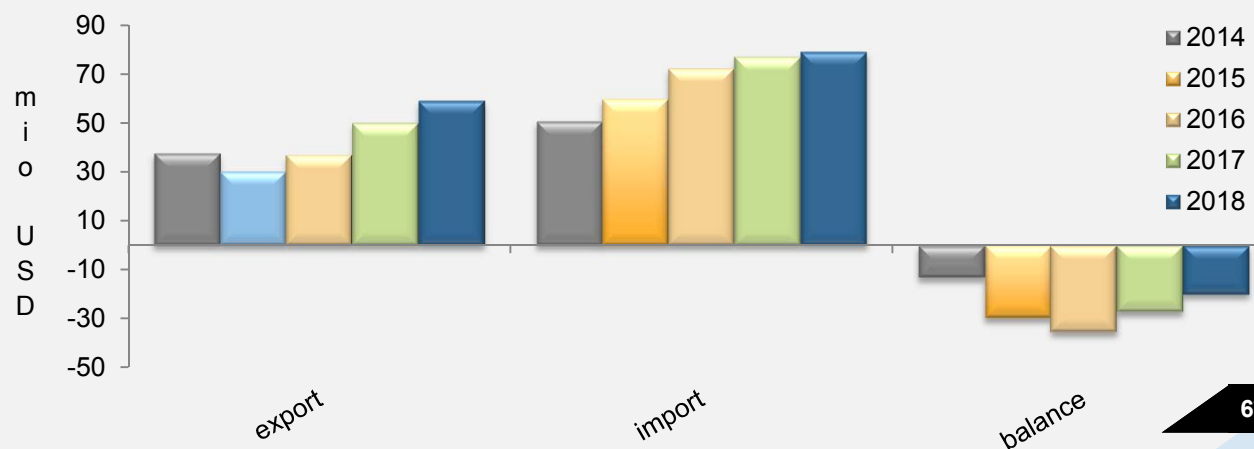
alaska pollock 32,1 mio USD

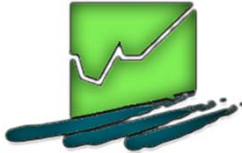


herring 5,7 mio USD



surimi 7,2 mio USD





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THANK YOU FOR YOUR ATTENTION

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Source:

Izba Administracji Skarbowej (Ministerstwo Finansów)
Ministerstwo Gospodarki Morskiej i Żeglugi Śródlądowej
Główny Urząd Statystyczny
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EUROSTAT/EUMOFA
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