



CoCliME: Investigating the socio-economic impacts of HABs through co-development with stakeholders in European marine coastal areas

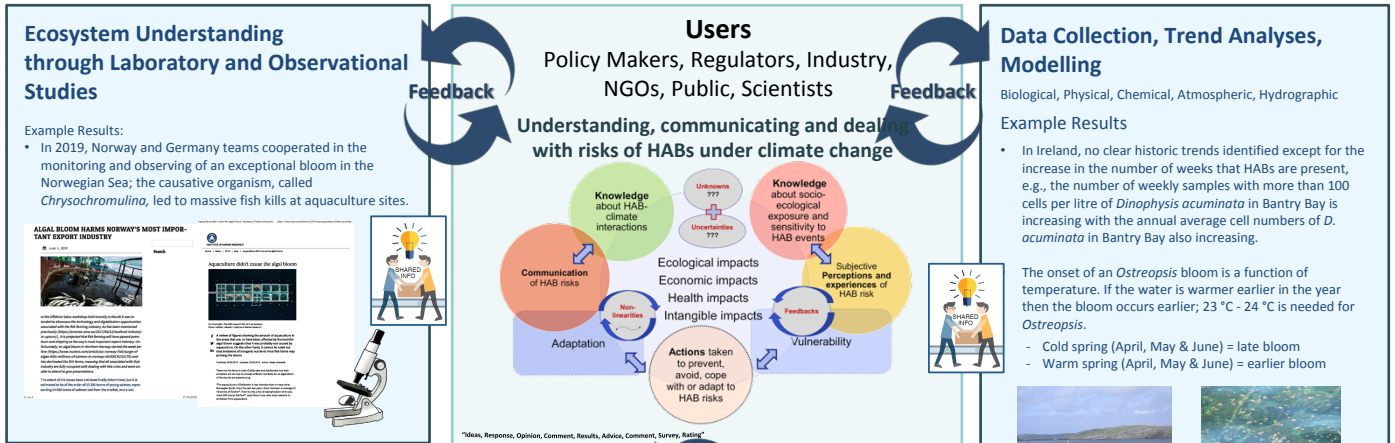


@Co_ClIME
#CoCliME

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CoCliME general AIM: Co-develop proof-of concept or prototype marine ecosystem climate services to support adaptive decision-making in European Seas



Example Case Study

The impact of shellfish trade bans caused by HABs on a French regional economy: an Input-Output approach

Between 2004 and 2018, 432 prefectural decrees enacted for a cumulated number of 16 849 days of trade bans

688 shellfish

SOUTHERN BRITANNY- 392 units

Rivières de Crach et St Philibert - 70

Golfe du Morbihan - 86

BAIE DE BOURGNEUF - 200

PAYS DE LA LOIRE - 296 units

Shellfish sales (2017):
37 600 tons
141 million €
=> 20% of national shellfish trade

Average number of days of shellfish trade bans by year

Number of impacted jobs for the regional economy

I-O regional Model: Two scenarios with contrasted impacts for the shellfish industry

Scenario	Change in GDP (M€)	Change in PPE (jobs)
without monetary compensation through higher prices, or through state aid	-8.0	-48
with an equivalent amount of state aid benefiting only to the local shellfish industry	-5.3	-35

Example Case Study

Ascertaining the economic impacts of *Ostreopsis* beach blooms

Steps

- Measuring the current level knowledge of risks associated with HAB *Ostreopsis* (Tourist and resident population):
 - Knowledge and experience of *Ostreopsis*
 - Means of information concerning HAB
 - Health consequences of *Ostreopsis*
- Evaluating their perception and their reactions (e.g. in terms of beach attendance) toward a future (hypothetical) emergence of proven health risks related to *Ostreopsis*, in connection with climate change
- Assessing their Willingness-to-Pay (WTP) to reduce or avoid these health risks, in a context of climate change = Monetary valuation of the well-being variations associated with these future HAB risks.
- Obtaining evidence to help the implementation of public policies against *Ostreopsis* health risks

Method

- Marseille : **Travel Cost Method (TCM)** with a **multi-sites approach**
- Nice : **Travel Cost Method** with a **single-site approach** (twin-beaches method)
- Monaco : **Choice Experiment Method** = Choice between 2 beaches (+ status quo) with different characteristics in terms of :
 - Absence / Presence of **jellyfish**
 - Absence / Presence of ***Ostreopsis*** (Moderate / Serious symptoms)
 - Absence / Presence of **bacteria and viruses** (→ Moderate intestinal disorders)

⇒ Approach that is different compared to Marseille and Nice case studies: the risk *Ostreopsis* is put in a **more general context of risks** (Jellyfish, Bacteria and Viruses, ...)

Some Key Messages

- HABs lead to a range of social and economic impacts for affected populations and industries. These impacts are context-specific due to variations in the biophysical and societal processes and interactions at play, the type of HABs, and the relevant stakeholders in each case
- The underlying mechanisms driving HABs and HAB-climate linkages remain unclear in many cases, complicating understanding of potential future impacts
- Understanding current HAB risks and socio-economic vulnerabilities, impacts perceptions and experiences is a basis for understanding future risks and impacts
- Transdisciplinary communication between biologists, physical oceanographers – modellers, social-scientists and stakeholders is a learning process.
- Face-to-face consultations, meetings and interviews are the most conducive way to create interest, encourage participation and build trust.