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Monitoring without borders...? Challenging!

Introduction

Rijkswaterstaat has a long record of monitoring activities at the North Sea. Extensive biological and chemical monitoring networks are operational. These networks do fulfil today's information need, and have to be sustainable for the future. Rijkswaterstaat requires an adequate and cost efficient monitoring network. The current goal is to come up with a more efficient monitoring programme national and international without avoidable overlap in these programs. The primary objective is that Ferry Box, Smart Buoys (or any innovation) can only be implemented if this leads to costs reduction. The current RWS programme has sufficient adequacy to serve the information needs. Benefits in terms of more accurate or reliable information is secondary.

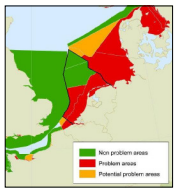
Information need

- WFD
- MSFD
- OSPAR
- Eutrophication policy
- Natura 2000
- Modelling and advise

NATURA 2000

OSPAR COMMISSION

Protecting and conserving the North-East Atlantic and its resources

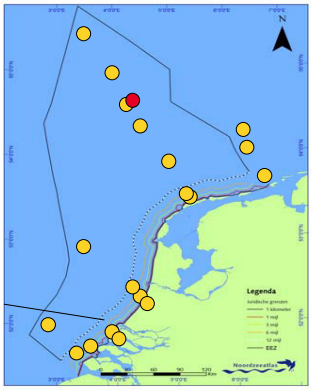


Parameters

- general parameters
- chemical substances
- nutrients
- phytoplankton

Actual Monitoring strategy

- Monitoring along transcects
- Equidistant in time



Challenges

- Adequate and cost efficient monitoring system
- Integrating new and proven techniques
- International cooperation
- Intercomparability of data

Comparison Ferrybox with in situ measurements "meetvis"
- Ferrybox gives more reliable results in time and space.
- Problems with QA & C need to be resolved.

Conclusion:
FB can be a better system than in situ point locations if
- better coverage in space and time can be guaranteed
- for reporting relevant parameters will be adequately measured
- good QA & C procedures are in place

Comparison auto sampler with in situ measurements
- Guarantee quality of preserved auto sampling samples.
- Simultaneous measurements using auto sampling and in situ ("Meetvis" measuring pod) sampling show large variations up to 25%, and even up to 100 % for suspended matter.
- Large as for now unexplained differences. Possible explanations need to be checked.

Conclusion:
Under these conditions not feasible to switch from in situ to autosampling.

Questions to be answered

- How can the workflow be organised efficiently both technically (sensors, etc.) and as process (routes, planning)?
- How can we integrate the various techniques into one efficient monitoring and reporting program?
- Facing financial cutbacks, what will be a more cost efficient monitoring program?
- How can data management and data exchange be organised and optimised?
- What experiences are there with organising Quality Assurance and Quality Control?
- What are the opportunities for an efficient cooperation and data exchange (Quality Assurance)?

General conclusion:
- For the short term operationalising the Ferrybox will only be feasible for the eutrophication information need.
- For the longer term when techniques have improved also other information needs (chemical substances, nutrients) can be considered.