

# IMBER: An Integrative Approach to Ocean Biogeochemistry & Marine Ecosystem in a Changing World

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The goal of IMBER is **“to investigate the sensitivity of marine biogeochemical cycles and ecosystems to global change, on time scales ranging from years to decades”**.

**Theme 1:** Identify and understand the interactions between biogeochemical cycles and marine food webs impacted by global change

**Theme 2:** Understand the sensitivity of marine biogeochemical cycles and ecosystems and their interactions to global change

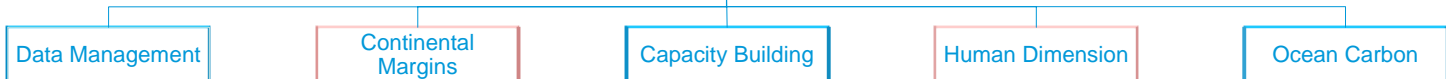


**Theme 3:** Understand feedbacks to the Earth System - Capacity of the ocean to control the climate system

**Theme 4:** Responses of Society Understand feedbacks between human and ocean systems including adaptation and mitigation

The implementation of IMBER science is facilitated by the working groups established to consider specific research topics

## IMBER Working Groups



### Joint IMBER/LOICZ Continental Margins Working Group

The Continental Margins Working Group (CMTT) is co-sponsored by the Integrated Marine Biogeochemistry and Ecosystem Research (IMBER) and the Land-Ocean Interaction in the Coastal Zone (LOICZ) projects.

**Goals:**

- To provide an understanding of the linked biogeochemical, physical and human dimensions of continental margin systems
- To develop accurate predictive capacity for continental margin responses to environmental and anthropogenic drivers, including accelerating global change and the consequent effects on the earth system and human society
- To provide knowledge, understanding and prediction needed to allow coastal communities to assess, anticipate and respond to the interaction of global change and local pressures which determine coastal change

**Research Topics:**

- Ocean Shelf Exchange as a Gateway of the Earth System
- Continental Margins as Sources or Sinks of CO<sub>2</sub>
- Potential Shifts in Continental Margin Systems with Increasing Atmospheric CO<sub>2</sub> and Ocean Acidification
- Coupling of Multi-Element Cycles across Boundaries
- Interaction of Biology and Biogeochemical Cycles
- End-to-End Food Webs
- Regime Shifts

Carbon fluxes at continental margins

**Publication:**

Carbon and Nutrient Fluxes in Continental Margins A Global Synthesis.  
Springer-Verlag (2010)

← Kon-Keo Liu, Larry Atkinson, Renato Quinones, Liana Talaue-McManus (Editors).

### IMBER Human Dimensions Working Group

Created in January 2011, this working group will focus on the interactions between human and ocean systems. Its motivation stems from recognition that humans not only influence ocean systems, but also depend on ocean systems for goods and services.

**Goals:**

- To promote an understanding of the multiple feedbacks between human and ocean systems
- To clarify what human institutions can do, either to mitigate anthropogenic perturbations of the ocean system, or to adapt to such changes

**Scope:**

- To take a broad comparative approach to provide frameworks to understand and forecast human-ocean-human interactions with respect to global change
- To use a comparative case study approach at all scales to explore questions related to: adaptive capacities of socio-economic status (SES), governance/food security/poverty reduction, global markets, and physical/biogeochemical links to humans
- To address the issues raised under Theme 4 of the IMBER Science Plan and Implementation Strategy
- To ensure that the other IMBER working groups and regional programmes include a focus on the socio-economic effects in marine ecosystems and use similar standards and methods

**Upcoming Event:**

**26-29 March 2012:** London, UK  
Planet Under Pressure: Special session  
“Toward a sustainability-science knowledge-network on marine-ecosystems: achieving innovative, transdisciplinary stewardship across multiple scales”

For more information:  
[http://www.planetunderpressure2012.net/session\\_fox.asp](http://www.planetunderpressure2012.net/session_fox.asp)