



Factsheet No. 11, July 2017

CERES storyline - meagre at the South Atlantic coast

What do we expect under climate change?

Meagre (*Argyrosomus regius*) is an important resource, both for fisheries and aquaculture. This species is distributed along the Atlantic Northeast, Atlantic Eastern Central and Mediterranean Sea. It is a fast growing species, with high fecundity and may attain over 180 cm in total length and 50 kg in weight, reaching over 200€ per specimen.

These characteristics, make meagre particularly valuable for small-scale commercial and recreational fishers, as well as to the processing industry due to the diversity of products that can be developed (e.g. fillets, slices). Therefore, its production for aquaculture has been heavily promoted. Meagre is produced in several Mediterranean countries (France, Italy, Spain, Egypt, Greece, Turkey, Malta and Portugal), mainly in cages but also in earth ponds.

Europe produces around 10,000 Tons of meagre. Its commercial size is above 1.5kg that can be reached in only 15 months depending on temperature (sea bream required the same time to produce a 400 g specimen). Growth is heavily depressed when water temperature

decreases below 17°C, and is optimal at 24°C. Therefore, this species might be a good solution for Mediterranean and South Atlantic aquaculture, considering global warming scenarios.

Our goal in CERES is to determine the potential impact of Climate Change on meagre, both for aquaculture and fisheries, by assessing growth, survival at different development stages and infer on how climate change may affect recruitment.

How vulnerable is meagre?

The meagre farming industries are still expanding in South Europe, with research still needed to achieve a sustainable and efficient production system. The most relevant barriers and challenges affecting the growth of this species are:

- availability of efficient protein sources and feed prices
- increased requirements for sustainability in farming practices
- diseases management
- transfer of diseases and parasites between farmed and wild fish
- farmed fish escapes
- predominance of small-scale farmers
- lack of product differentiation and development
- lack of co-ordinated national strategic plan for aquaculture and poor industry administration
- competition from an emerging range of other farmed species
- consumer's growing interest for safe and healthy food



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This project receives funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 678193 (CERES, Climate Change and European Aquatic Resources).



What is the economic value of this species?

Meagre distribution and commercialization is growing and the market demand for this species is growing exponentially. Yet, several constraints still affect the growth of this species production, mainly related with the harvesting seasons that are identical to other fish species already established, like sea bream and seabass, and the availability of wild meagre in the market. The total production of meagre in Europe attained 4100 Tons in 2015, and a market average value of 5.8 €/kg, thus representing a market value of 23 780 K€. Climate related changes are expected to affect production yields posing threat and opportunities to the viability of this species aquaculture.

What are the challenges?

The knowledge on meagre aquaculture is still scarce when compared to salmon, sea bass and sea bream. Several aspects related with different stages of meagre development still require the development of protocols

for a sustainable production of this species, namely on breeding programs for selection traits, bioenergetics, physiology, nutrition, disease prevention, optimization of technology adapted to meagre behavior, among others.

What is the working program in CERES?

- Evaluation of sudden environmental changes on survival and growth of larvae and post-larvae
- Effect of temperature on growth rate, survival and feed efficiency of juveniles

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