CORDEX FPS - LUCAS
Land Use and Climate Across Scales

Institute for Meteorology and Climate Research -Troposhere Research

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LUCAS - Objectives

Quantify the biophysical impact of land use change on the regional climate

→ simulations with different RCMs and LSMs on different spatial resolutions

- CCLM
- WRF
- RegCM
- REMO
- RCA4

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LUCAS - Structure

Phase 1: Continental scale, idealized experiments
- How sensitive are the regional climate conditions to LUC?

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LUCAS - Structure

Phase 1: Continental scale, idealized experiments
- How sensitive are the regional climate conditions to LUC?

Phase 2: Continental scale, realistic experiments
- How large is the contribution of LUC to detected past and potential future climate trends in Europe?

  → CMIP6 driven simulations for the past and future (RCP2.6)
  → realistic LUC scenarios in preparation
  → GCM with a mean climate sensitivity will be used as forcing

LUCAS – outlook

Phase 1: Continental scale, idealized experiments
- How sensitive are the regional climate conditions to LUC?

Phase 2: Continental scale, realistic experiments
- How large is the contribution of LUC to detected past and potential future climate trends in Europe?

Phase 3: Pilot regions, high resolution experiments
- Can local LUC reduce or amplify the effects of regional climate change?