

Integrative analysis under land-use and climate changes with an emphasis on adaptation

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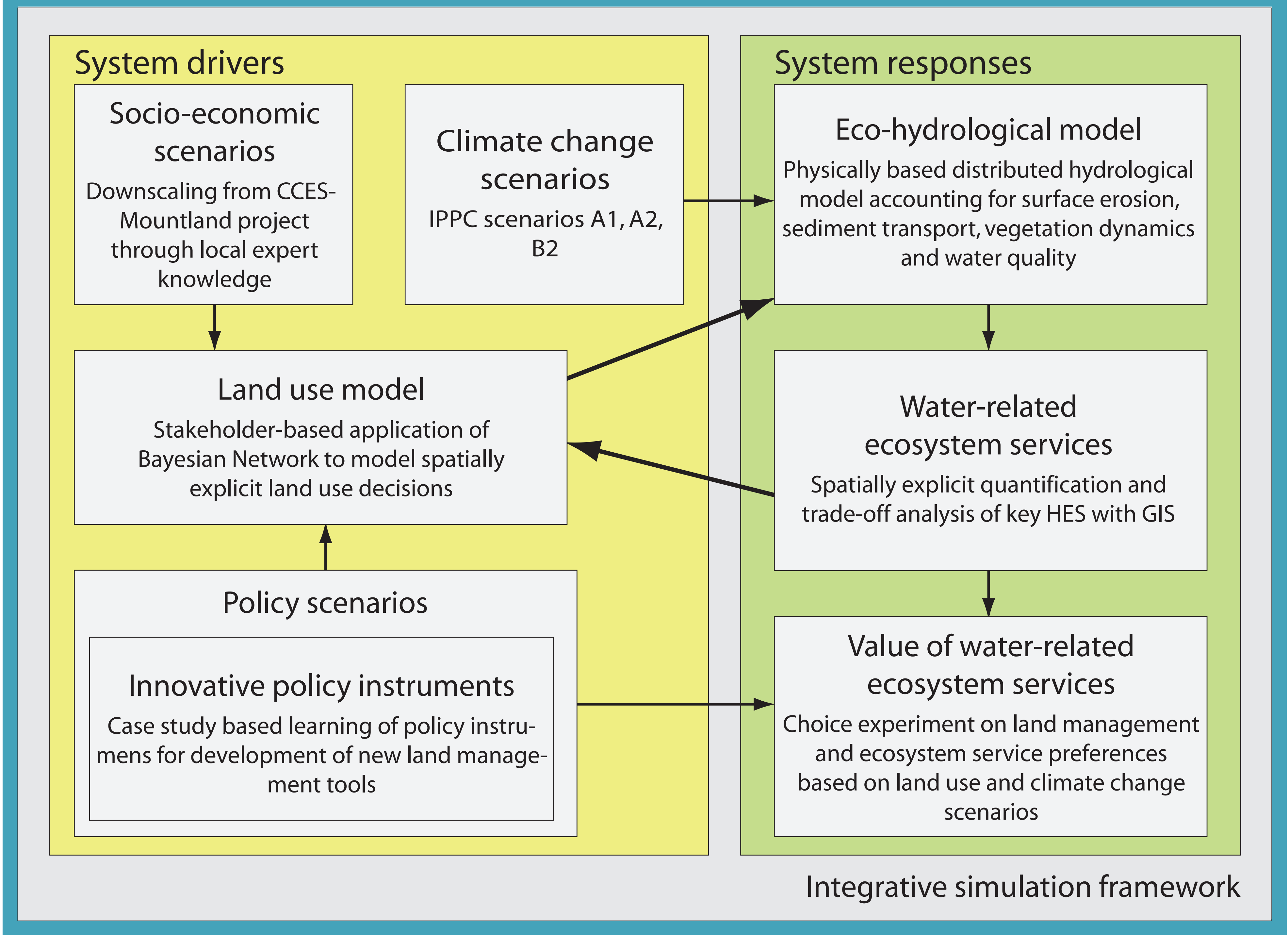
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Climate change as well as growing socio-economic pressures are expected to have a strong impact on the hydrological cycle. Political decisions entail changes in land use and land cover, which directly affect the provision of hydrological ecosystem services (HES). In order to secure HES provision, regional stakeholders need to develop **adaptation and mitigation strategies**.

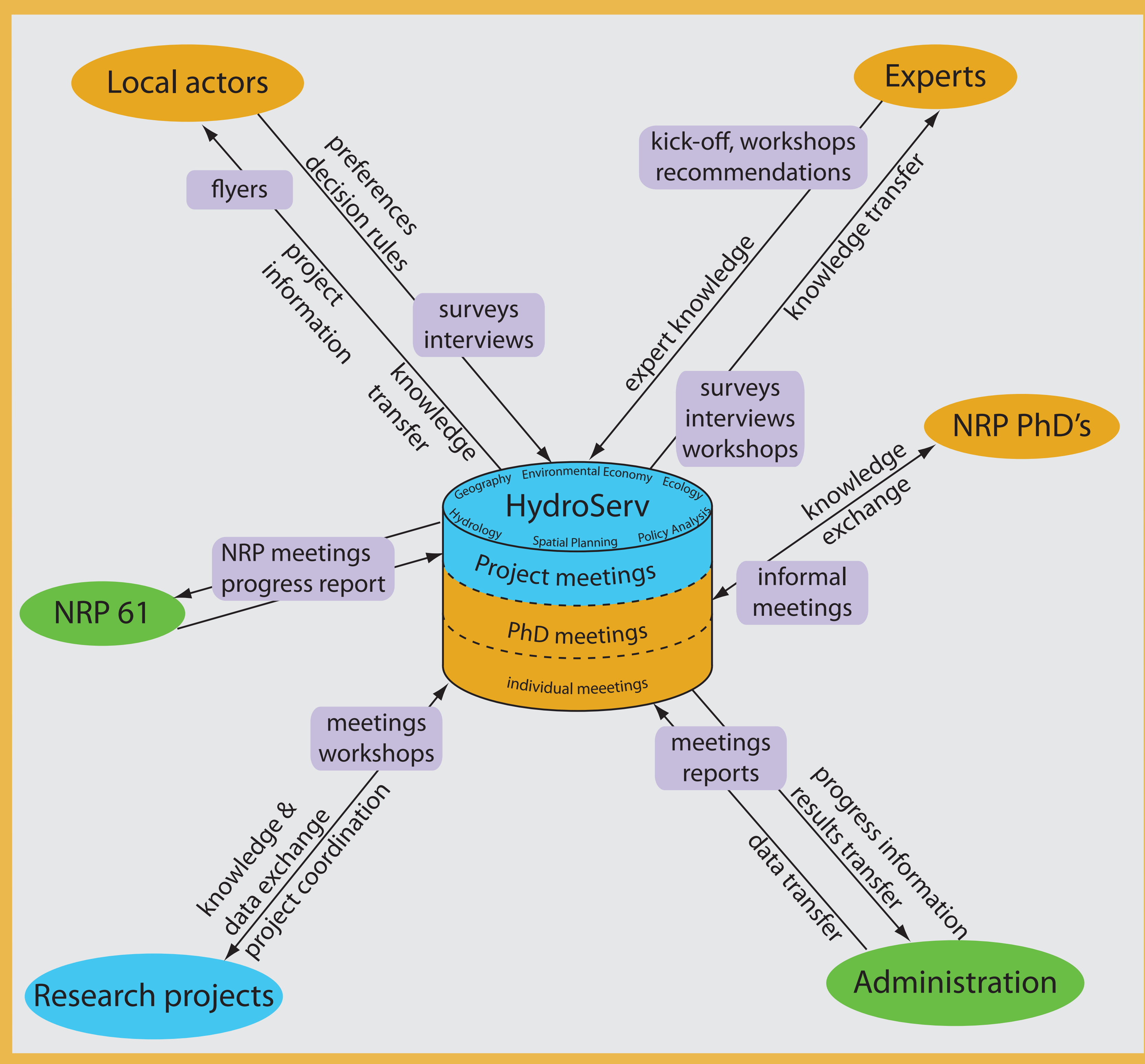
The project aims at better understanding the full value chain of HES.

An integrative framework combines the hydrological, ecological and economic aspects of the water resource supply chain and portrays these in various scenarios and different time steps to close the feedback loop between land use, hydrology and HES. This poster reflects the project framework and the inter- and transdisciplinary process.

Project framework and methodology



The projects' inter- and transdisciplinary collaboration



Research Questions

- Which land cover and land use options best improve the resilience of vulnerable ecosystems and related key HES in the face of further climate change at the catchment level?
- Can land use planning and regulations as well as payments for ecosystem services schemes increase the adaptive capacity of the system?
- Can the scientific uncertainties and the stakeholders' risk perceptions be taken into account in an integrative probabilistic simulation tool?

Expected Results

- New suitable institutional arrangements to secure the provision of HES at catchment level.
- A model showing the relationships and feedbacks between land use change, changes in key hydrologic attributes and the corresponding value of provided HES.