



Organic farming in the Netherlands and research in cooperation with the farmers

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Personal introduction

- Wijnand Sukkel
 - Applied Plant Research (PPO)
 - Wageningen University and Research Centre (WUR),
- Specialist organic plant production
 - Research Coördinator: Organic open field production
 - RC: Energy use and ghg emissions in organic agric.



Organic agriculture in the Netherlands

- Conditions: high land and labour costs, capital intensive, specialised
- Acreage: 48.000 ha (2,5% of total)
 - Grass and fodder: 34 000 ha
 - Potatoes, fruits, vegetables: 6 000 ha
 - Cereals 5 000 ha
- No farmers: 1 500



Organic agriculture in the Netherlands

■ Production

- Dairy
- Pig meat
- Potatoes, carrots, onions, cabbage
- Fresh market vegetables
- Glasshouse vegetables

■ Multifunctional

- nature, health care, recreation,
- direct selling,





Policy on organic agriculture

- Target: 10% organic
- No direct subsidies for farmers
- Development of the market for organic
- Investments in Research and Development
- Source of innovation and inspiration for conventional agriculture



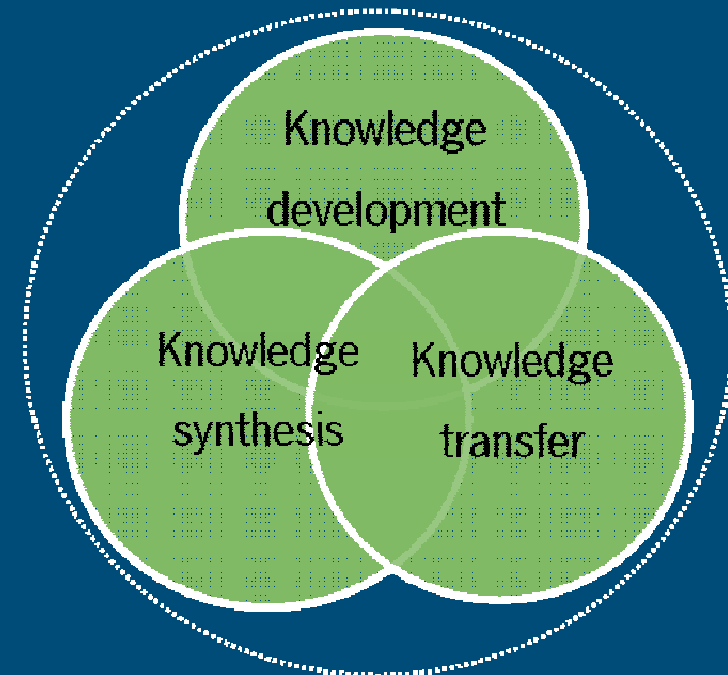
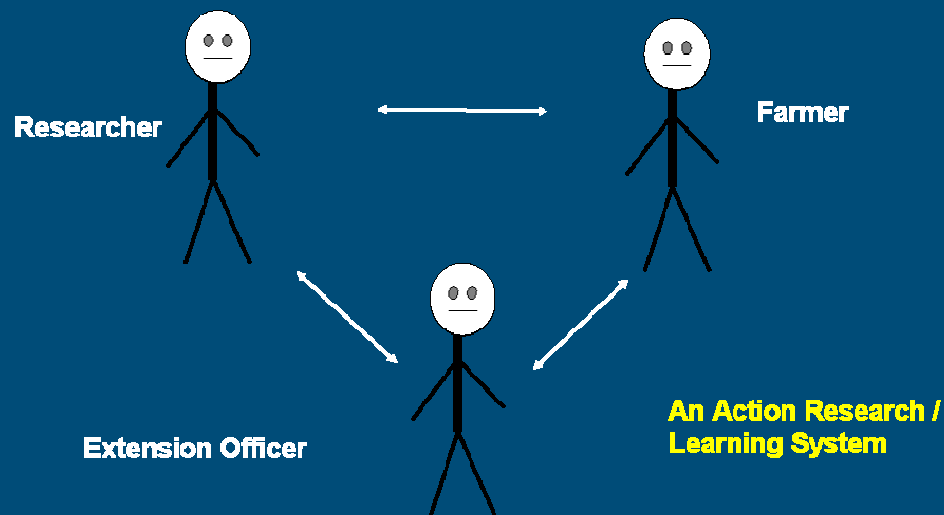
Research in organic agriculture

- 10 % of public research funds to organic
- 9 million public + ap. 2 million private (Euro's/year)
- Organic sector has the lead in the agenda for research and knowledge transfer
 - Bioconnect (total organic production chain)
 - Ownership
 - Vision development



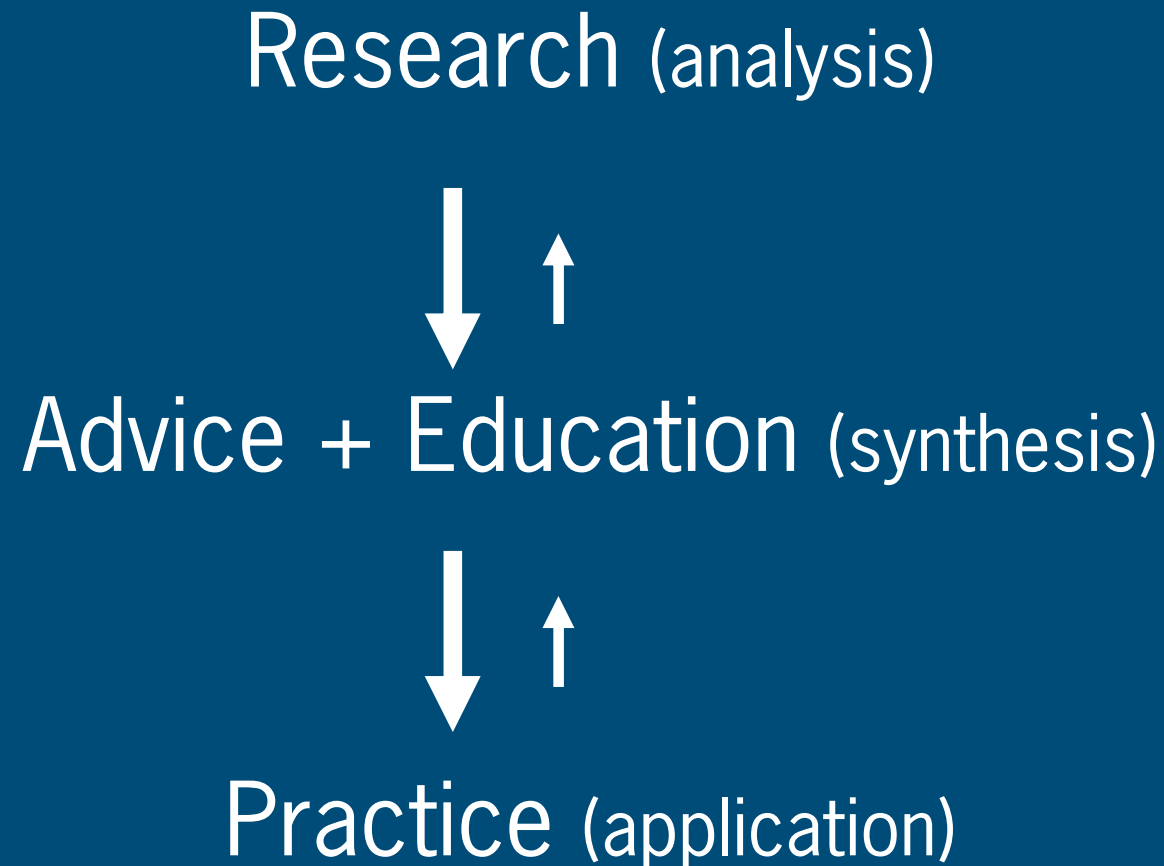
Vision on research and knowledge

- Integration of knowledge development, synthesis and transfer
- Participatory approaches (networks)
- System/holistic approaches





The classic model





Organic Agriculture needs
a specific approach in (applied) research and
knowledge transfer

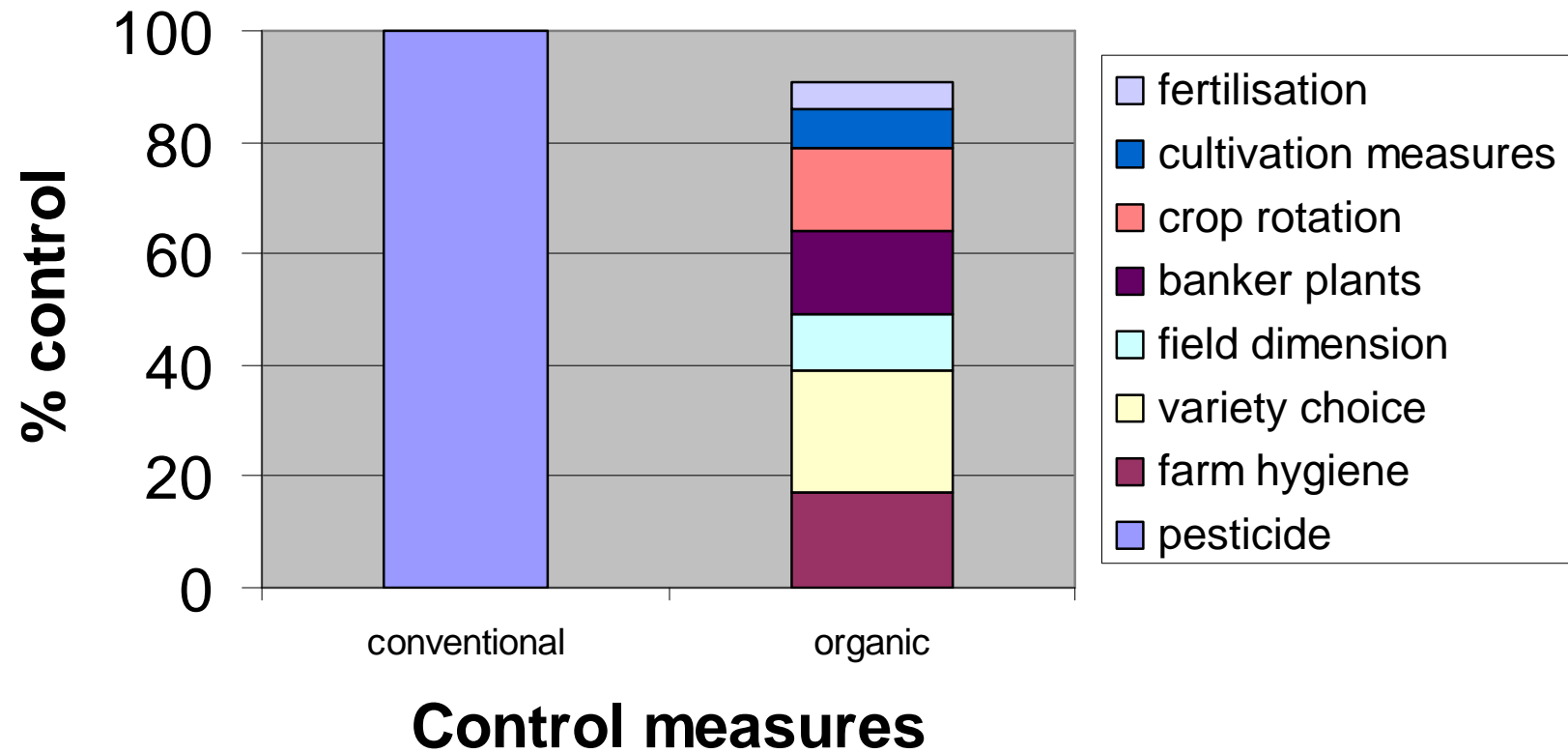
The linear knowledge model does not work for
the development of organic farming systems



Conventional	Organic
Uniformity	Diversity
Recipy	Concept
Reductionism	Holism
General	Situational
Control	Cooperation
Specialist	Universalist
Reaction	Precaution
Economy	Ecology
Global	Regional



Control pest x





Partners in knowledge network

- Farmer: craftsmanship, experience knowledge
 - Integrated methods and strategies instead of recipes
- Advisor: integrated practical knowledge
 - Application of methods under different circumstances
- Researcher: Formal knowledge, concepts
 - processes and systems, integration of disciplines
- Changing roles and skills of partners in network
- Basic information through internet



Research Arable and Vegetable crops

- Experimental systems
 - Nutrients Waterproof (organic matter, nutrient management)
 - Taste of Tomorrow (pests, diseases, weeds, soil)
- Thematic projects (soil, pest/weeds/diseases, nutrients, ghg emissions, product quality)
- Thematic innovation groups



Innovation groups

- Thematic group of innovative farmers
 - Weed control
 - Pests and diseases
 - Soil and mechanization
 - Soil and fertilisation
 - Product quality
 - Market and entrepreneurship
 - Small farm holdings
 - Energy use and ggh emissions



Innovation groups

Source of inspiration and innovation

Brings together inventors, innovators, researchers etc.

Support and facilitate initiatives

Ownerships by the farmers!!!



How do you get new ideas???

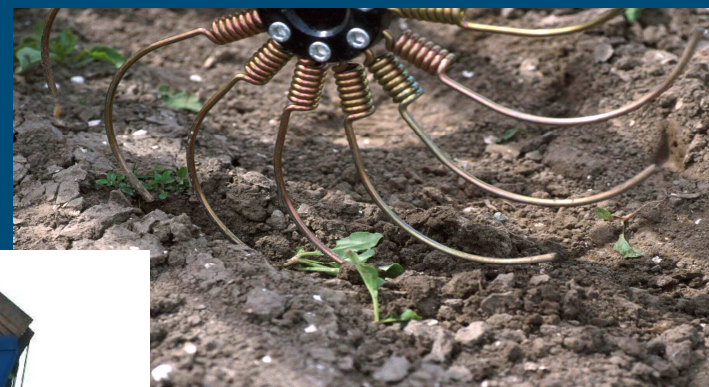
- Bring different knowledge sources together! practical knowledge, craftsmanship, formal knowledge,
- Exchange knowledge and experience: colleague's, researchers, advisors, suppliers, chainparties,
- Take notice of new developments,



Functions

- Guiding research projects
- Preparing research proposals
- Testing and improving innovations on farm
- Expert group for sector and policy makers
- Signaling: problems, developments, chances
- Vision development for organic agriculture
- Knowledge transfer

Innovative techniques





Group pests and diseases

- UV light and ozone
- Sprinkling for control of downy mildew
- Onion oil against carrot fly
- Beetle eater
- Natural enemies against pea aphids
- Functional biodiversity





Group soil and mechanisation

- Zero tillage techniques
- Fixed track systems
- Ridge tillage
- Minimal soil compaction

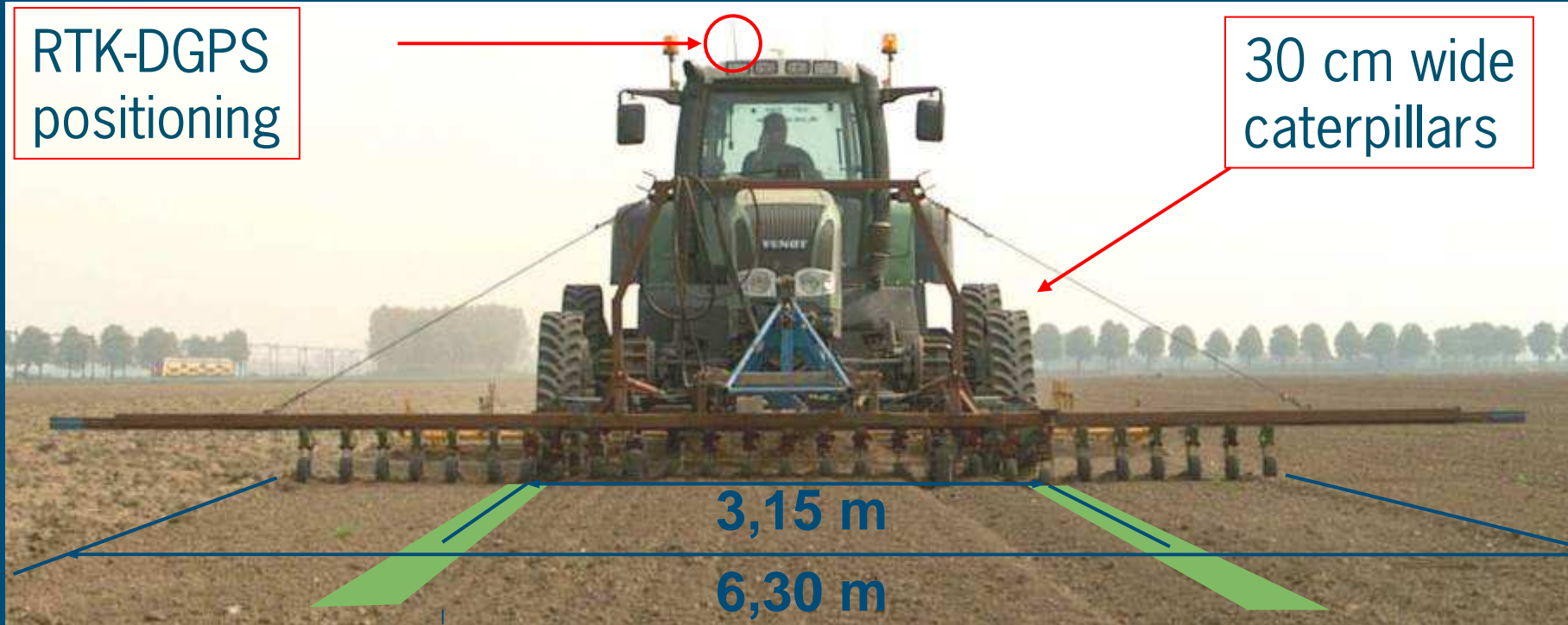




Fixed track system

RTK-DGPS
positioning

30 cm wide
caterpillars





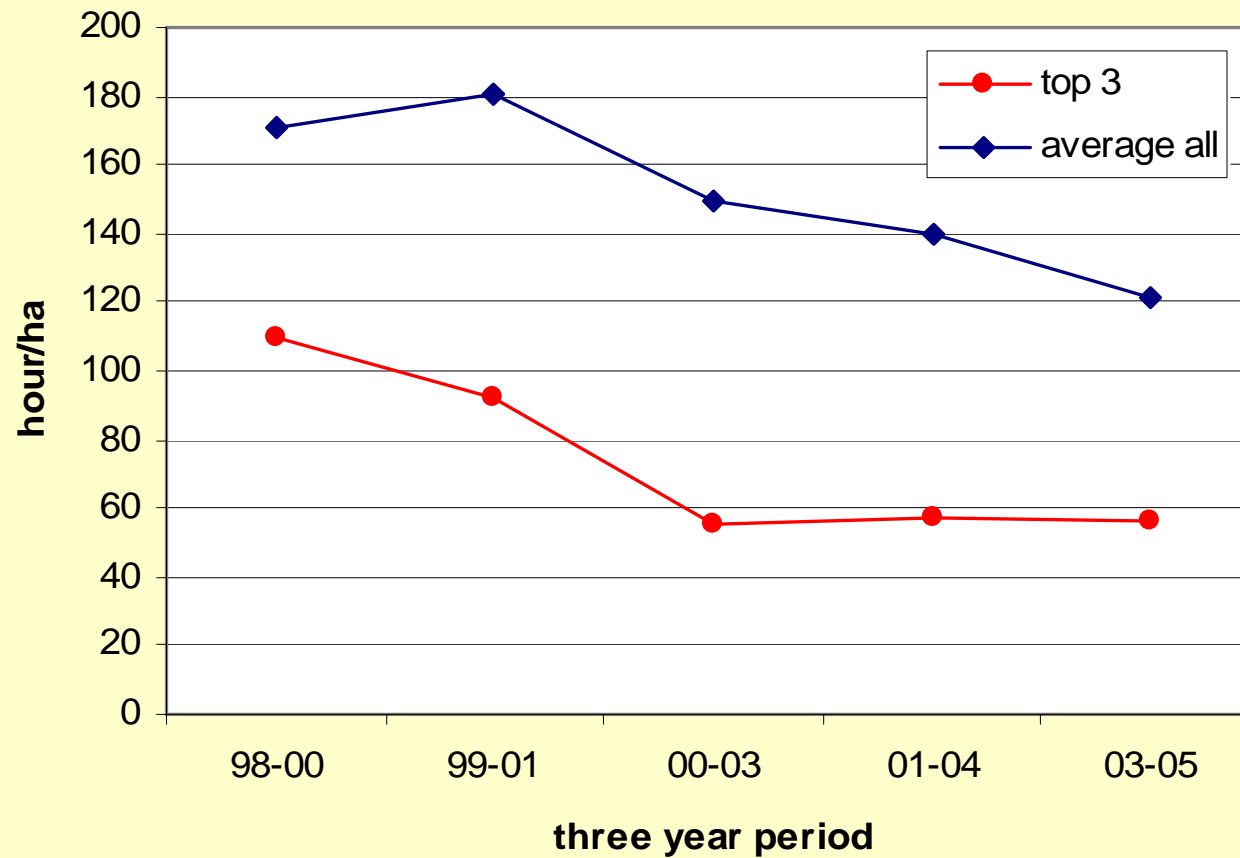
Groups market and product quality

- Honest food
- Marketing of tasteful potatoes
- Export of organic produce
- Taste of carrots and red beet
- New vegetable products
- New pumpkin varieties
- Pumpkin storage





Hours of handweeding in wintercarrots



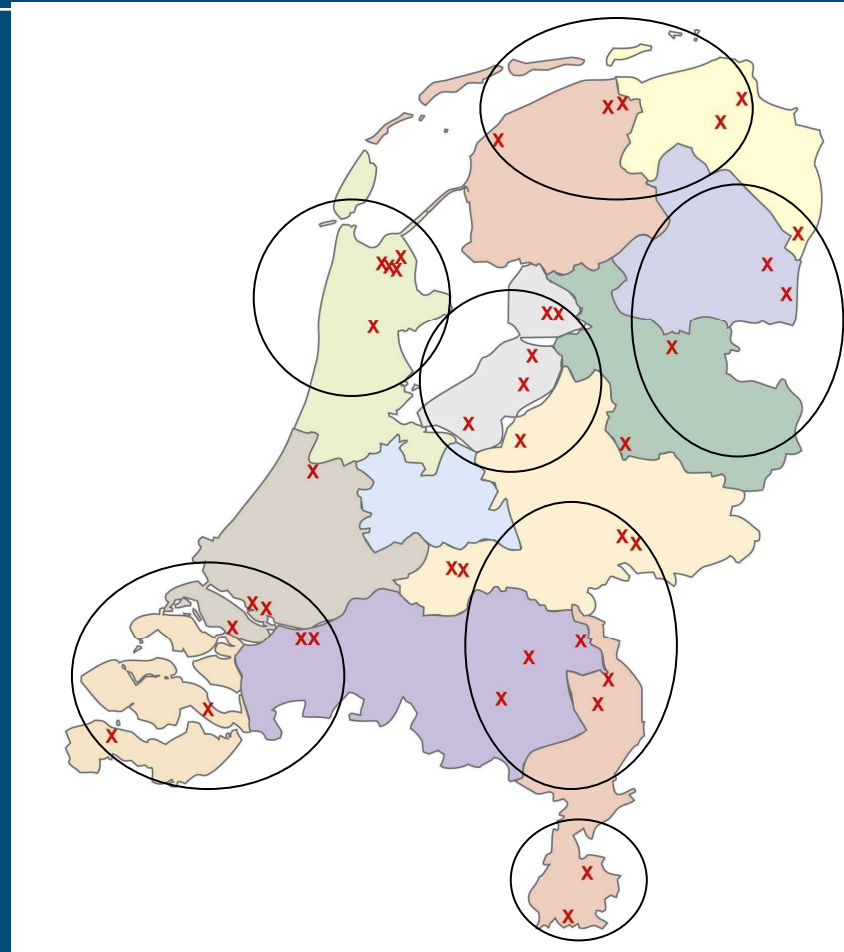


APR Farmers networks in the Netherlands

- Farmers networks since 1990
- Momentarily two main projects in plant production
 - BIOM (organic), 50 farmers
 - Farming with Future (integrated), 350 farmers
- Regional and sector groups of 5-15 persons
- Objectives:
 - Farming with Future: Implementation/support of policy (pesticide and nutrient emission)
 - BIOM: development organic farming



BIOM network
40 farmers,
7 regional groups,
arable and
vegetable crops





Main Principles

- Development, synthesis and transfer of knowledge is integrated
- System approach
- Learning by doing and seeing
- Knowledge input of partners is valued equal
- Learning from colleagues, advisors, researchers



Ingredients

- Regional and/or thematic farmers groups
- Research is demand driven
- Farm visits, meetings, excursions, demonstrations
- Involvement various stakeholders
- Farm Registration
- On farm research





Objectives and functions

- Farm development (People, Planet, Profit)
- Support and stimulation of innovation
- Identification bottlenecks (research, policy)
- Input for setting organic research agenda



Functions developed during project

- Provide policy information, statistics
- Lobby, interest care
- Platform for cooperation
- Testing and improving methods
- Research facilities for on farm research



Results general

- Fast knowledge circulation
- Improved cooperation
 - Studygroups, price information system, trade, po's, ..
- Improved insight in bottlenecks and performance
- Influence research agenda
- Higher awareness of environmental effects
- New market initiatives
- Higher performance participating farms
- Innovated farming methods



Gros yield

