

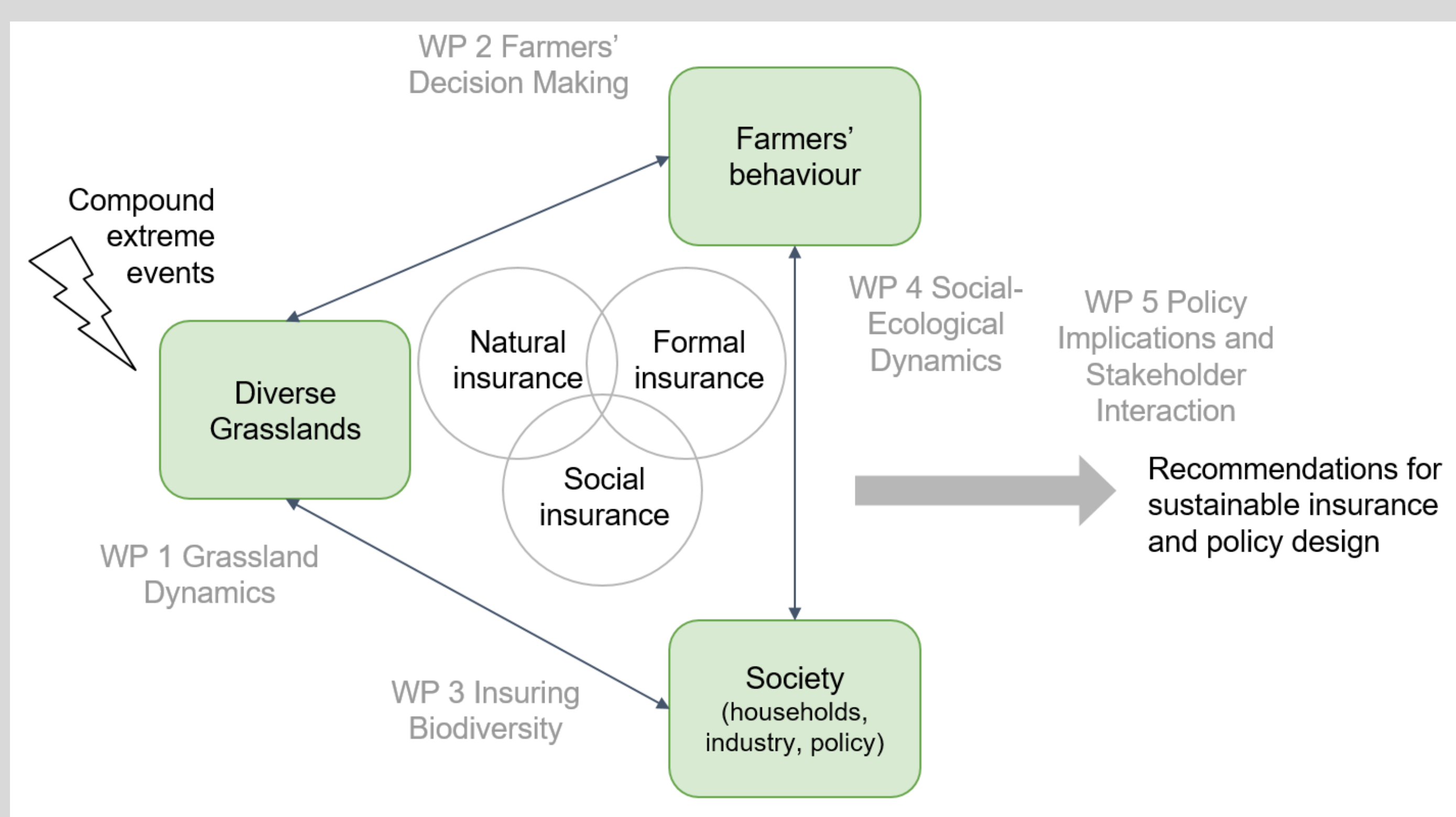
Impact of extreme events on ecosystem services in temperate permanent grasslands

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1 Motivation

Extreme events with increasing frequency, intensity, and duration have been affecting the provision of ecosystem services by temperate permanent grasslands, which triggers substantial threats against food security by grassland farming systems. The **InsuranceGrass** project will provide a holistic and comprehensive assessment on different types of grassland insurances, aiming to answer the pressing questions about how grassland-based farming systems can cope best with climate risk. As Work Package 1, we will explore the dynamics of grassland ecosystem services under extremes with different management intensities and plant diversity levels.

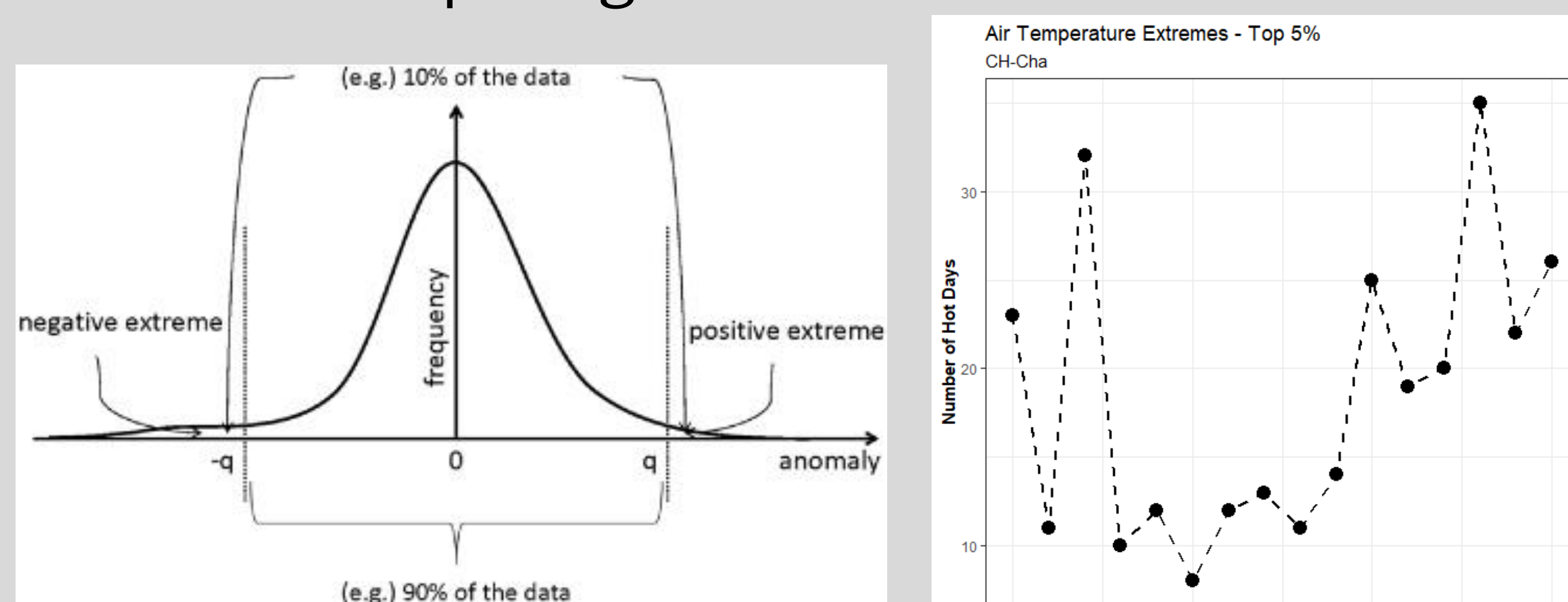


2 Methods

□ Benchmark establishment: Systematic literature review and meta-analysis of existing literature

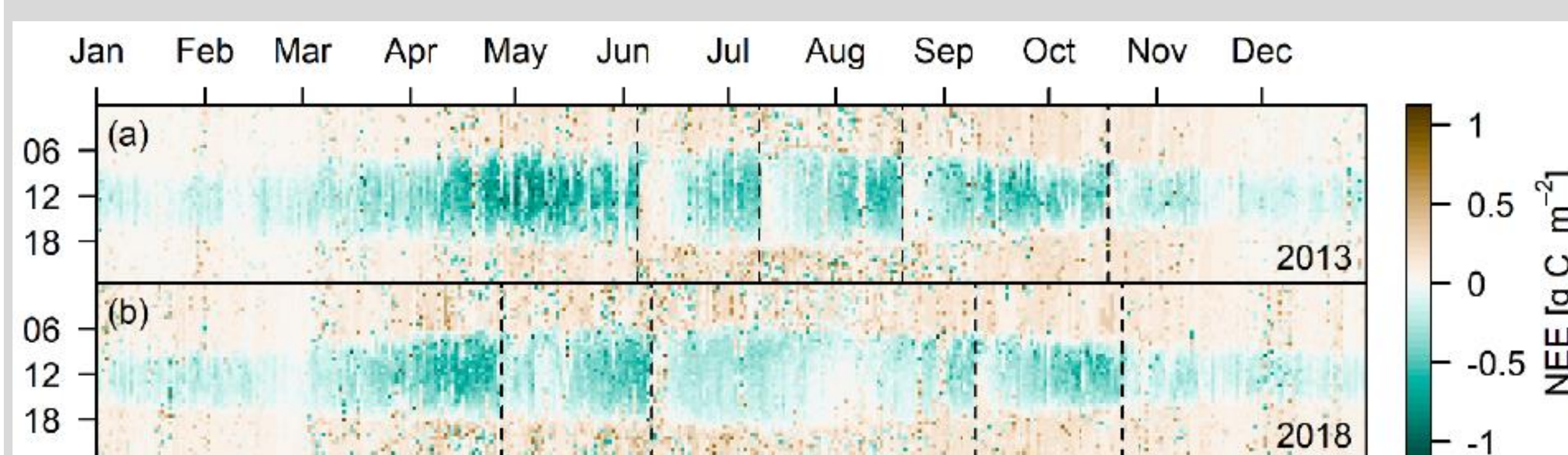


□ Extreme detection: Time series analysis with long-term high-resolution meteorological data from Central European grassland sites within Fluxnet



(Figure A2 in Zscheischler et al. 2014)

□ Impact assessment: Extreme events on climate regulating services using Eddy Covariance technique for grassland sites within Swiss FluxNet



(Figure from Feigenwinter et al. 2022)



3 Expected Outcomes

- ✓ Evaluate changes of ecosystem services due to climate change and extreme events
- ✓ Foster communications with stakeholders to mitigate future climate risks
- ✓ Support insurance and policy improvement for sustainable grassland farming systems

2 ZERO HUNGER



6 CLEAN WATER AND SANITATION



13 CLIMATE ACTION



15 LIFE ON LAND



(UN Sustainable Development Goals)

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