

# Adjustment and differences in farm performance – a farm management perspective from the Netherlands

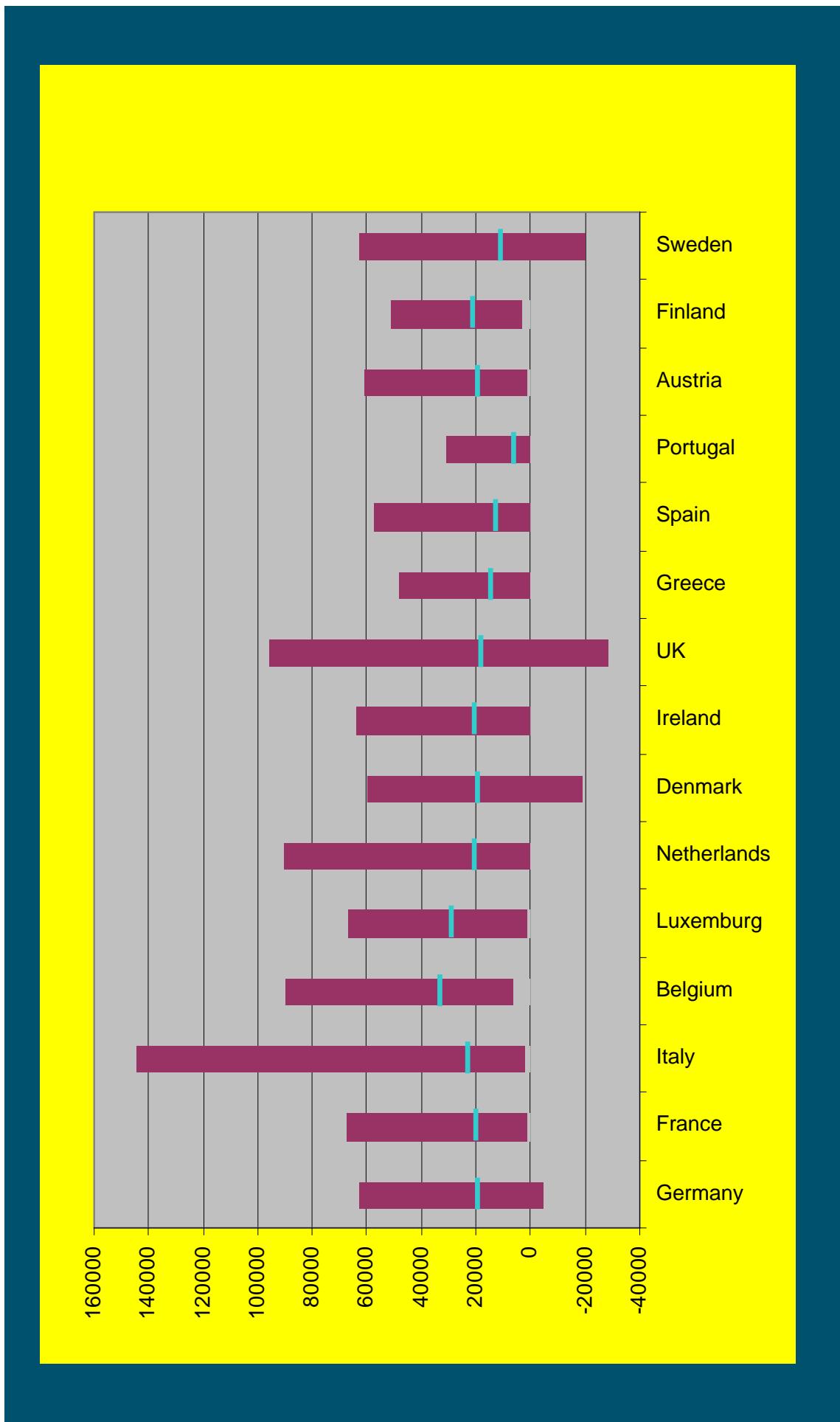
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## Road map presentation

1. Introduction: differences exist /strategic management
2. A history and review of Dutch research into differences in management performance
3. Differences in innovation strategies
4. Coherence with economic theory
5. Relation to policy adjustment / policy relevance
6. Discussion, conclusions, recommendations

# Family farm income on EU dairy farms



## Strategic management

Porter:

- Competitive advantage by low costs or differentiation
- 5 competing forces (entry new competitors, threat of substitutes, bargaining power buyers / suppliers, rivalry)
- Value chain / value system

Resource-based theory

- Bundle of unique resources defines competitive position
- Physical, financial, human and organisational capital
- 4 characteristics to sustain above normal profits (valuable, rare, not perfectly imitable, no substitutes)

## Dutch research on management performance

Vinus Zachariasse (1974)

- Field research on 29 comparable arable farms
- High differences in income
- Differences yields due to technical competences
- Capacity to think on a plant's grow process essential
- Farmers had problems with strategic decisions
- Farmer's willingness for self-criticism essential

## Dutch research on management performance

Follow-up of the work by Zachariasse:

- Boost in benchmarking and study circles
- Resulted in many technical - economic follow up studies (e.g. ware potatoes)
- Operational management at that time important for general extension
- Differences did not disappear. Nowadays differences within an EU region are often larger than between
- 1980s: ICT, Environment, Tactical decisions

## Dutch research on management performance

Environmental performance:

- Differences in use of energy, minerals, pesticides – also in the case of policy incentives to manage
- Mineral accounting system used in farm management, benchmarking and environmental tax

Stijn Reinhard (1999):

- Stochastic frontier approach and DEA in dairy
- Environmental efficiency differs
- Can be improved by (a.o.) better information

## Dutch research on management performance

Joop Alleblas (1987): different management levels

- Glasshouse horticulture management can be measured (decision making model, questionnaire)
- Actual level is rather low (40% of maximum)
- 50% of differences in economic results relate to differences in management
- Fitting level of management is not the maximum
- That level is higher for larger firms, firms with employees

Nicole Taragola (B., 2002): personal characteristics, information use, adoption of innovation

## Dutch research on management performance

### Differences in farm strategies (1990s)

- Economic sociologists (J.D. van der Ploeg): farm styles – methods to run the farm
- Classification based on farm structure and normative notions in peer groups
- Descriptive labels like ‘herdsmen’, ‘cattle breeders’
- Policies favour some types more than others
- Farm management economists’ first reaction: consumption behaviour instead of investment
- But then: research on strategies and competences

## Dutch research on management performance

Three examples:

Van den Ham & Ypma (2000)

- 2 types of dairy farmers in multifunctional agriculture:
- Inspired multi-functionalists and rational ones

Van den Ham (2003)

- Different concepts of farming for different competences
- Dairy farmers and cost prices of milk

ISP: strategy formulation can be supported

## Dutch research on management performance

*Full cost price farmers* are not so much stressing certain aspects of the farm but are keen to reduce costs.

*Growth minded farmers* try to increase the economies of scale of the farm and prefer own machinery over contractors.

*Environmental farmers* are focusing on very low mineral surpluses.

*Grassland managers* looks for high yields of grass and labour saving: cows are only part time outside to combine high nitrate use with good environmental practice.

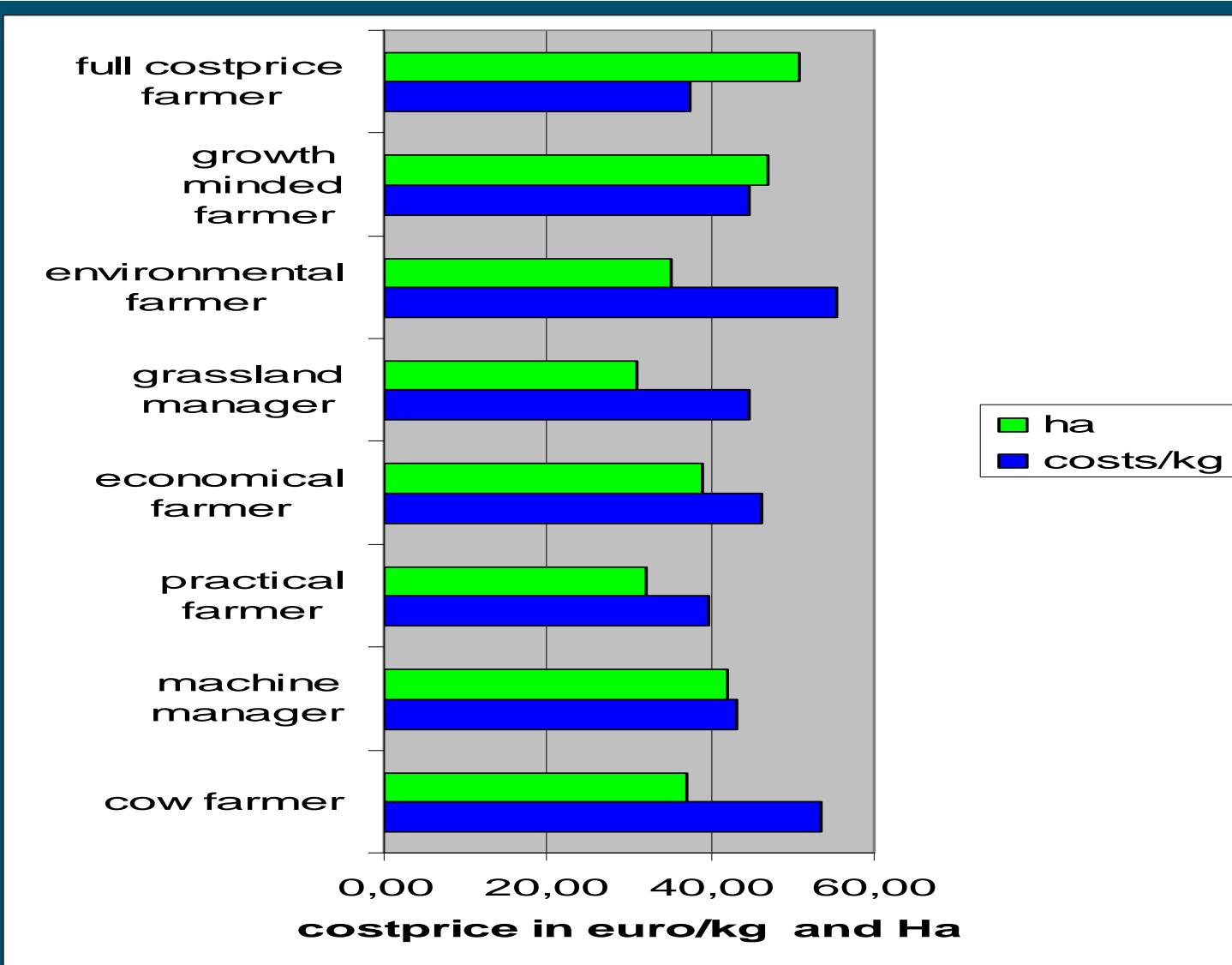
*Economical farmers* are economical and strongly risk-averse.

*Practical farmers* focus on labour saving and choose to source out activities to contractors.

*Machine managers* don't use contractors, probably due to less optimal location of land parcels.

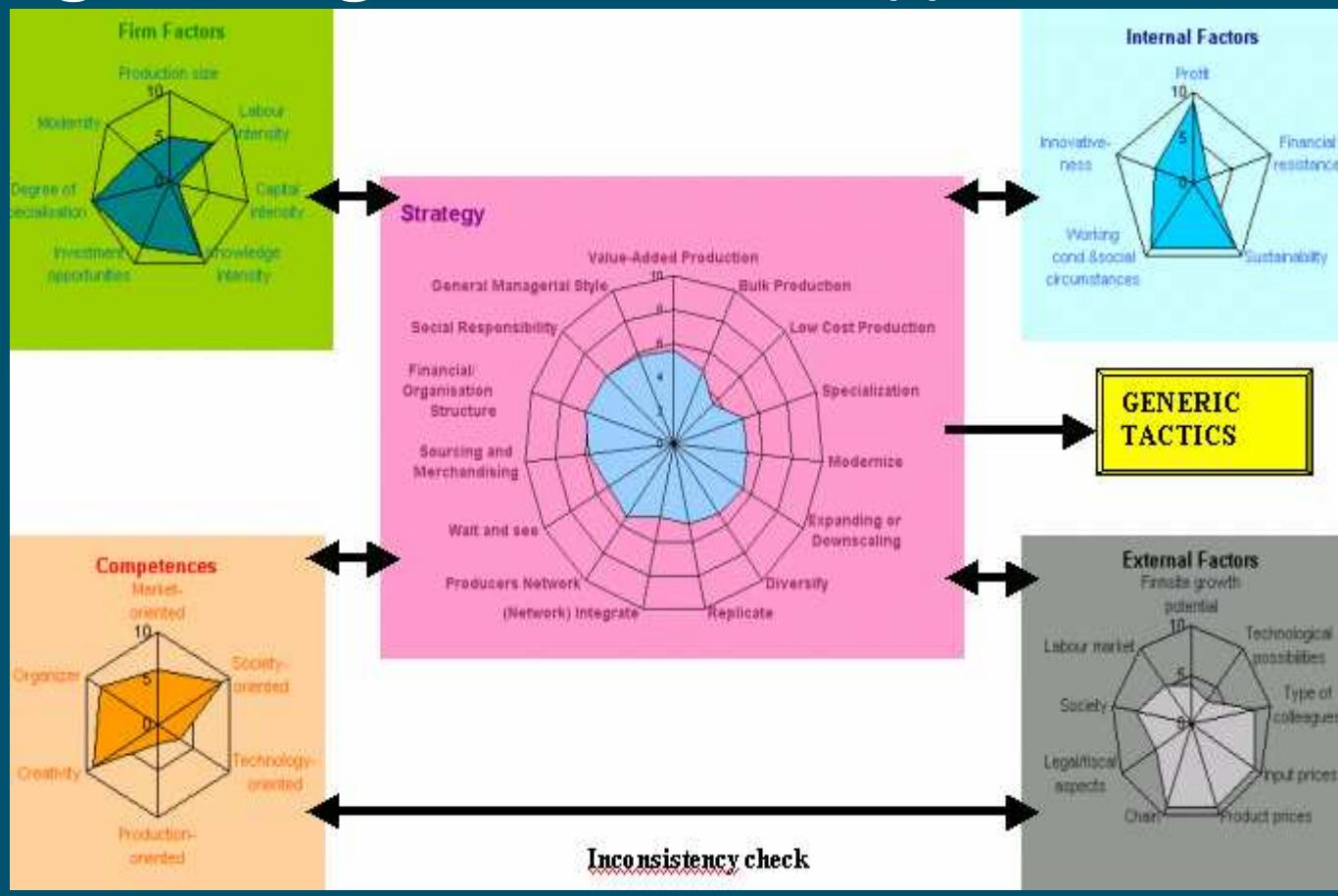
*Cow farmers* try to optimize the results per cow, seeing the animal as the main asset.

# Dutch research on management performance



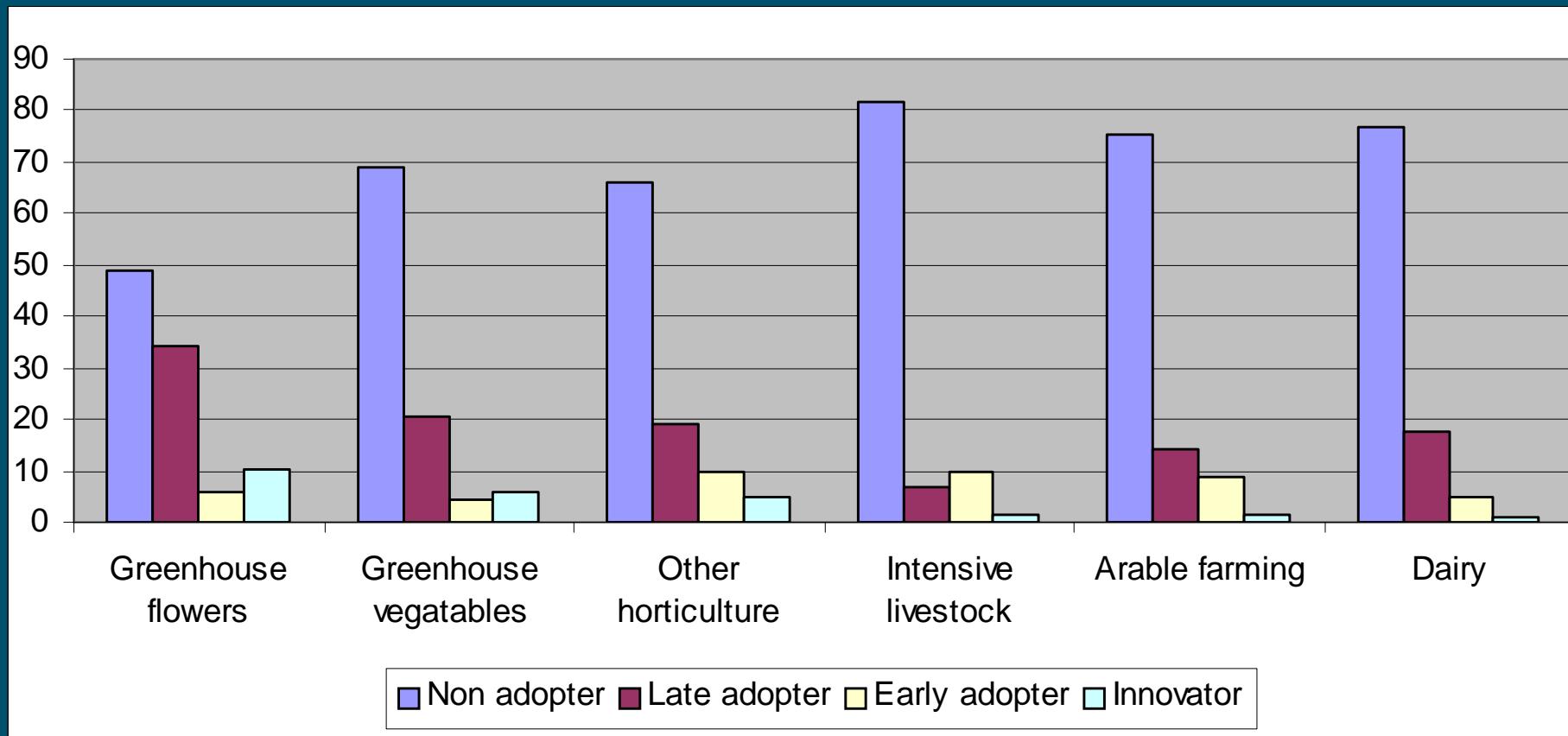
# Dutch research on management performance

Strategic management can be supported



## Differences in innovation strategies

Level of innovation differs between farms and sectors



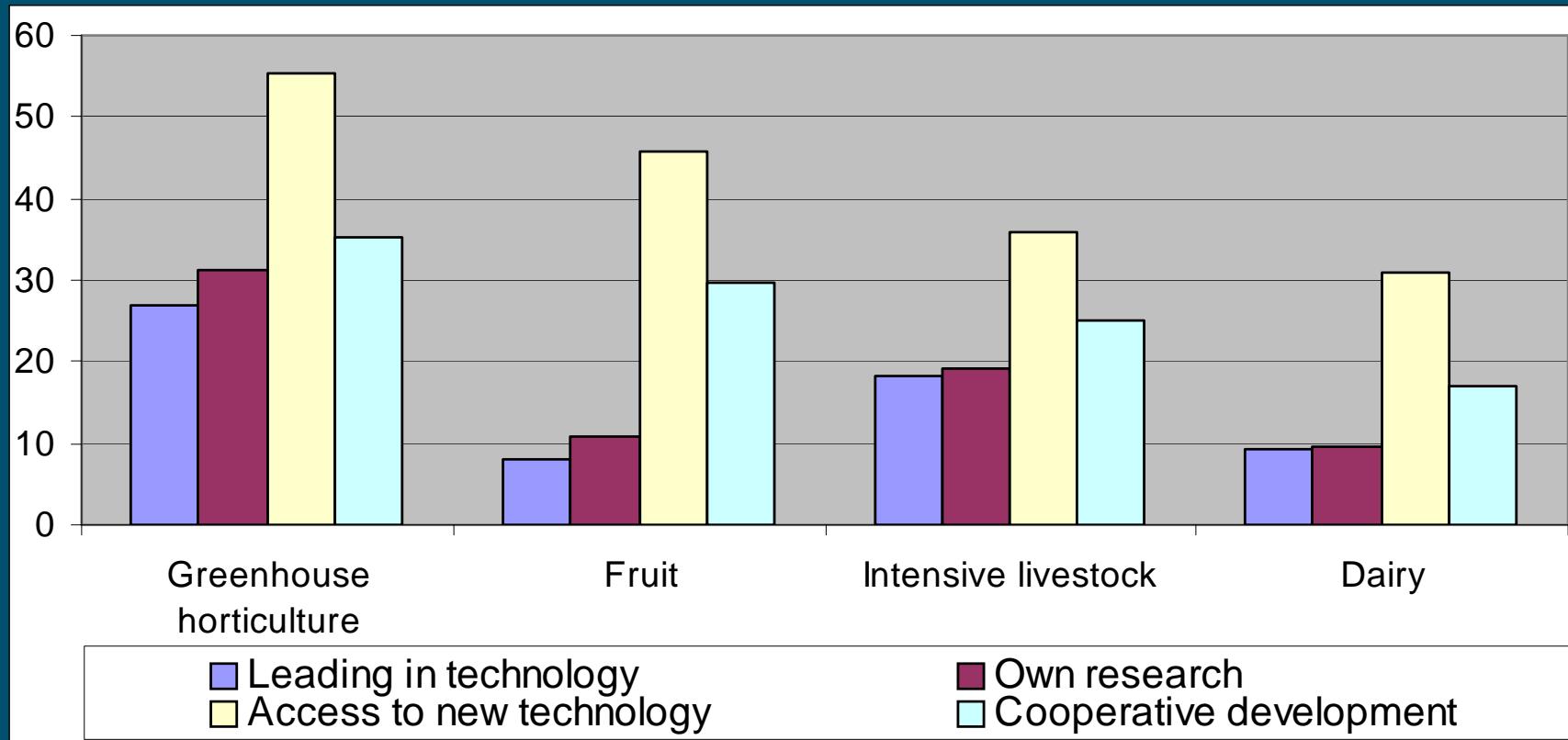
## Differences in innovation strategies

Van Galen and Bunte (2003):

- Innovative capacity of Dutch ag. is limited
- Investments have an incremental character
- Innovators have more radical innovations
- New production techniques more important than market innovations
- Diffusion follows the well known S-curve
- Most important bottleneck: uncertainty on government policies (before restrictive policies and high costs)

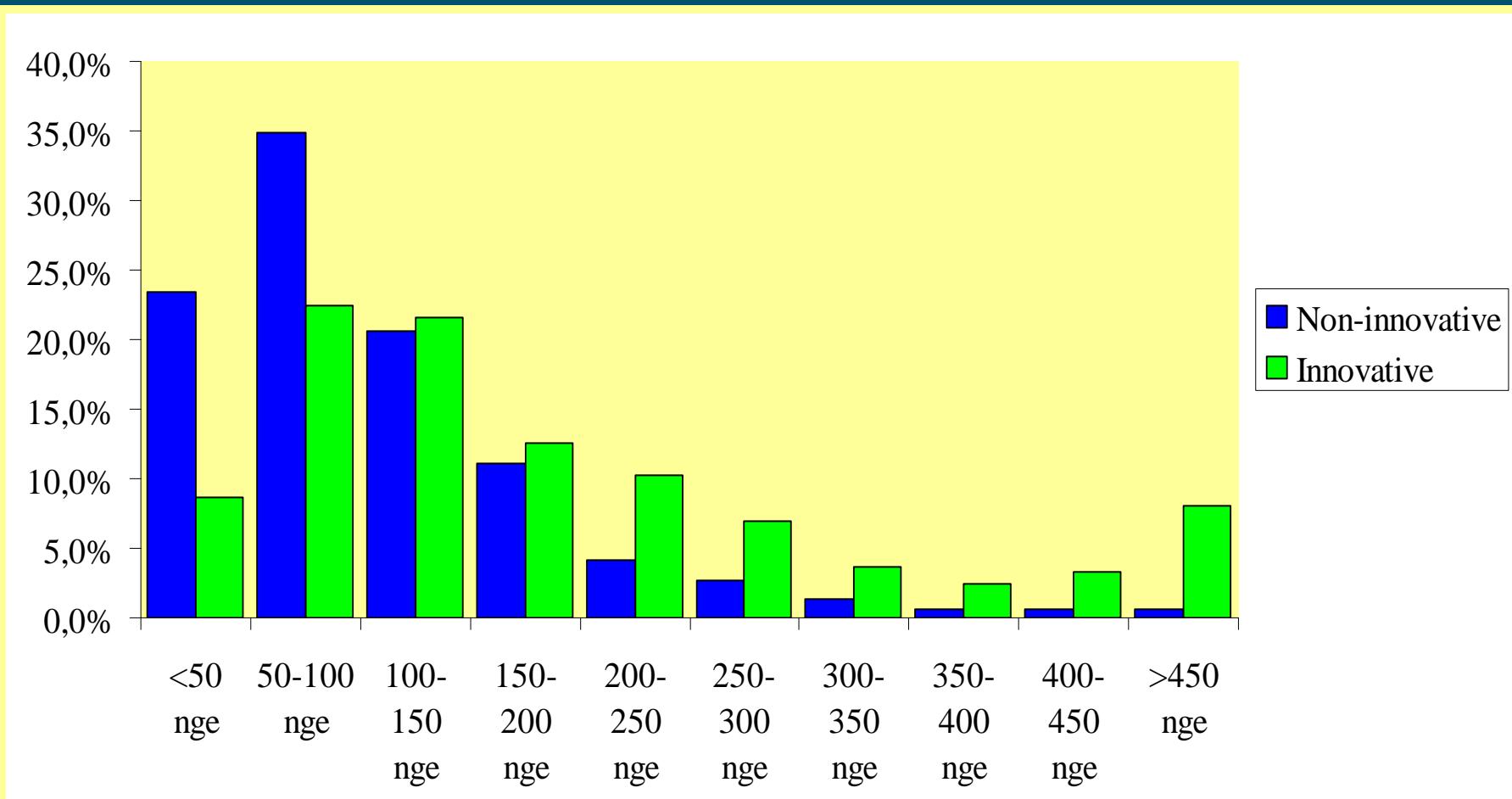
## Differences in innovation strategies

Innovation strategy differs between farms and sectors



## Differences in innovation strategies

Non-innovative farms are smaller



## Differences in innovation strategies

Diederens, van Meijl and Wolters (2002, 2003):

- Adoption behaviour dependent on:
  - Farm characteristics (+ size, market position, -/- solvability, age)
  - Environmental characteristics (regulation -/-)
  - Information/capabilities/preferences (persistent over time, cooperation matters)
- Structural differences front runners and laggards
- Behavioural differences innovators and early adopters
- Sometimes policy can easier change behavior than structural characteristics

## Coherence with economic theory

Are findings in management studies possible in perfect market ?

Yes:

- Farmers are price takers but differ in competences
- Different strategies are an effective tool to adapt
- Self criticism and learning are difficult in small firm
- External shock: feed back on strategy difficult
- They can survive a long time before they retire
- The best enlarge: high bidding price for fixed assets (capital gain; strong barrier to entry)

## Relation to policy adjustment / policy relevance

Not much research on reaction to policy adjustments

- Policy adjustments have different effects on farms with different strategies
- Innovation is lower in regulated sectors

EU CAP McSharry reform cereals 1990s:

- Dairy farmers saw as many strategic decisions and changes in management as cereal farmers
- Direct payments have prevented shake out of the sector and specialisation goes on

## Relation to policy adjustment / policy relevance

This implies:

*We cannot prove*

- *that a severe adjustment of agricultural policy induces more innovation,*
- *and that due to this innovation the effects of adjusting the agricultural policy are less severe than ex-ante estimated with current dynamic policy models*

## Relation to policy adjustment / policy relevance

Advice to policy makers:

- Be careful with statistics
  - Use 3 year average
  - Households have strategies, not farms or farmers
  - The photo is not a video
  - Increasing differences in income can signal innovation and adjustment
  - Differences are not bad for the wealth of the nation
- Farm development and restructuring always happen, also in regulated sectors

## Relation to policy adjustment / policy relevance

Advice to policy makers [continued]:

- Policies on innovation (e.g. organic) should be targeted
- If innovation is the aim – take away uncertainty: do not increase policy risks
- Stimulation of supply of extension, R&D can make sense but design is important
- Allocate resources over promoting innovation, diffusion and providing a security net

## Discussion, conclusions, recommendations

Adjustments lead to winners and losers (as with the abandoning of typewriters)

Current policy models calculate new equilibriums and take new strategies into account

Four topics stand out for further research to improve our understanding of how farmers react to policy shocks:

## Discussion, conclusions, recommendations

1. Ex-post analysis of policy changes on micro economic level (e.g. cereals in EU in 1990s)
2. Cross country analysis on innovation and farm strategies in one sector under different levels of regulation (e.g. dairy in EU, USA and NZ).
3. Research on changes in strategy in the household (including labour market and investment decisions)
4. The effect of chain organisation and the power of up/downstream industries on innovation and farm performance