APPLIED PLANT RESEARCH

Networks for Innovation in Organic Agriculture

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WAGENINGEN UR

Personal introduction

- Wijnand Sukkel
- Agronomist, Specialist organic plant production

Applied Plant Research (PPO)
Wageningen University and Research Centre (WUR),

Content

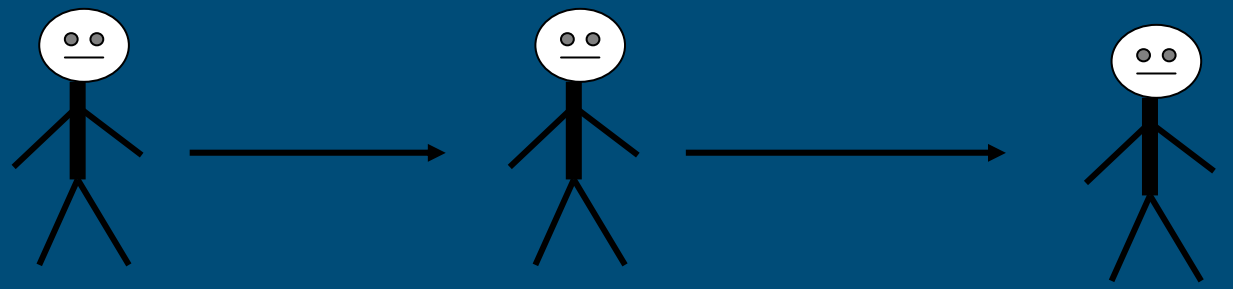
- Vision and background
- BIOM, a farmers network
- Results
- Recommendations

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

Linear Model



Researcher

analysis

Extension Officer

synthesis

Farmer

application

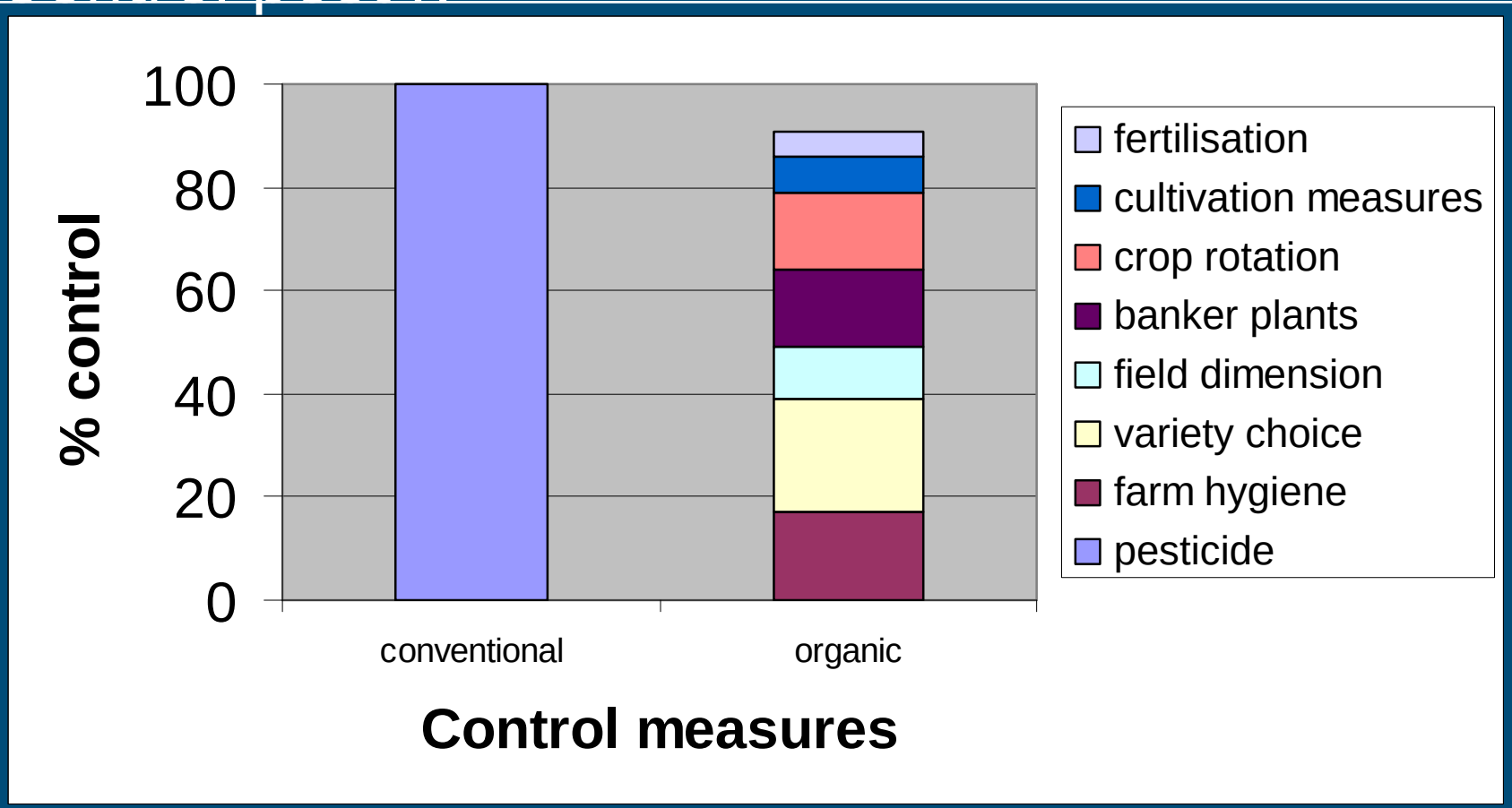
A Technology Transfer System

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

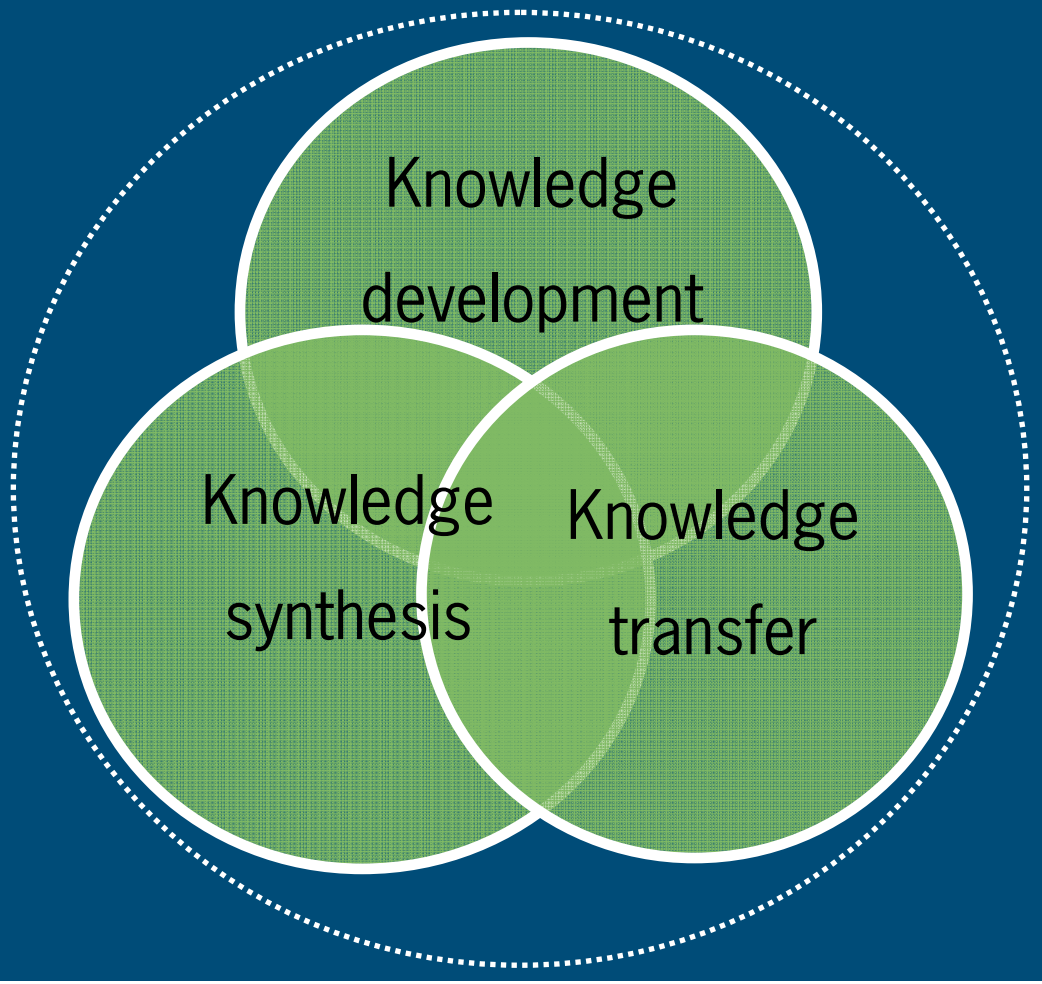
Consequences values and intentions organic

- Few monofactorial instruments
- Available methods and techniques have complex effects on farm performance
- Application of methods and techniques is situational

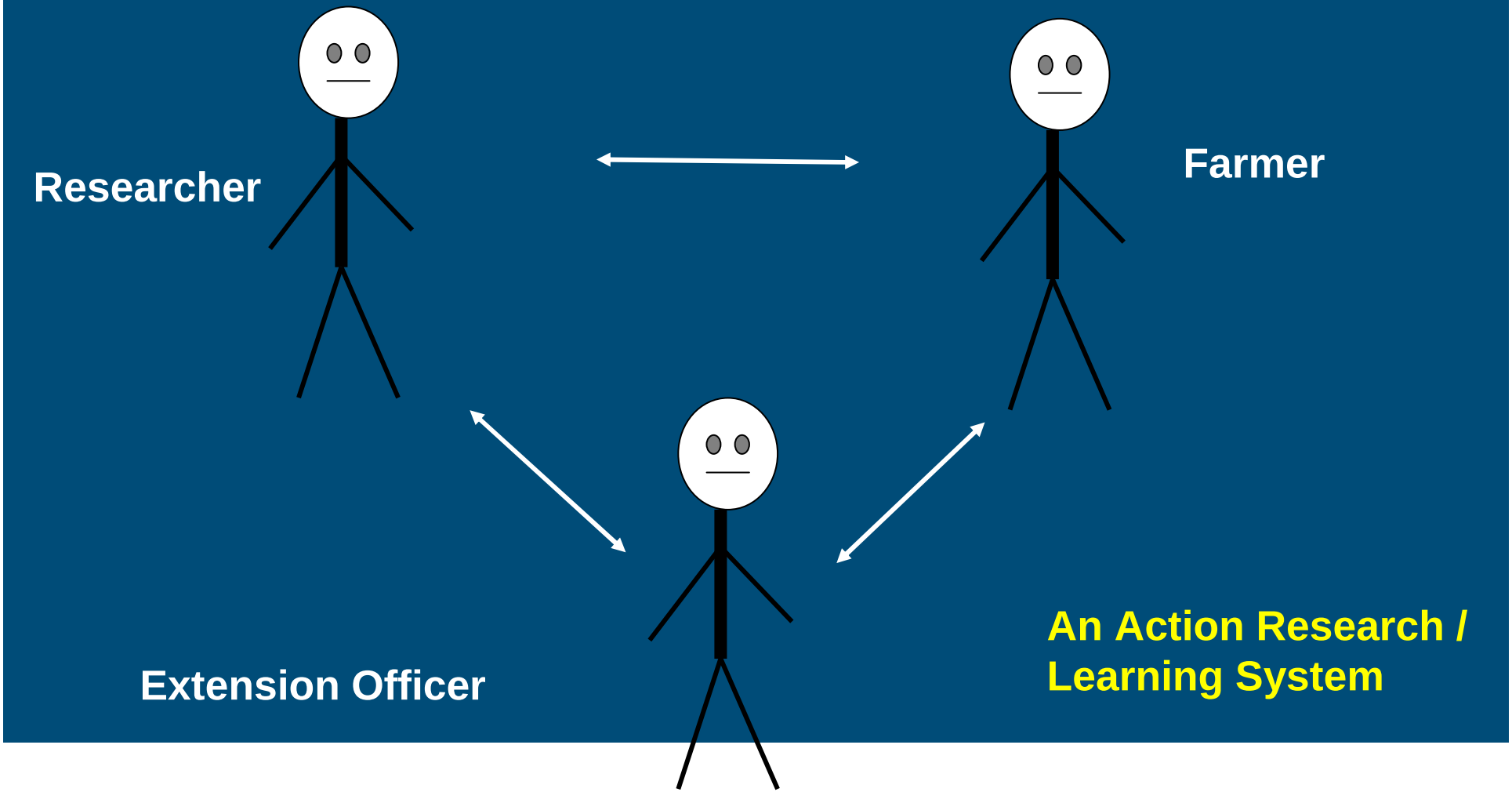
Control pest x



Integrate development, synthesis and transfer



Participatory Approach



Partners in knowledge network

- Farmer: craftmanship, 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

APR Farmers networks in the Netherlands

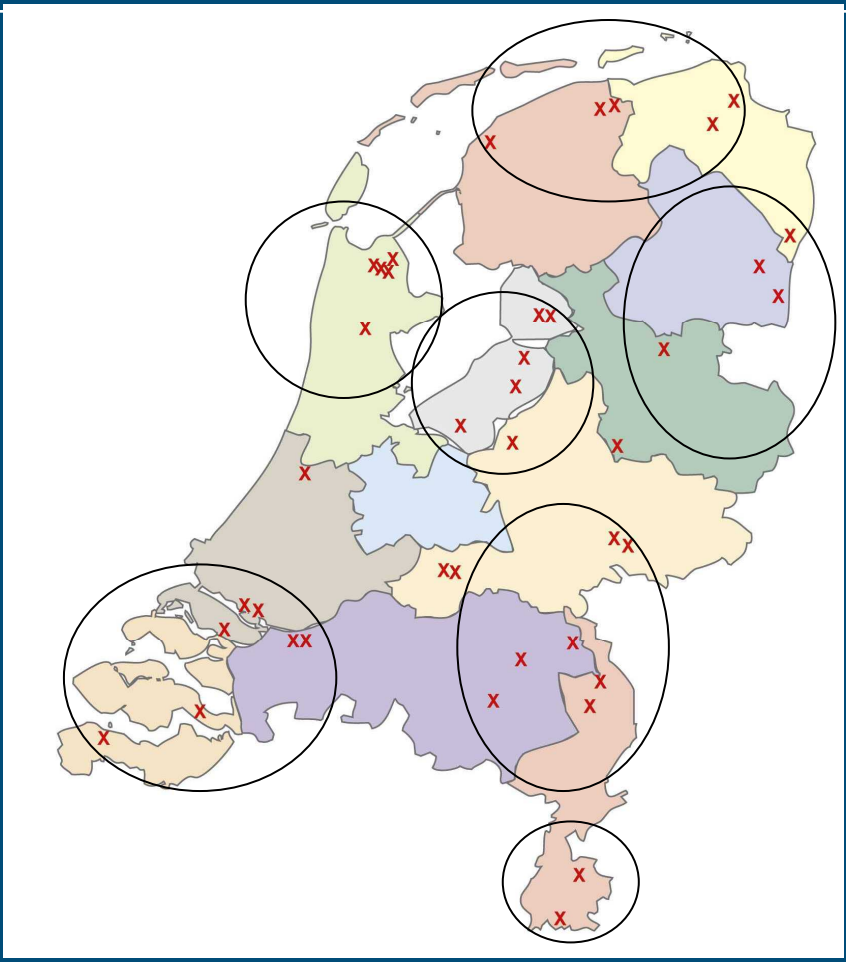
- Farmers networks since 1990
- Momentarily two main projects in plant production
  - BIOM (organic), 50 farmers
  - Farming with Future (integrated), 350 farmers
- Regional and sector groups of 5-15 persons
- Objectives:
  - Farming with Future: Implementation/support of policy (pesticide and nutrient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

BIOM network

40 farmers,

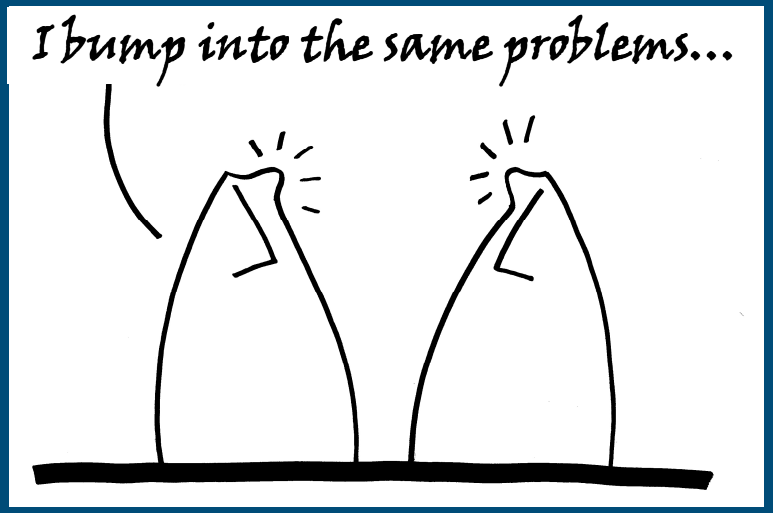
7 regional groups,

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

Demand driven agenda

- Farm continuity and basic income
  - Added value and cost reduction
  - Entrepreneur skills
- All within the framework of:
  - sustainable development
  - intentions of organic agriculture

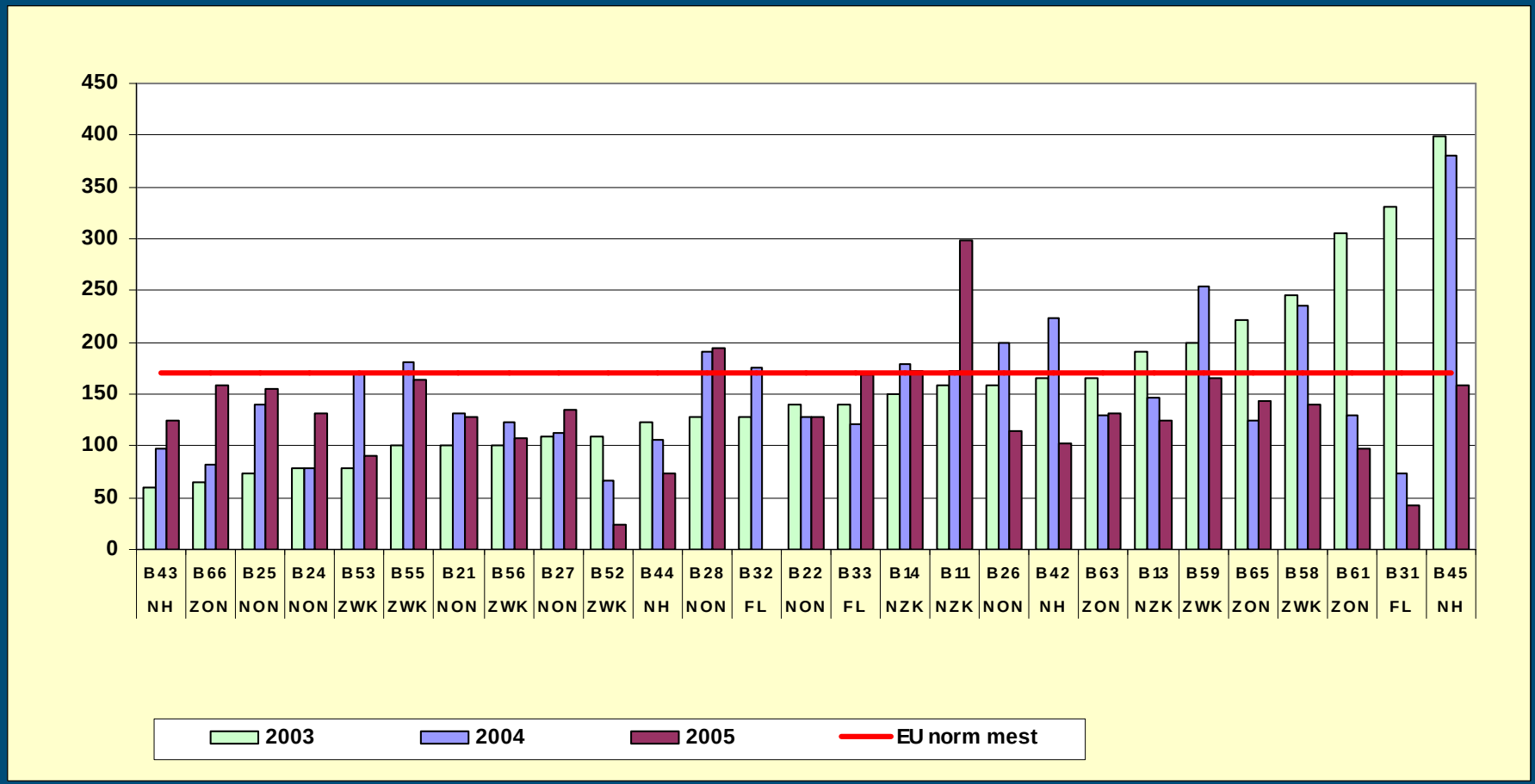
Results general

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

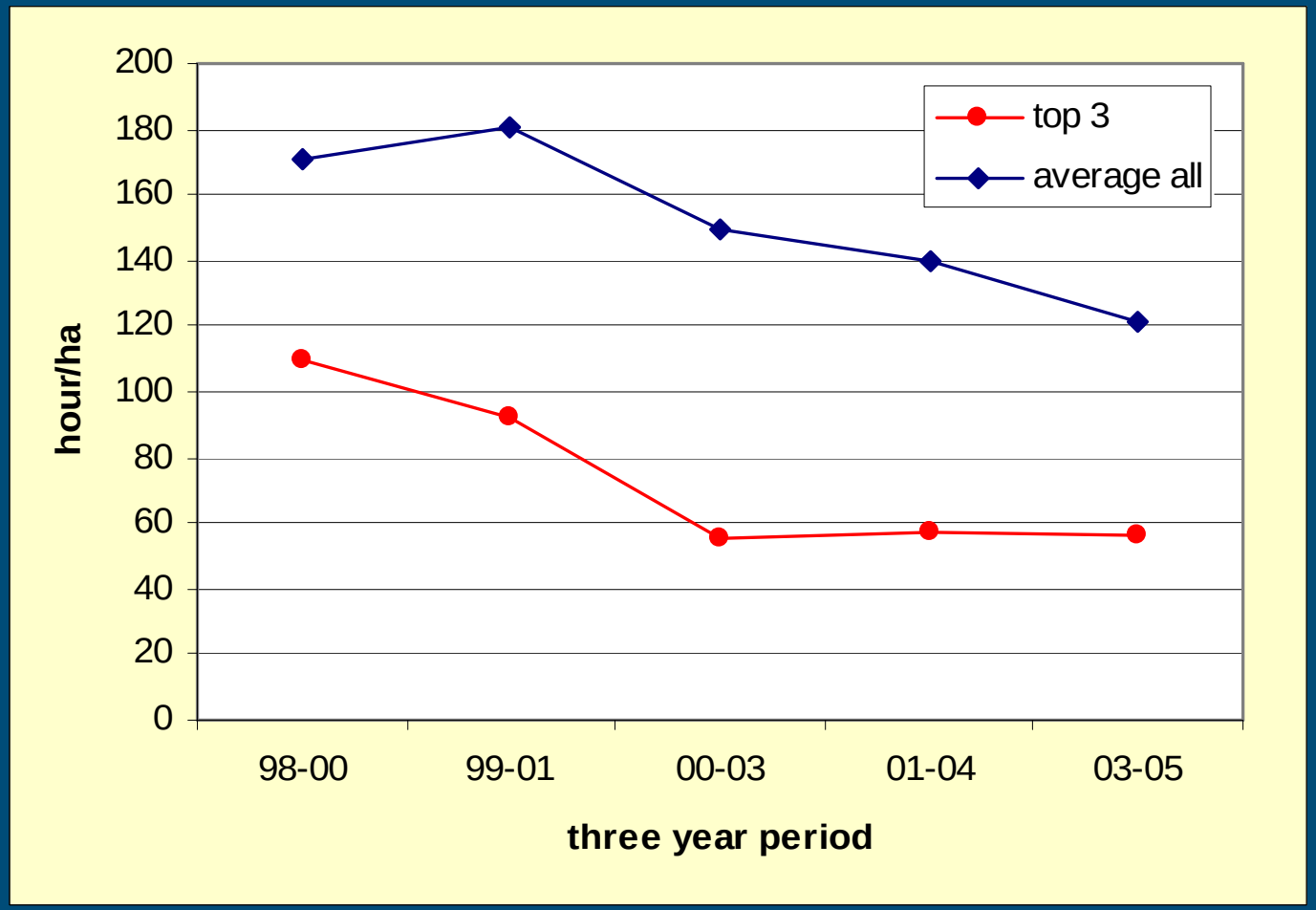
Results agronomic

- Reduction hours handweeding
- Leveled of extremes nutrient inputs
- Improved yields
- New techniques developed

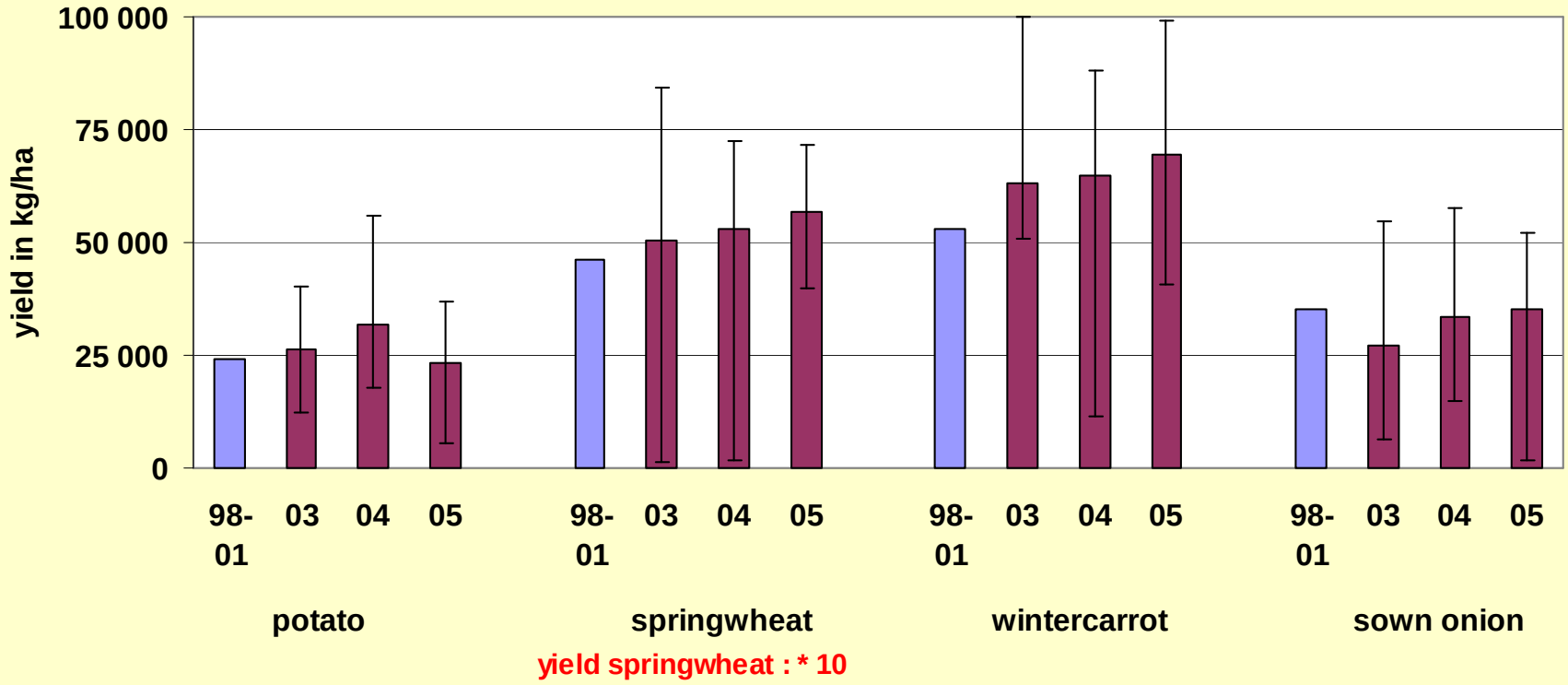
N input animal manure (kg/ha)



Hours of handweeding in wintercarrots

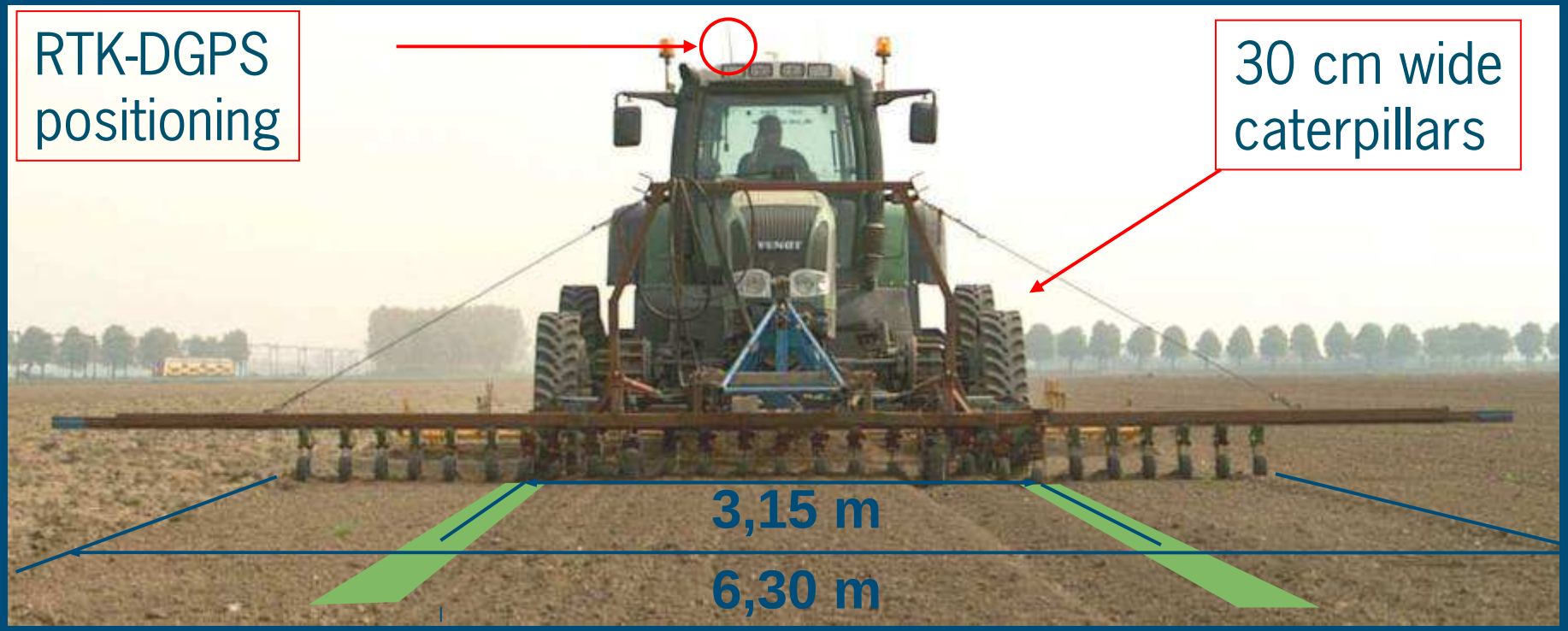


Gros yield


100 000
75 000
50 000
25 000
0
yield in kg/ha
98-01
03
04
05
potato
springwheat
wintercarrot
sown onion
yield springwheat : * 10

Innovative techniques

Fixed track systeem



Shortfall

- Input and dependance of animal manure
- Accumulation and losses of nutrients

- Product quality
- Yield stability
- Nature, landscape, biodiversity

Nutriënt management (farm level)

year	N input Total*	N input a.m.	N input fixation	N Surplus*	P_2O_5 surplus
	kg/ha	kg/ha	kg/ha	kg/ha	kg/ha
2003	237	157	41	132	63
2004	230	154	41	120	64
2005	223	134	48	115	57

* Without 35 kg/ha deposition

Critical succes factors

- Skills of workers
- Selection of participants
- Objectives and targets supported by participants
- Involvement of right stakeholders
- Win-Win situation for all involved
- Take care of hardware, software and orgware

Integrate development, synthesis and transfer of knowledge

Farmers networks are a valuable tool to achieve this!

Critical success factors

- For a successfull application in practice (farmers point of view), the farmer has to
  - Know (knowledge of techniques and methods),
  - Be able (in technical and economical terms, labour, risks, costs etc.)
  - Have the will (vision and motivation) and
  - Be allowed to do so (“socially desired” behaviour, acceptance in network)
- All these issues have to be taken care of

In the heart of knowledge development

- Farming with future uses the newest knowledge
  - From government sponsored research programmes on crop protection and fertilisation
- Links this with
  - The practical experience and innovative powers of farmers
- Develops and tests
  - Together with famers practicable effective and feasible methods for more sustainable farming systems
- Disseminates new knowledge via the network of advisory, agri-business et.
- Questions, chances and constraints are communicated to research and policy (agenda)

Unique approach project

- Farmers link their practical expertise with the results of agricultural research
  - In close coöperation of farmers, research and advisory services
  - Using all the experience of the different groups involved
  - Testing in practice innovations from farmers and the youngest knowledge and results of agricultural research
- Farmers, agricultural organisations, advisory services and agri-business disseminate the tested knowledge

Total system approach and participatory development are crucial steps towards organic agriculture that makes true its intentions

Questions?