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4th Promotional Workshop DIVERSIFY Athens, 11th JULY, 2018

Exploring the biological and socioeconomic potential of
new/emerging candidate fish species for the expansion
of the European aquaculture industry:



Co-funded by the
Seventh Framework
Programme
of the European Union



Dinos Mylonas
Project Coordinator
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Crete, Greece

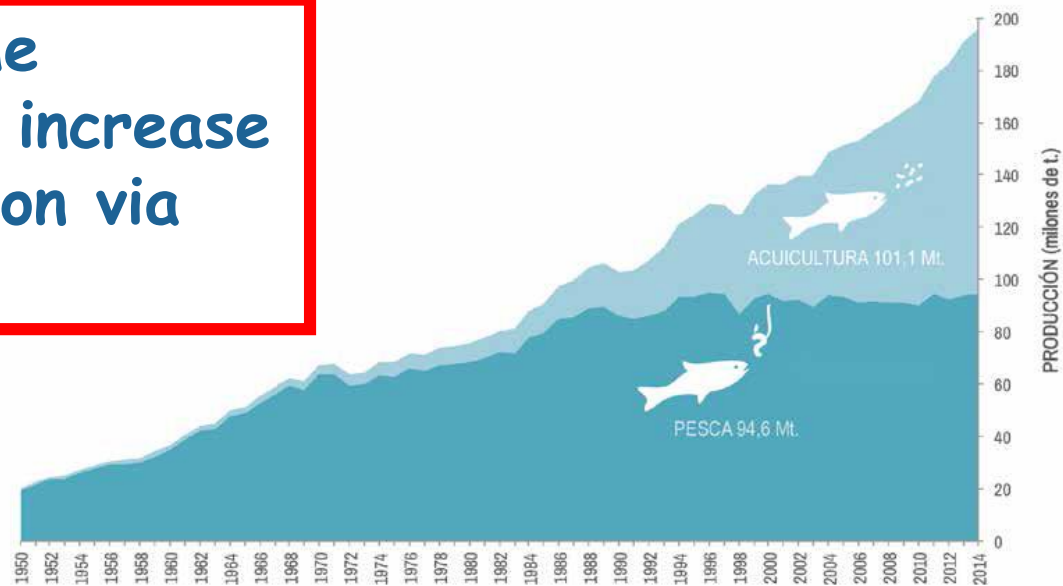
Rocio Robles, Dissemination
leader/Scientist
CTAQUA
Cadiz, Spain



Seafood consumption in the world/EU: some figures

- 50% of seafood worldwide from Aquaculture
- 10% of seafood in the EU from Aquaculture
- 65% of seafood in the EU imported

Strong interest from the European Commission to increase EU aquaculture production via DIVERSIFICATION





Problems with Mediterranean species



- Consumers prefer fillets, steaks, ready-to-cook
- Small, plate size (difficult to prepare, bones)
- Larger fish more expensive to grow (3 y)



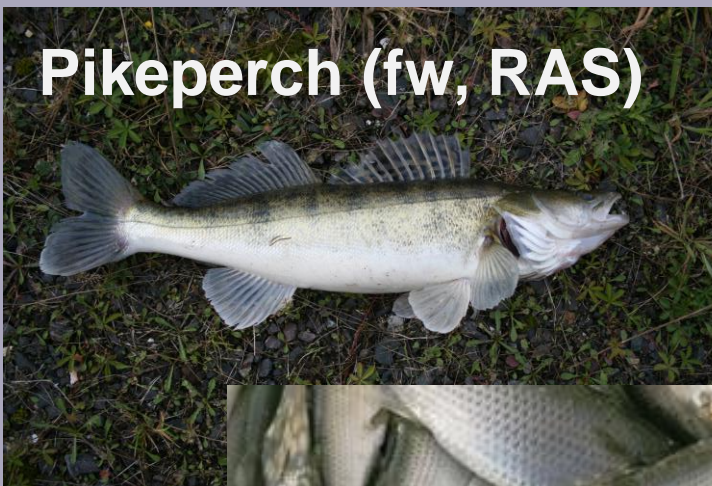


Choice of new/emerging species

greater amberjack



meagre



Pikeperch (fw, RAS)



grey mullet



wreckfish



Atlantic halibut



Partnership of DIVERSIFY

[ctaqua](http://ctaqua.eu)

37 partners:

**Spain, France, Italy, Greece,
Israel, Belgium, Denmark,
Netherlands, Norway, UK,
Germany and Hungary**



**20 Research/Universities
9 Small Medium Enterprises
2 Large companies
5 Professional associations
1 NGO**



Bottlenecks of the six species



Meagre: Limited genetic variation, nutrition, health



Greater amberjack: Reproduction, juvenile production, parasites



Wreckfish: broodstock availability, reproduction, juvenile production



Pike perch: larval survival and juvenile production



Halibut: reproduction, juvenile production, health



Grey mullet: reproduction, larval rearing, nutrition



Socioeconomic bottlenecks

- Perception of aquaculture products
- Aquaculture growth barriers
- Market demand, buyer preferences
- New product development, value adding
- Market development

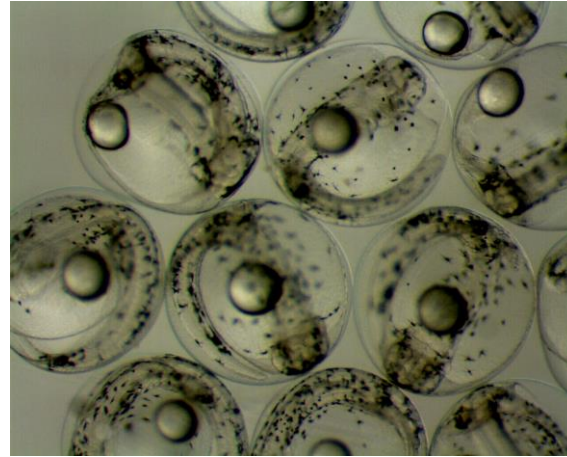
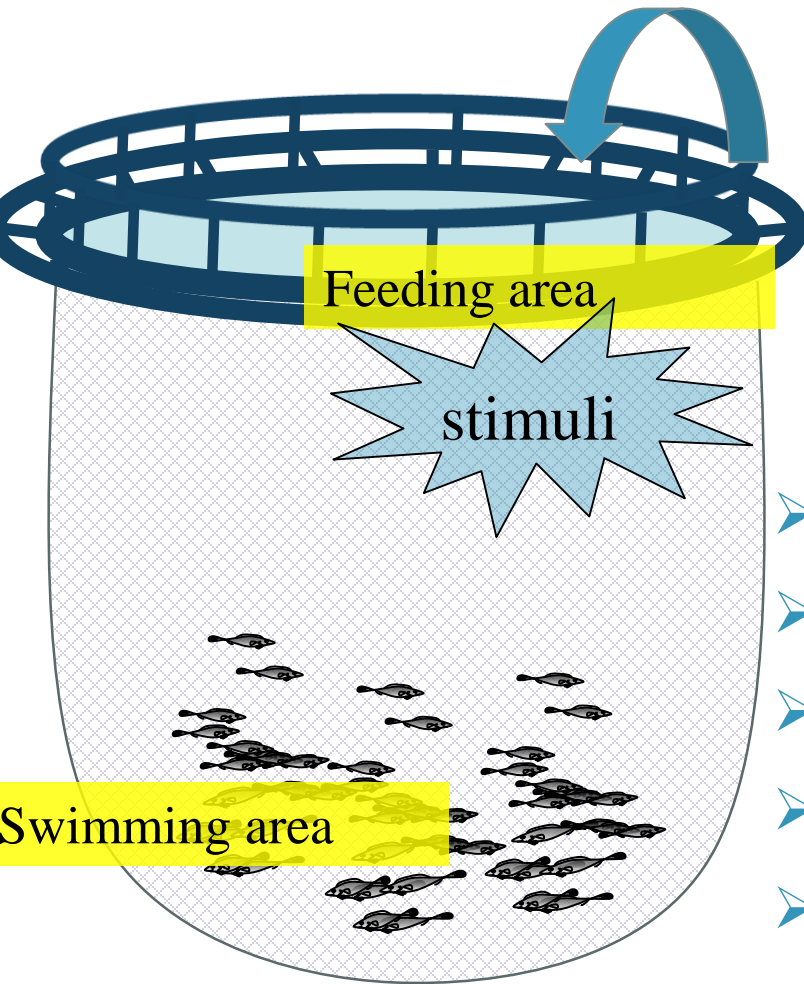






1-MEAGRE

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- Description of the **genetic variability** of the broodstock
- Paired-spawning control and *in vitro* fertilization methods
- Successful spawning **protocols**
- Protocol for enrichment of live food in larviculture (DHA)
- **Grow out**: response to physical stimuli
- Day and night distribution in **sea cages**

Papadakis, I.E. et al, 2017.



2- GREATER AMBERJACK

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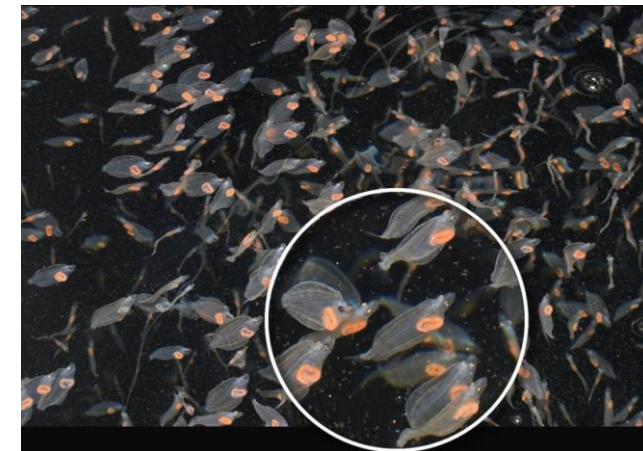
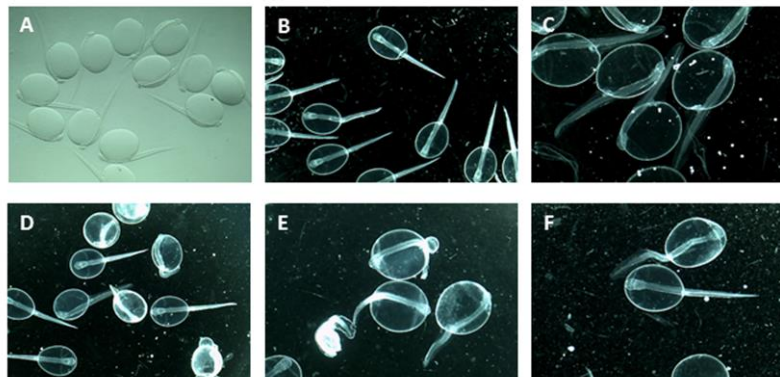
- Successful hormonal control of reproduction (implants). First spawning of F1 stocks
- 500.000 juveniles obtained → grow out cages
- Main challenge: control of parasites in grow out





3- ATLANTIC HALIBUT

- F1 fish could be hormonally induced to spawn earlier with higher fecundity than controls
- Larval rearing using on-grown Artemia, early weaning and improvement of juvenile quality
- Development of a VNN vaccine: capsid replicated





4-GREY MULLET



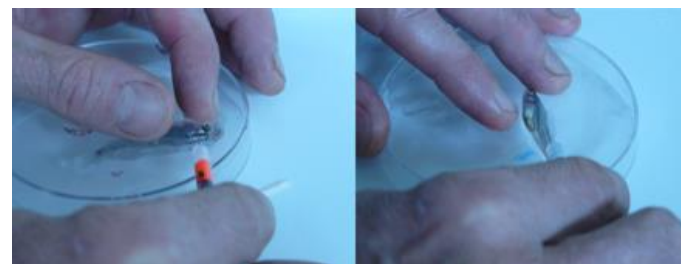
- Important knowledge generated on **herbivorous** sps.
- Controlled reproduction by **hormonal treatment**
- Effect of **Taurine** in larviculture
- Effect of salinity on DHA requirements
- High number of **juveniles** obtained
- **Grow out** systems under evaluation



5-PIKEPERCH



- Genetic variability of cultured broodstock and comparison with wild populations for future breeding selection programs
- Relevant role of **HUFA** and vitamins in larviculture.
- Prevention high cannibalism in larviculture
- Effects of various **environmental factors** (light intensity, water renewal rate, water flow direction and tank cleaning timing) on larval rearing of pikeperch (RAS).



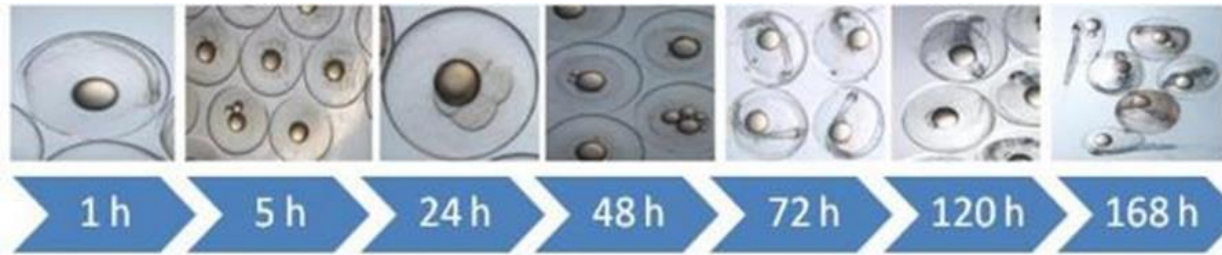


6- WRECK FISH

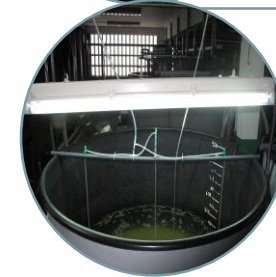
- Most challenging species
- *In vitro* fertilization protocol.
- Development of broodstock diet
- Limited larviculture period (35 and 60 days)



Antonio Vilar
Aquarium Finsterrae
www.casaciencias.org



High larval mortality.



Survival up to 60 dph.



Socioeconomics

- Identification of consumer segments for the candidate fish species
- Organoleptic characterization
- Production of ideas and value-added products, and testing them with consumers
- On line supermarket trials





Production of ideas and value-added products, aqua and testing with consumers

41 ideas for new product development of value added products.



12 ideas selected for checking **production feasibility and shelf-life.**



6 ideas selected for **consumer evaluation** in Spain, UK, Germany, France and Italy.



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Fresh frozen **greater amberjack** filet



Grey mullet in olive oil



Smoked **grey mullet**



Ready to eat **meagre** salad



Hamburger fish shape (**pike perch**)



Fish paté (**pike perch**)



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IRTA



Dissemination www.diversifyfish.com

THIRD PROMOTIONAL WORKSHOP OF DIVERSIFY ORGANIZED IN VERONA-ITALY



DIVERSIFY 3rd Promotional Workshop

Via
37
22th



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Access to

- Presentations from this workshop
- Technical Leaflets (species specific)
- Presentations from all annual meetings
- Scientific articles



The
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event started with an update of the project achievements in all the research areas, presented by the Dissemination leader. Five more presentations provided the background for the following debate. Among the presentations, the director of API, Andrea Fabris, gave an overview of the aquaculture production in Italy. During the debate, production costs and marketing of

Diversify species were important discussion points. Consumer attitudes towards aquaculture products and the culture of



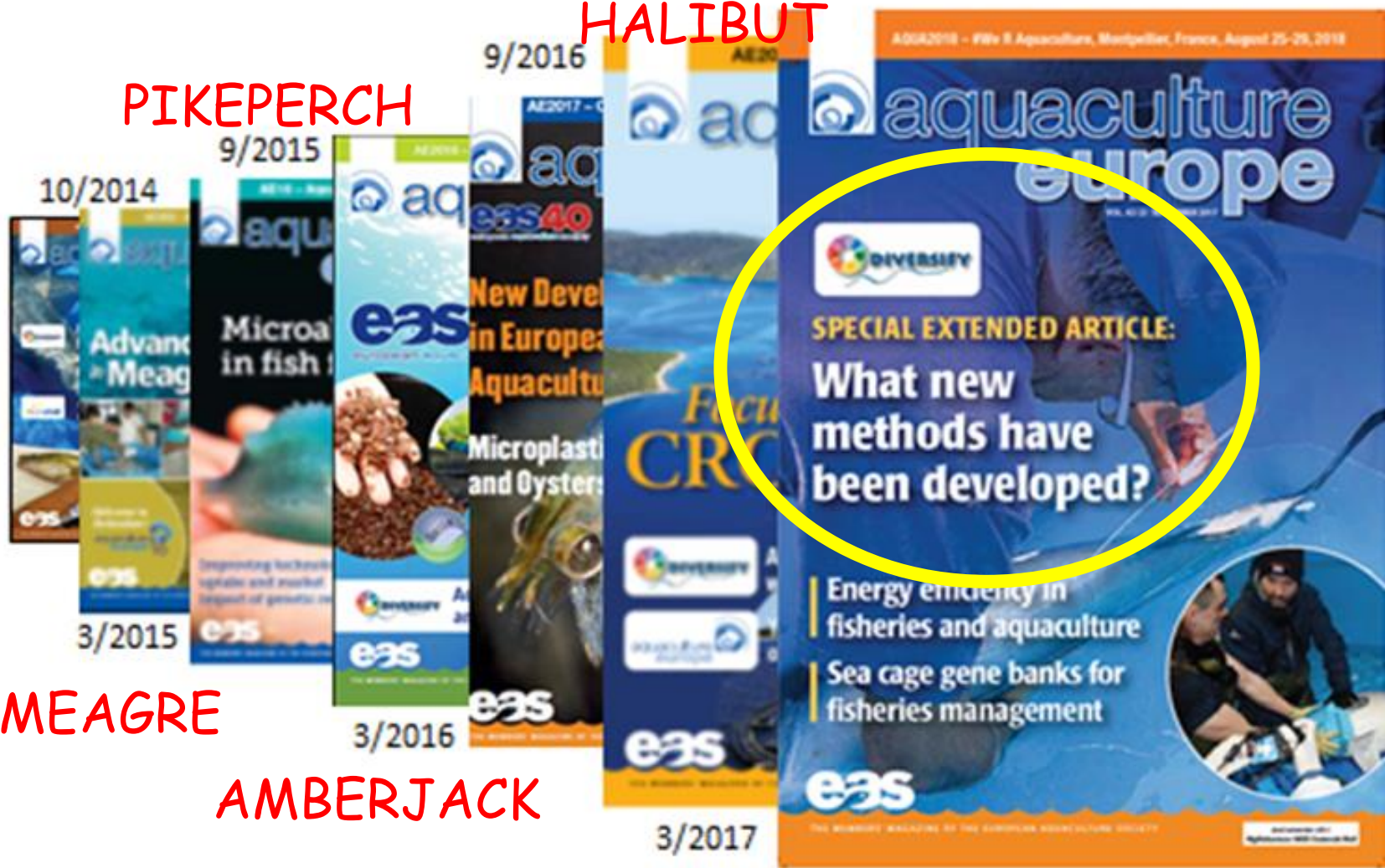
Articles in Aquaculture Europe:

9/2017

[ctaqua](http://ctaqua.org)

HALIBUT

PIKEPERCH



MEAGRE

AMBERJACK

WRECKFISH



DIVERSIFY in 3 minutes!

<https://youtu.be/49EZKkBkiaQ>



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New species for EU aquaculture

THANK YOU
www.diversifyfish.eu

Dinos Mylonas
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