

## Scientific Themes

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Managing the consequences of global environmental change, while securing a sustainable future, requires a more integrated approach that incorporates human aspects within the traditional analytical methods of disciplinary studies. The challenge is to develop integrative global change science that assembles research from diverse sources in innovative ways in order to understand the interacting dynamics of the Earth's life support systems. LOICZ will focus on how humans are supported by the coastal system, how their activities impact upon it, and what policies and practices will be required to ensure its sustainability.

Research on the biogeochemical, physical and human dimensions of coastal change is being carried out in LOICZ within five Scientific Themes defined and described within the Science Plan and Implementation Strategy (LOICZ-SPIS):

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### Scientific Themes

- I. Vulnerability of Coastal Systems and Hazards to Society**
- II. Implications of Global Change for Coastal Ecosystems and Sustainable Development**
- III. Human Influences on the River Basin Coastal Zone Interactions**
- IV. Biogeochemical Cycles in Coastal and Shelf**
- V. Towards Coastal system Sustainability by Managing Land-Ocean Interaction**

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### All themes have three common challenges:

- (i) Up-scaling regional science for global science, policy and management, and down-scaling global science for regional management and stakeholders
- (ii) the interaction between impacts of local/regional versus global drivers and pressures
- (iii) Combining natural and social sciences with stakeholder consultations to understand and advise on sustainable use of the water continuum.