



Comparison of economic and environmental performances of organic and conventional dairy farms throughout North West Europe

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Introduction



- An Interreg project : Dairyman (2009-2013)
 - Enhance the sustainability of dairy sector
 - Increase the delivery of key environmental services
- Dairy sector challenges
 - Price volatility
 - Environmental legislations
 - Social requirements
- Objectives
 - Follow a pilot farm network
 - Find strategies that can be implemented elsewhere with success



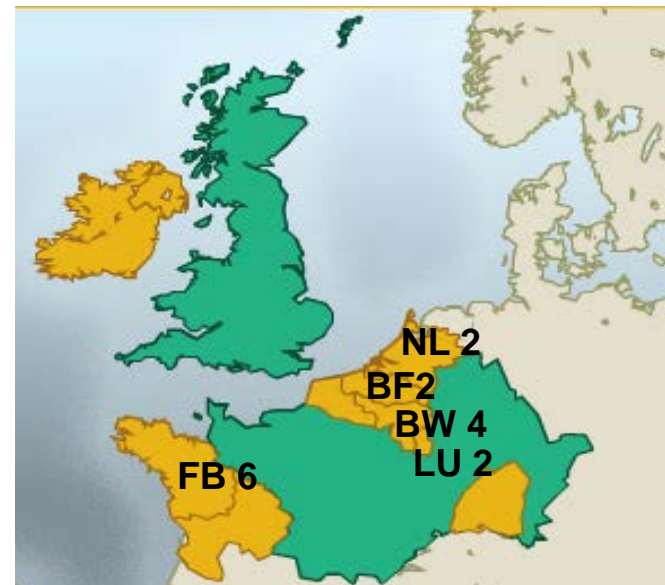
Material and methods



Pair-Farms



- 8 organic farms and their “homologue” conventional = 16 farms
- Homologue means: as similar as possible
 - Agricultural area size and use
 - Herds size
 - Labour unit
 - Climate
 - Soil
 - Strategies of management
- Principal Compound analyses
- Expert discussion



Dairyman

126 farms in 10 regions

Indicators



Descriptive data

- ✓ Labour unit
- ✓ Land size and use
- ✓ Herds size
- ✓ Milk produced
- ✓ Cow productivity
- ✓ Concentrate provided
- ✓ Age at first calving
- ✓ Calving interval

Economic data

Farm Income per labour unit

$$= \frac{\text{Receipts} - \text{Annual Expenses} - \text{Depreciation} - \text{Interest}}{\text{Family Labour Units}}$$

- ✓ Milk price
- ✓ Inputs cost
- ✓ Inputs efficiency
- ✓ ...

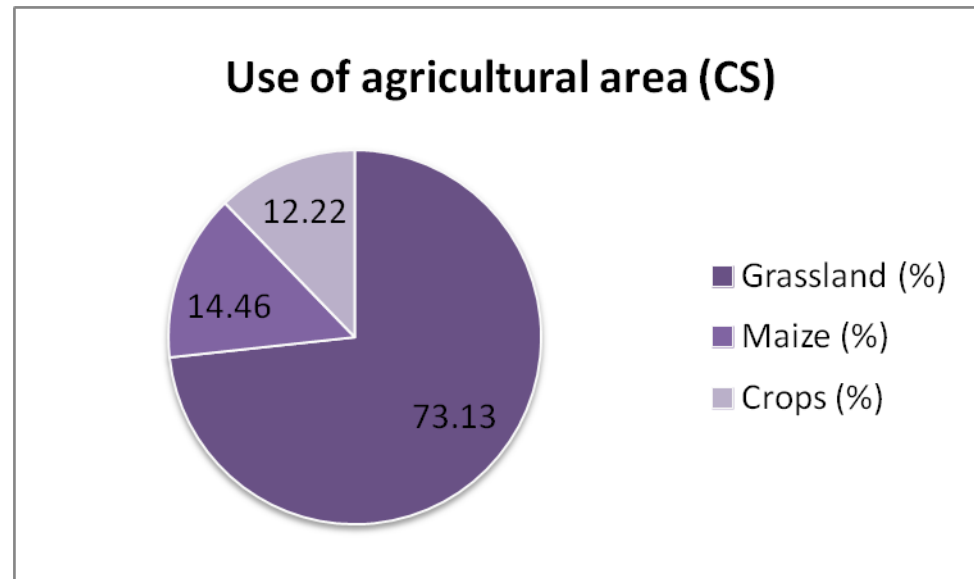
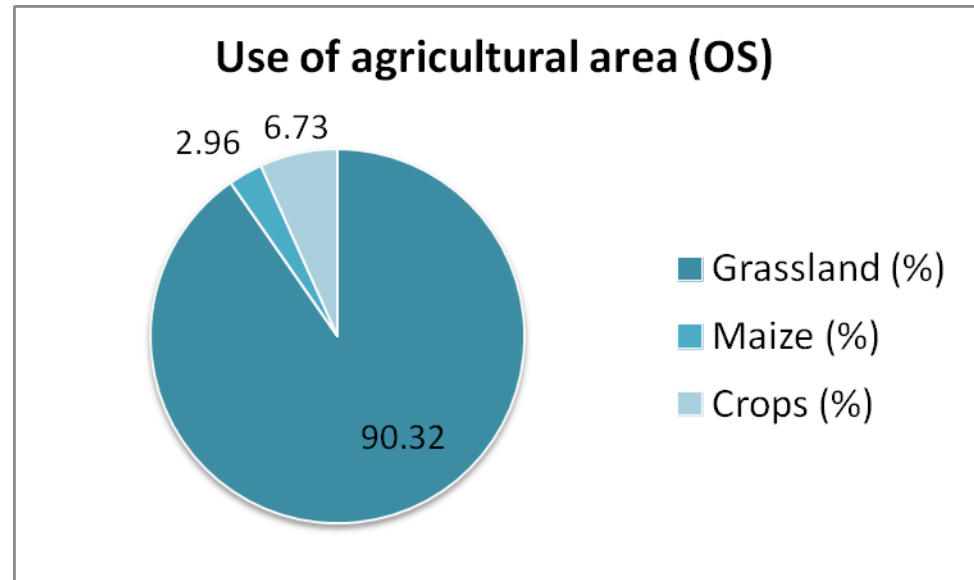
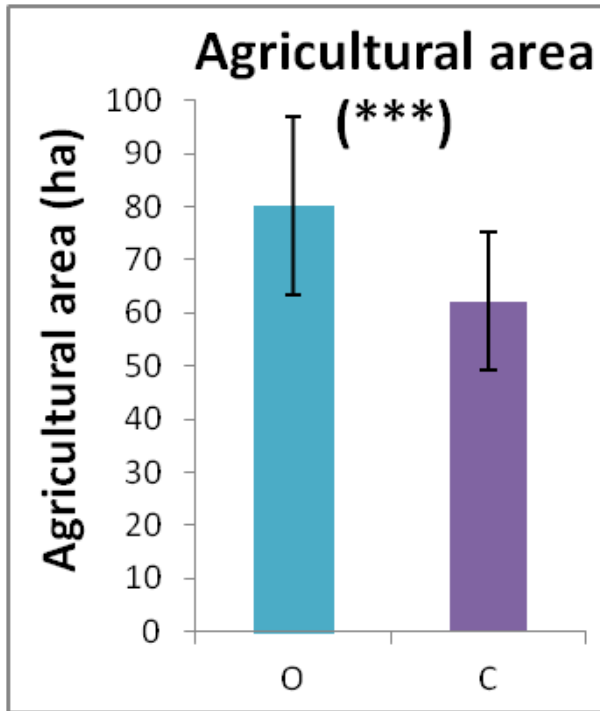
Environmental data

- ✓ N & P Balance per ha
 - ✓ N & P efficiency
- $$\text{Mineral balance} = \sum \text{Input} - \sum \text{Output} - \sum \text{Stock variation}$$
- ✓ GHG emissions per ha, per ton of milk (*on + off farm*)

RESULTS



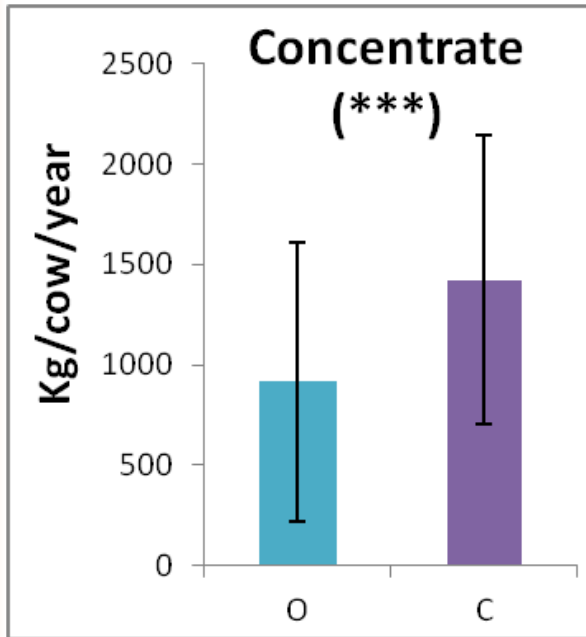
Description



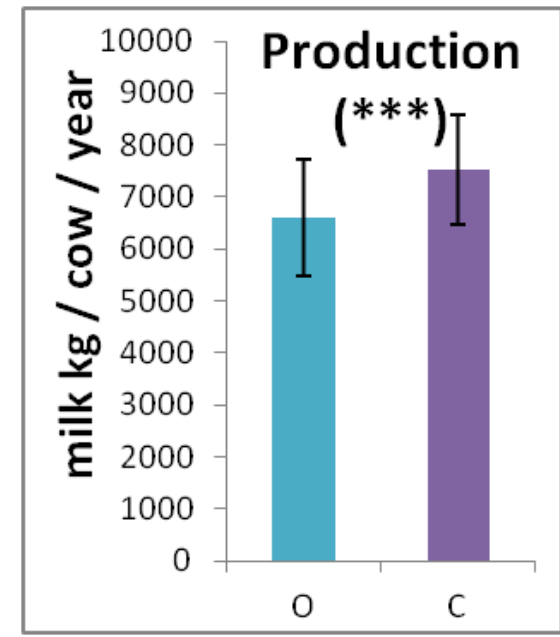
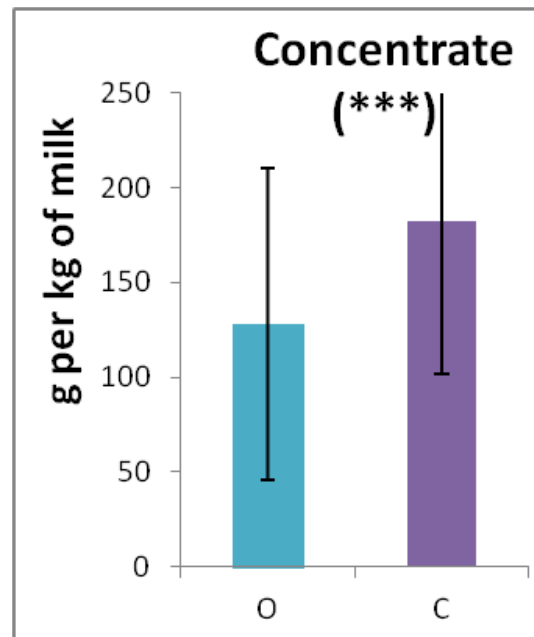
Organic systems
more specialized on
grassland

Conventional systems
diversify their production
with crops

Description



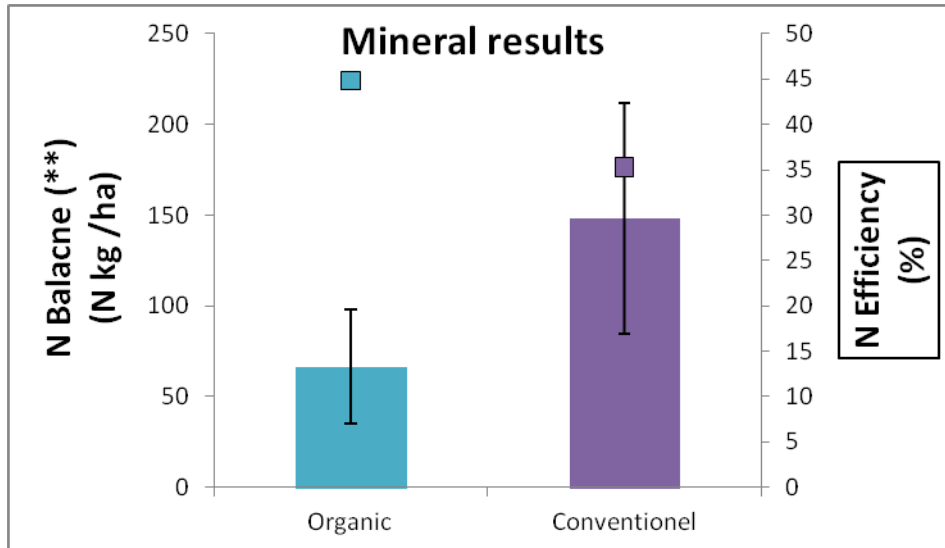
Smaller amount of concentrate in organic system but huge variation



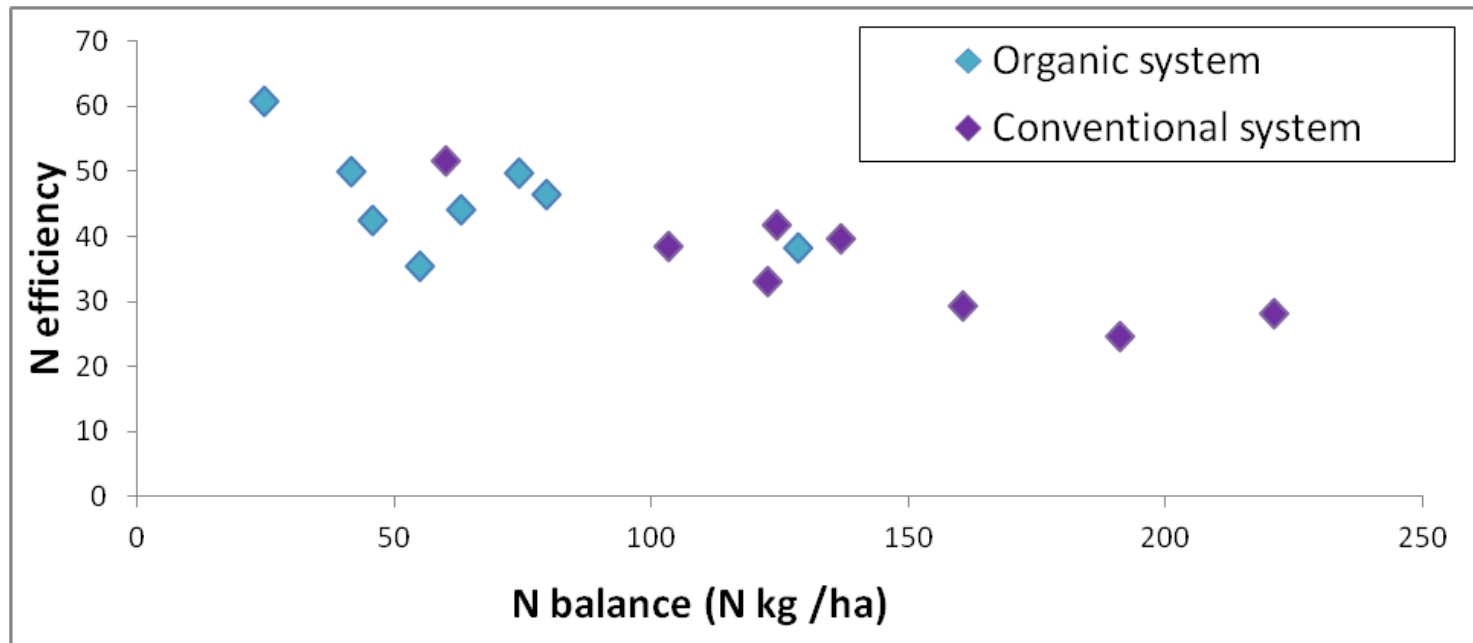
Higher cow production in conventional system

Some conventional systems provide the same amount of concentrate that organic systems and get the same level of production

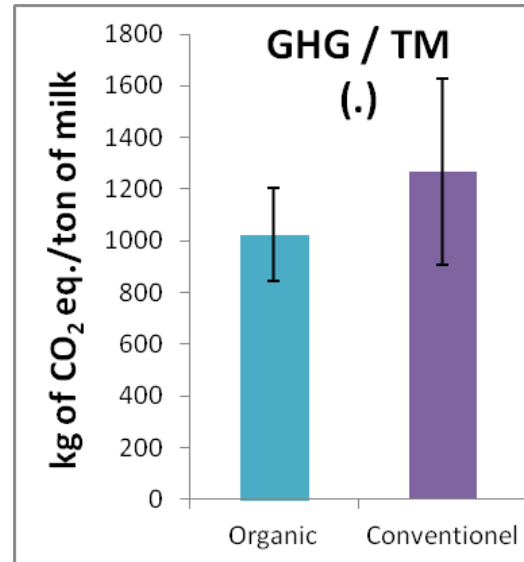
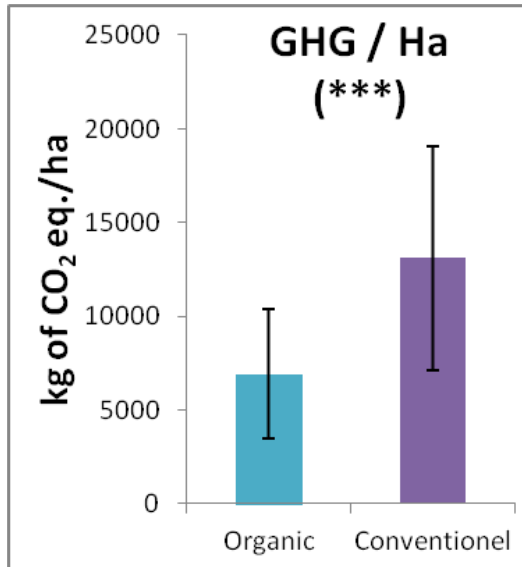
Environment



Smaller N balance and better N efficiency for organic system

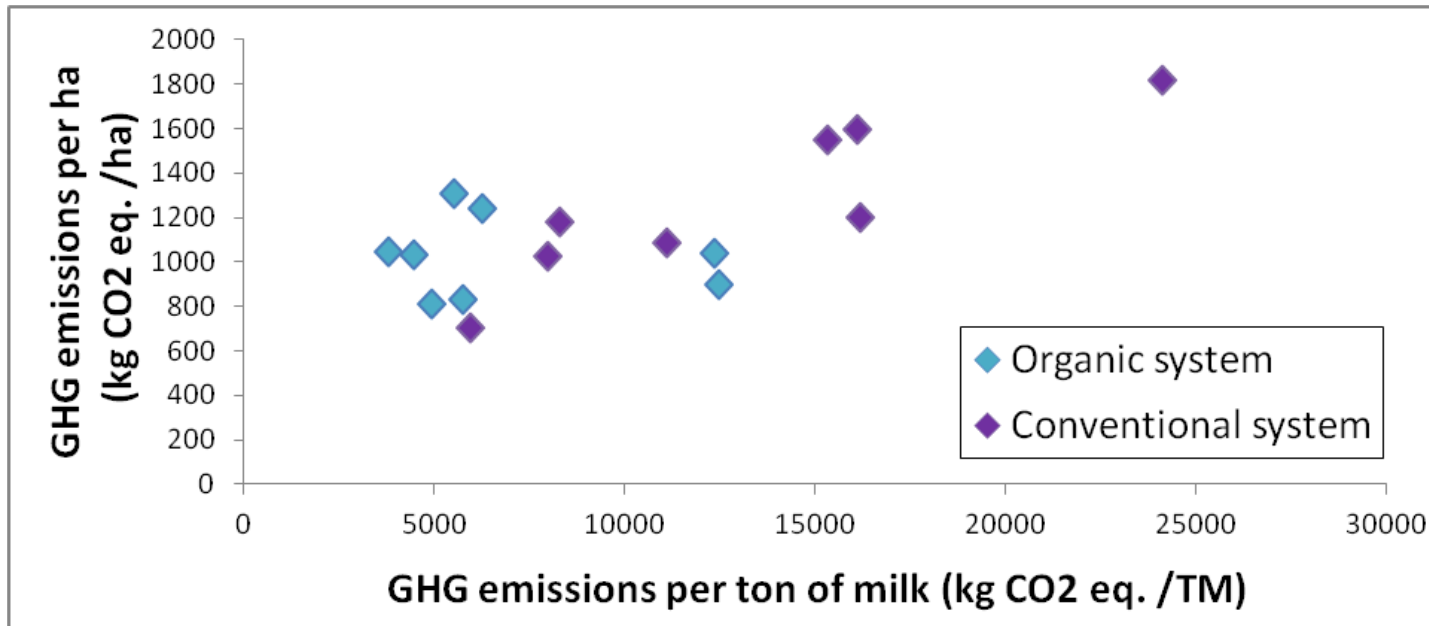


Environment

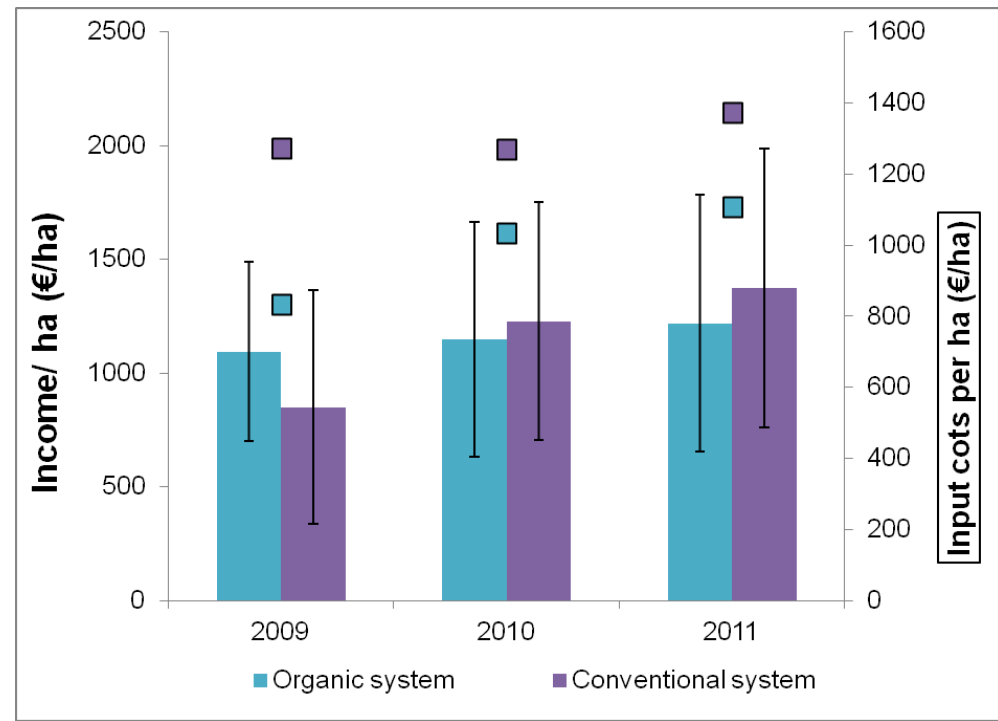
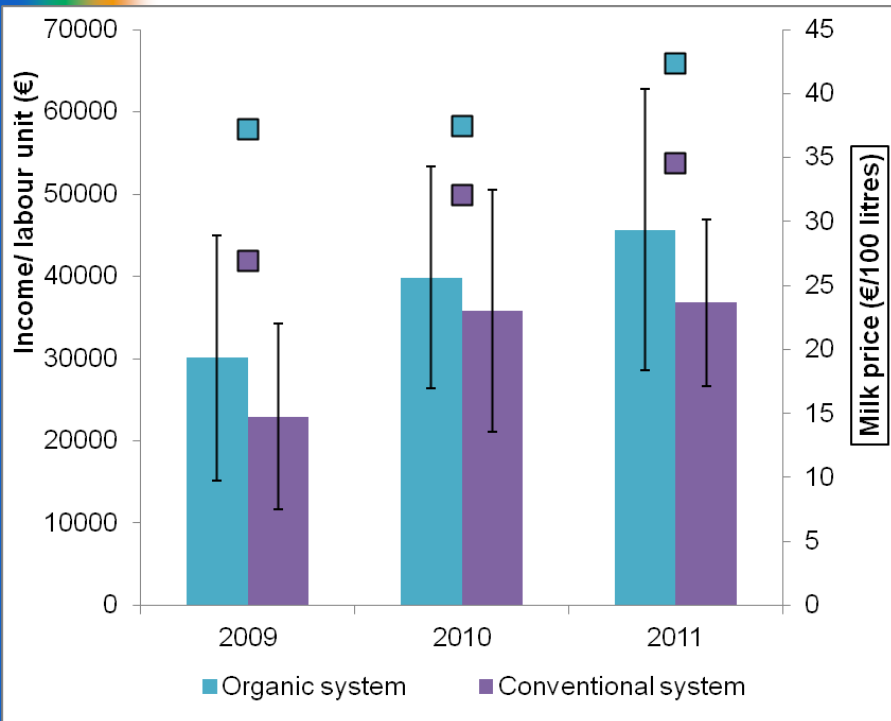


Smaller emissions for organic systems, specially per ha

High variation
→ Improvement are possible



Economy



Better milk valorization (**) and revenue per working unit (*) for organic system

- Extra price
- Cheesse & Yaourt

Similar incomes and inputs cost per ha!

Conclusions



Environment

Organic >> Conventional

Challenge : Inputs management

Economy

Income : Organic > Conventional

Milk price : Organic >> Conventional

Challenge : Milk valorization

➔ Resilience over the time and face to price volatilization??



*Thank for your
attention*





EXTRA



Regional effect

