



UNIVERSITÀ  
DEGLI STUDI DI BARI  
ALDO MORO



Israel Oceanographic &  
Limnological Research



Knowledge transfer workshops - grey mullet  
Bari, 14 May 2018

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



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



Rocio Robles  
Dissemination leader  
CT-AQUA  
Cadiz, Spain

Constantinos (Dinos) Mylonas  
Project Coordinator  
HCMR  
Crete, Greece

# 37 partners:

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



**- Enhancing the EU aquaculture through  
species diversification**

**2013-2018**  
**11,8 million €**

# Problem with Mediterranean species



- Small (plate size), difficult to prepare, w/bones
- Consumers prefer fillets, steaks, ready-to-cook
- Growing fish larger is limited / inefficient (>3 y!)





# Choice of new/emerging species



greater amberjack



Pikeperch (fw, RAS)



grey mullet  
(omnivorous, euryhaline)



Atlantic halibut



# Bottlenecks of the six species



- **meagre** (*limited genetic variation, nutrition, health*)



- **greater amberjack** (*reproduction, juvenile production, parasites*)



- **wreckfish** (*broostock availability, reproduction, juvenile production*)



- **Atlantic halibut** (*reproduction, juvenile production, health*)



- **grey mullet** (*reproduction, larval rearing, nutrition*)



- **pikeperch** (*juvenile production*)





# Socioeconomics bottlenecks

- perception of aquaculture products
- market demand, buyer preferences
- new product development, value adding
- market development



# Meagre



- Genetic characterization of existing broodstocks in Europe, genetic linkage map and QTL analysis
- Development of methods for selective breeding (*in vitro* fertilization, paired spawning)
- Feeding behaviour to improve grow-out in cages
- Systemic granulomatosis and its relation to nutrition, immune system characterization



# Greater amberjack



- Development of broodstock management and spawning induction methods, first spawning of F1 stocks
- Larval rearing methods and production of juveniles
- First commercial on growing trials in sea cages
- Health management (parasites) and immune system characterization

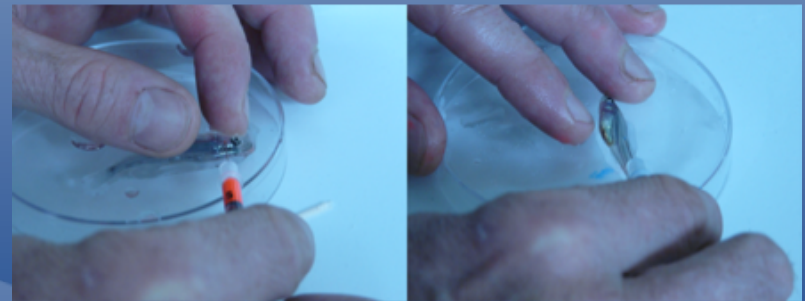




# Pikeperch



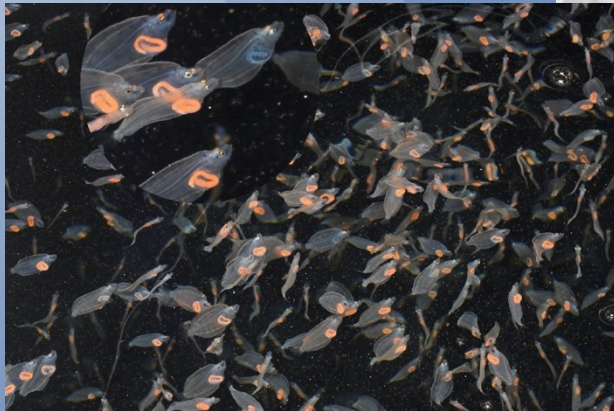
- **Genetic variability of cultured broodstocks and comparison with wild populations for future breeding selection programs**
- **Effects of various environmental factors (light intensity, water renewal rate, water flow direction and tank cleaning timing) on larval rearing of pikeperch**
- **Behaviour traits during early development**



# Atlantic halibut



- Optimize ovulation kinetics and stripping
- Larval rearing using ongrown *Artemia*, early weaning and improvement of juvenile quality
- Production of VNN capsid protein for vaccine development



# Wreckfish



- Reproductive cycle in captivity
- Induction of spawning (tank and strip spawning) and spontaneous spawning
- Development of broodstock diet
- Larval rearing (still no success past 35 dph)





# Grey mullet



- Development of hormonal therapies to enhance gametogenesis
- Induction of spawning
- Environmental and nutritional aspects of larval rearing, weaning to herbivorous diet

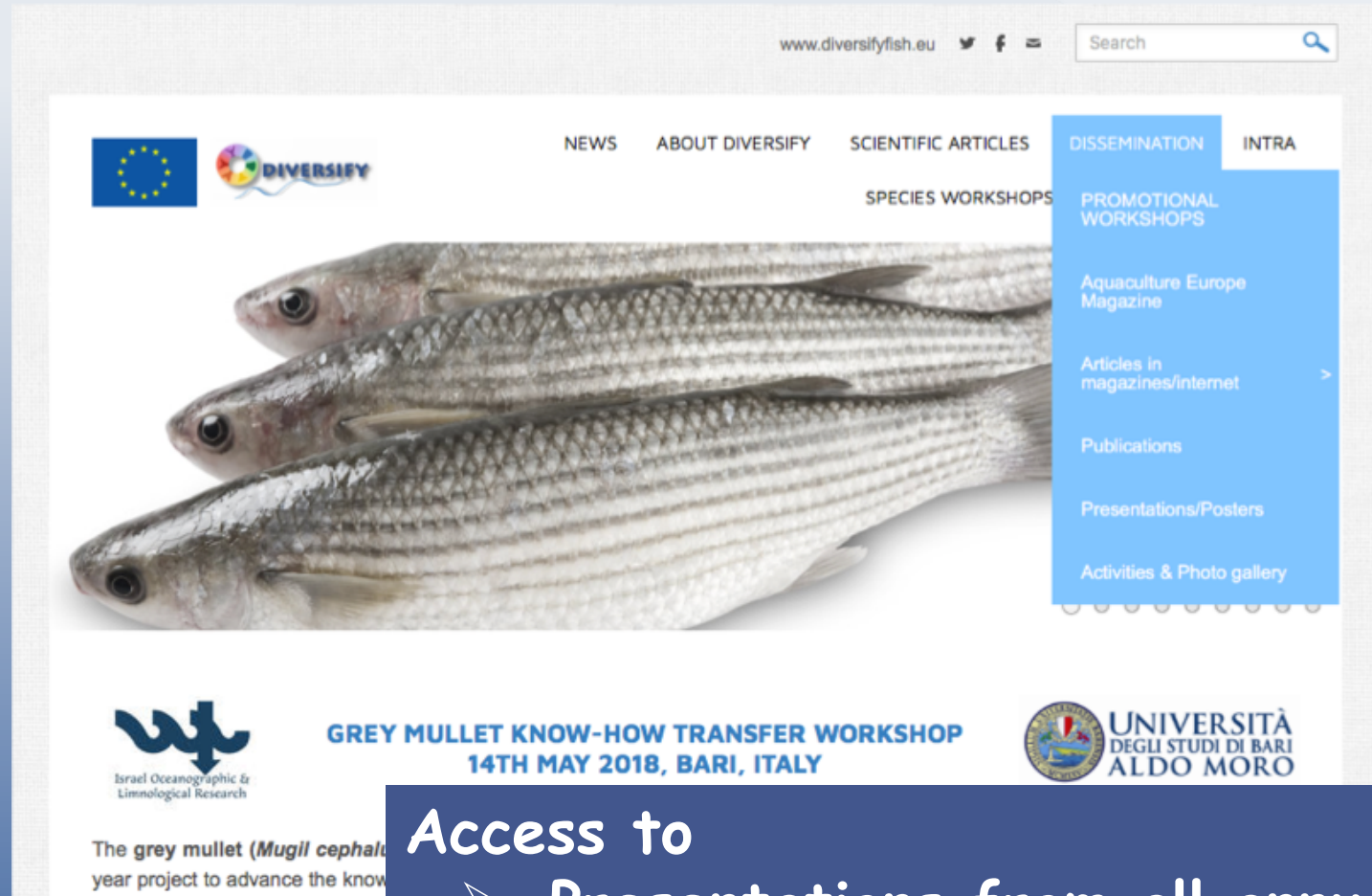


# Socioeconomics

- 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



# Dissemination - [www.diversifyfish.eu](http://www.diversifyfish.eu)



www.diversifyfish.eu

NEWS ABOUT DIVERSIFY SCIENTIFIC ARTICLES SPECIES WORKSHOPS DISSEMINATION INTRA

PROMOTIONAL WORKSHOPS

Aquaculture Europe Magazine

Articles in magazines/internet

Publications

Presentations/Posters

Activities & Photo gallery

GREY MULLET KNOW-HOW TRANSFER WORKSHOP  
14TH MAY 2018, BARI, ITALY

UNIVERSITÀ DEGLI STUDI DI BARI ALDO MORO

Israel Oceanographic & Limnological Research

The grey mullet (*Mugil cephalus*)  
year project to advance the know

## Access to

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





UNIVERSITÀ  
DEGLI STUDI DI BARI  
ALDO MORO



Israel Oceanographic &  
Limnological Research



Knowledge transfer workshops - grey mullet  
Bari, 14 May 2018

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



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



Rocio Robles  
Dissemination leader  
CT-AQUA  
Cadiz, Spain

Constantinos (Dinos) Mylonas  
Project Coordinator  
HCMR  
Crete, Greece