

**International Conference on Research Infrastructures  
(ICRI 2012)  
Session « Climate Change »**

Towards coordinated “Research Infrastructures”  
to investigate the deep sea

Catherine Mével  
ECORD Managing Agency  
CNRS-IPGP

# Investigation of the deep sea and sub-seafloor is essential to understand climate change

ODP Leg 208



*ocean acidification related to a warming event attributed to the sudden release of CO<sub>2</sub> in the atmosphere – PETM event, ~56 Ma ago*

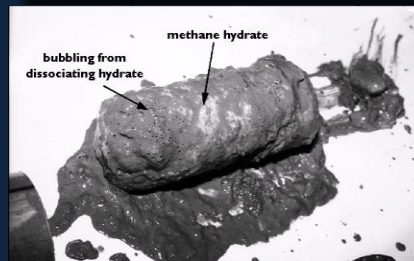
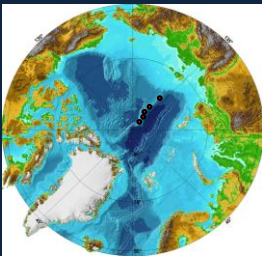
Archives of past climate changes are embedded in deep sea deposits



IODP  
exp 310

*Drowned coral reefs record the history of sealevel rise that may be correlated with the past evolution of ice sheets*

## The Arctic challenge



Gas hydrates trapped in the subseafloor may be released by global warming and contribute to the green house effect

Understanding past and/or current events is essential to inform the future....

Access to the deep sea and subseafloor requires sophisticated technologies: R/V and associated tools, ice-breakers, scientific ocean drilling, long term monitoring, etc.

# Coordinated “Research Infrastructure” are required to provide this access

Some initiatives have been launched with the support of the EC during the last decade



These initiatives represent a first successful step – *however remain fragmented, do not cover all the needs, funding still insufficient*

The development of coordinated « RIs » should build on existing expertise and knowledge

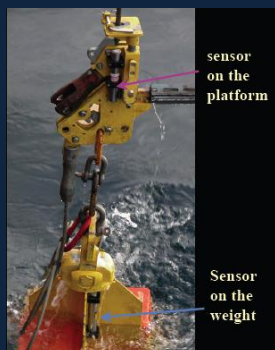
The European Commission has a role to play

- by helping the member nations to get organized and structured
- by facilitating transnational access

A constant dialogue between the Research Infrastructure unit and the more scientific units is also necessary.

Obviously, it will be easier for a R.I. organized at the European level to contribute to an international network.

In the field of sub-seafloor sampling and instrumentation, we have a lot of expertise in Europe



a “Distributed European Drilling Infrastructure” should build on this expertise and knowledge distributed across Europe in universities, institutes, SMEs

It will help

- develop stronger links between research and operational groups
- share experience and capabilities
- remain at the forefront of innovation
- promote dialogue and coordination with other relevant infrastructures – R/V, EMSO, ice cores, continental drilling (ICDP), GEOSS
- provide capabilities for sustainable use of samples and data
- provide training for younger generations
- speak with one voice at the international level

# Science results must be made available to decision makers

- Open access data bases and core/sample repositories

*Need to provide capabilities for sustainable use of samples and data*

- Distributed facilities - Use of common standards

- Resource for training the new generations

- Data accessible to diverse communities

- Scientific discoveries translated into useful information for stakeholders and decision makers



ECORD Summer school at the Bremen Core Repository

Infrastructure ↔ Research capacity  
Science results  
Decisions and actions