Monitoring sustainability of Dutch agriculture

OECD Paris, april 7/8 2011

Report prepared by: Koen Boone en Mark Dolman (eds.)
Presentation by: Hans Vrolijk



LEI
WAGENINGEN UR

Content

- Why this project
- Themes and indicators
- Results
- Lessons learned



Why monitoring of agricultural sustainability

- Societal concern about agricultural production
- Policy objectives broader than economic results
  - Specific objectives
  - Minimum standards
- Ministry: transition sustainable agriculture, policy sustainable livestock sector
- Integrated assessment of policy measures (environmental economic evaluations)
- Requires a wide set of indicators and data elements

Monitoring sustainability of Dutch agriculture

- Dutch
- Agriculture
- Quantitative
- Long term development *(1990 – most recent)*
- Structural development *(long year averages for volatile indicators)*
- Linking to government policies and goals

Structure report

- Chapters for 7 main farm types in the Netherlands and total Dutch agriculture
- Chapters split in Introduction, Profit, Planet, People and Integration
- Profit, Planet and People split in 25 sustainability themes
- Per theme:
  - Why relevant
  - Goals government and/or sector
  - Description indicator
  - Development of indicator in relation to goals
  - Explanation of development of indicator

Data sources

- Intensive use of Farm Accountancy Data Network:
  - Split into farm types
  - Split into organic and diversifying farms (other gainful activities)
  - Next to averages per indicator, spread in results available
    - % of farms with income levels below poverty threshold
    - % of farms that reach environmental goals of government
  - Linkage between themes
    - Relation between economic and environmental performance
- Use of other data sources

Themes

Introduction

- Geographical distribution
- Number of (specialized) farms, area
- Organic agriculture
- Multifunctionallity

People

- Spatial quality
- Image/Reputation
- Labour
- Succession
- Animal welfare and health
- Food Safety

Planet

- Energy use
- Climate change
- Nutrients
- Water use
- Crop protection
- Biodiversity
- Animal feed
- Soil quality
- Plant health
- Fine particulate matter

Profit:

- Income
- Financial position
- Investment
- Innovation
- Competitiveness

Example of indicators

Income:

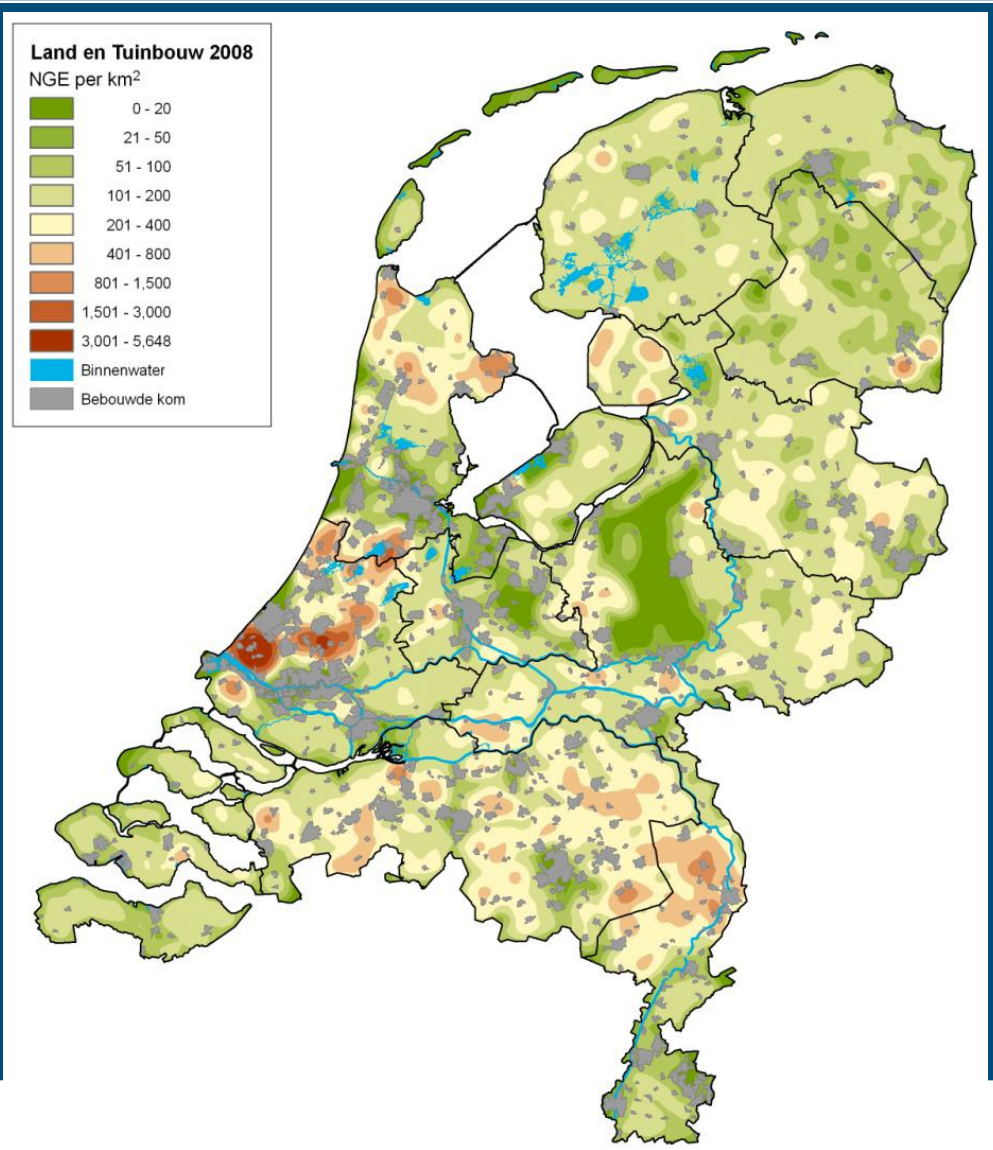
- Family farm income per family labour unit
- % of farms with a total household income below poverty threshold
- Output divided by total costs (including unpaid costs for own labour and own capital)

Nutrients:

- Organic and artificial manure applied per ha
- Soil balance (Nitrogen and Phosphate) per ha
- Nitrogen concentration in surface water split into soil type
- Ammonia emission split into sources

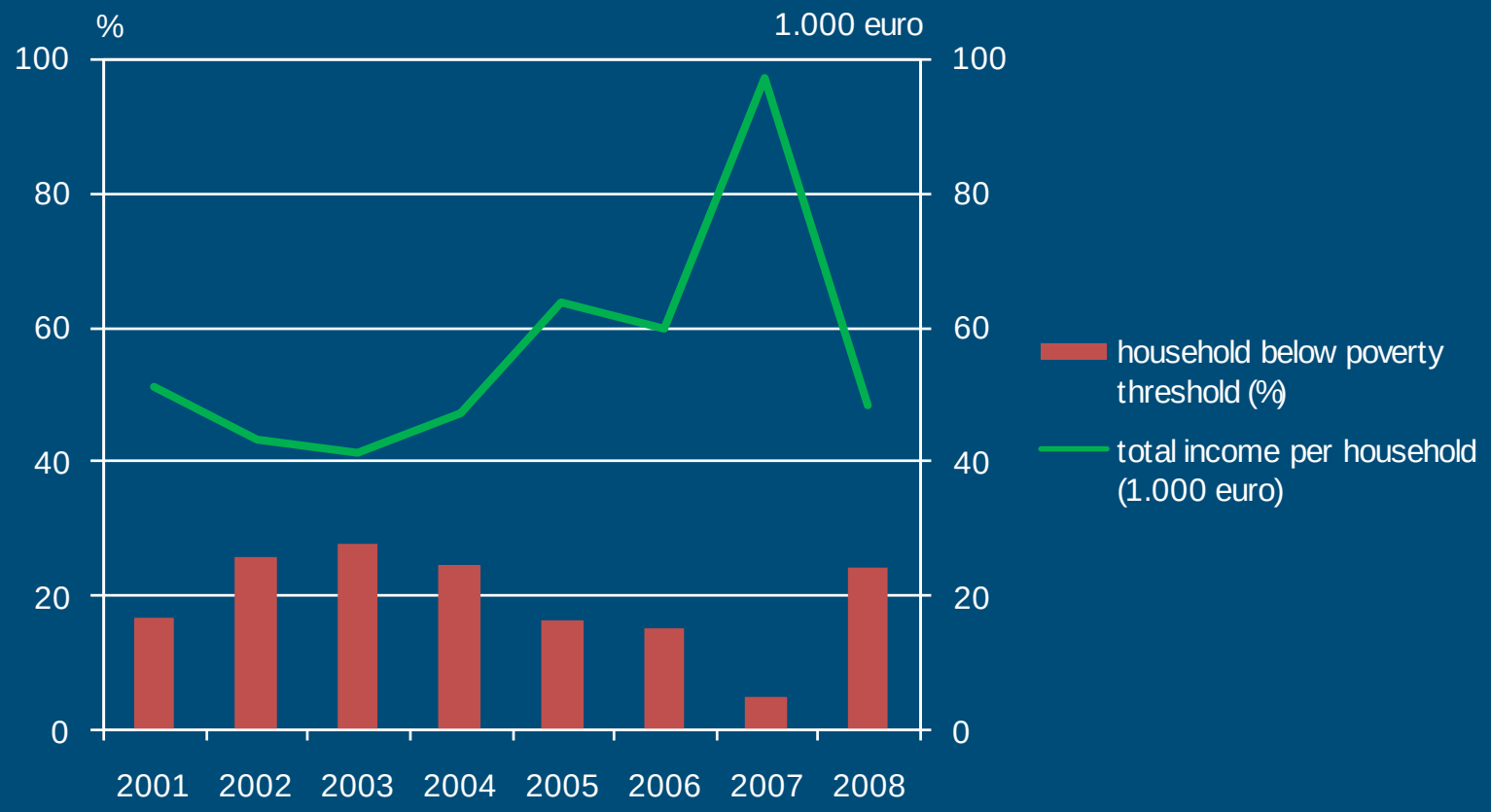
Theme: Geographical distribution

indicator: ESU per ha



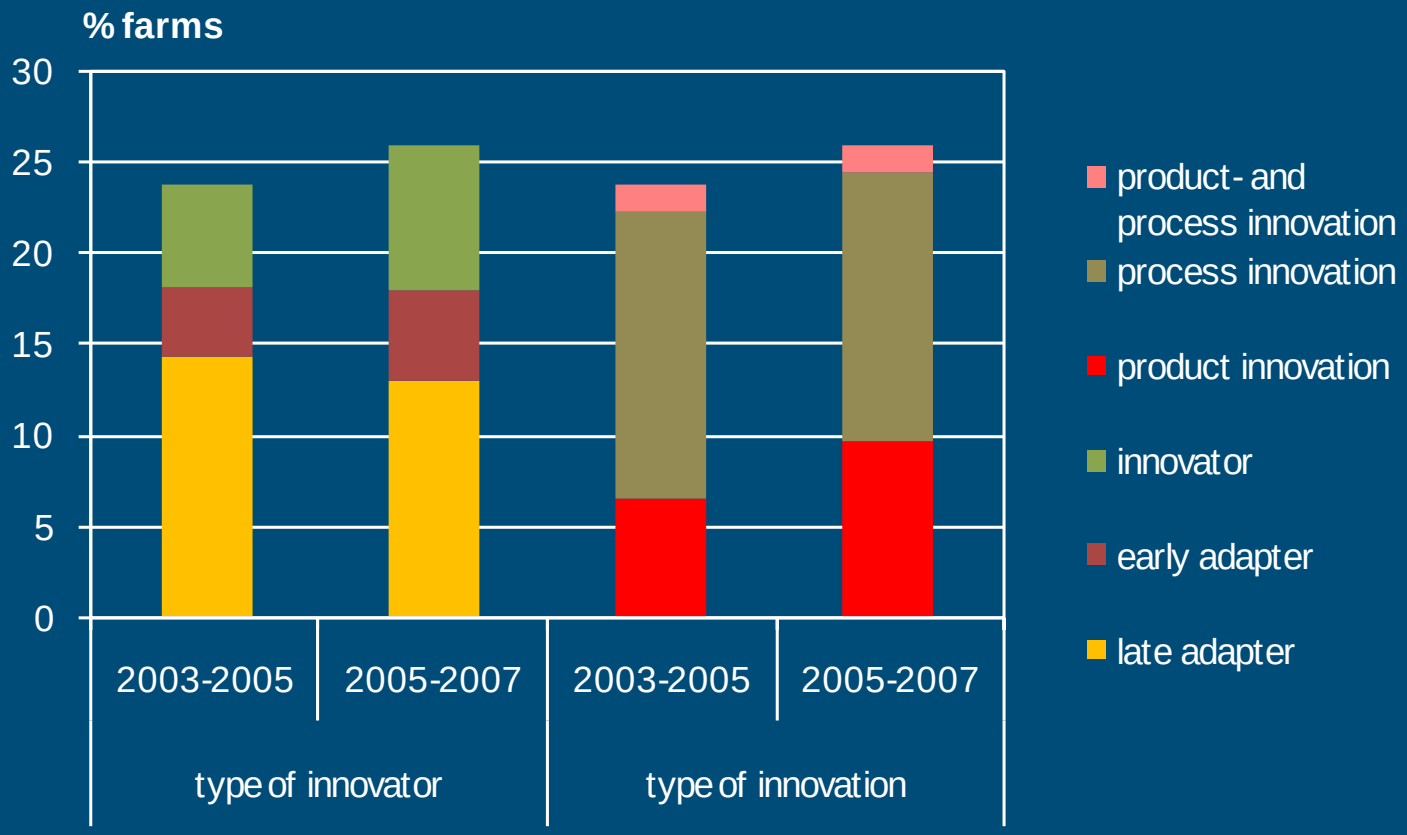
Theme: Farm Income

indicator: percentage of dairy farms with total income (including off-farm) below poverty threshold



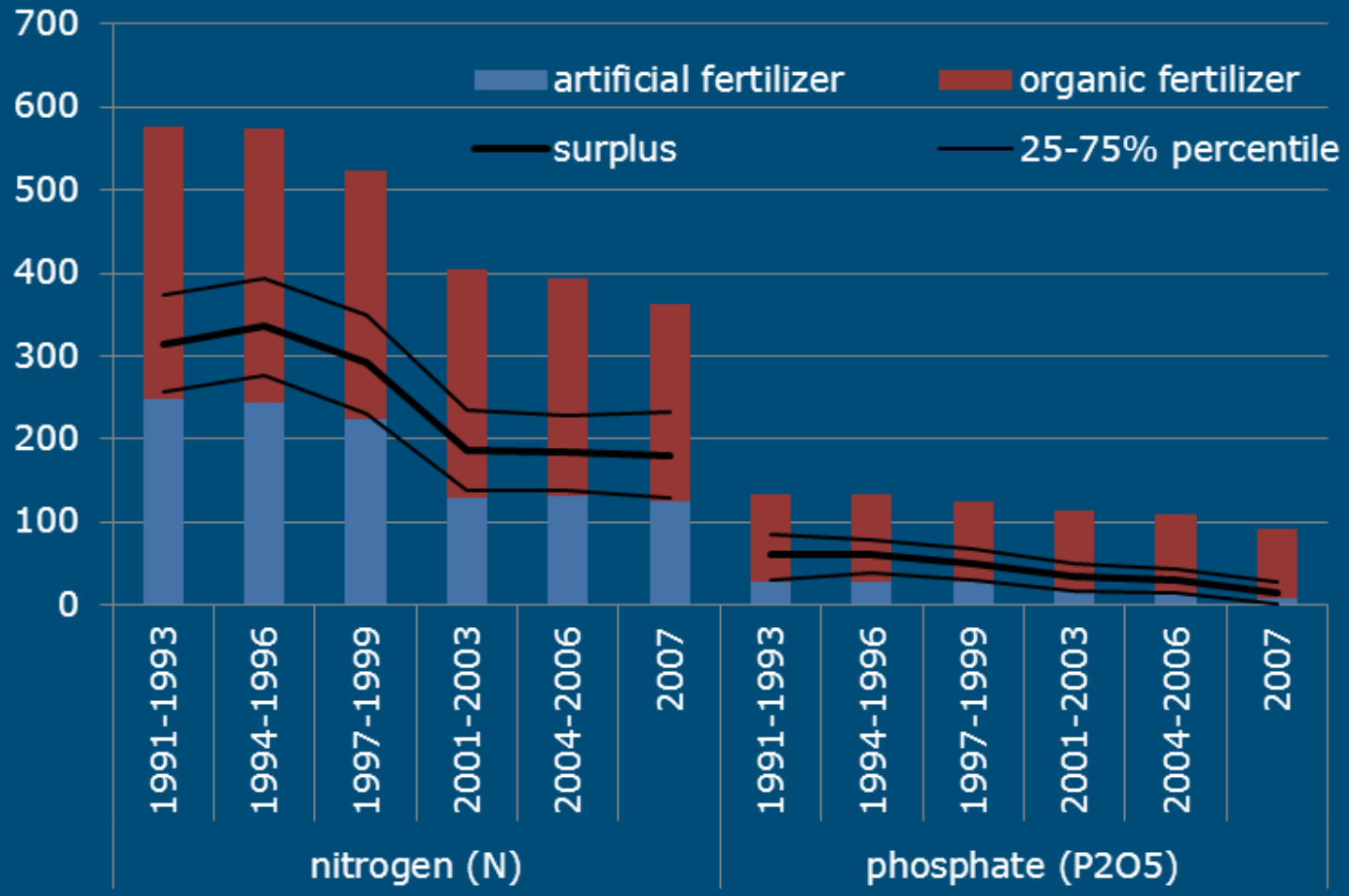
Theme: Innovation

indicator: percentage of innovations and innovators in greenhouse horticulture



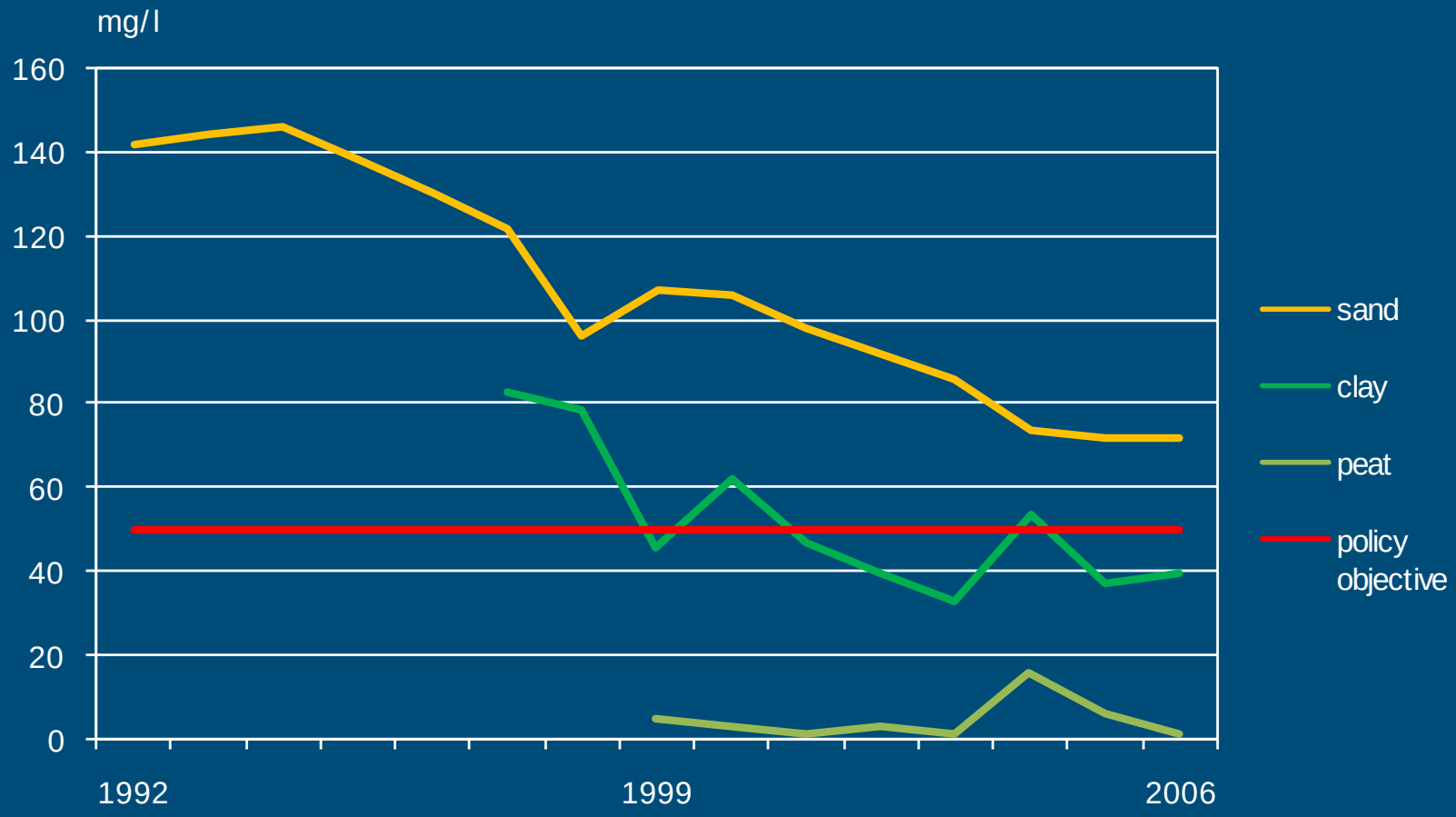
Theme: Nutrients

indicator: mineral application and surplus (dairy farms)



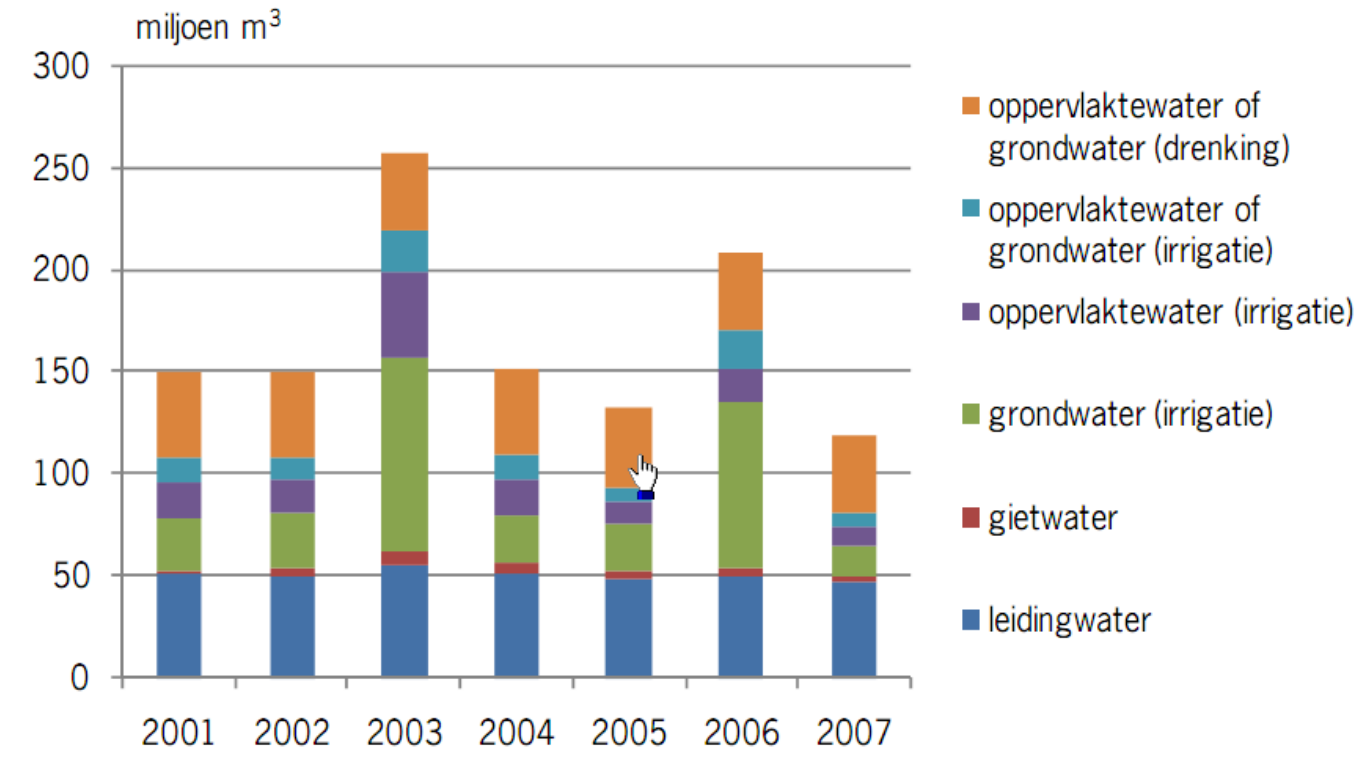
Theme: Nutrients

indicator: nitrate concentration in upper groundwater



Theme: water

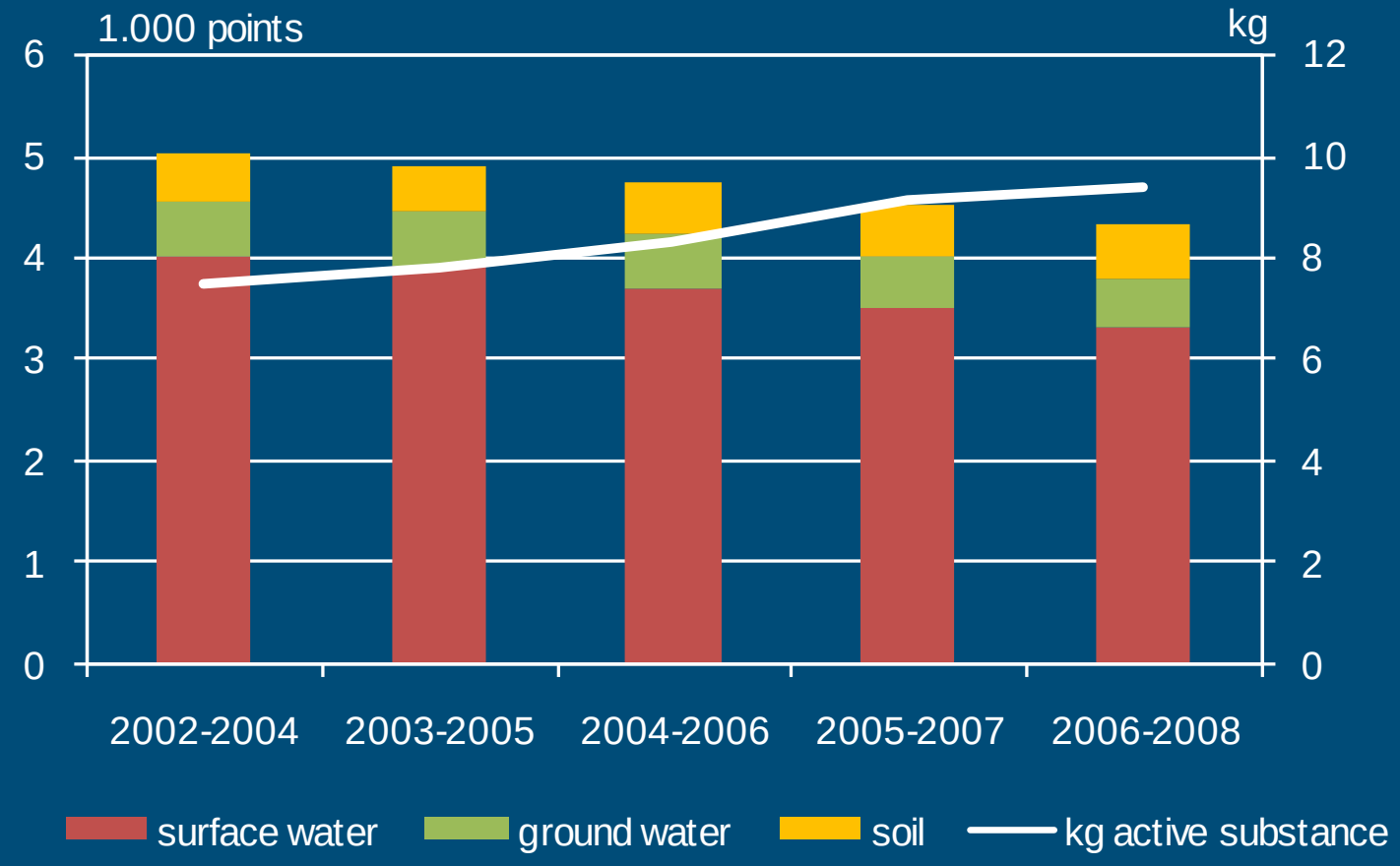
Figuur 2.8 **Watergebruik (miljoen m³) in de land- en tuinbouw, 2001-2007**



Bron: Informatienet.

Theme: Crop protection

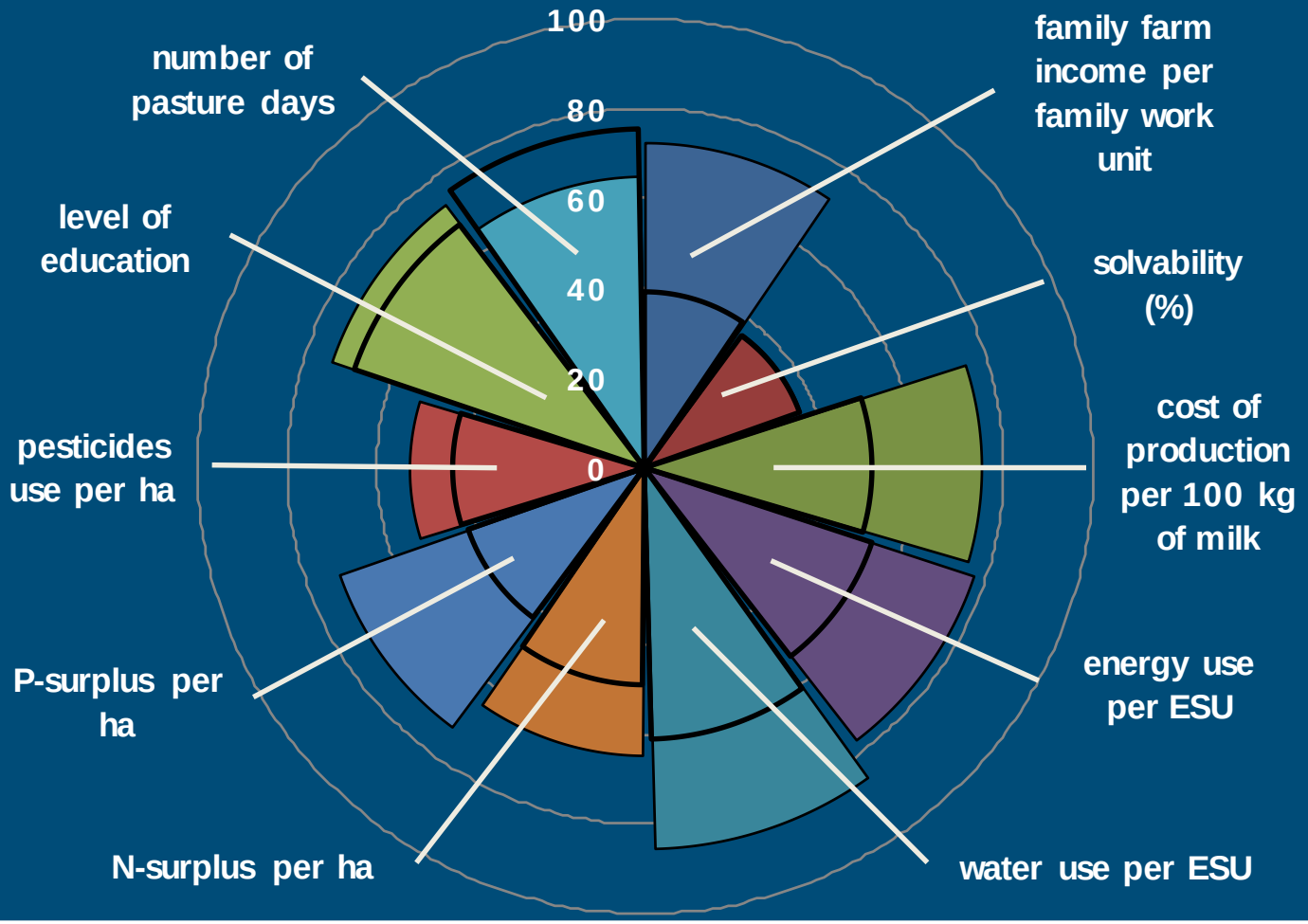
indicator: pesticides use and environmental impact points for arable farms



Do integral sustainable farms exist?

- Select homogeneous group of farms: Dairy farms
- Calculate 3-year average score for all farms on all themes
- Identify per theme the 25% best performing farms
- Select the farms that are most often part of this 25% group
- Compare the performance of these farms with average farm
- Identify the characteristics of these farms

Comparison of the scores of the most sustainable farms with the average farm



LEI
WAGENINGEN UR

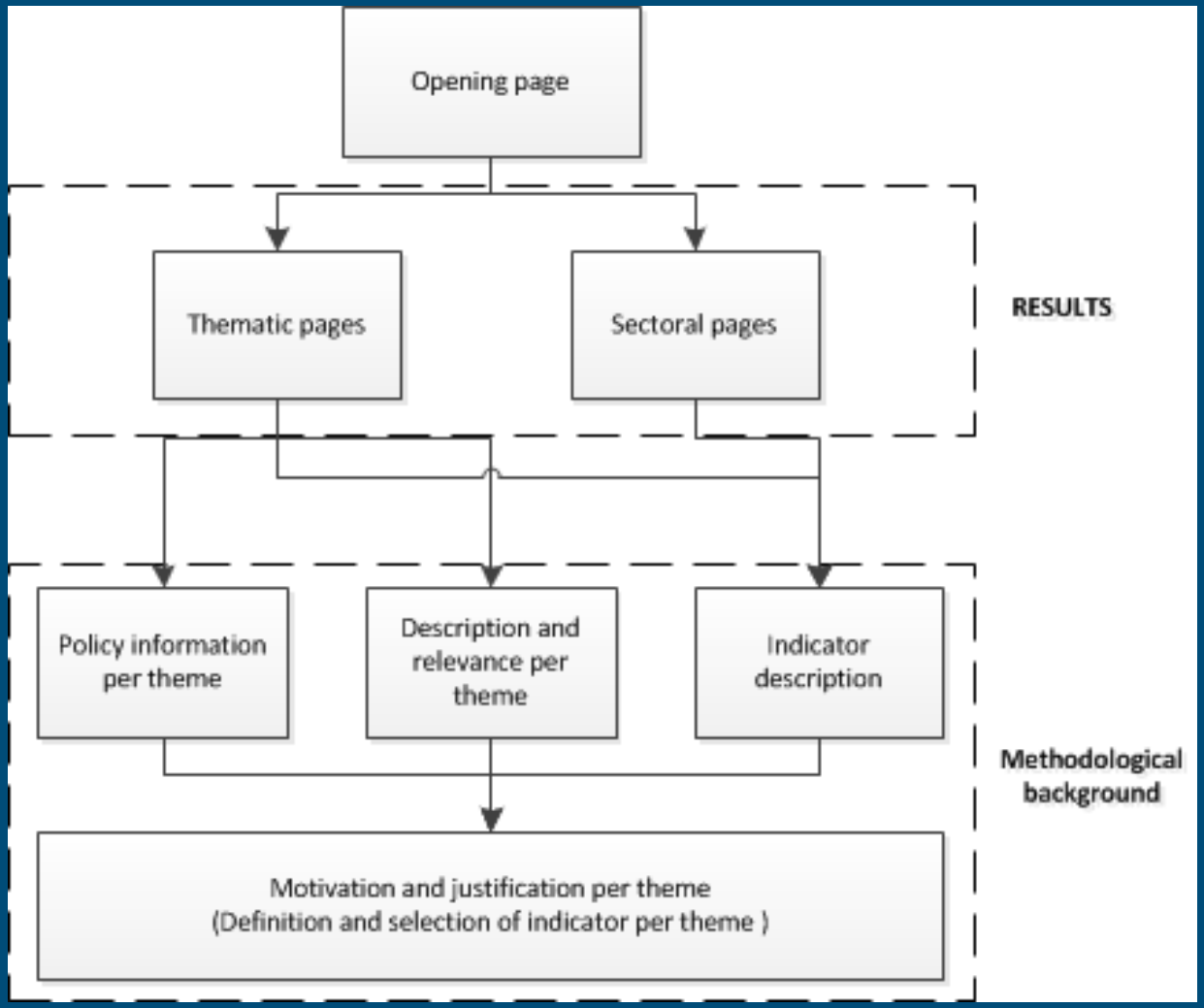
Lessons learned

- Necessary to consult large group of specialists
- How to get more integrated conclusions?
  - Integrated analysis on farm level
  - Qualitative research (workshops/interviews)
- Internet site next to report
  - Always latest numbers available
  - More possibilities to add more detailed data
  - Links to government policy and methodology
  - Links to sites where data is already reported
- International comparisons

Conclusions micro data and sustainability

- Increased demand for not only economic performance measures but also performance on planet and people indicators
- Integrated data assembling on micro level has large advantages; FADN provides a good basis for collecting sustainability information
- Extension of FADN data to other indicators facilitates monitoring of sustainability
- Requires adaptations in FADN (skills and expertise, data collection procedures, reporting)
- Facilitates international comparison

Design of web site



More Information

Report:

webdocs.alterra.wur.nl/WOT/rapporten/WOTrapport_105.pdf

(in Dutch with English summary)

Paper:

http://www.lei.wur.nl/NR/rdonlyres/82AFF37C-DB0E-405B-9085-10B87FB0FFA4/122752/10155BooneartikelDEFINITIEF.pdf

Koen Boone, koen.boone@wur.nl

Thank you for your attention

© Wageningen UR



LEI
WAGENINGEN UR