

Home | Domains and Actions | Earth System Science and Environmental Management (ESSEM) | In Detail

ESSEM in Detail

The following examples illustrate aspects of potential research and development in this Domain. The scope of the Domain is not restricted to these activities.

- ▶ All Actions
- ▶ Biomedicine and Molecular Biosciences (BMBS)
- ▶ Chemistry and Molecular Sciences and Technologies (CMST)
- ▶ **Earth System Science and Environmental Management (ESSEM)**
 - **In Detail**
 - Actions
 - Restricted Area
- ▶ Food and Agriculture (FA)
- ▶ Forests, their Products and Services (FPS)
- ▶ Individuals, Societies, Cultures and Health (ISCH)
- ▶ Information and Communication Technologies (ICT)
- ▶ Materials, Physics and Nanosciences (MPNS)
- ▶ Transport and Urban Development (TUD)
- ▶ Trans-Domain Proposals



Modelling and observing the changing Earth systems: Based on improving our understanding of physical and biogeochemical principles through new and integrated observing and modelling capacities, this will contribute to predicting global and regional environmental changes.

Prediction, adaptation and mitigation of hazards: This requires developing advanced modelling and early-warning systems (e.g. geohazards, severe hydro-meteorological events, air/soil pollution), integrated with upgraded in-situ, remote

sensing and satellite technologies and observing networks.

Enhancement of Environmental Management: This will contribute to the development of early-detection technologies and indicators to managing natural resources (e.g. biodiversity loss, nitrogen and phosphorous cycling), as well as to the development of systems for renewable energy production, modelling of water and energy production scenarios and their impact on the environment.

Strong interactions with international initiatives, programmes or organisations are welcome. ESSEM also supports interdisciplinary research networks on adaptation and mitigation for regional or local authorities and policy makers.

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