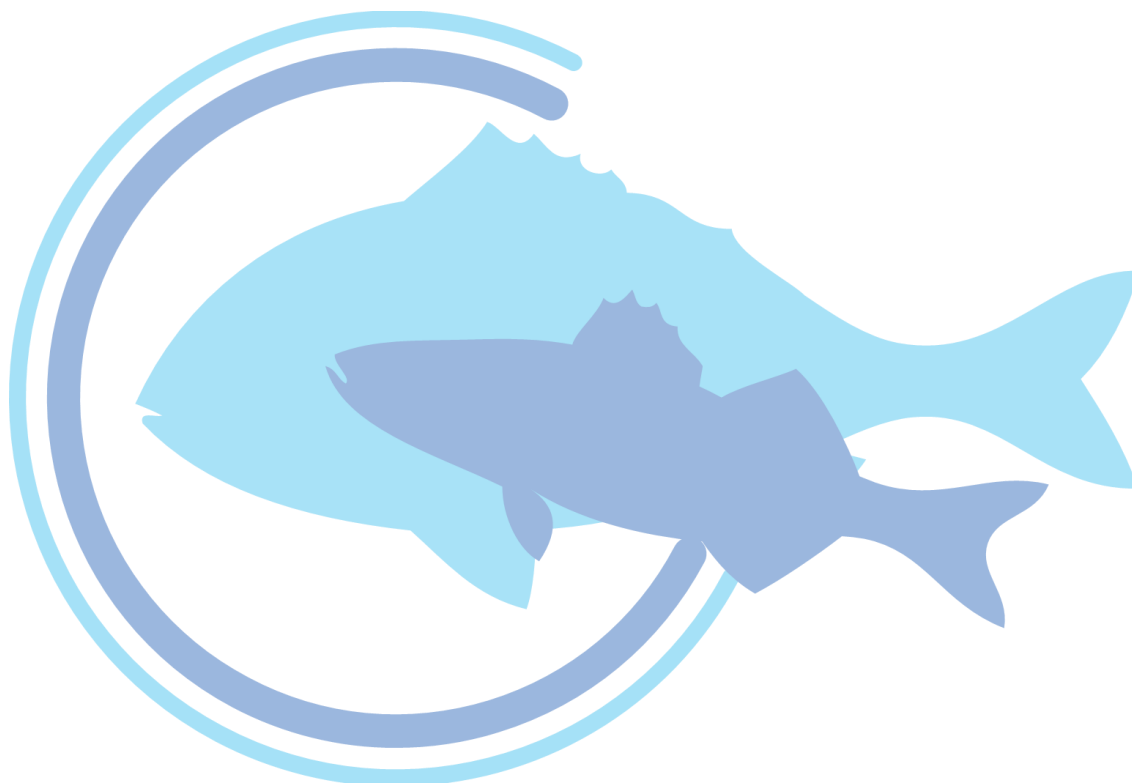




Consumer Driven Production: Integrating Innovative Approaches for Competitive and Sustainable Performance across the Mediterranean Aquaculture Value Chain



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# An industry-driven project



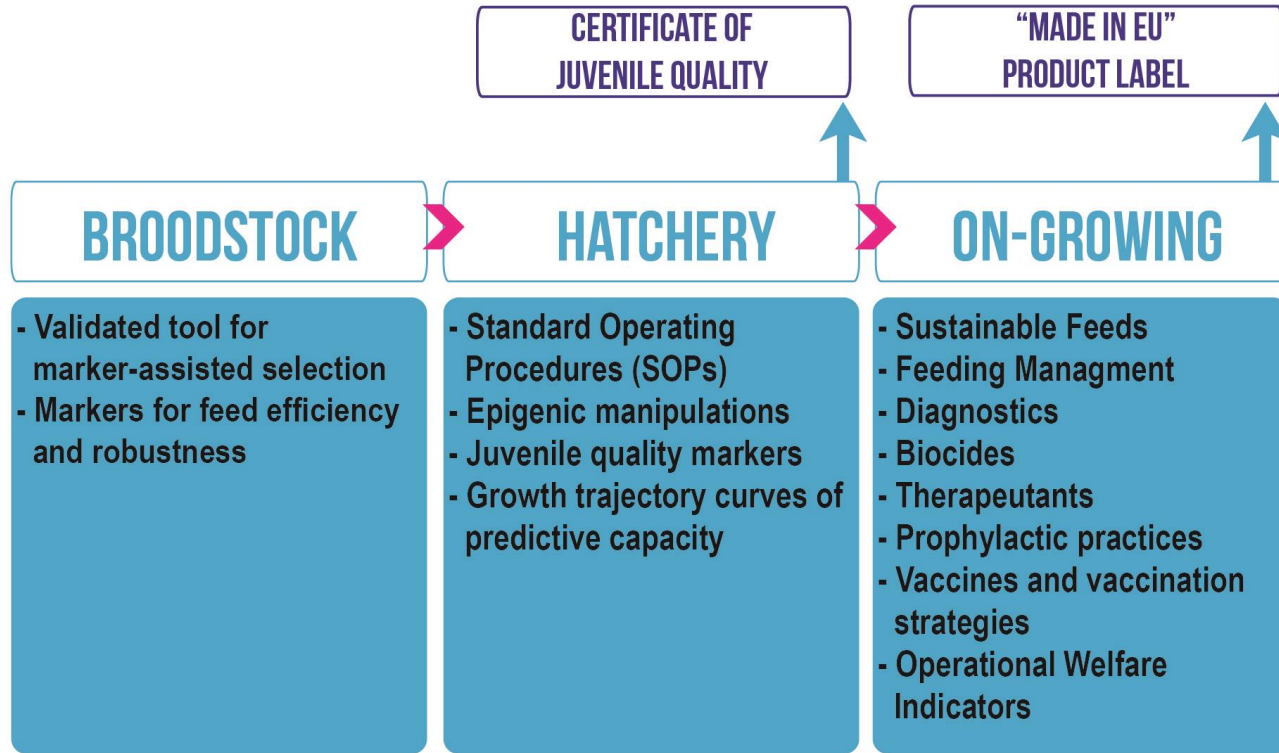
*“The Mediterranean mariculture industry is at a crossroads. While the political climate for development has never been better, the industry is under a range of pressures, be these technical, market-oriented, legislative or financial..... “More attention needs to be given .....to the urgent priority of improving technical performance of the Mediterranean fish farming sector, specifically of sea bass and sea bream. The absence of improvement over time is marked. Individual focused projects or a more holistic, integrated programme are required to address this, .....” [FEAP Annual Report 2014](#)*



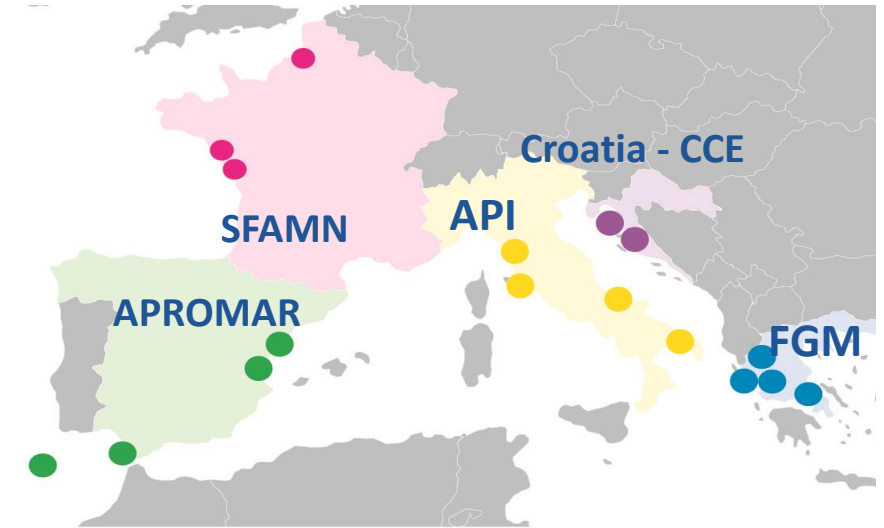
**28 partners, 13 Linked Third parties, 10 countries**

PerformFISH will increase the competitiveness of the Mediterranean aquaculture sector by tackling biological, technical and operational weaknesses that underlie the stagnation of marine fish production in the last decade, while addressing social and environmental responsibility and contributing to Blue Growth and Food Security.

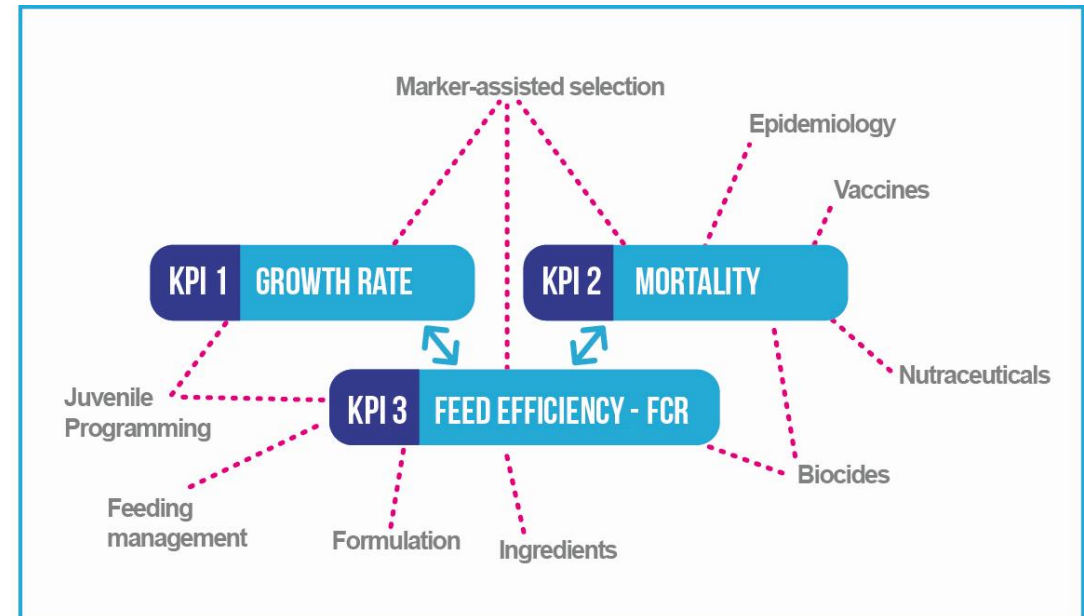
# Approach to generate measurable Impact



- MARKETING STRATEGY FOR MMFF PRODUCTS
- CAPACITY BUILDING FOR MMFF INDUSTRY
- CODE OF CONDUCT FOR ALL MEDITERRANEAN COUNTRIES

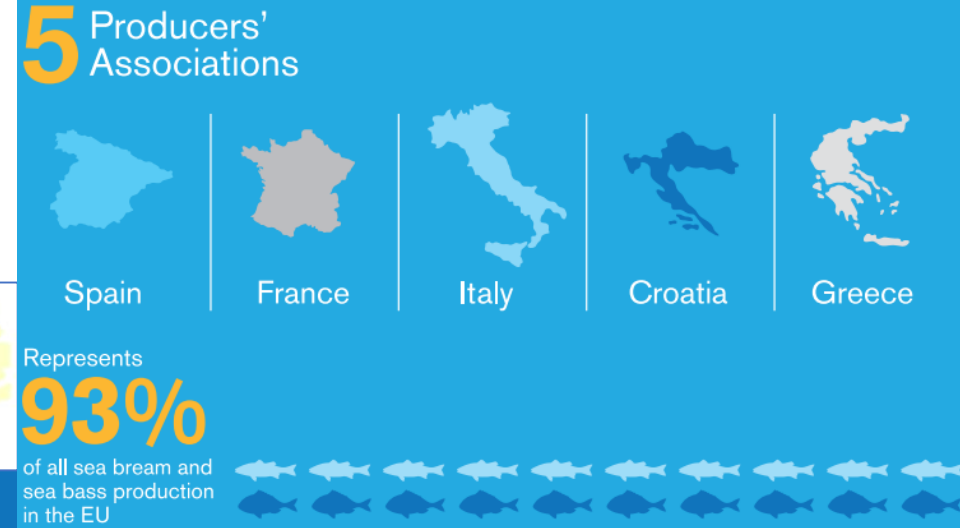


“real world” infrastructure support for demonstration and implementation activities



# Approach to generate measurable Impact

- ✓ Benchmarking system based on Key Performances Indicators
- ✓ Extensive Industry Consultation
- ✓ Virtual Research Environment to host and manage KPI data



## PerformFISH KPI System

**55**  
Key Performance Indicators

**15** for hatchery

**5** for pre-grow

**35** for grow-out

### Four overarching KPI categories

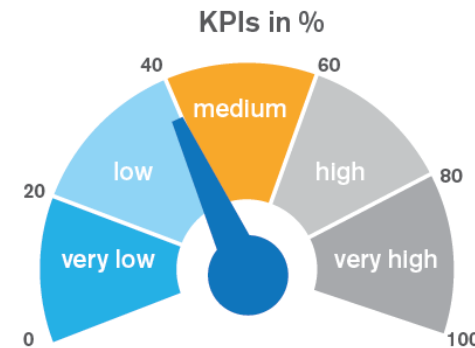
**35 Technical Performance Indicators (T-KPI)** for ranking biological performances of batches and technical efficiency.

**14 Environmental Performance Indicators (ENV-KPI)** to assess the impact of farming practices on the preservation of biodiversity and habitats, the use of natural resources, water, space and energy use, and its ecological footprint.

**9 Welfare Performance Indicators (W-KPI)** to assess welfare at different life stages and in relation to different culture systems and husbandry practices.

**2 Economic Performance Indicators (E-KPI)** for estimating productivity and efficiency of aquafarms.

### Carrying out testing of Key Performance Indicators over 3 years



**16** hatchery farms  
(1 Spanish, 4 Greek, 5 Italian, 1 Croatian and 5 French)

**35** sites for pre-grow and grow-out  
31 farm sites at sea (sea pen) and 4 farm sites on land (tank)

# Progress so far.....



The largest genetic dataset in sea bream and sea bass

Validated SNP-chip



Epidemiological patterns and indicators for biosecurity and effective fish disease management

Diagnostic Techniques for field application

Consolidated list of diagnostic labs and techniques

Biochemical, molecular, morphological and immunological indicators of larval and juvenile quality

Correlation of morphological quality between the juvenile and fish of commercial size

GROWTH RATE

Operational Welfare Indicators

KPI 2

MORTALITY

New vaccines and vaccination schemes: Triple vaccine Noda+Vibrio+Pasteurela

Nutraceuticals

KPI 3

FEED EFFICIENCY - FCR

Five alternative active substances (3 antibacterial and 2 antiparasitic)

System for biomass estimation in sea cages

Up-dated list of nutritional requirements for sea bream and sea bass

Practical protocol for conditioning sea bream to novel feeds in commercial farms



# Report on Best Therapeutics Practices for Mediterranean Farmed Fish



Acronym: PerformFISH

Title: *Consumer-driven production: Integrating Innovative Approaches for Competitive and Sustainable Performance across the Mediterranean Aquaculture Value Chain*  
Grant Agreement: 727610

## Deliverable 3.3

### Best therapeutics practices for Mediterranean farmed fish

Lead parties for Deliverable: HCMR  
Due date of deliverable: 30 April 2019  
Actual submission date: 15 July 2019

Dissemination level: PU (Public)  
Version: V1 (April 2019)

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This project has received funding from the European Union under grant agreement No 727610. The European Union cannot be held responsible for any use which may be made of the information contained therein.

The report includes reflections on the main mistakes and inefficient practices detected in the current therapeutics in these two fish species, as well as recommendations on how increase the **efficiency** and on how to **reduce the use misuse and undesirable effects** of the substances in the treatments

## Alternative pharmacological substances\*

**ANTIBACTERIAL**  
3 substances tested:  
✓ doxycycline  
✓ lincomycin  
✓ spectinomycin

Studies confirm the suitability of these antimicrobial substances as therapeutic substances for European sea bass and gilthead sea bream and their suitability as alternative substances for antibacterial treatments

**ANTIPARASITIC**  
2 substances tested:  
✓ mebendazole  
✓ toltrazuril

Studies confirm the suitability of these substances in the control of certain parasitic diseases of European sea bass and gilthead sea bream (mainly *Sparicotyle chrysophrii* infections and also myxosporean and microsporidian infections)

\*Not considered as critically important for human health by the World Health Organization (WHO)

# Reinforcing the marketing of European sea bass and sea bream products



- ✓ Current state of the target markets
- ✓ Market barriers
- ✓ Consumer perception studies
- ✓ Marketing strategies



# Reinforcing the marketing of European sea bass and sea bream products



Non-consumer Profile.....



57% of non-consumers are male  
50% are young, below the age of 46  
67% lives in Northwest and Northeast Italy  
53% lives in households consisting of 2 - 4 people  
21% are students

49% approximately at the national average  
40% is below the national average

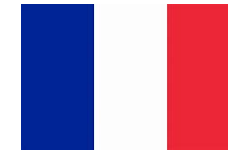
25% thinks is "too expensive"  
*30% does not like the smell or taste of fish*  
*26% are concerned with "too many bones" and "difficult to prepare"*  
*10% vegetarian lifestyle*



52% of non-consumers are male  
77% are young, below the age of 46  
31% lives in South of Spain  
76% lives in households consisting of 2 - 4 people  
20% are students

54% approximately at the national average  
34% is below the national average

31% thinks is "too expensive"  
*28% does not like the smell or taste of fish*  
*25% are concerned with "too many bones" and "difficult to prepare"*  
*10% vegetarian lifestyle*



50% non-consumers are male  
65% are young, below the age of 46  
Loose geographical pattern  
66% lives in households consisting of 2 - 4 people  
10% are students  
21% live alone  
35% approximately at the national average  
46% is below the national average

41% thinks is "too expensive"  
*29% does not like the smell or taste of fish*  
*36% are concerned with "too many bones" and "difficult to prepare"*  
*3% vegetarian lifestyle*



# Expected Outputs



## Industry

- ✓ **European Certificate of Juvenile Quality**
- ✓ **Products for disease management and health boost**
- ✓ **Operational Welfare Indicators**
- ✓ **Technology for optimizing feed efficiency**
- ✓ **Key Performance Indicators** to build a robust benchmarking system based on KPIs

## Policy

- ✓ **Code of conduct** to safeguard quality along the product line and of the final product and establish proper and **responsible practices** to serve the vision of **economic and ecological sustainability**

## Environment and Society

- ✓ **High quality and healthy MMFF products** (EU certified)
- ✓ **Consumer driven marketing plans** promoting “locally produced, locally consumed” “farmed in EU” products and “confidence in culture” for the MMFF sector
- ✓ **Environmental KPIs**
- ✓ **Lower Ecological Footprint**



# Expected Impact

PerformFISH  
INDUSTRY-LED  
RESEARCH WILL  
HAVE A POSITIVE  
IMPACT ON:

## Industry

- ✓ Increased competitiveness of the Mediterranean Marine Fish Farming (MMFF) sector
- ✓ Increased production of high-quality sea bass and sea bream
- ✓ High skilled aquaculture workers
- ✓ Higher revenues for the Mediterranean aquaculture industry

## Policy

- ✓ Contribution to the implementation of the Common Fisheries Policy (CFP), the Marine Strategic Framework Directive (MSFD), and the European Bioeconomy Strategy
- ✓ Collaboration with the BLUEMED Initiative to create a healthy, safe and productive Mediterranean Sea

## Environment and Society

- ✓ Job creation, particularly in peripheral and coastal regions
- ✓ Consumer driven production of MMFF products
- ✓ Lower environmental impact of MMFF activities in the Mediterranean basin
- ✓ Improved image of aquaculture production systems and products



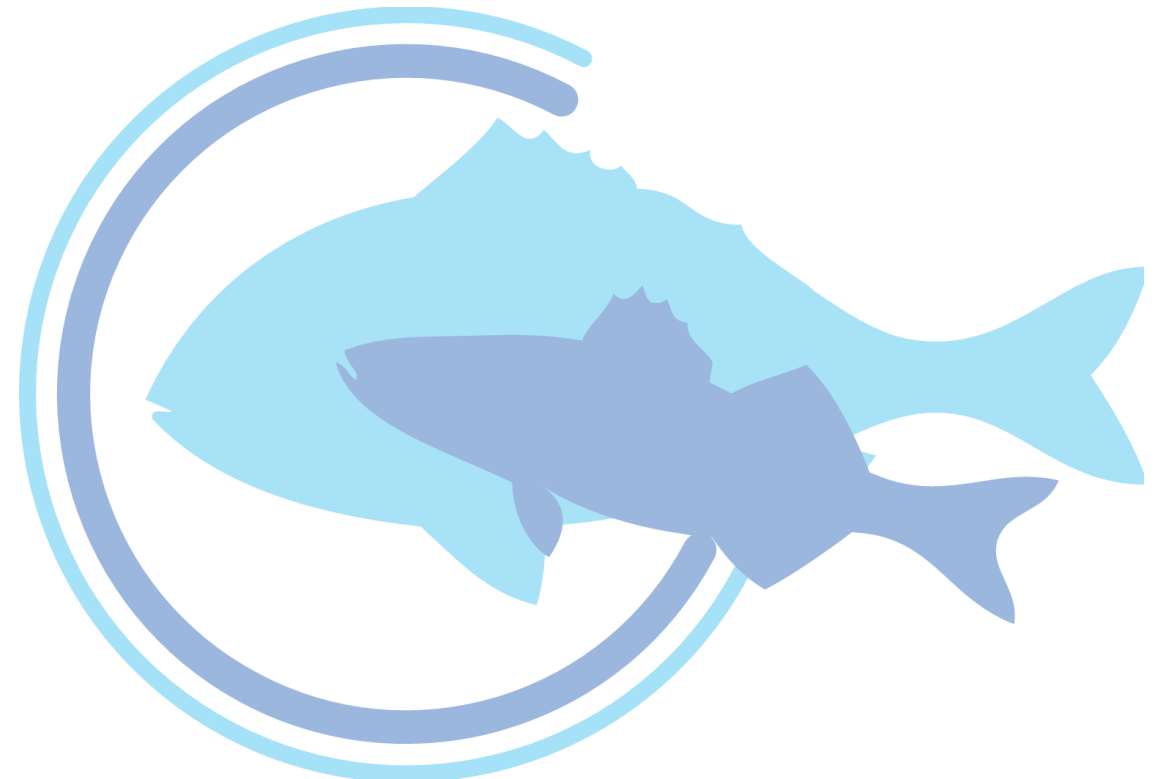
# Questions?



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