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INFORMATION SYSTEM ON THE EUTROPHICATION OF OUR COASTAL AREAS

Final conference

30th June 2014, Boulogne-sur-Mer

2 Mers Seas Zeeën
INTERREG IV A
"Investing in your future"
Crossborder cooperation programme
2007-2013 Part-financed by the European Union
(European Regional Development Fund)

How did we inform the general public ?

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ADRINORD
University of Portsmouth
CEMARE
Nausicaá La Mer est sur Terre
NIOZ
PML Plymouth Marine Laboratory
UNIVERSITY of GREENWICH
vito vision on technology
VLIZ

Informer le public tout au long du projet

“Communication in the ISECA project is necessary to inform people on the eutrophication phenomenon in general!”

Informer le public tout au long du projet

1. Rédiger un plan de communication (logo, charte graphique, outils de communication, outils de sensibilisation…).

2. Questionner le public sur ses connaissances et affiner nos messages

3. Comprendre et expliquer le travail des scientifiques même s'il est complexe, très spécialisé et difficilement visible

4. Créer des outils adaptés

5. Les diffuser lors d'événements pour des publics différents

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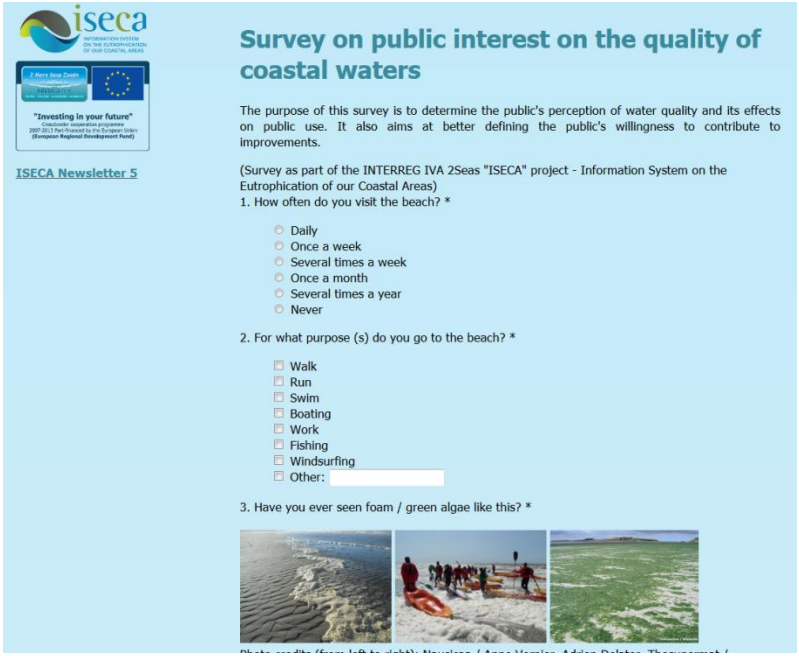
1. Rédiger un plan de communication

- Définir les **objectifs** de communication
- Créer la **charte graphique**, le logo et la base line
- Définir les outils en fonction des événements et des publics
- Mettre en place un calendrier

Ce plan de communication a été discuté et affiné avec les partenaires

2. Interroger le public et évaluer ses connaissances

- **Quelles sont ses perceptions** et ses connaissances du phénomène (mousse ou algues vertes sur les plages)
- Tirer parti des résultats des questionnaires
- Affiner nos messages pour répondre à ses questions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ISECA Newsletter 5

Survey on public interest on the quality of coastal waters

The purpose of this survey is to determine the public's perception of water quality and its effects on public use. It also aims at better defining the public's willingness to contribute to improvements.

(Survey as part of the INTERREG IVA 2Seas "ISECA" project - Information System on the Eutrophication of our Coastal Areas)

1. How often do you visit the beach? *

- Daily
- Once a week
- Several times a week
- Once a month
- Several times a year
- Never

2. For what purpose (s) do you go to the beach? *

- Walk
- Run
- Swim
- Boating
- Work
- Fishing
- Windsurfing
- Other:

3. Have you ever seen foam / green algae like this? *

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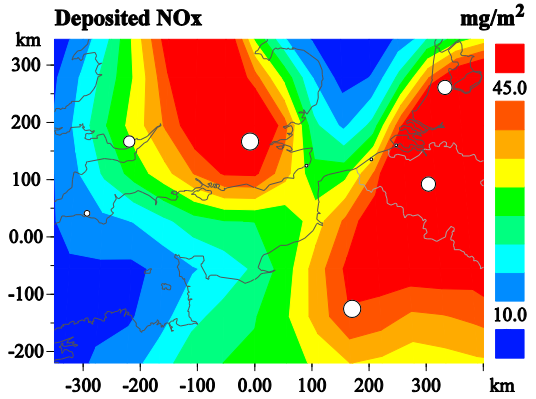
3. Comprendre un phénomène complexe

- **Questionner les scientifiques** pour bien comprendre leur mission et ce qu'est l'eutrophisation (la définition, les causes, les conséquences, l'évolution du phénomène).

- Faire rédiger par chaque scientifique une page qui résume son activité. Un travail de simplification de leur part est indispensable.



- Tout au long du projet, nombreux échanges pour valider les écrits.

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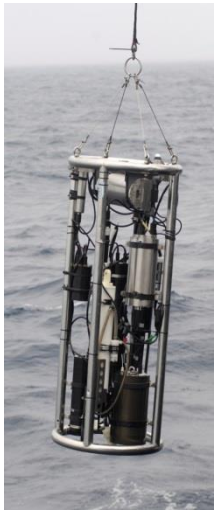
3. Comprendre un phénomène complexe

- Organiser des **journées d'information** où les parties prenantes et les éducateurs rencontrent des experts pour leur poser des questions.

- Affiner les messages qui nous semblent essentiels pour le public



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4. Créer des outils adaptés

4.1 Créer des outils d'information et de communication

4. 1.1 Site internet (Web information system)
4.1.2 Wiki
4.1.3 Fiches documentaires
4.1.4 Dépliant, kakémonos et poster
4.1.5 Newsletter
4.1.6 Vidéos

4.2 Créer des activités pédagogiques interactives et dynamiques qui aiguisent la curiosité et répondent aux questions du public

4.2.1 Beach lab activity (Vliz)
4.2.2 Satellite and ocean colors activity (PML)
4.2.3 Why the sea foams? (Nausicaà)
4.2.3 All connected to the World Ocean

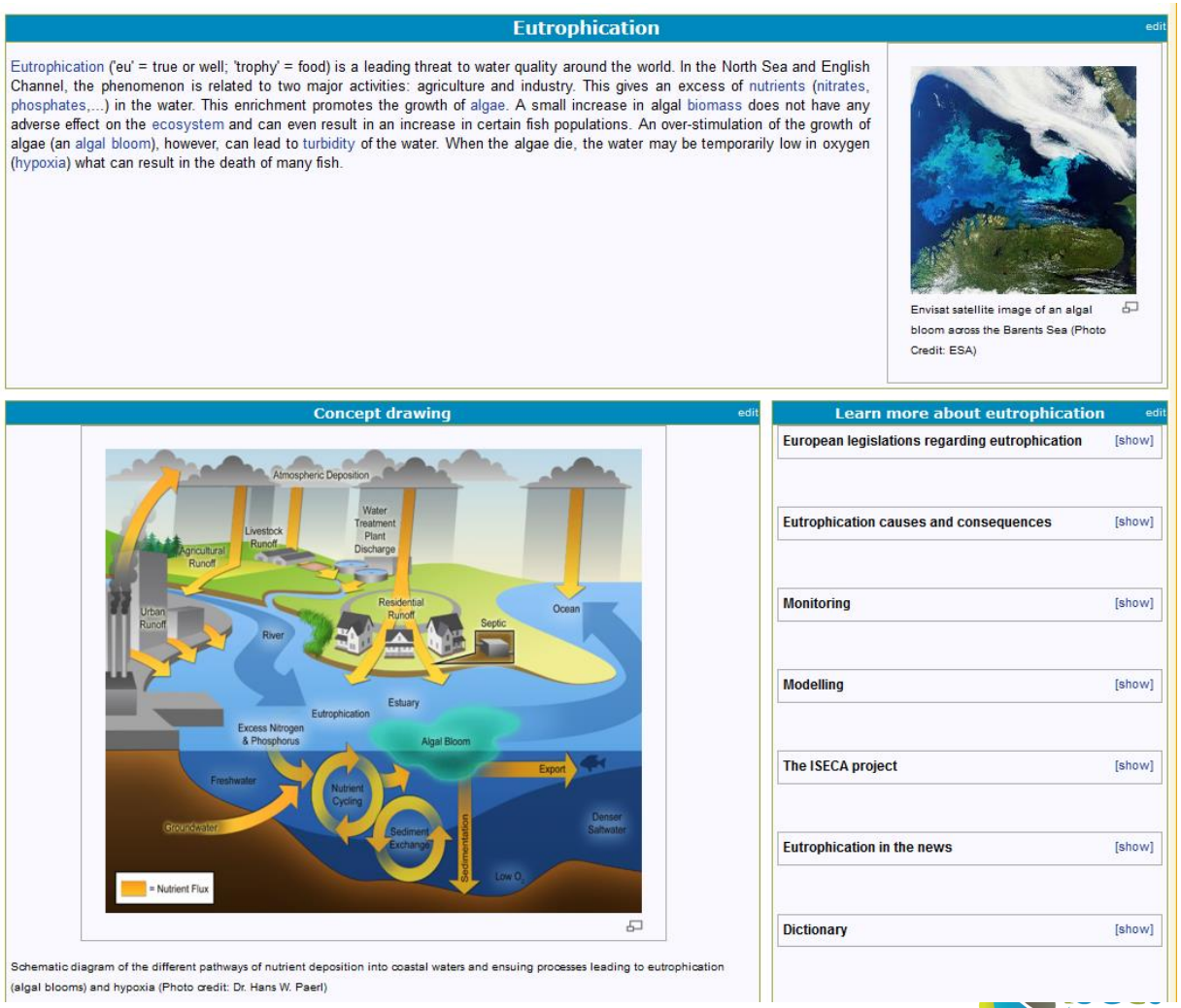
4.1.1. Web Information System (WIS)

www.iseca.eu

- Trilangual
- ISECA category
- Quick access

4.1.2 Coastal WIKI on eutrophication

- VLIZ WIKI pages
- Created for general public (from 14 yrs old)
- Dissemination of scientific information and knowledge to general public
- WIKI pages have a high impact factor by frequently visits



Eutrophication edit

Eutrophication ('eu' = true or well; 'trophy' = food) is a leading threat to water quality around the world. In the North Sea and English Channel, the phenomenon is related to two major activities: agriculture and industry. This gives an excess of nutrients (nitrates, phosphates,...) in the water. This enrichment promotes the growth of algae. A small increase in algal biomass does not have any adverse effect on the ecosystem and can even result in an increase in certain fish populations. An over-stimulation of the growth of algae (an algal bloom), however, can lead to turbidity of the water. When the algae die, the water may be temporarily low in oxygen (hypoxia) what can result in the death of many fish.

Envisat satellite image of an algal bloom across the Barents Sea (Photo Credit: ESA)

Concept drawing edit

Schematic diagram of the different pathways of nutrient deposition into coastal waters and ensuing processes leading to eutrophication (algal blooms) and hypoxia (Photo credit: Dr. Hans W. Paerl)

Learn more about eutrophication edit

- European legislations regarding eutrophication [show]
- Eutrophication causes and consequences [show]
- Monitoring [show]
- Modelling [show]
- The ISECA project [show]
- Eutrophication in the news [show]
- Dictionary [show]

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Informer le public tout au long du projet

4.1.3. General documentation

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→ BACK TO Commu

Activity 1: Eutrophication in the 2Seas Region: the great inventory

- *Phaeocystis* and foaming beaches
- Results survey of public interest: What do you think about the presence of gree seashores?
- Socio-economic analysis in ISECA

Activity 2: Earth Observation Products

- In situ-measurements in ISECA
- What is ocean colour?
- Ocean colour from space
- Atmospheric correction and ocean colour

Activity 3: Modelling

- Atmospheric modelling for ISECA
- Modelling marine and coastal eutrophication

ISECA Newsletter 4

What is eutrophication? Online survey!

What is ocean colour ?

The "colour" of the ocean is determined by the impact of light with the water and any coloured particles or dissolved chemicals in the water. Colour is the light reflected by the water and the substances present in it. When light hits a water molecule or a coloured substance in it, the different colours (or wavelengths) can be absorbed or scattered in differing intensities. The colour we see results from the colours that are reflected.

The substances in seawater which most affect the water colour are: phytoplankton, inorganic particles (or sediments), dissolved organic chemicals, and the water molecules themselves. Phytoplankton contains chlorophyll (a coloured algal pigment), which absorbs red and blue light and reflects green light. Particles can reflect and absorb light, which increases turbidity of the water. Dissolved organic matter only absorbs, mainly blue light, and its presence can interfere with measurements of chlorophyll (Figure 1).

When we look at the sea from a beach or observe it from space, particularly in areas like the caribbean or eastern Mediterranean, we see that the colour is blue because water absorbs red and reflects blue light. However, in other areas the colour is often changed by the other constituents (phytoplankton, sediments and dissolved organic chemicals). Using highly accurate electronic instruments , we can measure a wide array of blue tones, which reveal the presence of varying amounts of these constituents.

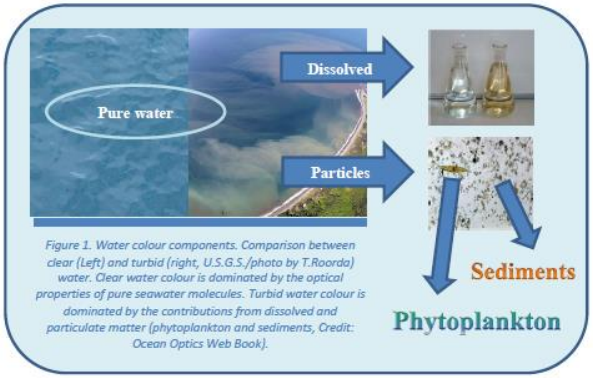

Figure 1. Water colour components. Comparison between clear (Left) and turbid (right, U.S.G.S./photo by T.Roorda) water. Clear water colour is dominated by the optical properties of pure seawater molecules. Turbid water colour is dominated by the contributions from dissolved and particulate matter (phytoplankton and sediments, Credit: Ocean Optics Web Book).

- **Why is ocean colour important?**

The main reason to measure ocean colour is to study phytoplankton, the microscopic ocean algae which are at the base of the oceanic food web. Phytoplankton produce organic carbon using light and carbon dioxide. This process is called photosynthesis. It is possible because plants contain chlorophyll, green-coloured compounds.

The ocean colour is also an indicator of the health of the ocean. In addition to light and carbon dioxide, phytoplankton also require nutrients such as nitrogen and phosphorus. When these nutrients are too high (either due to natural or man-made causes), phytoplankton can grow too much and when they decay consume the oxygen in the water, causing the death of many marine organisms. This phenomena is called **eutrophication** and the ISECA project is studying it through the satellites images.

- No scientific reports
- Topics are easily explained to general public
- Online view or download

Informer le public tout au long du projet

4.1.4. Newsletters

- ***6 editions :***
  Online view or download
- ***Introduction :***
  project related information
- ***Science :***
  focus on a scientific topic important in ISECA
- ***Zoom :***
  focus on a ISECA partner
- ***Agenda :***
  data on events important for ISECA
- ***Subscription possible !***

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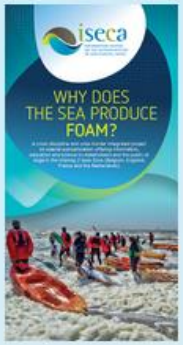
4.1.5. Dépliants, kakémonos et posters

→ BACK TO Communication and education

Project leaflet



Project banners

Project posters

- Eutrophication: a response of the sea biology to human activities
- Integrating Earth Observation with field data and model simulations, the ISECA project

Attirent le regard,

Distribués et présentés

- Dans les aquariums et centres de la mer
- Lors d'événements

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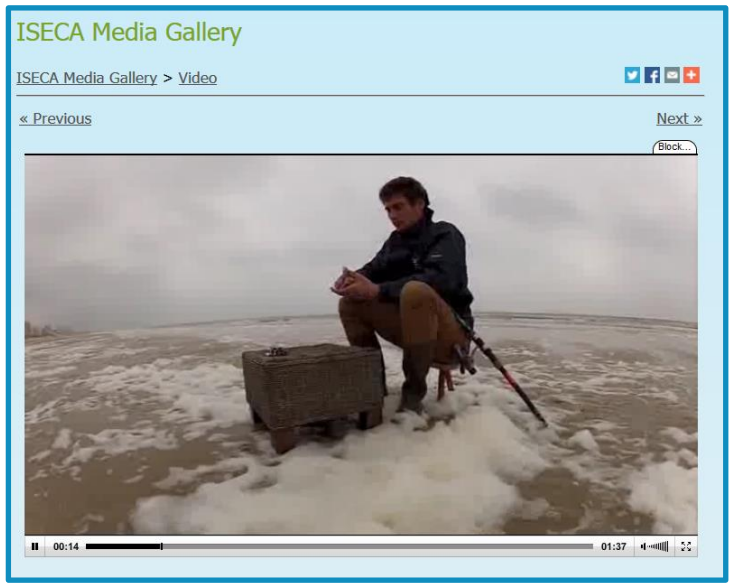
4.1.6. Vidéos

. ***Pourquoi la mer mousse ?:*** une vidéo qui pose des questions

. ***Focus sur l'eutrophisation :*** une vidéo qui apporte des réponses

. ***3? aux experts :*** des vidéos pour approfondir le sujet



4.2.1. Activités éducatives

Beach Lab Tool — Why does the sea foam? (Long)

Satellites and Ocean Colour Activity

→ BACK TO Education

→ BACK TO Education

1. **Introduction**

   What is remote sensing?
   Why do we use remote sensing?
   Can you imagine how satellite images could be used?
   What is Ocean Colour?

2. **Experiment**

   Satellites used in remote sensing are an important tool for scientists when observing the Earth. It can provide a wide visual picture and allows us to create more insight into the eutrophication processes by studying Ocean Colour (OC). In the first part of the activity you will study some satellite images and try to identify their origin. In the second part you will perform a simple Ocean Colour experiment to demonstrate how changing concentrations of phytoplankton, dissolved organic matter or suspended particles can have an influence on the colour of the ocean.

3. ***This tool is designed for children from 7-11 years old.***

   Download (PDF) here!

…n innovative computer tool
…em. If you do not have that
…eople can raise in the air to

…tion on the phenomenon of
…what is eutrophication, what

5. Rencontrer les publics

5.1. Le grand public

5. 1.1. Dans les centres de la mer

5.1.2. Lors d'événements : JMO, Fête de la nature, Journée mondiale de l'eau (Fr), Fête de la science (UK)

5.2. Les scientifiques et les experts

5.2.1. Présentation de posters : colloques scientifiques

5.2.2. Rassemblement d'éducateurs : Emsea, CCST

5. Et demain…

. Le site web reste en ligne et sera animé par le Vliz.

. Les outils d'information et de communication sont à disposition.

. Des formations seront proposées pour les découvrir et les utiliser.

. Un outil ***"tous riverains de l'océan"*** sera finalisé et distribué sous forme de CD-Rom

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Nous présenterons en détail tous les outils de sensibilisation lors de l'atelier mardi entre 9 h et 11 h 30.

Nous vous remercions de votre attention !

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Thanks to :

- *Elise Chiroutre*
- *All ISECA partners for their involvement in communication*

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