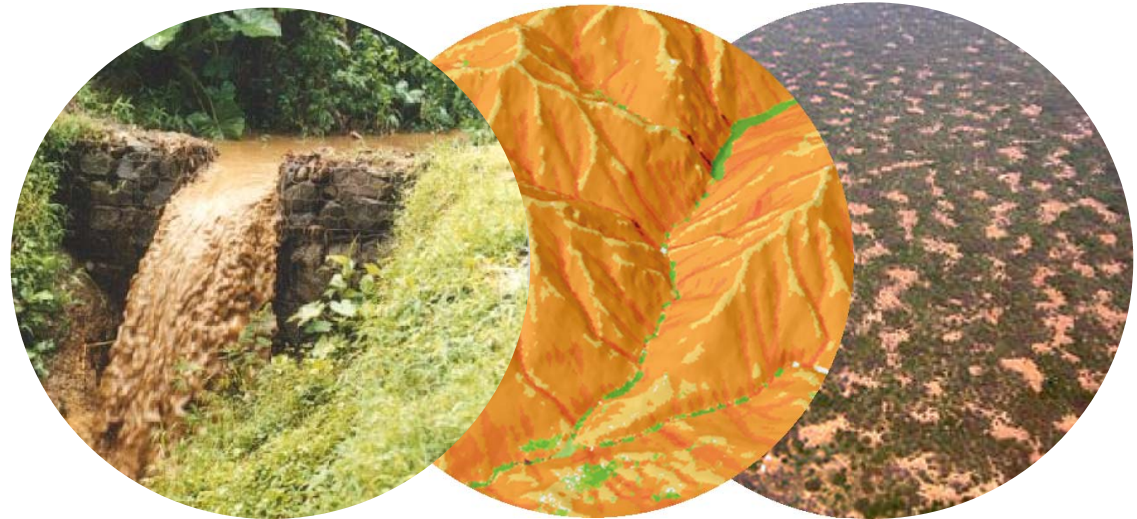

Research interests

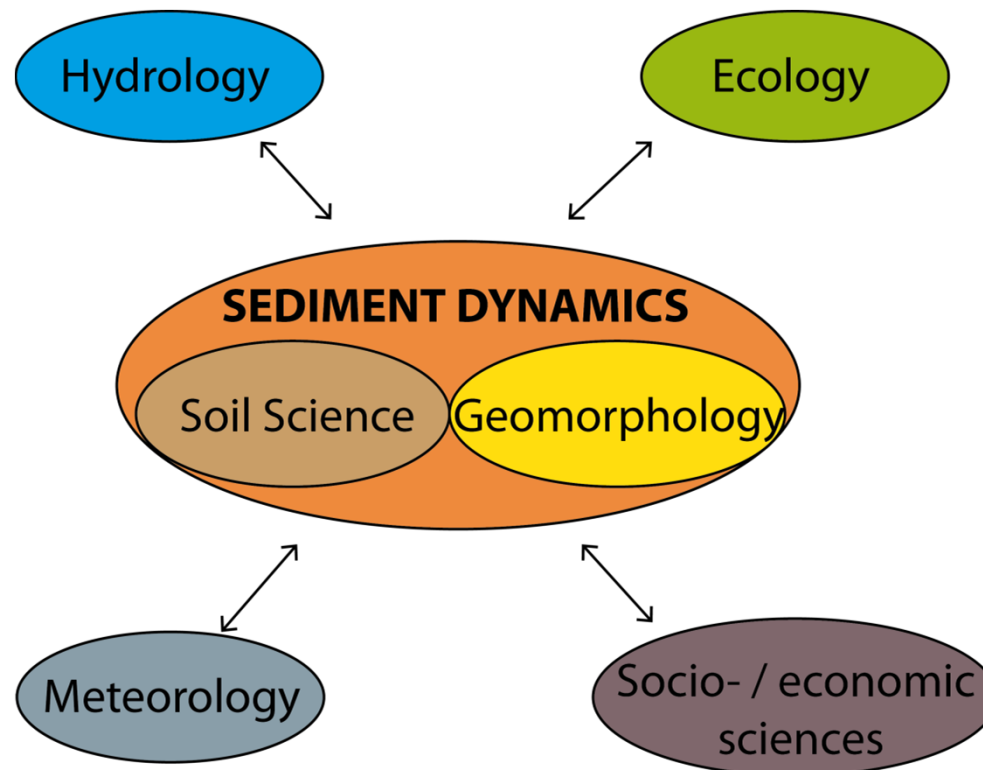
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Central research theme

- Sediment dynamics:

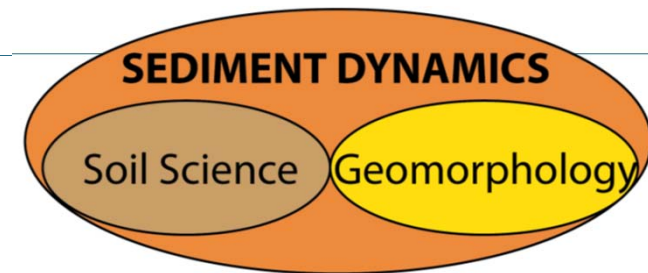


Relevance of research theme

- Societal relevance:
 - Soil and water conservation
 - Food security
 - Climate change adaptation

- Scientific relevance: understanding system dynamics
 - Source, sinks and pathways of sediment
 - Interaction between sediment and vegetation
 - Self-organisation and uncertainty
 - Process representation

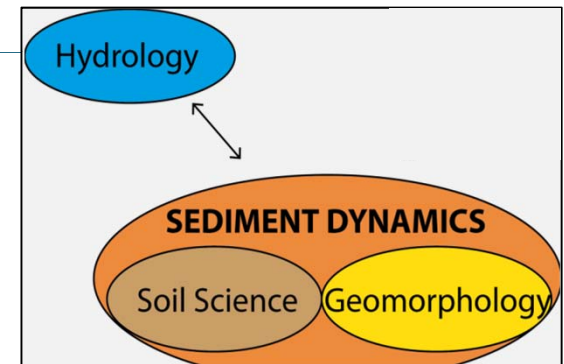
- Location: Upstream = source of sediment



Research questions and methods

Interaction Sediment Dynamics – Hydrology

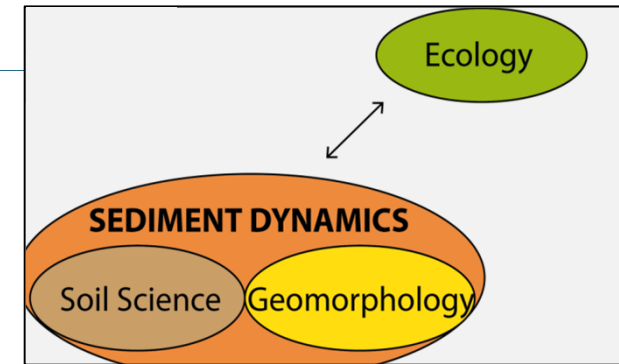
- Main theme: sediment dynamics due to transport by water
- Q: how can fluvial dynamics best be incorporated in modelling sediment dynamics at different spatial and temporal scales?
- Relevance:
 - Scientific: process representation, hydrological connectivity
 - Societal: flooding, water harvesting
- Methods: modelling, field observations & monitoring



Research questions and methods

Interaction Sediment Dynamics - Ecology

'feedbacks and interactions between vegetation dynamics and geomorphic processes'



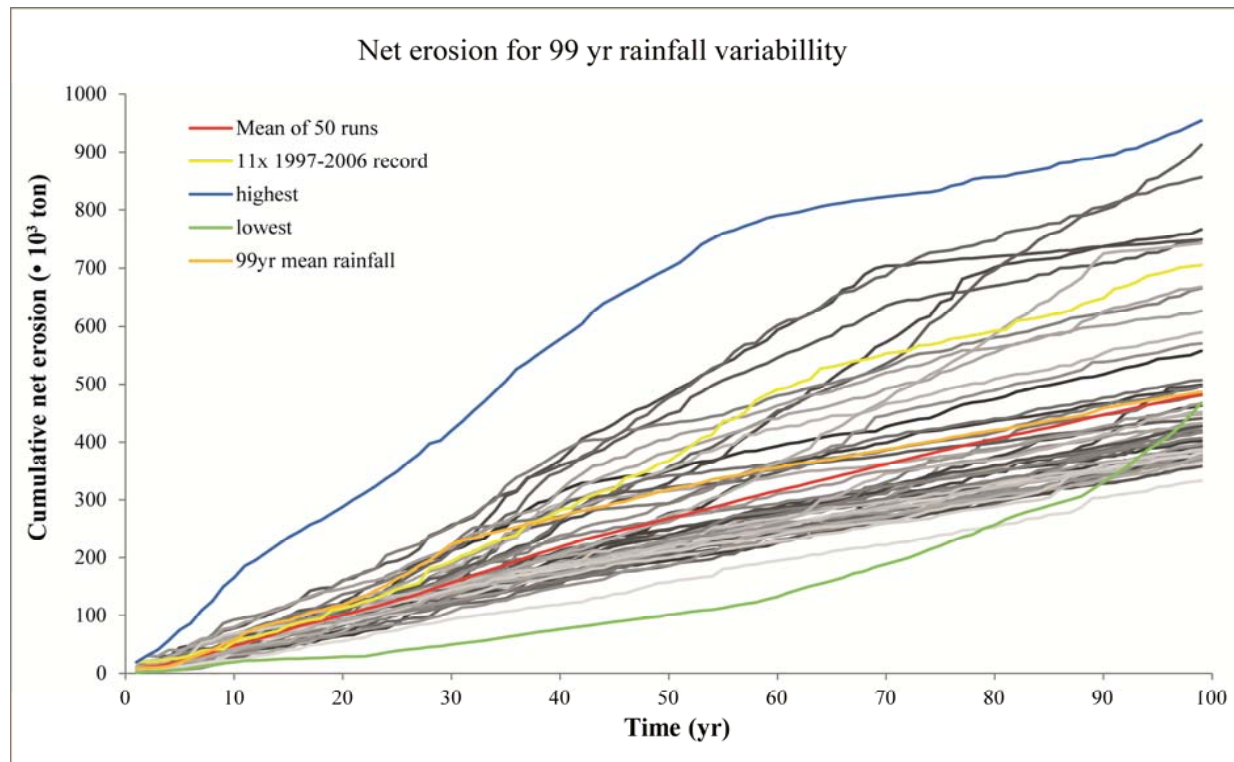
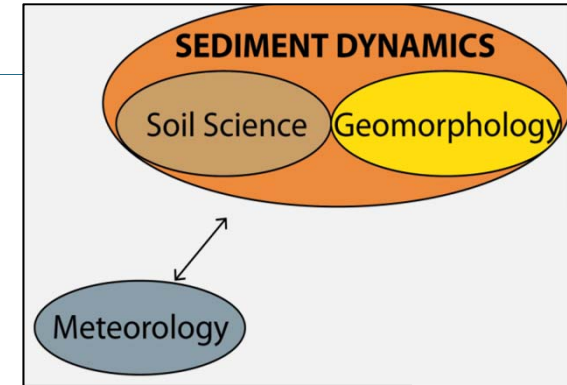
- Q: How does landscape and vegetation legacy affect ecosystem shifts?
- Relevance:
 - Scientific: unknown; why crucial?
 - Societal: landscape mar desertification
- Methods: Lab experiments, temporal substitution



Research questions and methods

Interaction Sediment Dynamics - Meteorology

- Q: How does rainfall sequencing affect catchment scale sediment dynamics?



on? Spatial

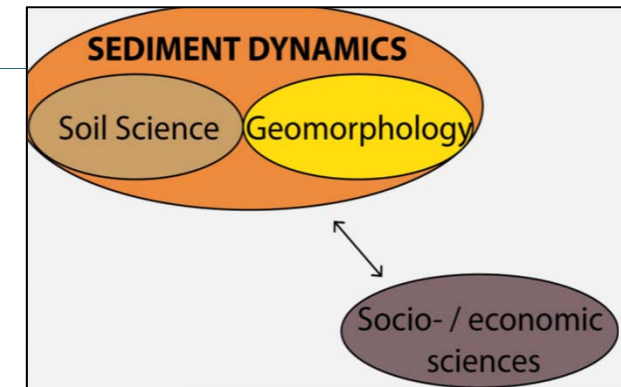
asures

ab experiments

Research questions and methods

Interaction Sediment Dynamics – Socio-economic sciences

- Q: How does human activity affect sediment dynamics?
 - Past, present, future
 - Upscaling best practices
- Relevance:
 - Scientific: natural vs. human, anthropocene, process representation
 - Societal: sustainable landuse, SWC measures
- Methods: modelling, field monitoring



Sediment dynamics!

Jantiene Baartman
9 Jan 2014

