

# Managing shellfish diseases now and in the near future?

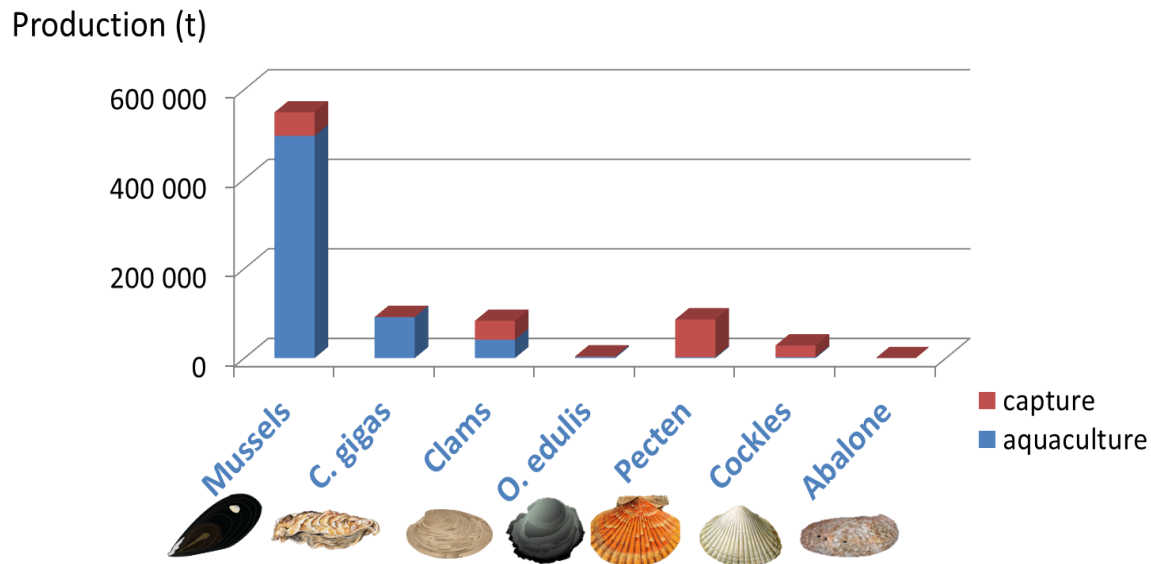
## Research outcomes from VIVALDI

VIVALDI Final Conference- Brest, 26-28 November 2019



# The context

## European marine mollusc production

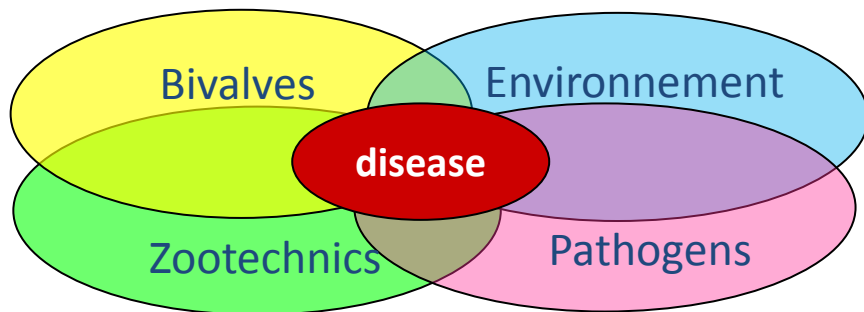


Increase of mortality events

**Challenge:** Increase the sustainability and competitiveness of the European shellfish industry

# The VIVALDI project: 2016-2020

Better knowledge of factors triggering disease emergence



Sniezko modified by Le Groumellec et al.

Tools and strategies to prevent control and mitigate impact of diseases

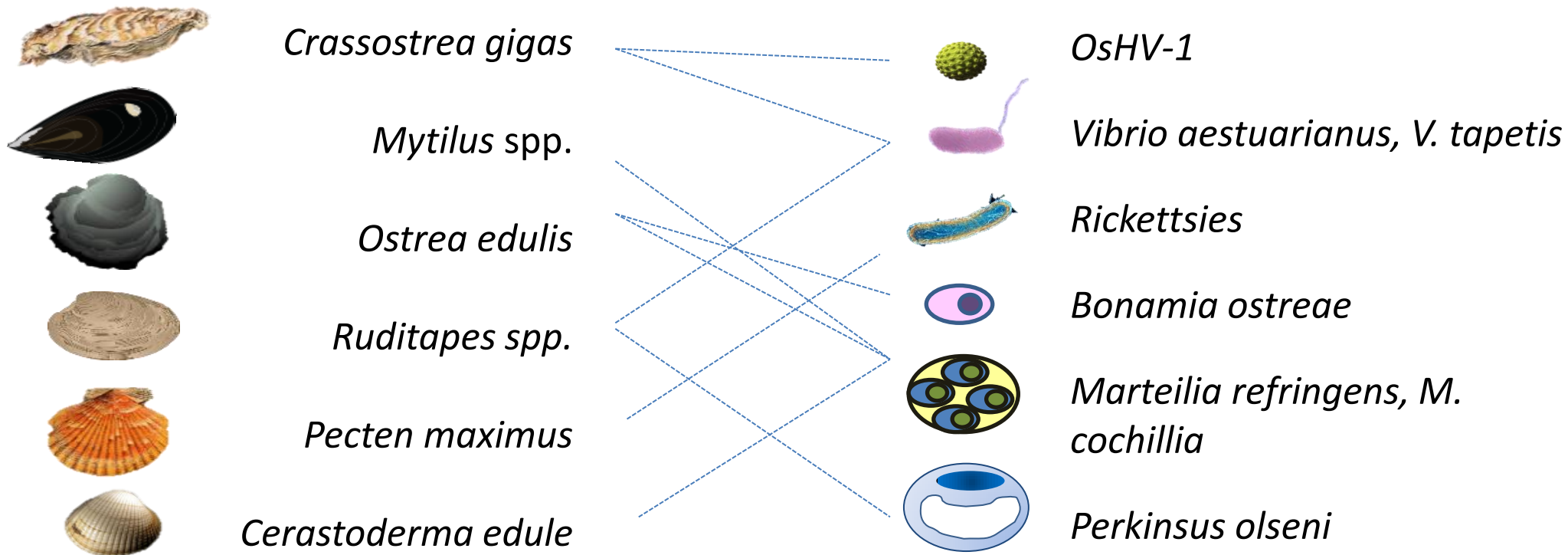
VIVALDI consortium

21 partners

Public research/education institutions ●  
 Private research institutions ●  
 Private companies ●

The map shows numbered markers across Europe: 1 (red) in France, 2 (blue) in Spain, Portugal, and the UK, and 3 (blue) in the UK and the Mediterranean. A circular callout contains logos for 21 partners, categorized into Husbandry practices (LABOGENA, SYSAAF, Nofima, Bivalves, cAWI, IFREMER, CSIC, CEFAS, DTU, etc.), Pathogens (UCC, etc.), and Environment (Marine Institute, Atlantium, etc.).

# Main species investigated in VIVALDI



# Main outcomes

## Improve detection of pathogens...



In water:  
Passive sensors  
In oysters:  
Magnetic beads

## Obtain resistant animals ...

stimulating immunity

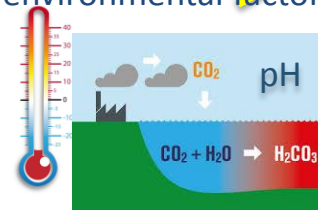


optimizing  
selection  
programmes

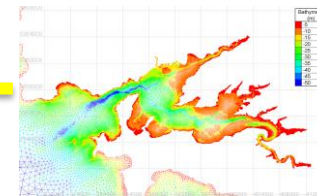


## Decrease emergence and mortality...

identifying influent  
environmental factors

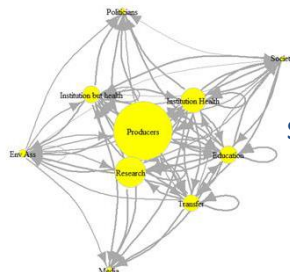


designing water treatment and husbandry  
practices to reduce mortality



modelling  
pathogen spread

## Improve communication with stakeholders...



Based on  
stakeholders  
mapping



Based on risk  
perception  
analysis

Based on a co  
construction  
process

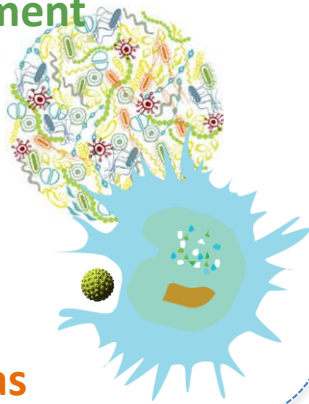


Manual of  
biosecurity  
measures

# VIVALDI's impacts

## Knowledge improvement

35 articles  
on mollusc diseases;  
microbiome and  
defense mechanisms



**Scientists,  
Producers, Cas**

## Progress in disease resistance selection

In cupped oysters  
and clams



**Producers and  
hatcheries**

## Innovation potential



Examples:  
- Pathogen detection  
- Pathogen inactivation

**Industries (SMEs)**

## Policy impact

Improve surveillance  
and management

Identify  
adapted  
management  
measures

Early detect  
abnormal  
signals and  
pathogens

Better design  
surveillance  
programmes

Facilitate  
contingency  
plan  
establishment

**Competent  
authorities  
Policy makers  
Producers**

*Healthy bivalves*



**Happy  
producers  
and  
consumers**



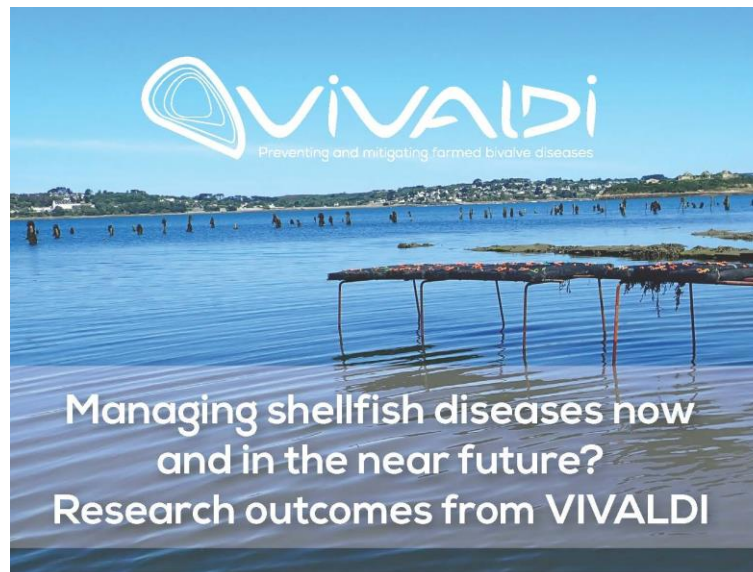
## Final conference



To present VIVALDI outcomes

To exchange about new advances in understanding shellfish diseases

To collectively identify disease management measures



**FINAL CONFERENCE**

*OPEN TO ALL STAKEHOLDERS*

**Brest (F)**

**26-28 November 2019**

Pole Numérique Brest Iroise :

26-27 November

Océanopolis :

28 November



## Today...

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One day more dedicated  
to stakeholders


English, French, Italian  
and Spanish  
interpretation

Tools and approaches to prevent emergence and spread  
Presentations & Discussion

*Coffee break (Posters)*

Impact of the environment on shellfish health  
Presentations & Discussion

*Lunch*

VIVALDI video projection 

Collectively elaborate recommendations  
Presentations & Discussion

*Coffee break (Posters)*

Stakeholders exchange session  
Discussion  
Focus discussion groups on management measures

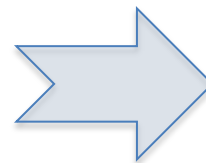
Conclusions



## Main gaps and barriers

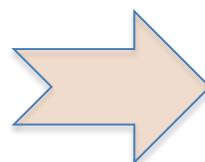
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Poor implementation of the legislation



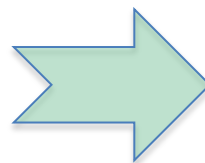
How to design and implement management measures ?

Intensification of the production, associated with an increase of mortality including of endemic species



Need for diversification and restoration: how to avoid and mitigate diseases?

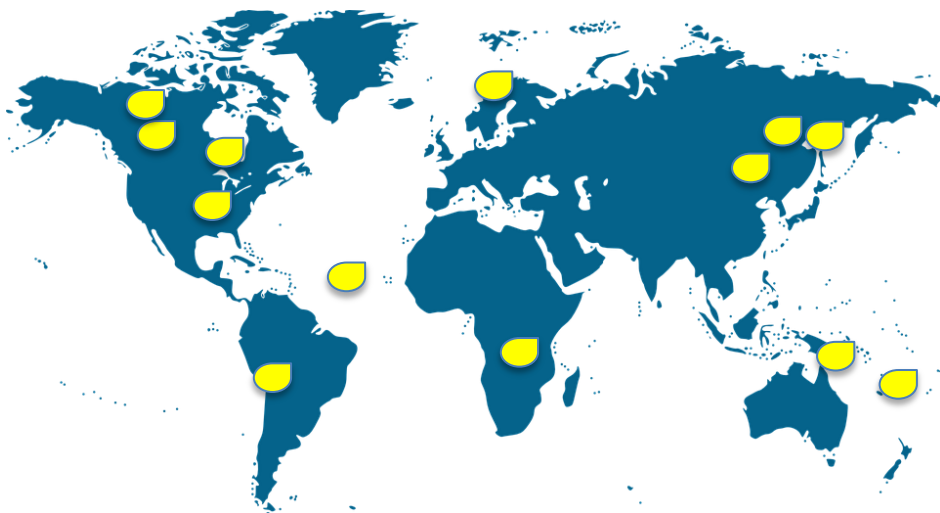
Context of global change



How to predict and anticipate disease outbreaks?

## Shellfish health: an international challenge

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Shellfish diseases do not stop at the frontiers:

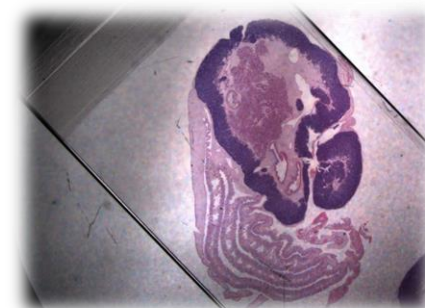
Socio-economical and ecological consequences of shellfish diseases

A context in evolution: changing environment, increase of animal movements...

**Building an International network on shellfish diseases**

## Follow us on...

- Our website: [www.vivaldi-project.eu](http://www.vivaldi-project.eu)
- Twitter: @vivaldieuproj
- Facebook: vivaldiproject





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## CONTACT

Isabelle Arzul  
isabelle.arzul@ifremer.fr

IFREMER - Station de La Tremblade  
17390 La Tremblade / FRANCE

Direct line: +33 (0)5 46 76 26 47  
Switchboard: +33 (0)5 46 76 26 10

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