

A close-up photograph of several piglets, showing their pink skin, large eyes, and snouts. The piglets are looking towards the camera.

Explaining relations between economic and life cycle assessment indicators for Dutch pig fattening farms

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Content

- Introduction
 - Context
 - Research objective
- Material & Method
 - FADN
 - Performance indicators
 - System and system boundary
- Results
 - Performance indicators
 - Explanatory variables



Introduction (context)

■ Pig sector

- Breeding farms
- Fattening farms
- Integrated pig farms
- Other farms



Farms (#)	1,770
Fattening pigs (million)	5.8

■ Sustainability issues

- Ammonia emission
- Animal welfare
- Economic performance



wide variation among farms



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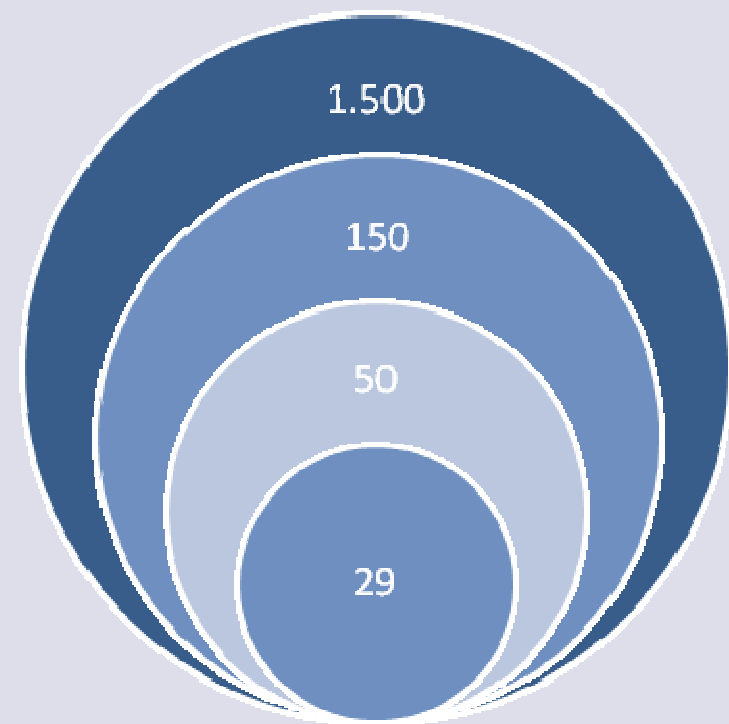
Introduction (objectives)

- Objective:
 - Quantify economic and environmental performance
 - Identify explanatory characteristics

Material & Methods (data)

■ Farm Accountancy Data Network

- 2007
- Sample of 1,500 agricultural and horticultural farms
- 150 pig farms
- 50 fattening pig farms
- 29 farms used in this study
 - No other animals
 - Farm specific manure production



Material & Methods (economic performance)

- Economic performance
 - Gross value added per unit of labour
 - Gross value added per 100 kg slaughter weight

Material & Methods (environmental performance)

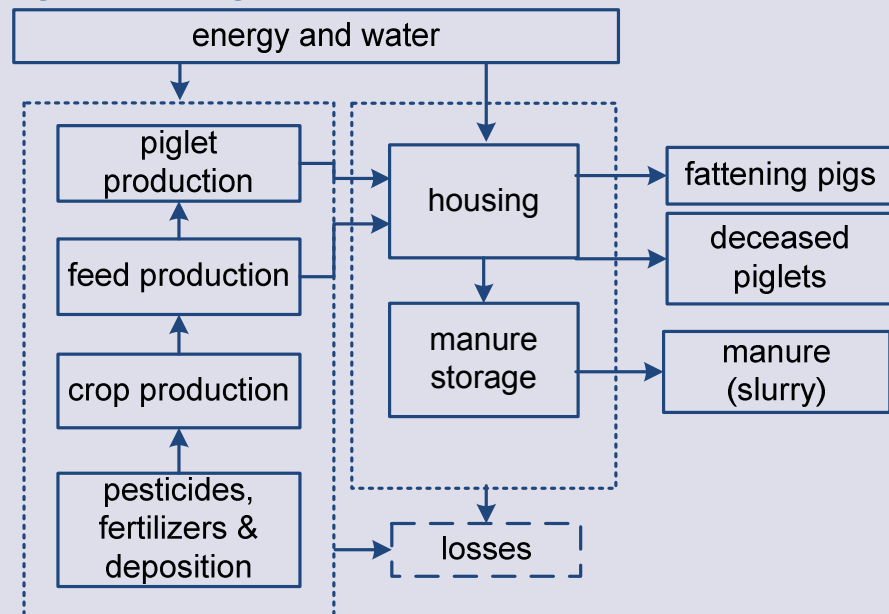
■ Environmental performance

■ Life Cycle Assessment

- Cradle to farm gate
- Functional unit: 100 kg slaughter weight

■ Impact

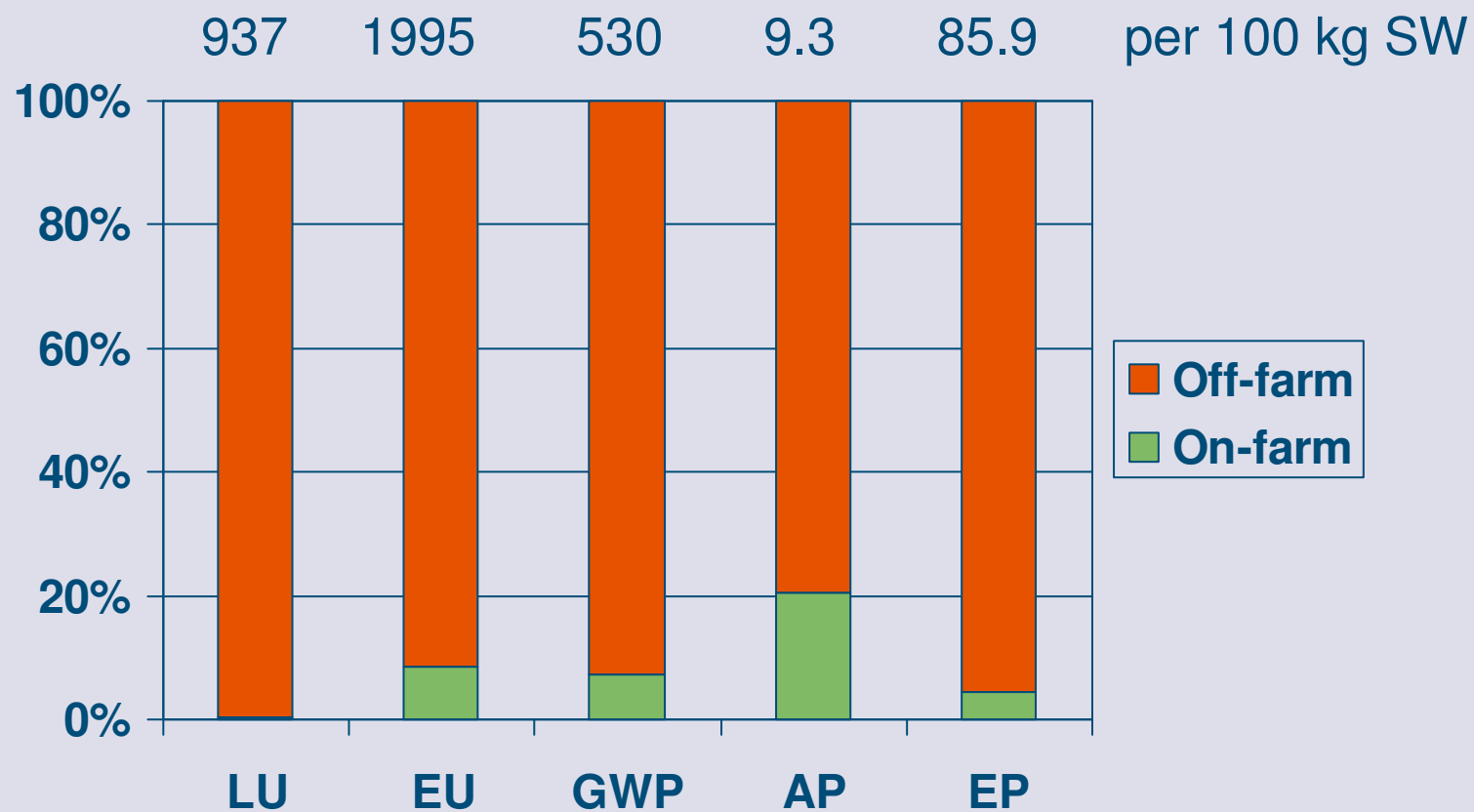
- Land occupation
- Non-renewable energy depletion
- Climate change
- Eutrophication
- Acidification



Results (economic performance)

- Gross value added
 - Per 100 kg slaughter weight € 5.1
 - Per unit of labour € 26,150

Results (environmental performance)



Results (explanatory variables)

- Spearman Rho's Correlation between
 - Economic performance
 - Acidification potential
- Partial least squares regression (54%)
 - Scale
 - Average no. fattening pigs
 - Labour
 - No. of low emission animal places
 - Type of feed
 - Dry feed
 - Other feed

Discussion & Conclusion

- Better environmental performances goes along with a good economic performance
 - High variance
- How to handle manure?
 - Stable balance
 - Manure as an input

Next steps...

- Update feed inventories
- Solution how to handle manure
- Scaling up towards sector level
- Comparison with input-output lca of the sector



Thanks for your attention.

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