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ECO-EFFICIENCY OF DAIRY FARMS

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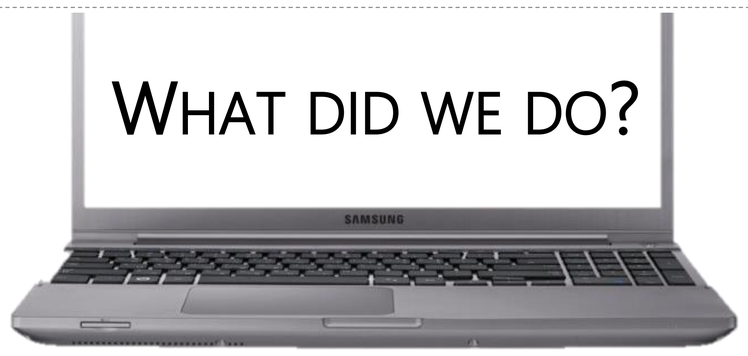
WHAT DID WE DO?



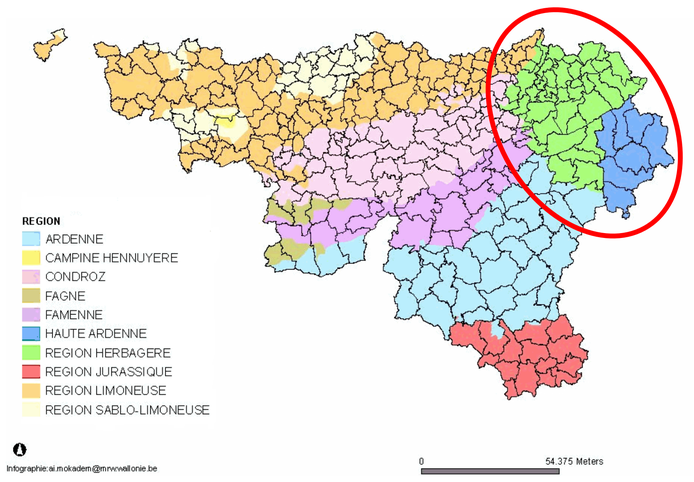
Assessment of Walloon dairy farms **eco-efficiency**

$$= \frac{economic\ value\ added}{environnemental\ pressures}$$

using DEA and easily-accessible environmental and economic indicators

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 (€)

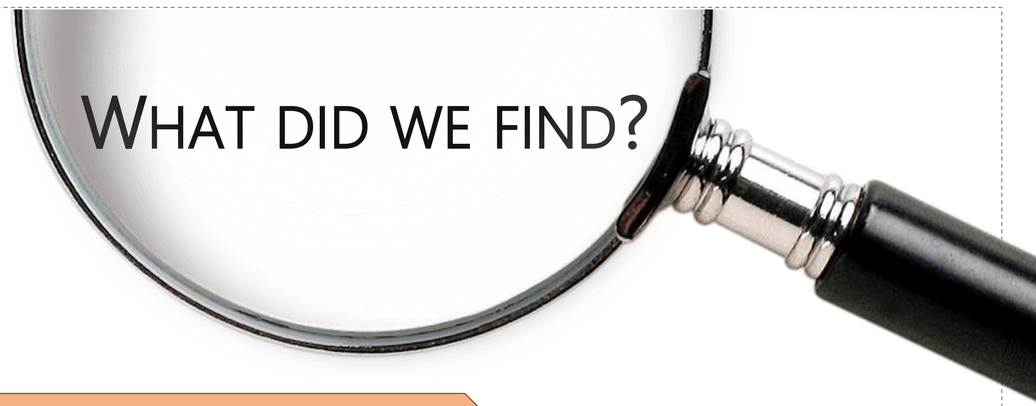
Output (economic-related variable)

- Fat and protein corrected milk (FPCM, L)

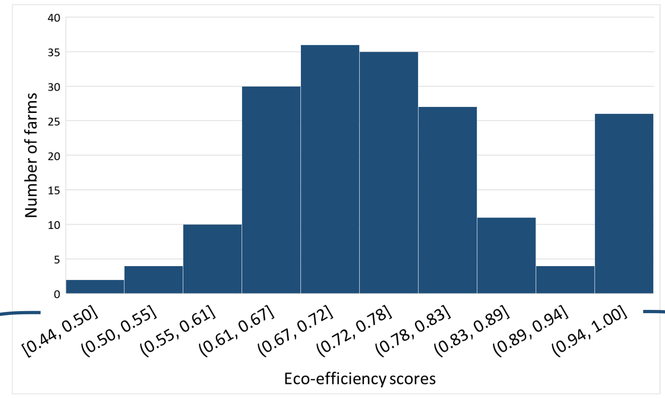
Second-stage analysis

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?

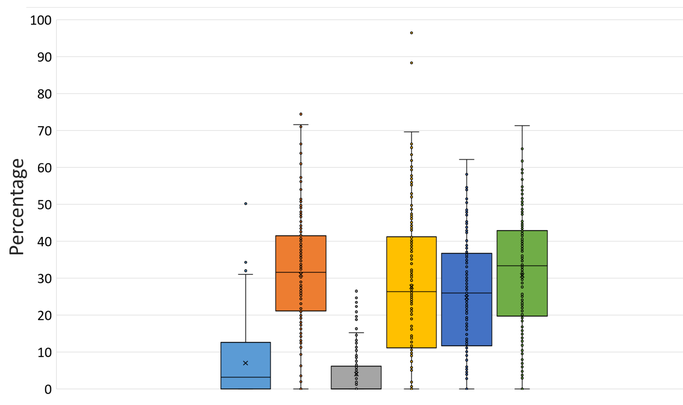


Distribution of eco-efficiency scores



24 farms with eco-efficiency =1 (i.e. on the DEA frontier)

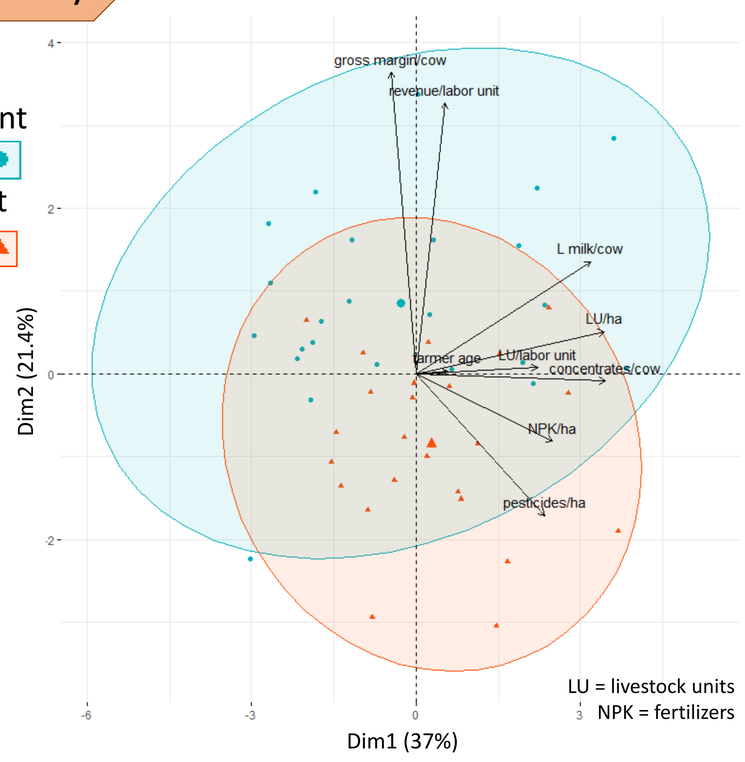
% of inputs or outputs that inefficient farms (N=161, eco-eff. score < 1) need to adjust to reach efficiency



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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