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

## UPDATED RESULTS
## MAY 2017

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

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CTAQUA
Cadiz, Spain

# DANKE!!

**Matthias Keller,** Svenja Motzkus, Sandra Kees and Sabine Wedell

## WORKSHOP AGENDA

10:00 ***Presentation of the project DIVERSIFY***.
Rocio Robles, Dissemination leader. Technical Director, CTAQUA, Spain.

10:20 ***The German fish market in figures: Update on valuable data***.
Matthias Keller, Managing Director of BVFi, Germany.

10:40 ***German markets: consumer attitude to new fish products***.
Jürgen Pauly, Category Manager Fresh, Globus SB-Warenhaus, Germany.

11:00 Coffee break

11:30 ***Aquaculture products for the long run: Consumer-driven product idea development from Diversify***. Marija Banovic, MAPP Centre, Department of Management, Aarhus University, Denmark.

11: 50 ***Traceability, labelling and certification of fish products***. Javier Ojeda, APROMAR, Spain.

12: 10 ***Cross-cultural consumer perception of new fish products***. Luis Guerrero, IRTA, Monells, Spain.

12:30 Debate: ***Consumer attitude to diversification in aquaculture fish products: trust of consumers in aquaculture products, sustainability and health-related behaviour***.

Moderator: Marija Banovic (AU)

Panel: Matthias Keller (BVFi); Jürgen Pauly ( Globus); Birgit Schmidt-Puckhaber, (Fachzentrum Landwirtschaft); Javier Ojeda ( Apromar); Luis Guerrero (IRTA); Machiel Reinders (WUR).

degustation

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

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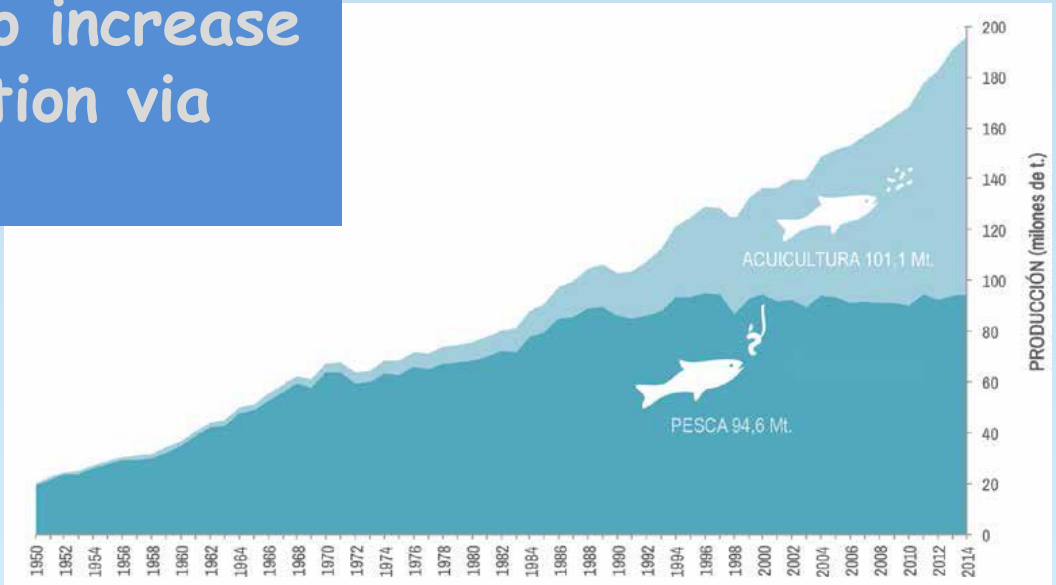
# Seafood consumption in the world/EU

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

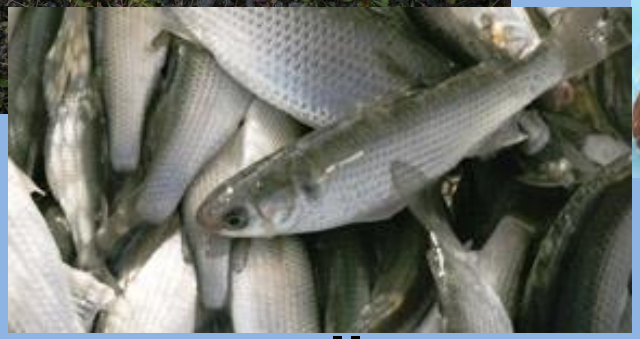
**Strong interest from the European Commission to increase EU aquaculture production via DIVERSIFICATION**



# 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



grey mullet

# Partnership of DIVERSIFY

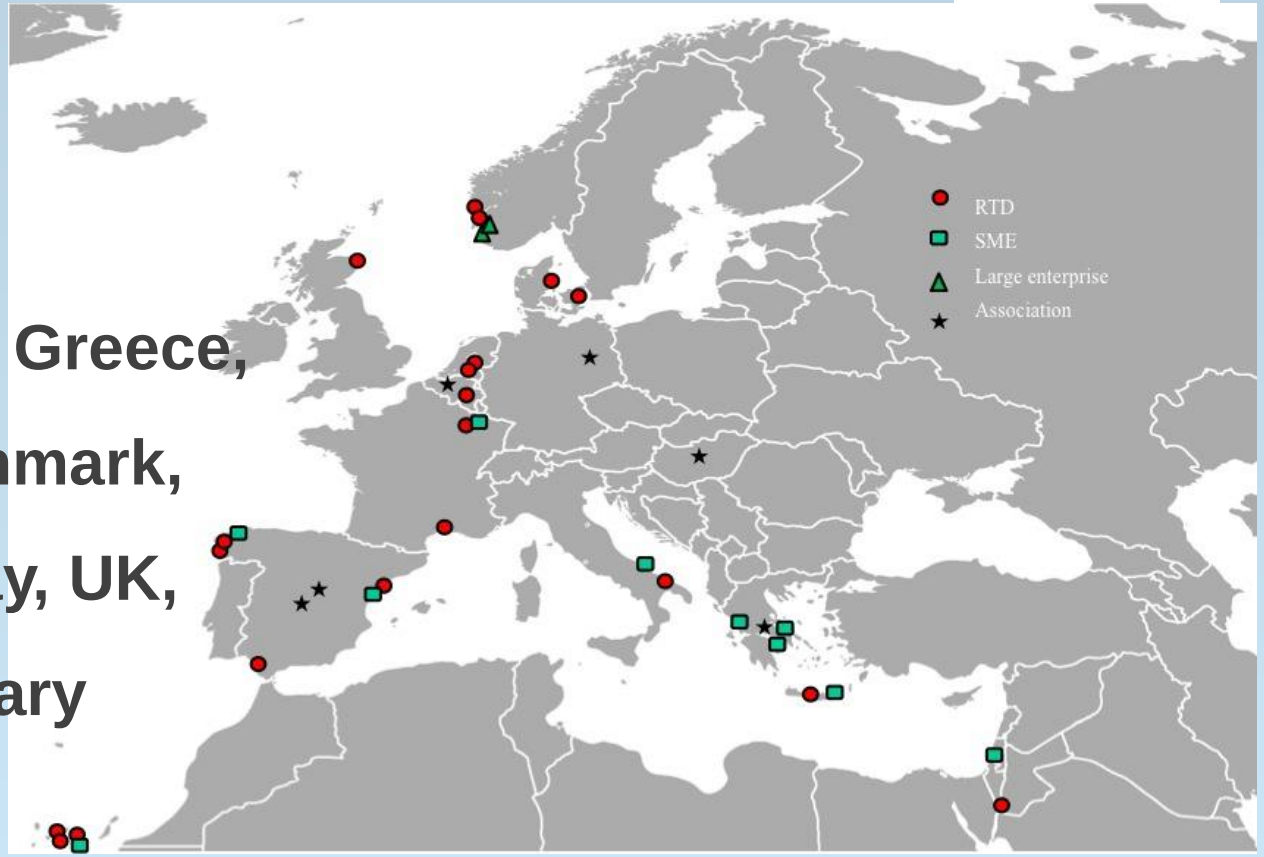
**37 partners:**

**Spain, France, Italy, Greece,**

**Israel, Belgium, Denmark,**

**Netherlands, Norway, UK,**

**Germany and Hungary**



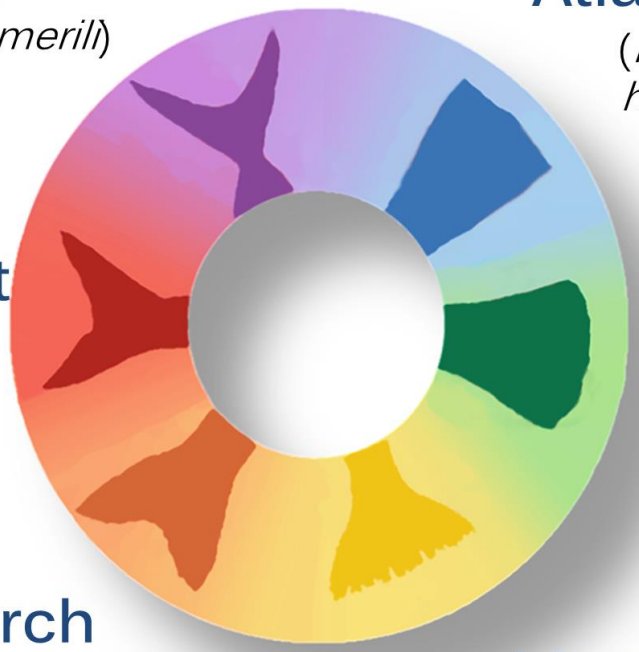

**20 Research/Universities**
**9 Small Medium Enterprises**
**2 Large companies**
**5 Professional associations**
**1 NGO**

Reproduction and genetics
Socioeconomics
Grow out husbandry
Fish health
Nutrition
Larval husbandry
Research areas

# RESULTS

Greater Amberjack
(*Seriola dumerili*)

Atlantic halibut
(*Hippoglossus hippoglossus*)



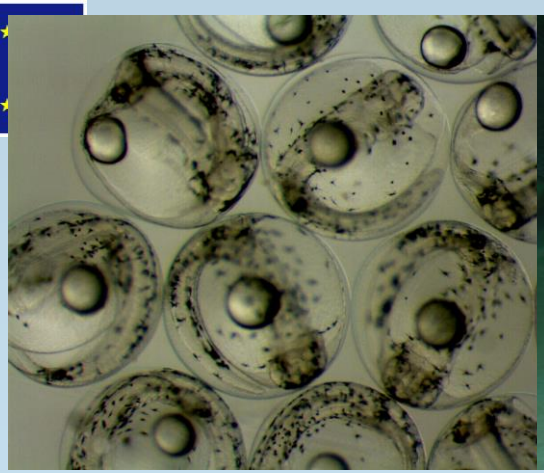
Grey mullet
(*Mugil cephalus*)

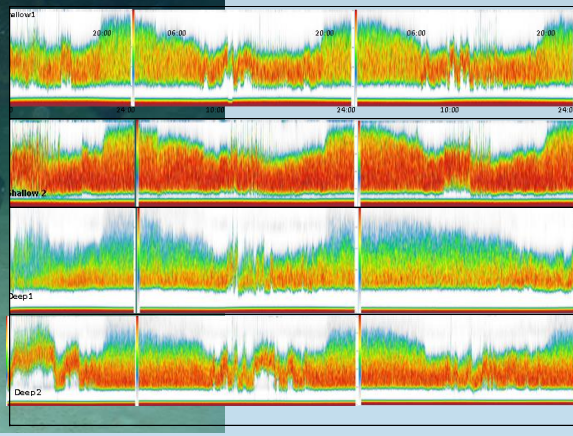
Wreckfish
(*Polyprion americanus*)

Pikeperch
(*Sander lucioperca*)

Meagre
(*Argyrosomus regius*)

# 1-MEAGRE





- 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
- Distribution in **sea cages**

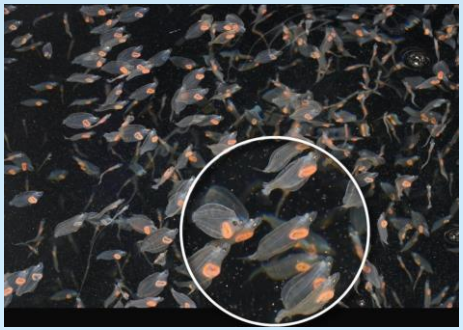
# 2- GREATER AMBERJACK

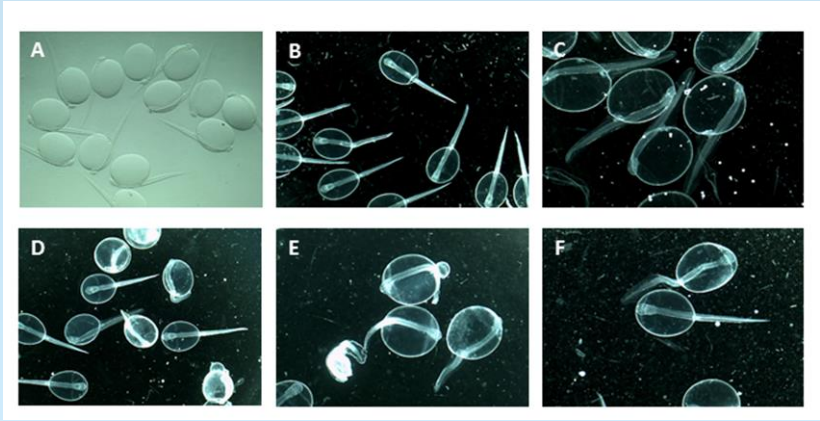
- Successful hormonal control of reproduction (implants)
- 300.000 juveniles obtained → grow out cages
- Main challenge: control of parasites in grow out

Greater Amberjack larval rearing, HCMR 2016

# 3- ATLANTIC HALIBUT

- **F1 fish** could be hormonally induced to spawn earlier with higher fecundity than controls
- Development of a VNN vaccine: capside replicated
- Production efficiency increased

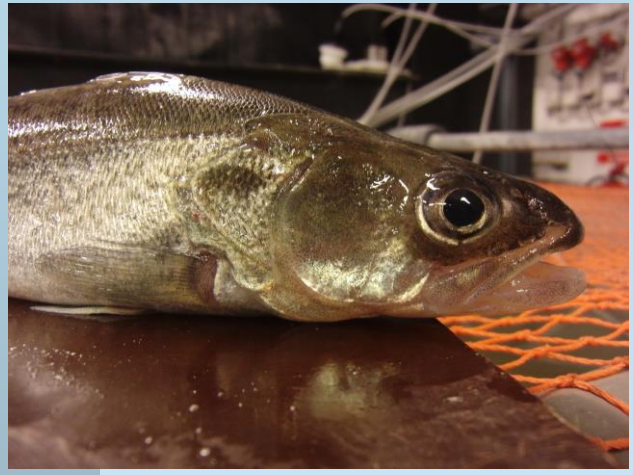




# 4-GREY MULLET

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

# 5-PIKE PERCH



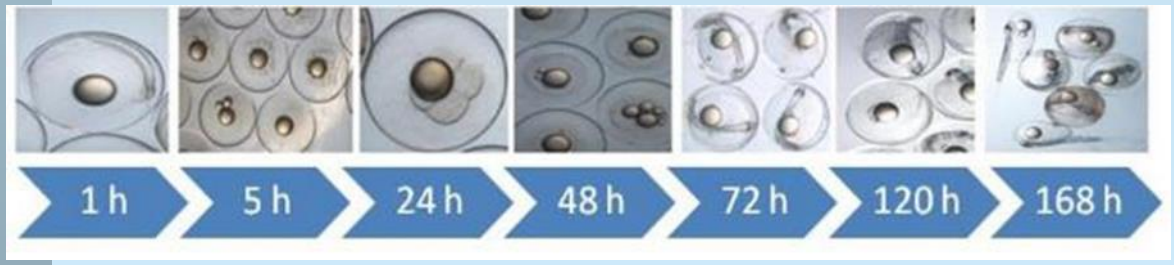
- Relevant role of **HUFA** and vitamines in **larviculture.**
- Prevention **high cannibalism** in larviculture
- Optimization of RAS via **multifactorial** studies (light intensity, water renewal moment and rate, siphoning period, water current…)
- Improvement of rearing practices in ongrowing

# 6- WRECK FISH

- Most **challenging** species
- ***In vitro* fertilization** protocol.
- **Wild-cultured** nutritional comparison
- Limited **larviculture** period

High larval mortality.

Survival up to 27 days.



# SOCIOECONOMIC WORKPACKAGES

- WP 27-Institutional and organizational context
- WP 28-New product development
- WP 29-Consumer value perceptions and behavioural change
- WP 30-Business model and marketing strategy development

# WP 28 New product development

**41** ideas for new product development of value added products.

**12 ideas selected for checking production feasibility and food safety.**

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

# Socioeconomics

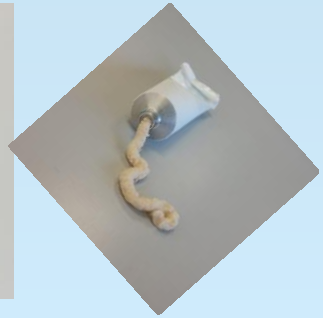
Ready to eat **meagre** salad

Fresh frozen **greater amberjack** filet

**Grey mullet** in olive oil

Hamburguer fish shape (**pike perch**)

Smoked **grey mullet**



Fish paté (**pike perch**)

NEWS ABOUT DIVERSIFY SCIENTIFIC ARTICLES DISSEMINATION INTRA

MEETINGS & ACTIVITIES AE 2017- DIVERSIFY

bundesverband fisch
fischindustrie fischgroßhandel

## NEWS

The most up-to-date general-audience information on the project

Contact Dissemination Coordinator

# www.diversifyfish.eu

M.J., 2016.
**s: An**
**techniques**.

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### AQUACULTURE EUROPE 2017-DIVERSIFY SPECIAL SESSION

**DIVERSIFY** will have a Special Session d
**Aquaculture Europe** confenrence to be
Croatia next October.

You can click on the following link to send
the conference
https://www.was.org/Eas

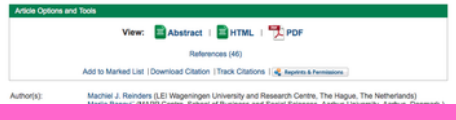
We have already some abstracts. You can see all submitted abstracts by pressing the button bel
submitted:
*"Fish for the future: what could influence European consumer choice of new aquaculture products?. Evidence fro study with low and medium processed products"* by M. Banović and A. Krstallis (AU, HRH)

*"Spawning kinetics of greater amberjack (Seriola dumerili) in response to multiple GnRHa injections or implants"* b
Fakriadis, Francesca Lisi, Irini Sigelaki, Maria Papadaki, Anastasios Raftopoulos and Constantinos C. Mylonas (H

*"Broodstock management and spawning induction of greater amberjack (Seriola dumerili) reared in tanks and sea Greece"* by Constantinos C Mylonas, Ioannis Fakriadis, Anastasios Raftopoulos, Georgios Iakovopoulos, Nikos Pa
Maria Papadaki, Irini Sigelaki (HCMR, ARGO and GMF)

# AE 2017-Croatia
# DIVERSIFY SPECIAL SESION

Consumer perceptions of farmed fish: A cross-national segmentation in five European countries




Author(s): Machiel J. Reinders (LEI Wageningen University and Research Centre, The Hague, The Netherlands)

Reinders, M.J., Banovic, M., Guerrero, L., and Krystallis, A. **Consumer perceptions of farmed fish: A cross-national segmentation in five European countries**. *British Food Journal, 118(10): 2581-2597.*
*Click here to contact the author*

**rained**

(2016)

(CATA) vs. Free Choice Profiling (FCP)
Oxana Lazo, Anna Claret, Luis Guerrero
First published: 7 March 2016
DOI: 10.1111/joss.12202
Cited by: 0 articles

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lazo_et_al._2016-1p.pdf
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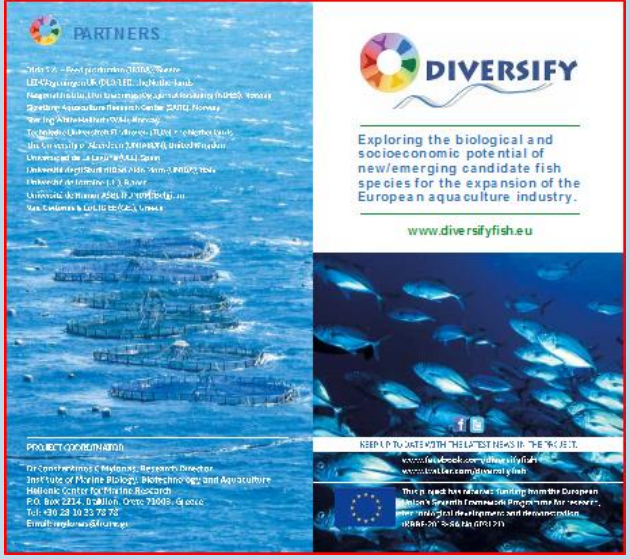
Grigorakis, K., 2015. **Fillet Proximate Composition, Lipid**




# THANK YOU

## www.diversifyfish.eu

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