

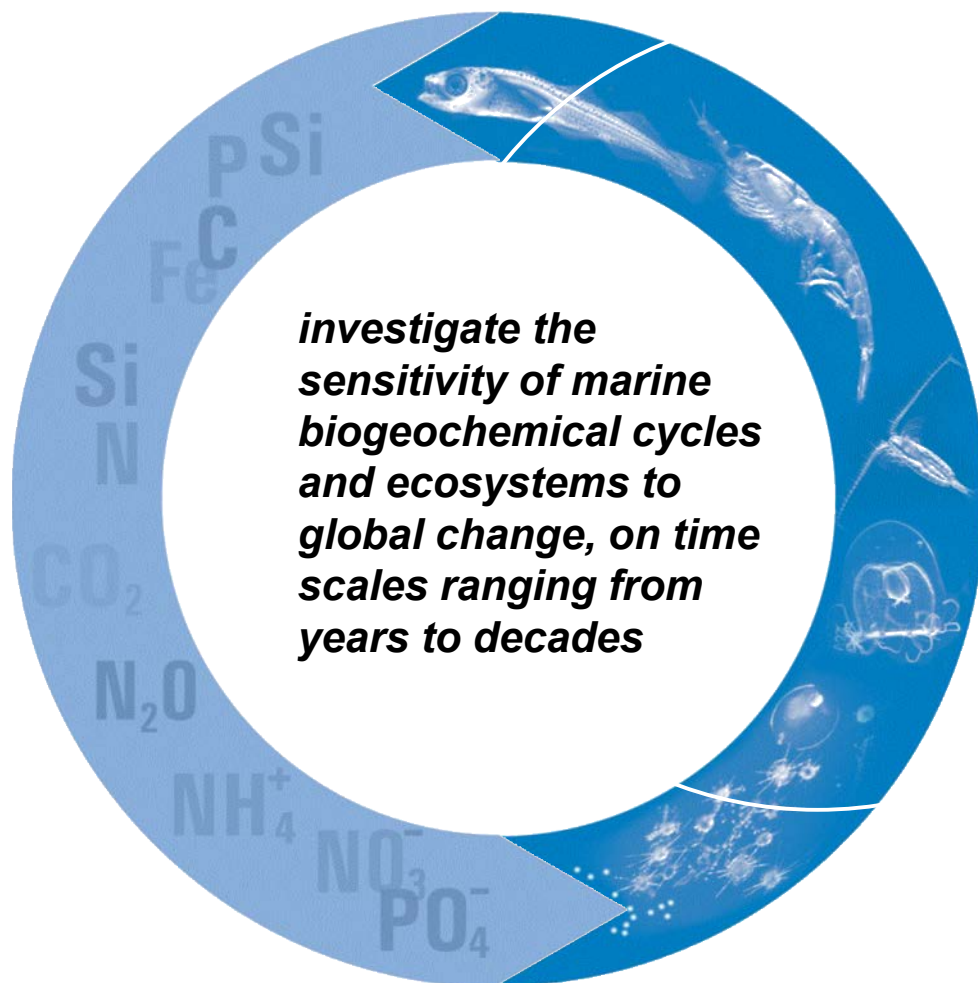


Integrated **M**arine **B**iogeochemistry and **E**cosystem **R**esearch

“...to provide a comprehensive understanding of, and accurate predictive capacity for, **ocean responses to accelerating global change and the consequent effects on the Earth System and human society**”



IMBER RESEARCH FOCUS



FOUR RESEARCH THEMES

- Interactions between biogeochemical cycles and marine food webs
- Sensitivity to global change
- Feedbacks to the Earth System
- Responses of society



IMBER SCIENCE

RESEARCH THEME 1 – Biogeochemical cycles and marine food webs

- Linkages and feedbacks between marine biogeochemical cycles and food webs ([advances in making links](#))
- Transfer and transformation of matter and material across interfaces and through internal ecosystem processes ([advances in mesopelagic ocean understanding](#))





RESEARCH THEME 2 – Sensitivity to global change

- Impacts of climate-induced changes through physical forcing and variability ([advances through regional programmes](#))
- Effects of increasing anthropogenic CO₂ and changing pH on marine biogeochemical cycles, ecosystems and their interactions ([advances in ocean acidification](#))
- Effects of changing supplies of macro- and micronutrients ([focus of IMBIZO-II](#))
- Impacts of harvesting on end-to-end food webs and biogeochemical cycles ([regional programmes](#))





IMBER SCIENCE

RESEARCH THEME 3 – Feedbacks to Earth system

- Oceanic storage of anthropogenic CO₂ (**focus WGs**)
- Ecosystem feedback to ocean physics and climate (**regional programmes**)

RESEARCH THEME 4 – Responses to society

- Promote understanding of the multiple feedbacks between human and ocean systems (**HD-WG**)
- Clarify what human institutions can do, either as mitigation or adaptation (**HD-WG**)





IMBER – Next Five Years



GLOBEC ended as an IGBP ocean program in March 2010

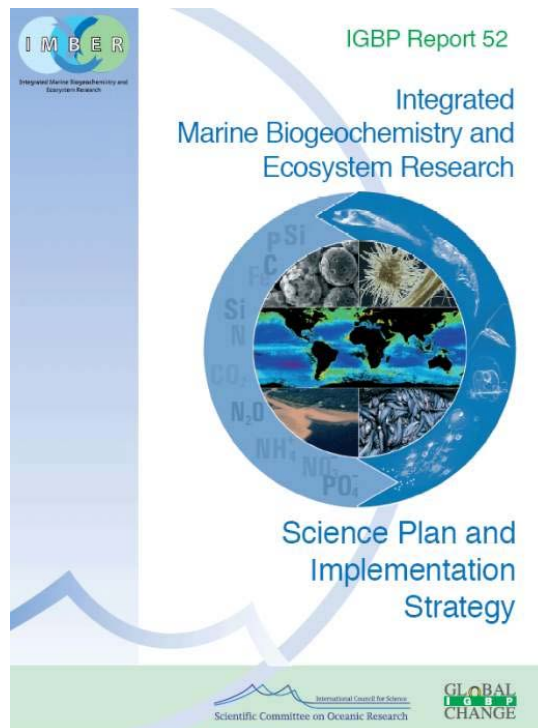
In 2008 a Transition Task Team (TTT) was established to facilitate continuation of GLOBEC regional programs in IMBER and to provide guidance on new areas of research for IMBER

Report of TTT is published as a supplement to the
IMBER Science Plan and Implementation Strategy
IGBP Report 52A





IMBER Science Plan and Implementation Strategy SPIS (2005)



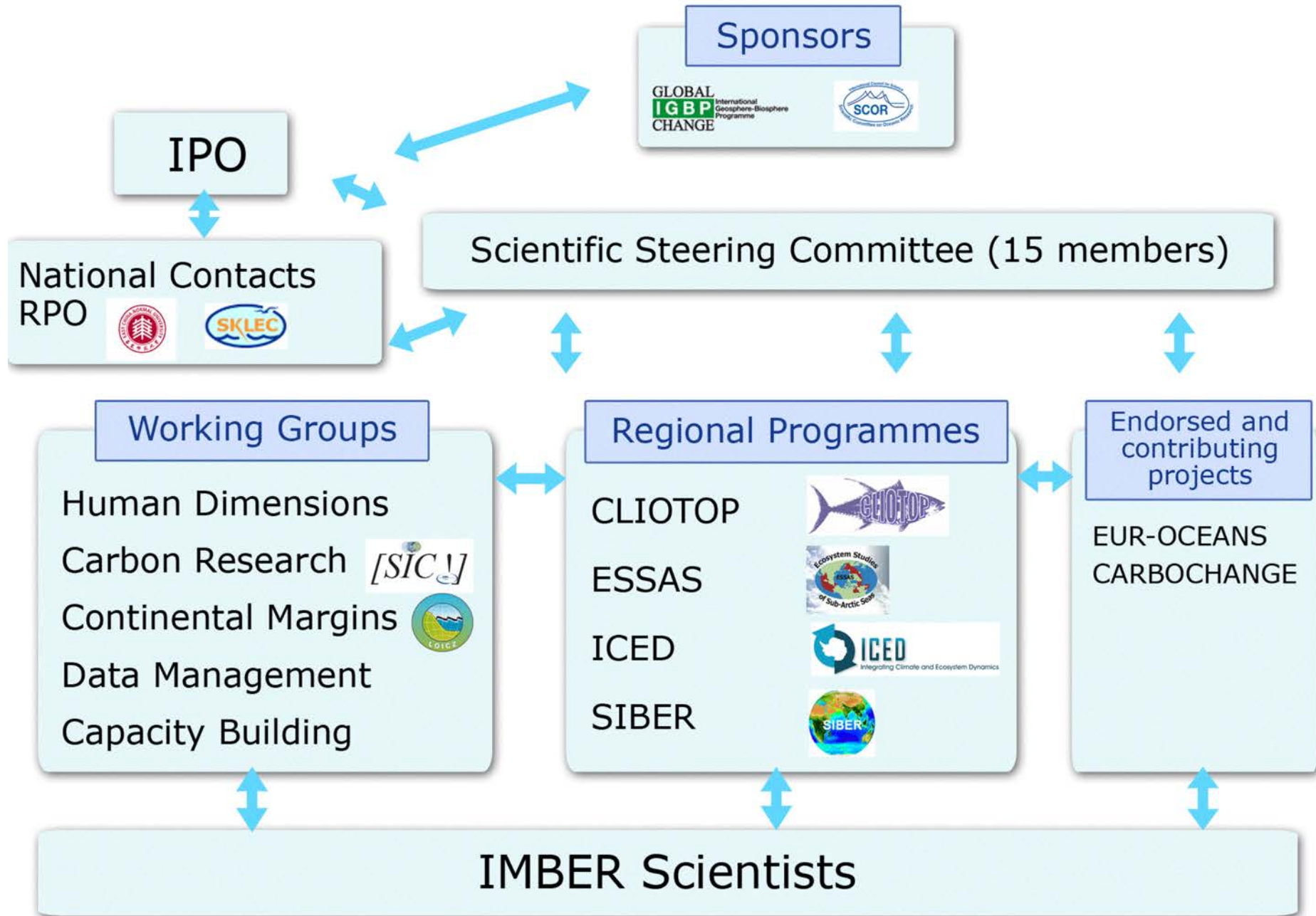
Supplement to the IMBER SPIS (2010)



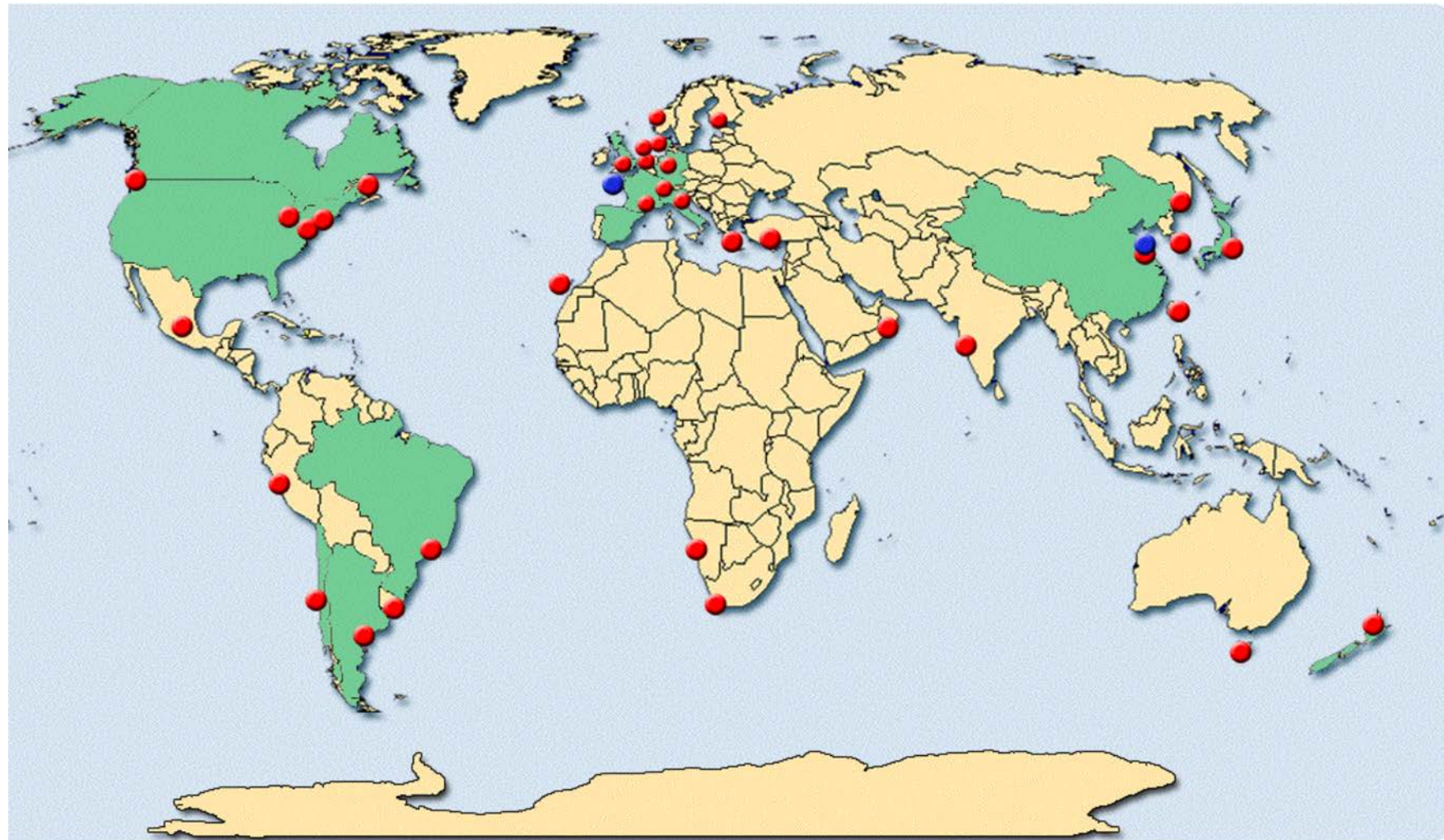
→ IMBER II - next five years

www.IMBER.info/SPIS.html



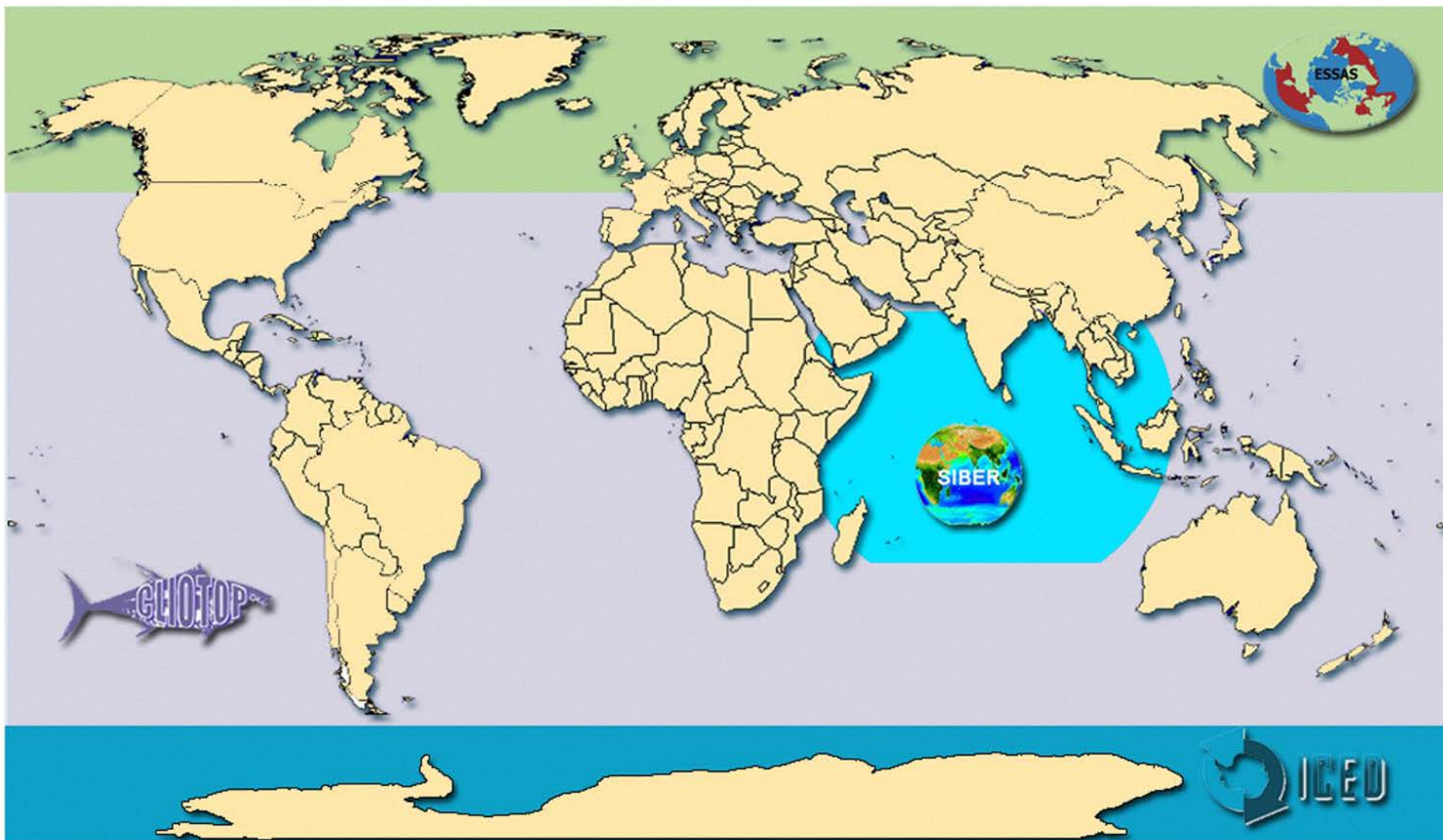


IMBER National Network (2011)



- Country with one or more endorsed projects
- National contact(s)
- Project Offices

IMBER Regional Programmes



Four IMBER Regional Programmes

ESSAS: Ecosystem Studies of Sub-Arctic Seas

To understand how climate change will affect the marine ecosystems of the Sub-Arctic Seas and their sustainability.

Leaders: Ken Drinkwater and Franz Mueter



CLIOTOP: CLimate Impacts on Oceanic TOP Predators

To study oceanic top predators within their ecosystems using a worldwide comparative approach.

Leaders: Olivier Maury and Alistair Hobday



ICED: Integrating Climate and Ecosystem Dynamics in the Southern Ocean

To better understand climate interactions in the Southern Ocean, the implications for ecosystem dynamics, the impacts on biogeochemical cycles, and the development of sustainable management procedures.

Leader: Eugene Murphy



SIBER: Sustained Indian Ocean Biogeochemical and Ecological Research

Basin-wide program in the Indian Ocean focused on biogeochemical and ecological research, with existing and planned observing systems and expeditions providing the observational backbone.

Leaders: Raleigh Hood and Wajih Naqvi



Working Groups

Capacity Building

To enhance research capabilities in less developed countries and to strengthen graduate education in ocean sciences. Leader: Jing Zhang

SOLAS/IMBER Carbon *[SIC!]*

Coordinate and synthesise ocean carbon research in surface ocean (Andrew Lenton), interior ocean (Niki Gruber) and ocean acidification (Jean-Pierre Gattuso).

IMBER/LOICZ Continental Margins

To finalise the Continental Margins Implementation Plan to coordinate research in these areas. Leaders: KK Liu (IMBER) and Helmuth Thomas (LOICZ)

Data Management Committee encourages the use of good data management practices in all aspects of IMBER science. Leader: Alberto Piola

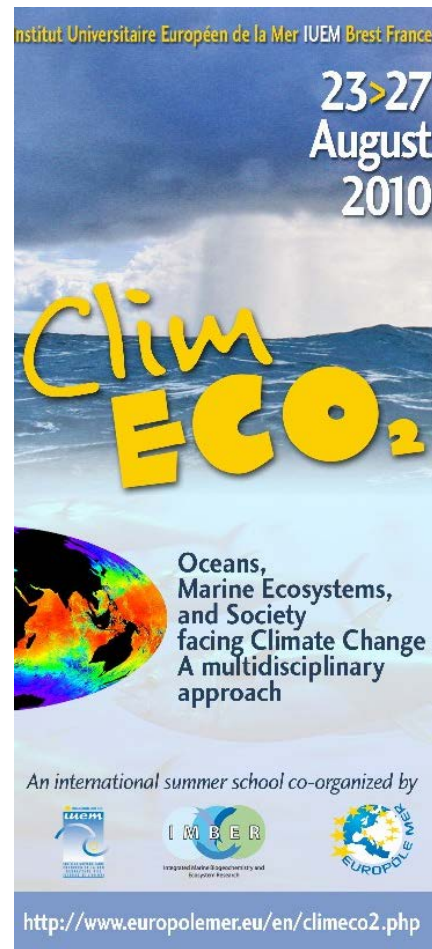
Human Dimensions To understand the feedbacks between human and ocean systems, and to clarify what human institutions can do to mitigate anthropogenic perturbations of the ocean system, or to adapt to such changes. Leaders: Alida Bundy, Marie Badijeck and Moenieba Isaacs



IMBER summer schools



2012



2010



2008





IMBER IMBIZO III

28-31 January 2013

Goa, India

The future of marine biogeochemistry,
ecosystems and societies.

*Multi-dimensional approaches to the challenges
of global change in continental margins and
open ocean systems*



