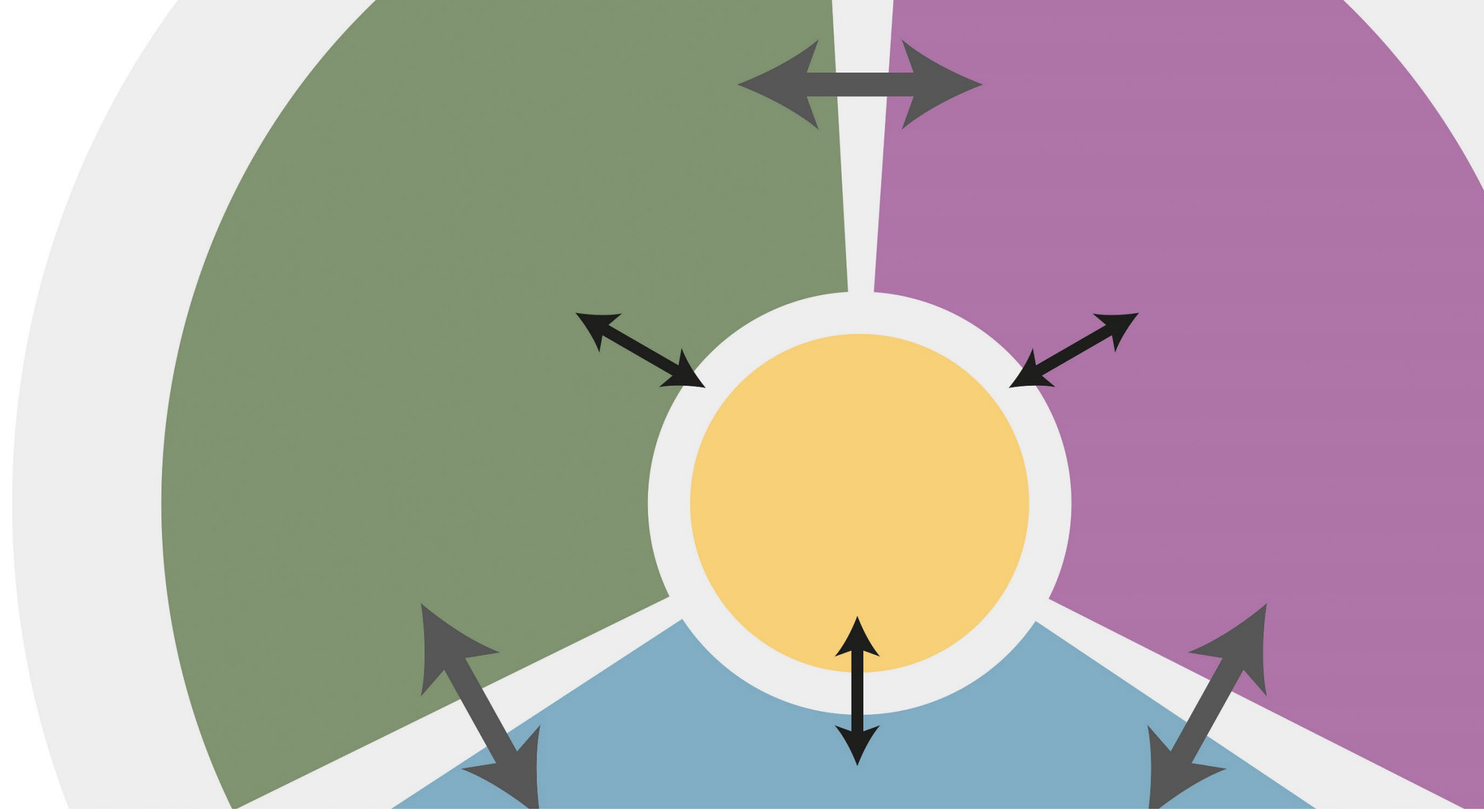


Regime shifts and human behavior in agricultural systems



Motivation & Innovation

- Undesirable regime shifts are often driven by agricultural land-use decisions (Fig. 1)
- Understanding farmer behavior in the face of regime shifts is key to design effective and efficient governance responses
- It is unknown if and how risk-experienced farmers perceive regime shifts and emanating systemic risk, and how their land-use decisions are affected by these perceptions, their beliefs, preferences and indications of warning signals
- When proposing governance responses, a wide array of policy instruments regulating (e.g. European) farmer behavior needs to be taken into account, which may differ in their suitability to regulate farmer behavior in the face of regime shifts

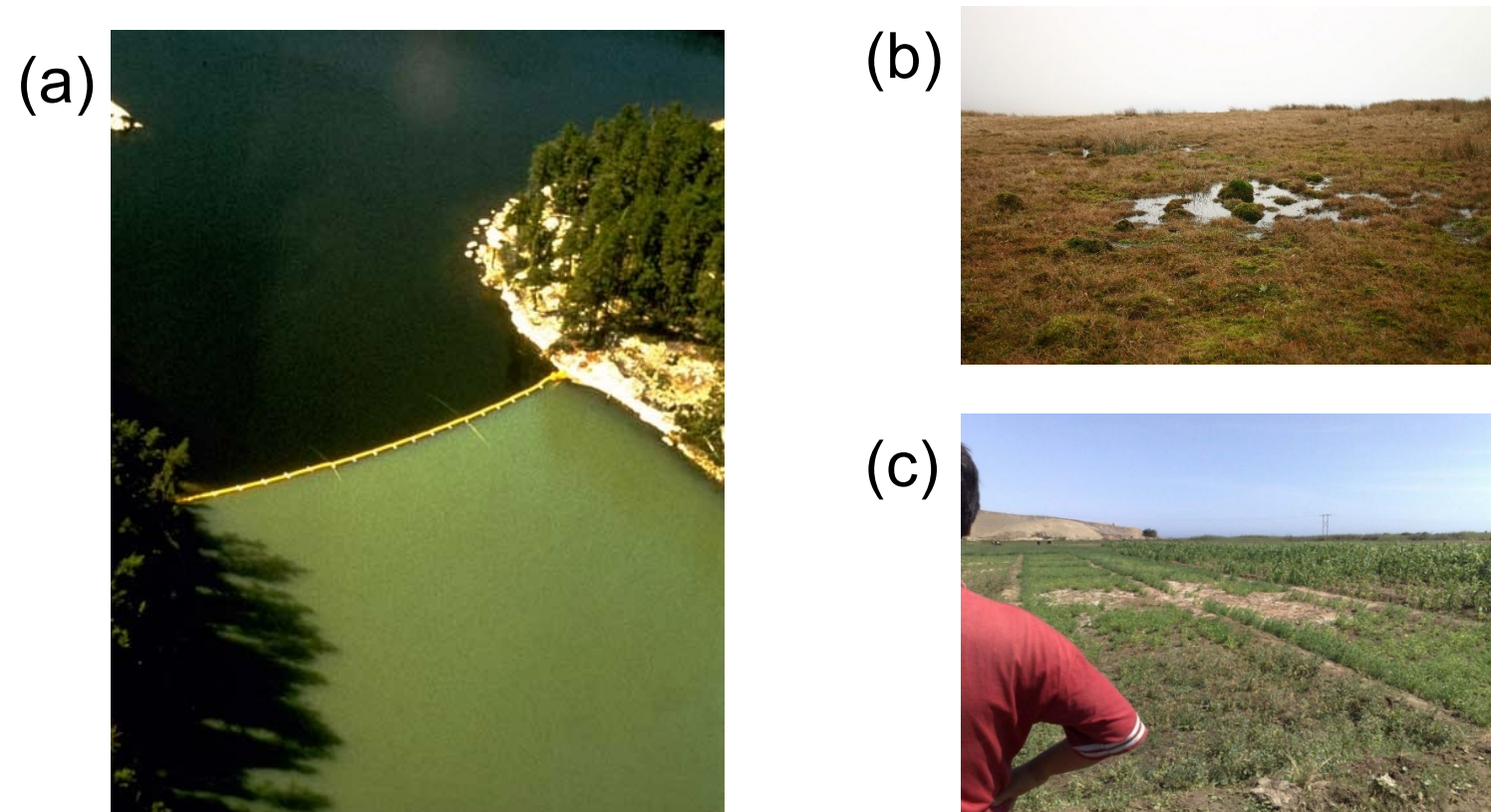
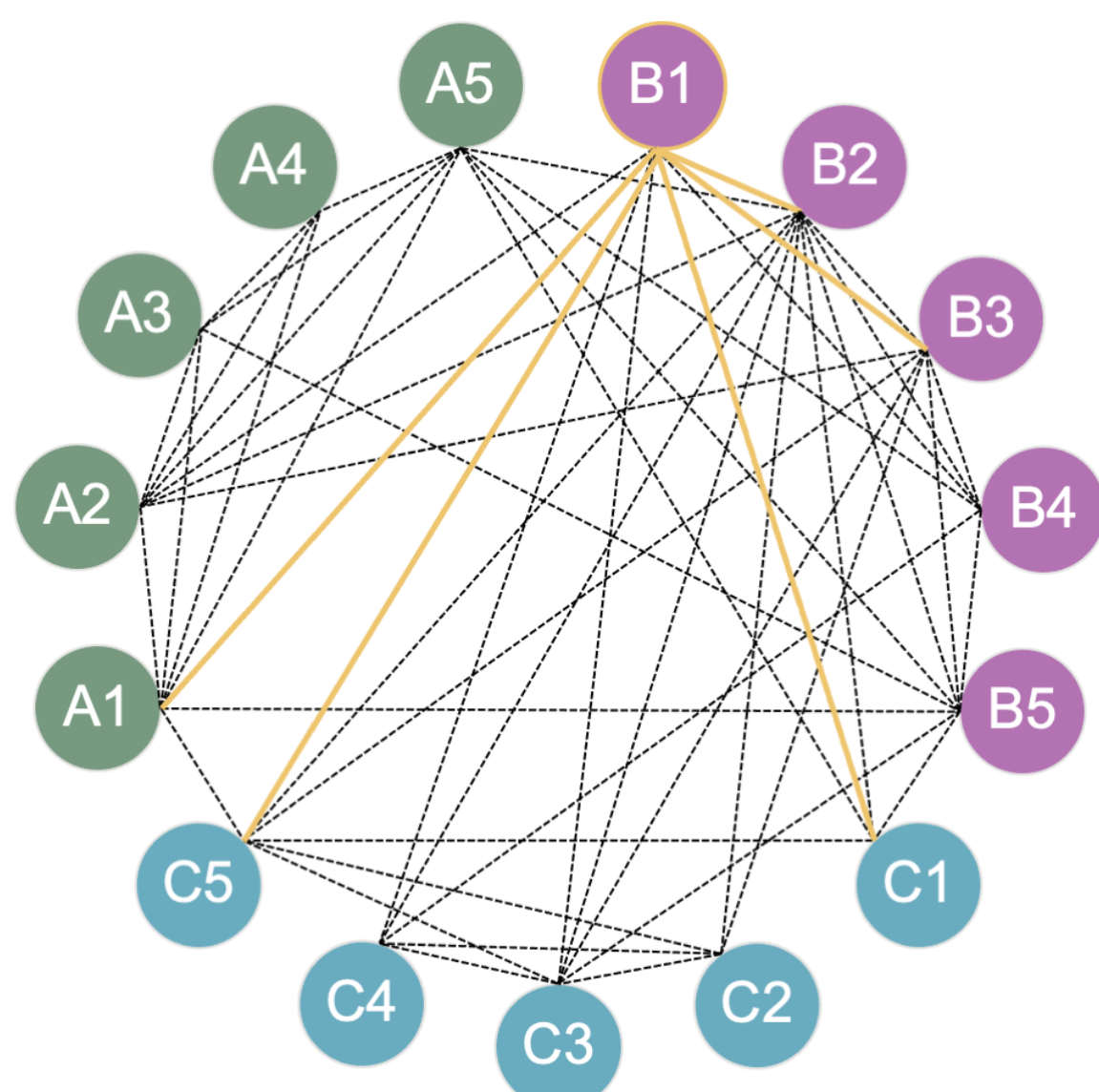


Figure 1. Regime shifts in agricultural systems which are at least partly driven by human land-use decisions: (a) Freshwater eutrophication, (b) peatland transitions, (c) soil salinization. Source: Regime Shifts Database, regimeshifts.org.

Linkages



- Exchange on farmer typologies with A1 and C5
- Exchange on perceptions with B2
- Exchange on policy instruments with B3 and C1

References

Barreiro-Hurle, J., [...], M., Thomas, F., & Zagorska, K. (2023). Willing or complying? The delicate interplay between voluntary and mandatory interventions to promote farmers' environmental behavior. *Food Policy* 120(2023), 102481.
 Lefebvre, M., [...], Thomas, F., & Thoyer, S. (2021). Can Economic Experiments Contribute to a More Effective CAP? *Euro Choices* 20(3), 42-49.

B1. Human activities

Objectives

- PhD 1 (**B1a**): Assess farmer perceptions of regime shifts and their impact on behavior. It will:
 - Identify relevant cases of regime shifts from the literature
 - Empirically elicit farmer knowledge and perceptions of regime shifts and their implications for farmer behavior
 - Empirically test strategies to alter perceptions of regime shifts
- PhD 2 (**B1b**): Assess the suitability of various policy instruments implemented in or proposed for the agricultural sector to address the challenges associated with regime shifts. It will:
 - Theoretically and systematically assess the available range of policy instruments in terms of their suitability to regulate farmer behavior in the face of regime shifts
 - Empirically evaluate a subset of these policy instruments, taking into account the role of policy design, farm and farmer characteristics
 - Use results to formulate policy recommendations

Scientific Design

- The project uses a mixed-methods approach combining qualitative and quantitative research methods
- Both PhDs carry out systematic literature reviews
- PhD 1 conducts in-depth semi-structured interviews with farmers and analyses the data with qualitative content analysis
- Both PhDs implement economic lab (PhD 1) or lab-in-the-field (PhD 2) experiments with students (PhD 1) or farmers (PhD 2)

Principal Investigator

Dr. Fabian Thomas

- Behavioral agricultural economics
- Agricultural policy evaluation
- Science for policy

