

VIVALDI

Preventing and mitigating farmed bivalve diseases

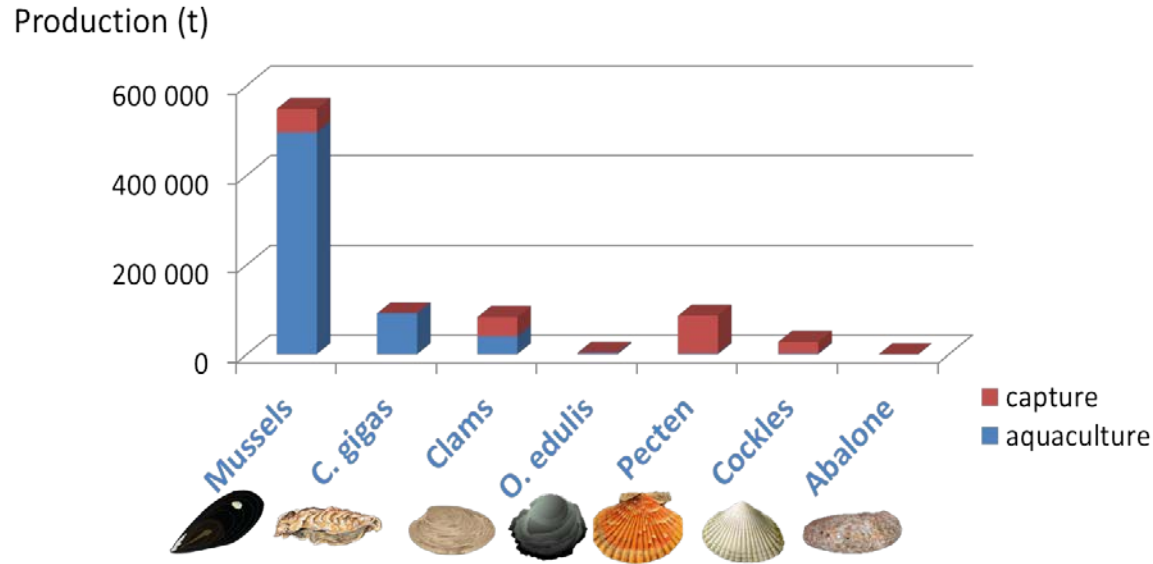
Isabelle Arzul, Ifremer

EU/EATIP Day Aquaculture Europe 2019 Berlin, 9 October 2019



The context

European marine mollusc production

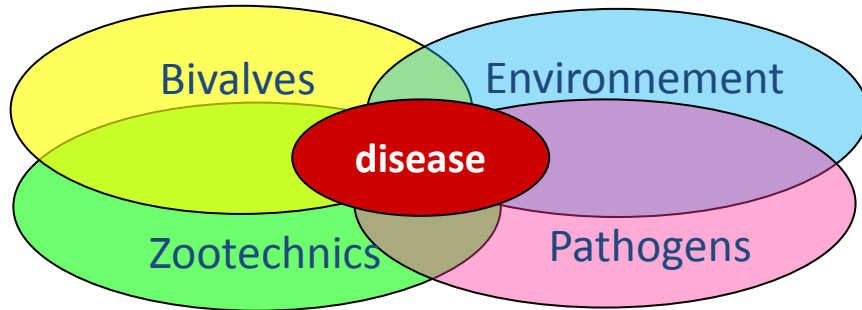


<https://www.lemonde.fr/>
Increase of mortality events

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

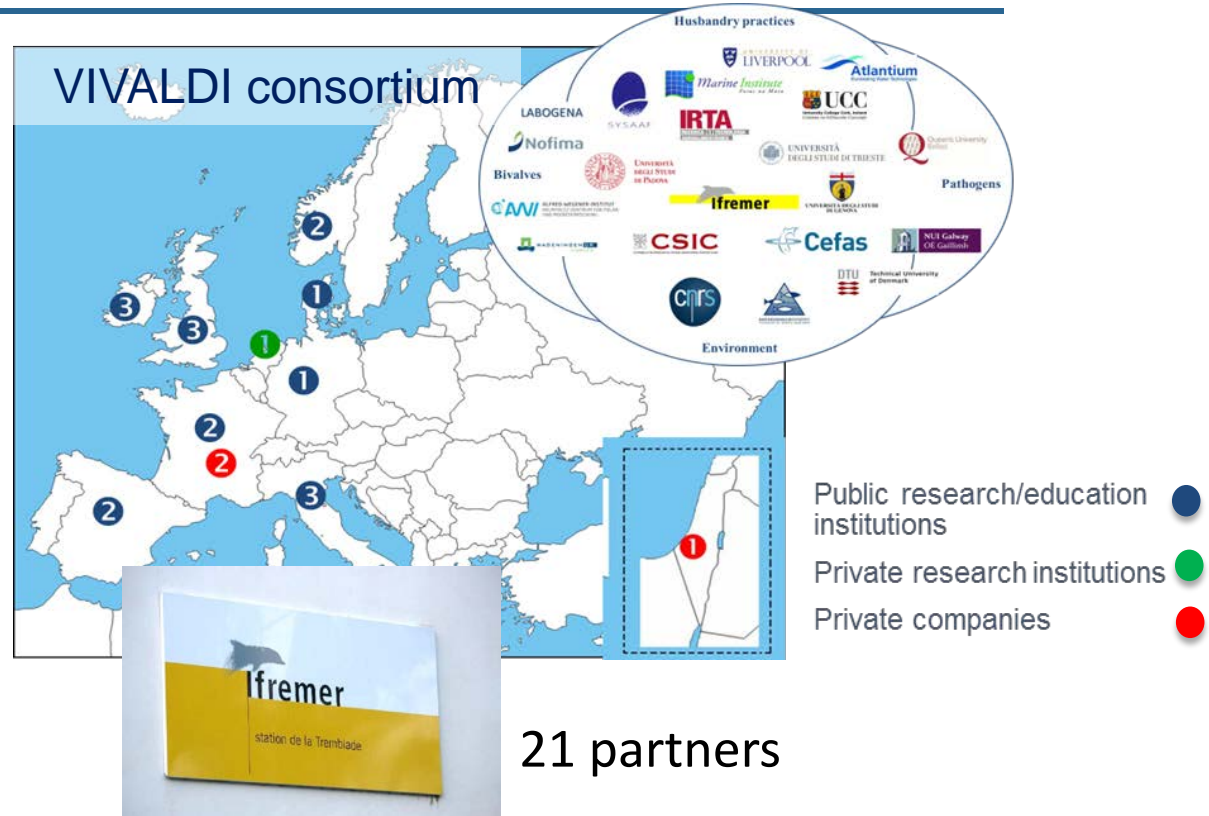
The VIVALDI project: 2016-2020

Better knowledge of factors triggering disease emergence



Snieszko modified by
Le Groumellec et al.

Tools and strategies to prevent
control and mitigate impact of
diseases



Main outcomes

Improve detection of pathogens...



In water:
Passive sensors
In oysters:
Magnetic beads

Obtain resistant animals ...

stimulating immunity

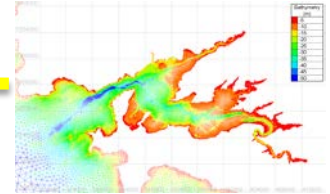
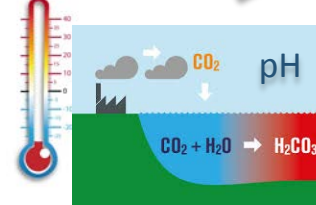


optimizing
selection
programmes



Decrease emergence and mortality...

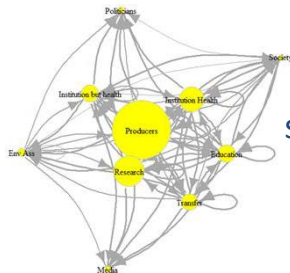
identifying influent
environmental factors



modelling
pathogen spread

designing water treatment and husbandry
practices to reduce mortality

Improve communication with stakeholders...



Based on
stakeholders
mapping



Based on risk
perception
analysis

Based on a co-
construction
process



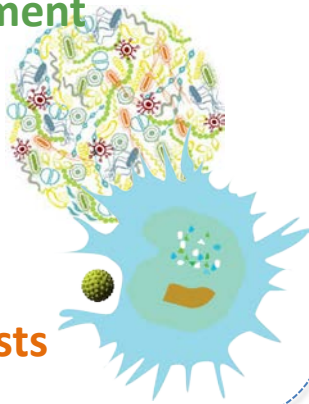
Manual of
biosecurity
measures

VIVALDI's impacts

Knowledge improvement

35 articles
on mollusc diseases;
microbiome and
defense mechanisms

Scientists



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

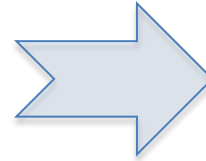


**Happy
producers
and
consumers**



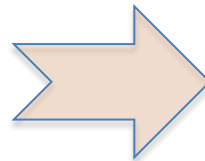
Main gaps and barriers

Poor implementation of
the legislation



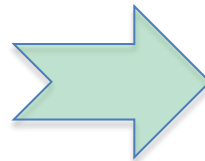
How to design and
implement management
measures ?

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



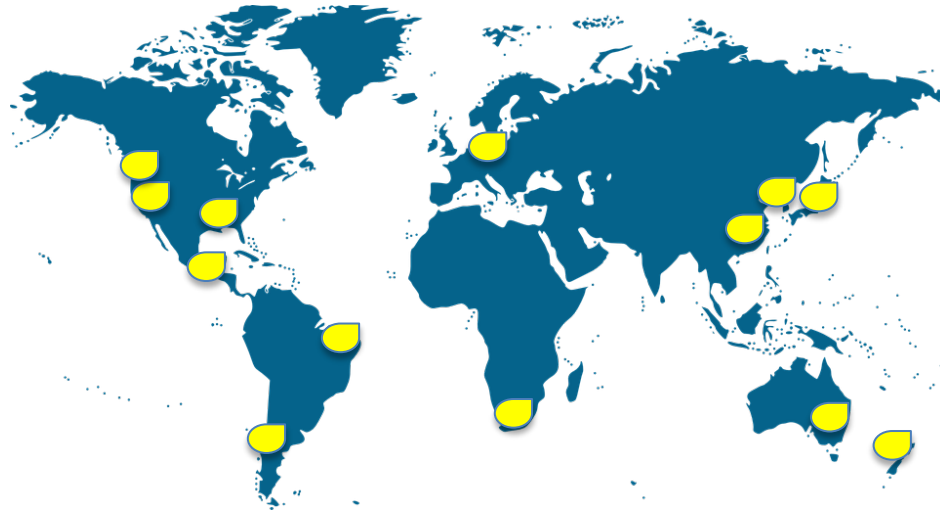
Need for diversification and
restoration: how to avoid and
mitigate diseases?

Context of
global change



How to predict and
anticipate disease
outbreaks?

Shellfish health: an international challenge



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...

An international expert advisory panel

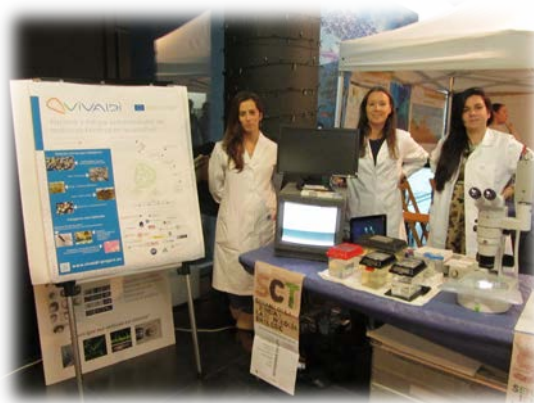
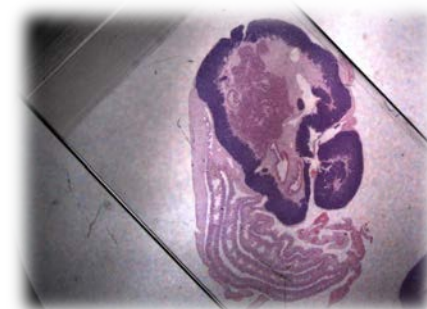
- Sharing expertise
- Increasing international cooperation
- Improving information flows

Building an
International network
on shellfish diseases



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- Facebook: vivaldiproject



Join us at VIVALDI's final meeting in Brest (F)

26-27 November: scientific conference with VIVALDI's research results



28 November: conference with all stakeholders on disease management measures and biosecurity



More information:





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