Assessment of Walloon dairy farms eco-efficiency:

\[ \text{eco-efficiency} = \frac{\text{economic value added}}{\text{environmental pressures}} \]

using DEA and easily-accessible environmental and economic indicators

**WHAT DID WE DO?**

- **Data**
  - Accounting data from the Walloon Breeding Association
  - 185 dairy farms (conventional and organic) in 2017
  - Most farms situated in the eastern part of Wallonia

- **Method**
  - Data Envelopment Analysis (DEA) with the slacks-based measure of efficiency (SBM) model
  - Inputs (simple environmental indicators)
    - Forage area = land use (ha)
    - Livestock units
    - Purchased fertilizers and pesticides (€)
    - Purchased feed (€)
    - On-farm energies (€)
  - Output (economic-related variable)
    - Fat and protein corrected milk (FPCM, L)
  - Second-stage analysis
    - Investigate the determinants of eco-efficiency using ANOVA and PCA for 2 groups of farms (eco-efficient vs. eco-inefficient farms)

**WHAT DID WE FIND?**

- **Distribution of eco-efficiency scores**
  - 24 farms with eco-efficiency = 1 (i.e. on the DEA frontier)
  - % of inputs or outputs that inefficient farms (N=161, eco-eff. score < 1) need to adjust to reach efficiency

- **Determinants of eco-efficiency**
  - 2 groups:
    - 24 most eco-efficient farms (score = 1)
    - 24 least eco-efficient farms (score < 0.64)
  - Difficult to determine categorical determinants of eco-efficiency
  - Organic farms tend to be more eco-efficient

**WANT TO FIND OUT MORE?**

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