



# caviar portugal



**A construir a aquacultura  
do futuro...**

[www.caviarportugal.com](http://www.caviarportugal.com)

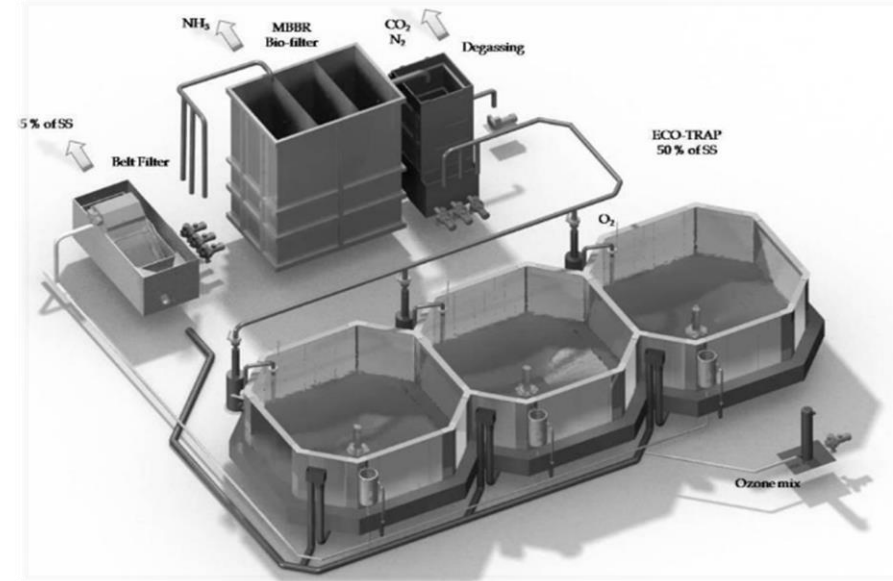


HISTÓRIA DO DESENVOLVIMENTO DE UM  
PROJETO DE AQUACULTURA DE ESTURJÃO  
NUM PAÍS...  
À BEIRA-MAR PLANTADO!

Paulo Zaragoza Pedro



**Caviar Portugal is a SME technology and Innovation Company driven by the ambition of becoming one of the big players in worldwide in caviar production. Brainchild of biologist Paulo Pedro and the Ukrainian aquaculturist Valeriy Afilov, the company was founded in 2012 with the mission of implement a fish farm for sturgeon in Portugal.**



**The aim of the project is to farm in closed recirculation aquaculture systems (RAS) 4 species of sturgeon with the purpose of producing meat, caviar and value-added products for national and international markets.**

**Innovative Project for Portugal, with estimated production of 6 ton/year caviar and 100 ton of sturgeon meat combining state of the art technology and focusing on energy efficiency to start in 2017**



# OUR SERVICES

## RAS MANAGEMENT & COMMISSIONING

Caviar Portugal can assist and advise on commissioning and maturing, managing and maintaining RAS and aquaponics systems for optimal operation, greatest efficiency and maximum profitability: from start-up and stocking to maintaining optimal water quality; from effective farm management plans to developing biosecurity protocols; from feed and growth management

## RAS DESIGN & MAINTENANCE

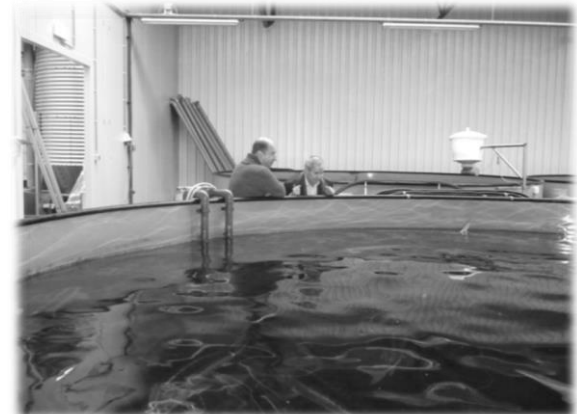
Caviar Portugal partners are among the industry's finest RAS designers, engineers and servicing and maintenance technicians. From designers and engineers with experience of creating systems from small R&D systems to full RAS farms and integrated aquaponics systems, to technical specialists with experience in servicing complex RAS facilities, you will not find better

## TRAINING & EDUCATION

Caviar Portugal can provide services of advanced education and training in the aquaculture sector. Delivering guest lectures in schools, or universities, providing training at farms or research centers and providing placements for on-the-job training needs.

## R&D SERVICES

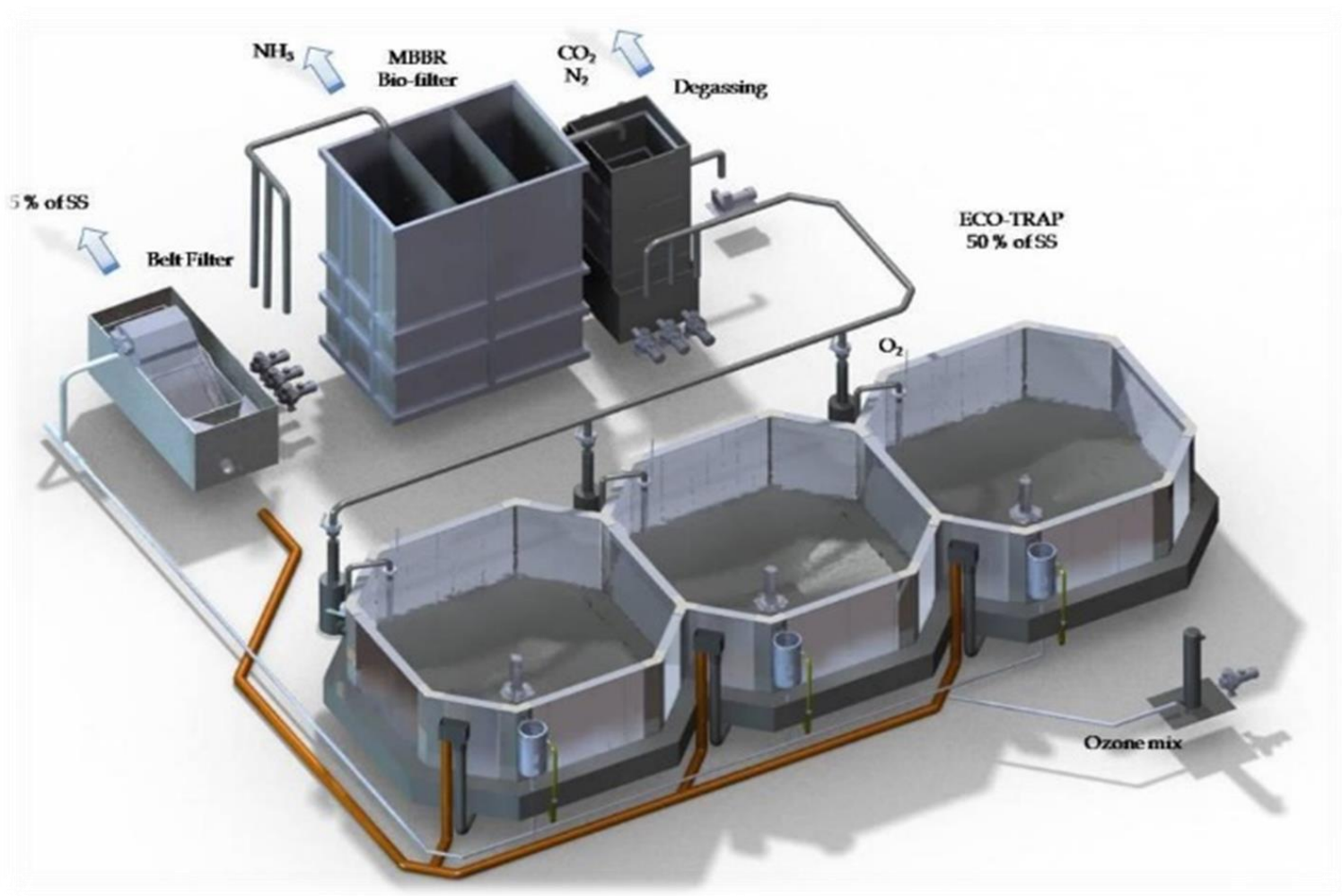
We offer high quality professional in-vivo R&D services to the aquaculture. We are committed to providing quality services and value for money supported in years of combined experience of academic and commercial research, as well as commercial RAS production, guaranteeing a friendly, efficient and complete service to our clients and partners.





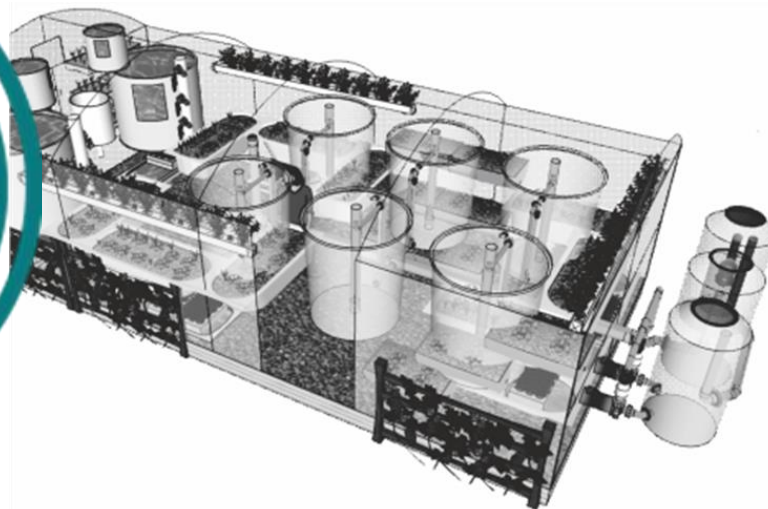
# RAS

## Recirculation Aquaculture System





**AQUAPONICS**  
Transforming waste into products  
Nutrient use optimization  
Food safety  
Energy efficiency











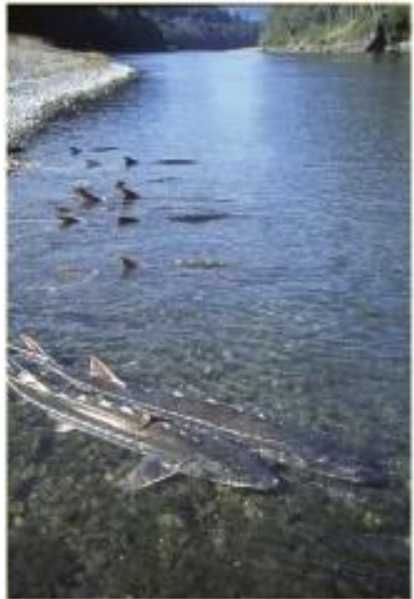
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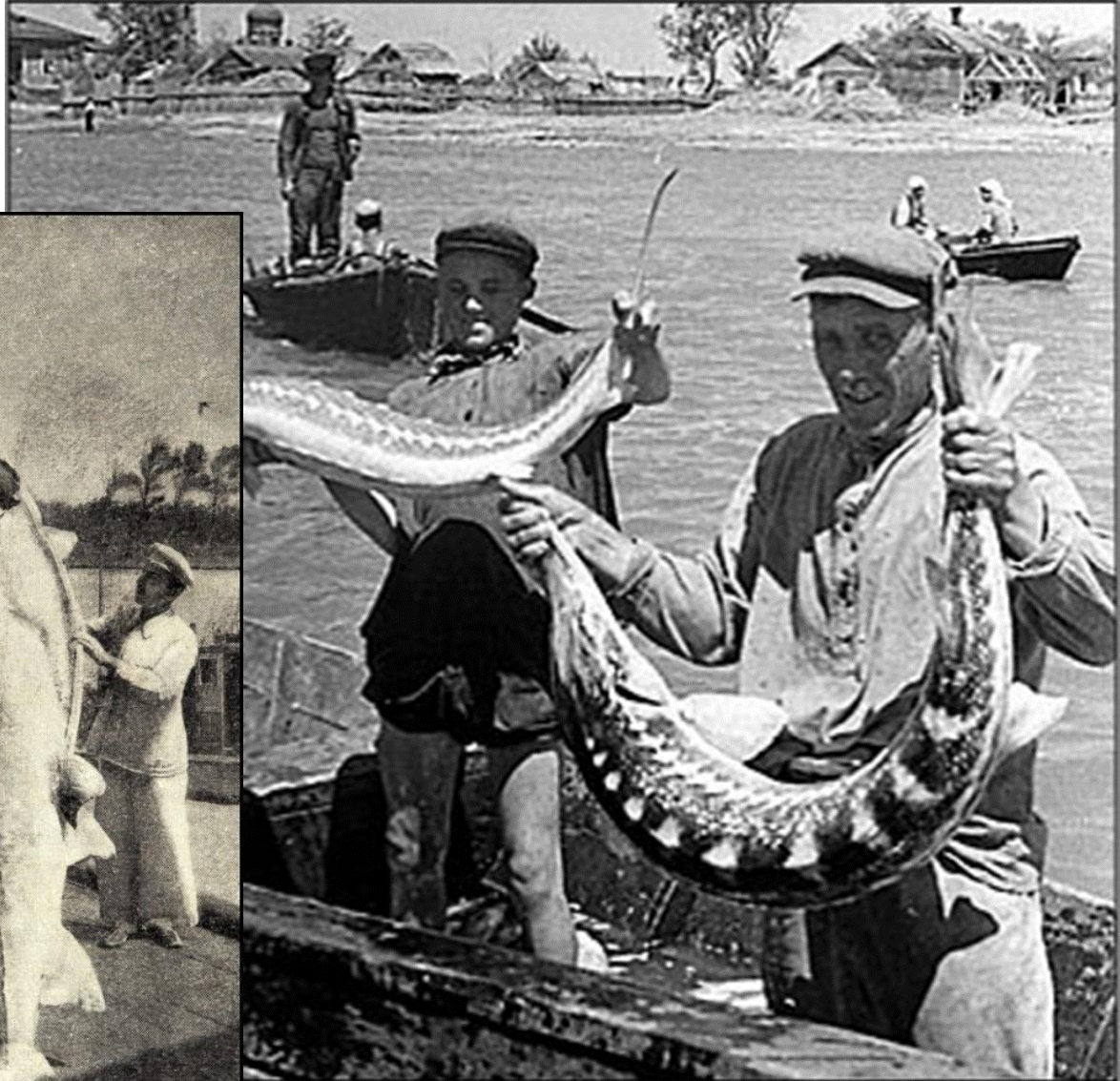




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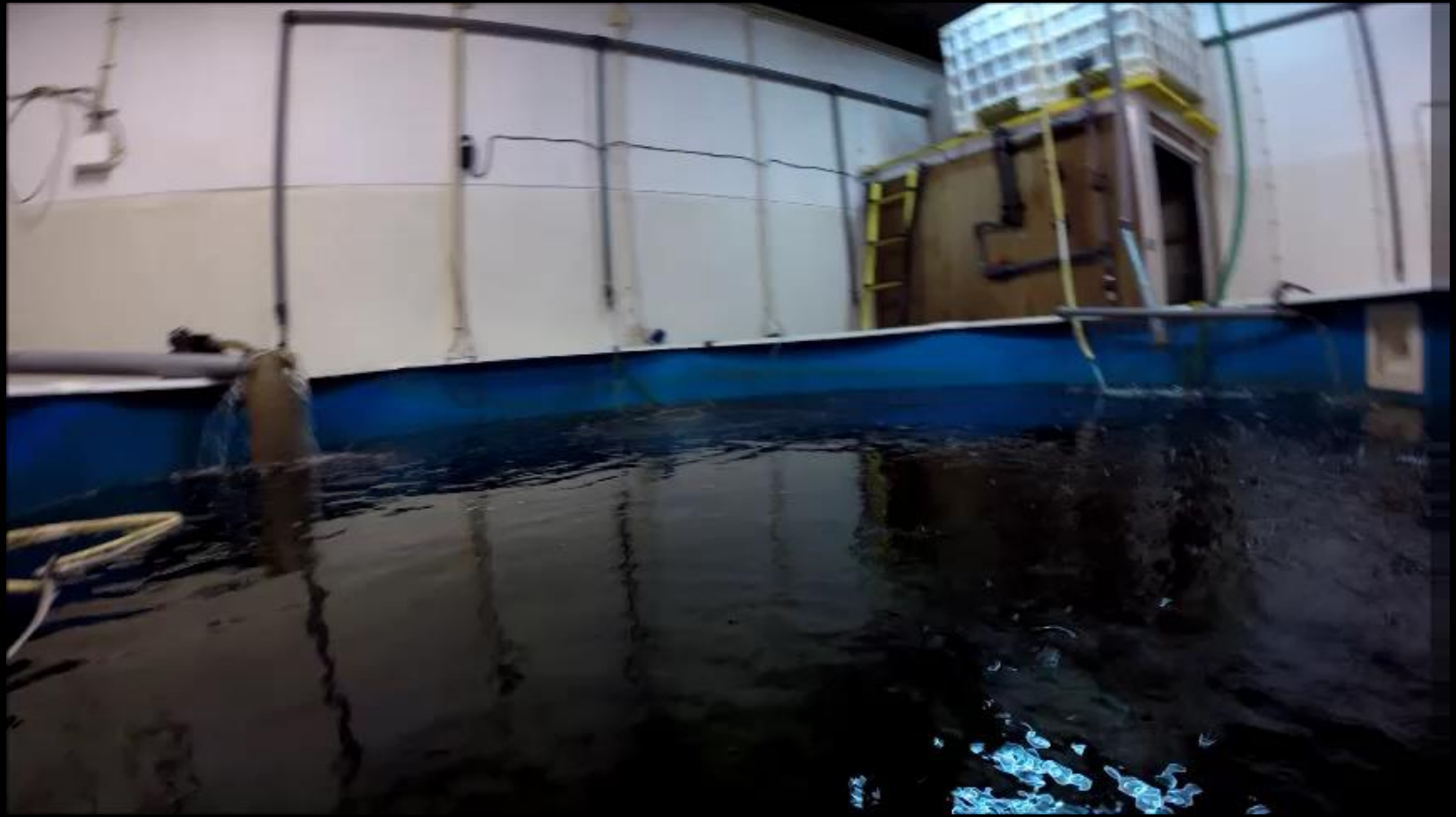




## Black Caviar Devoured by Muscovites in Ritzy Competition

The Moscow Times | Apr. 23 2012 00:00 | Last edited 12:28









## Produtos

### Caviar

De diferentes espécies (sterlet, Beluga, russo, híbrido). Utilização alimentar e também cosmética/ farmacêutica.

### Pescado

Venda a retalho, fresco, congelado e fumado.

### Sub-produtos / co-produtos

Transformação e valorização. Visceras, peles, cartilagem, nutrientes...





## I&D

### **Eficiência dos sistemas recirculares**

Remoção de nutrientes, ciclos de frio, integração de tecnologia de valorização, eficiência e sustentabilidade (Aquaponia, Multitrofico).

### **Eficiência no cultivo e desenvolvimento das espécies**

Indução ou determinação precoce do sexo, desenvolvimento de híbridos, apuramento de exemplares, melhoria dos procedimentos para extração do caviar (menos intrusivos), diagnóstico de estados de maturação, optimização de dietas

### **Sub-produtos / co-produtos**

Transformação e valorização, identificação de novas aplicações.



## I&D Perspetivas

### Desenvolvimento de tecnologia para RAS de grandes espécies marinhas

Desenvolvimento e aplicação do conhecimento e conceitos em água doce e sua aplicação a espécies marinhas de elevado valor (seriola, atum) em sistemas recirculares em terra.





# building tomorrow's aquaculture... today

Muito obrigado pela vossa  
atenção!

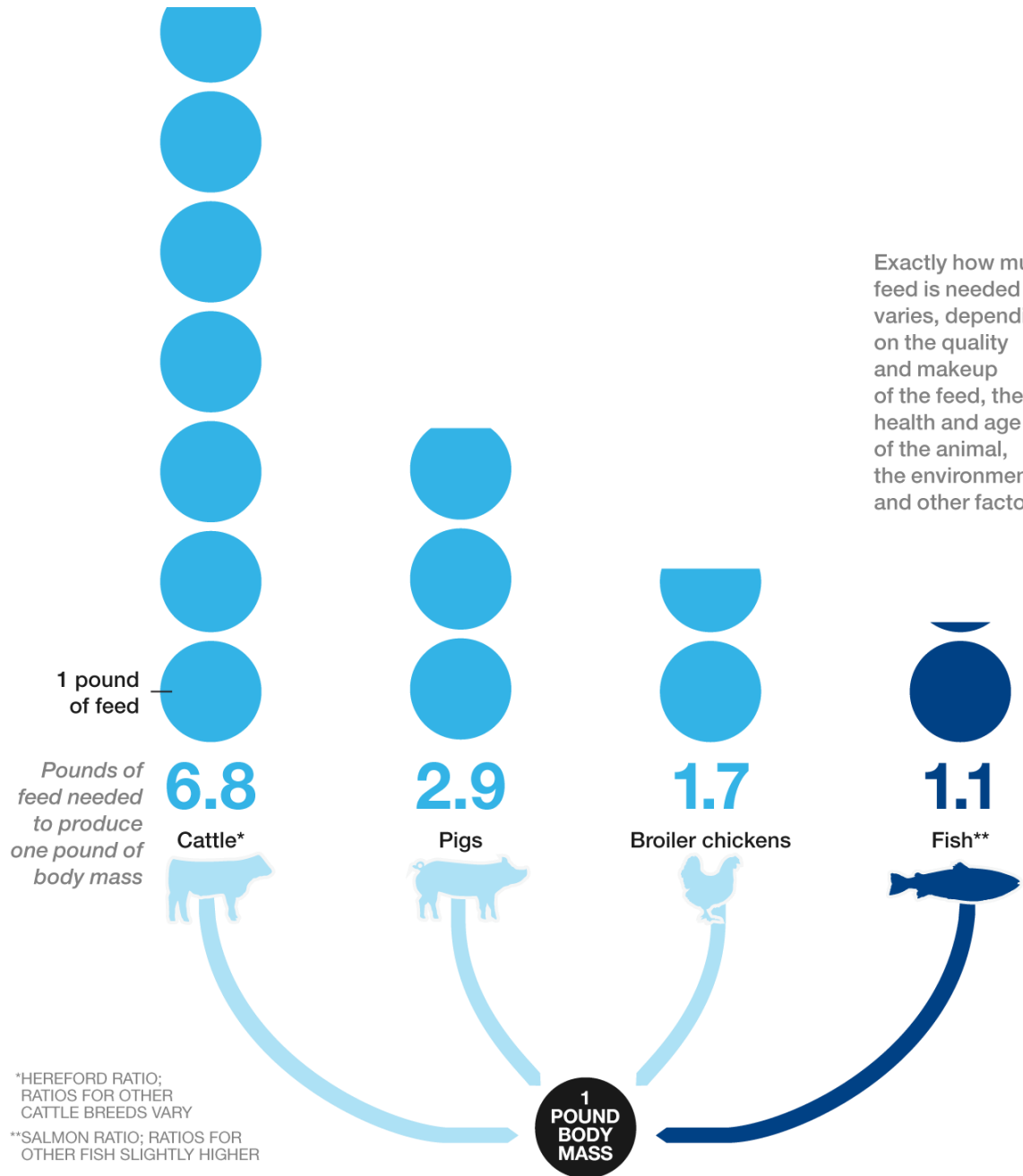


## O Esturjão...

Esturjão é o nome comum usado para designar as espécies de peixes da família Acipenseridae, incluindo os gêneros Acipenser, Huso, Scaphirhynchus e Pseudoscaphirhynchus.

O termo inclui cerca de 28 espécies e subespécies que são comumente conhecidas como esturjões e várias espécies aparentadas que possuem nomes comuns distintos, sendo as mais notáveis “sterlet”, “kaluga” e “beluga”.

Os esturjões compõem uma das mais antigas famílias de peixes ósseos existentes, e são nativos de rios, lagos e costas subtropicais, temperadas e subárticas da Eurásia e da América do Norte.



\*HEREFORD RATIO; RATIOS FOR OTHER CATTLE BREEDS VARY

\*\*SALMON RATIO; RATIOS FOR OTHER FISH SLIGHTLY HIGHER

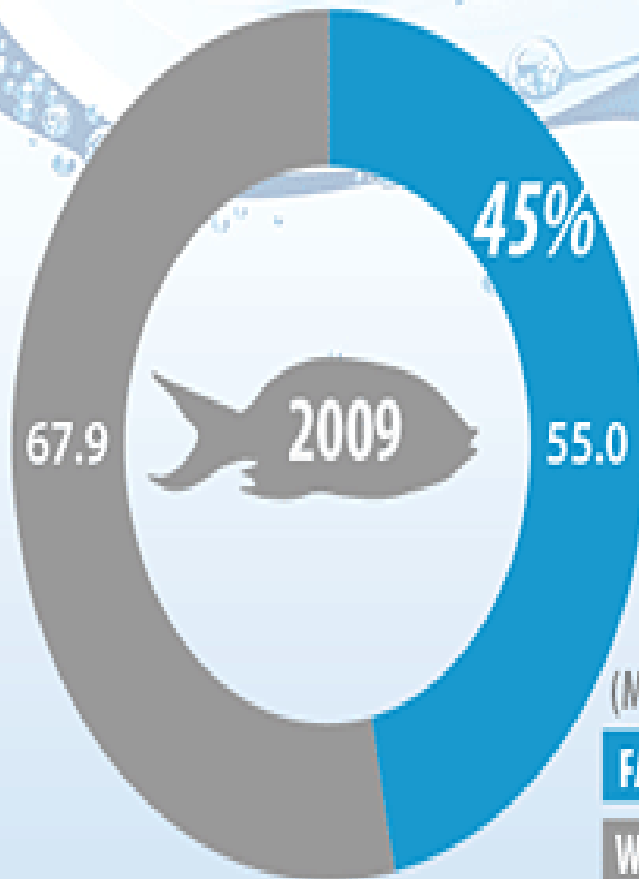


# GLOBAL SEAFOOD CONSUMPTION

NOW

VS

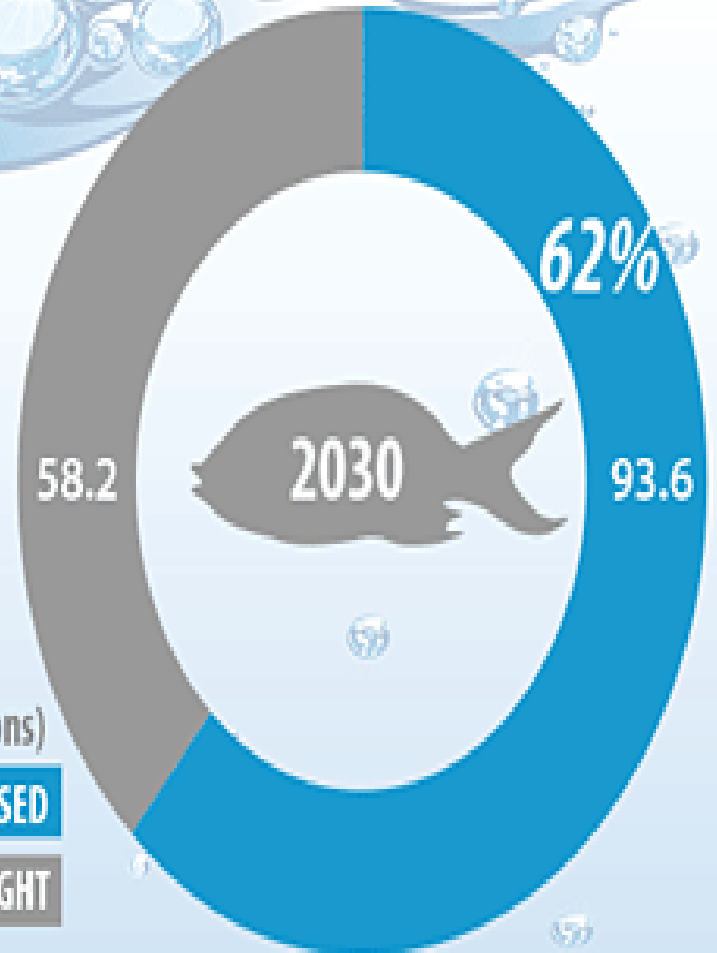
FUTURE



(Million tons)

FARM RAISED

WILD CAUGHT







In 2012 Almost Half of All Fish and Seafood Directly Consumed by People or Used for Other Purposes Came from Aquaculture.



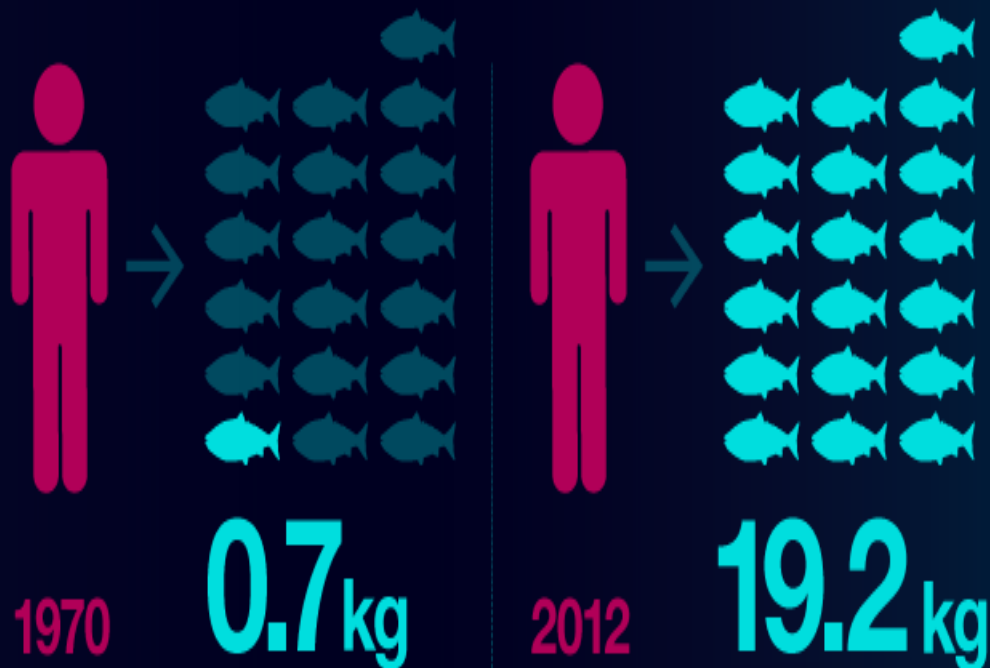
**49%**  
is Farm-raised

**18%**  
is from Mariculture



## Fish and Seafood Farming is the Fastest Growing Animal-Food Production Sector

The per-capita supply of fish and seafood increased from less than 1kg in 1970 to almost 19kg in 2010.



SOURCE:

FAO – The State of World Fisheries and Aquaculture, 2014.