

Social learning about whole farm sustainability on the basis of indicators

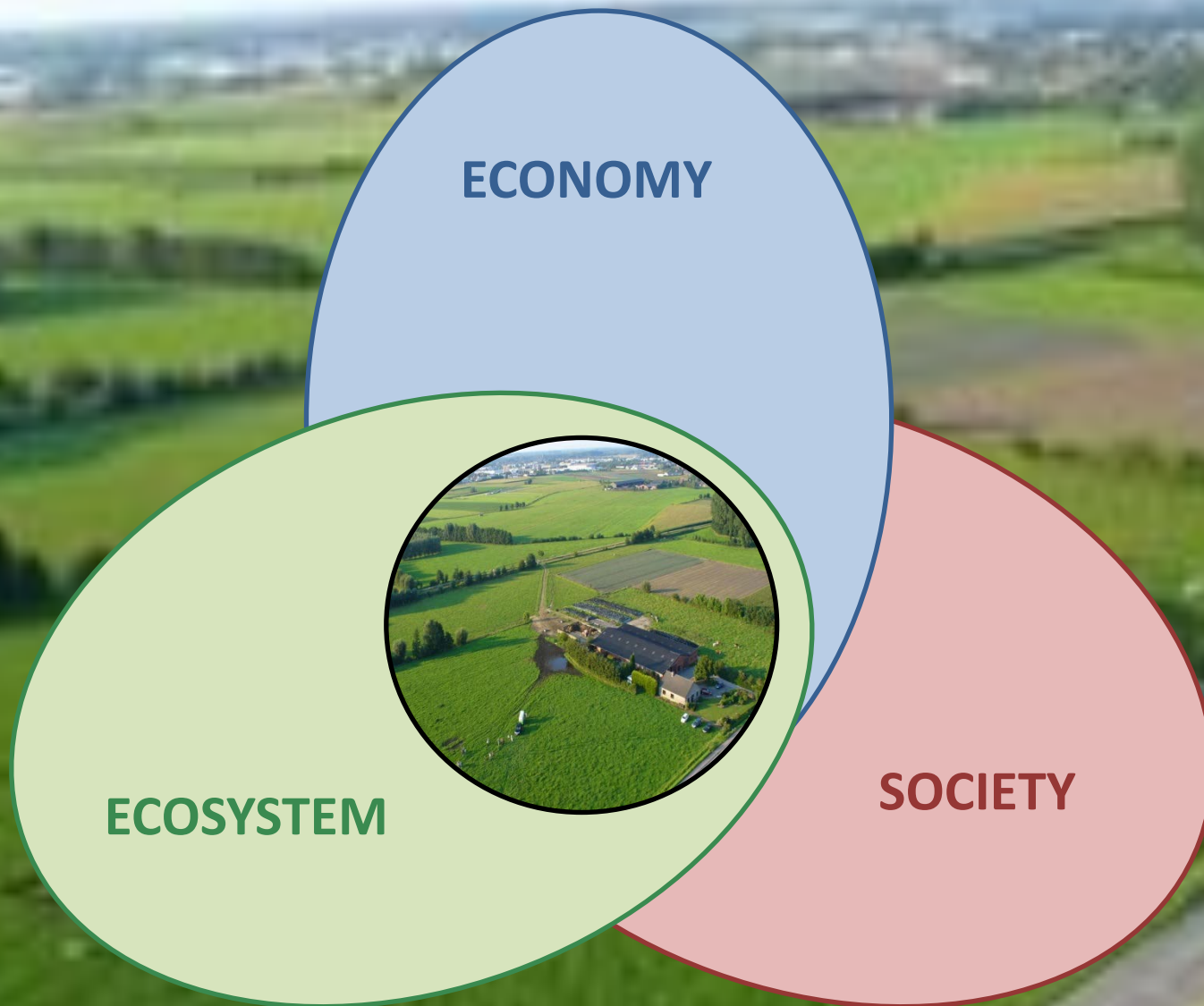
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December 27, 2013

Endure workshop Co-innovation

Institute for Agricultural and Fisheries Research
Social Sciences Unit
www.ilvo.vlaanderen.be
Agriculture and Fisheries Policy Area

Whole farm sustainability




Social learning



Group discussion
with peers
& advisor

... on the basis of indicators



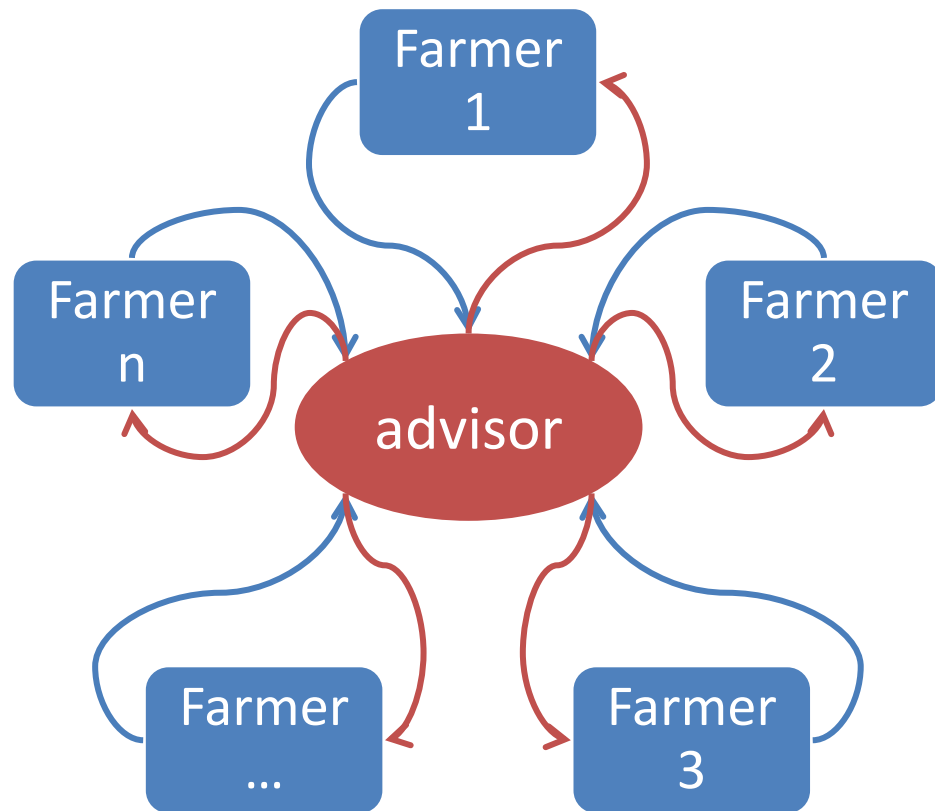
Group discussion
with peers
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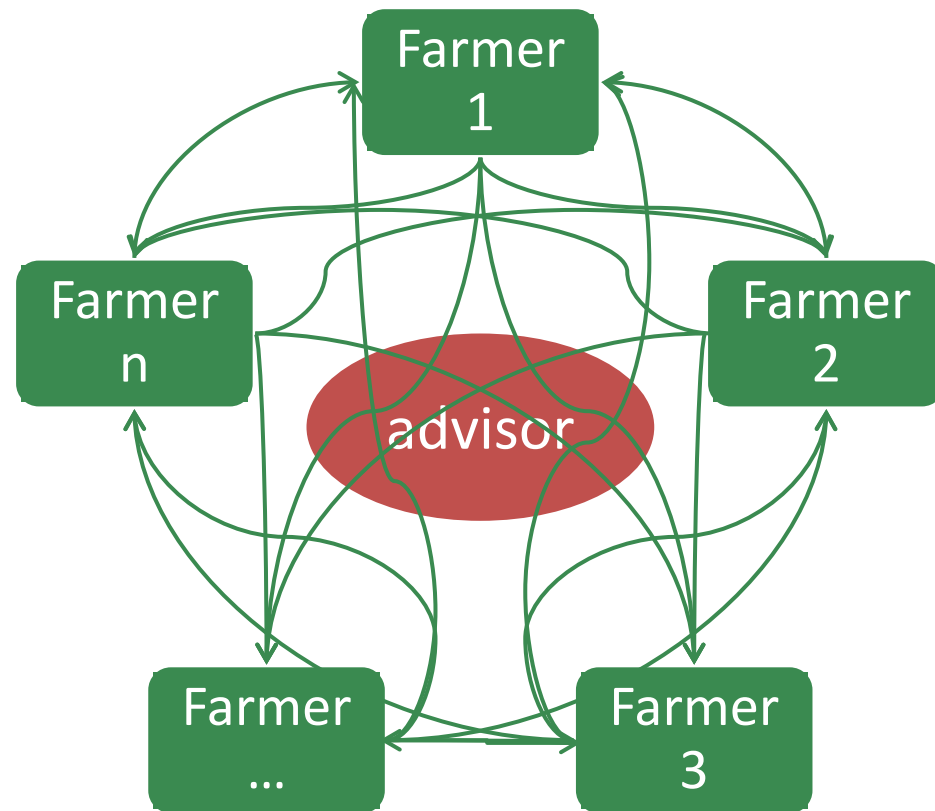
Indicators as
starting point for
the discussion

Extension ↔ social learning

Extension



Social learning





Experience with the use of indicators and social learning

1. Monitoring tool MOTIFS: development, implementation & evaluation
2. Dairy farm sustainability
3. Crop protection sustainability
4. Fruit farm sustainability
5. Quick scans

① Monitoring Tool

SHORT HISTORY

- 2001: vision document “On tomorrow's grounds”
- 2002-2006: Stedula
 - Make “sustainability” concrete for agriculture
 - Develop indicators ⇒ MOTIFS
- 2007: ILVO – Social Sciences
continued work on indicators & learning instruments
- 2012-13: ⇒ toolbox indicators & experience
⇒ evaluation and self-reflection

① MOTIFS

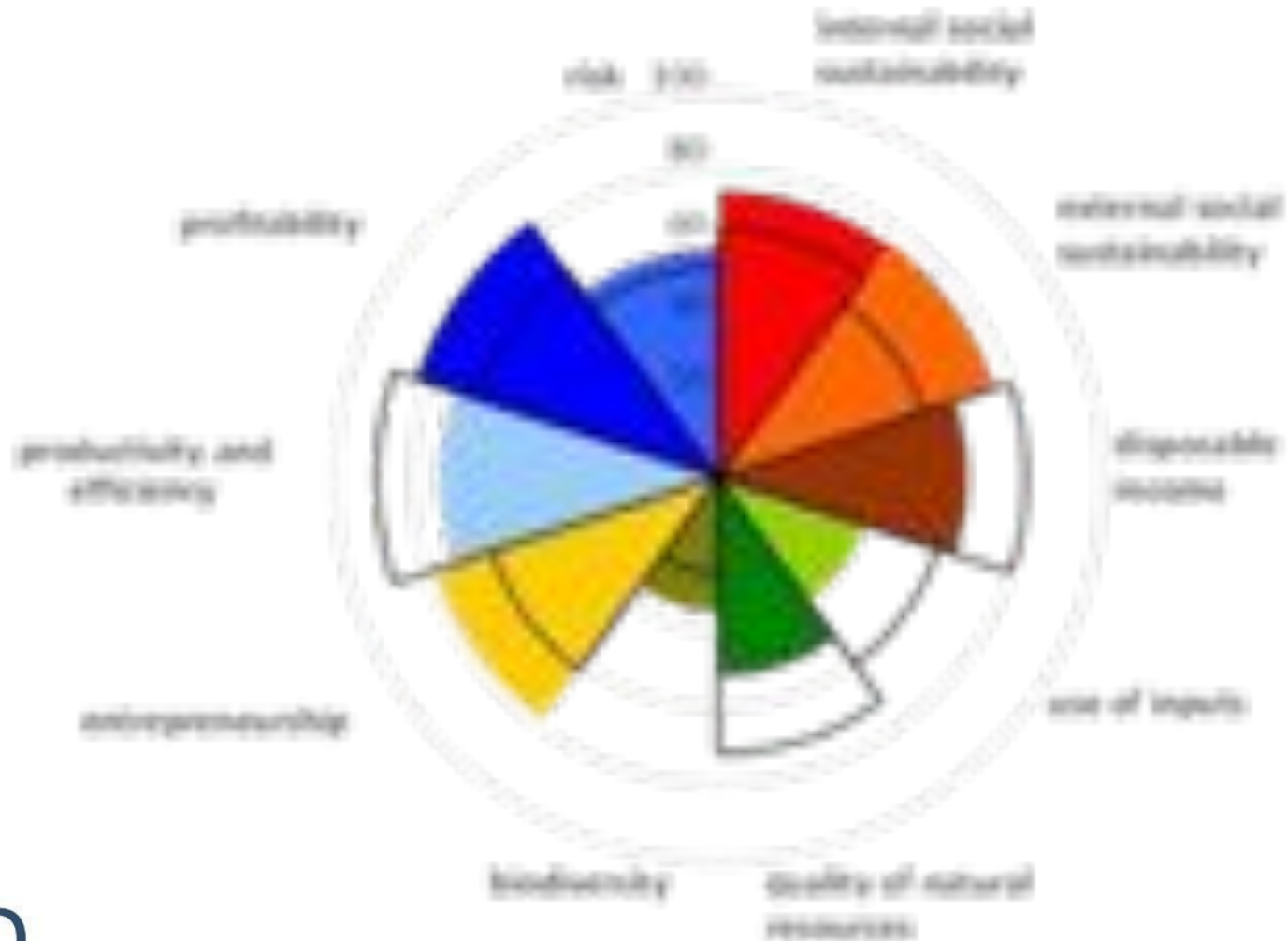
MONITORING TOOL FOR INTEGRATED FARM SUSTAINABILITY

Goals:

- to **communicate** about sustainability
- to measure and **monitor** sustainability
- to motivate farmers and **support** them in their **farm management**

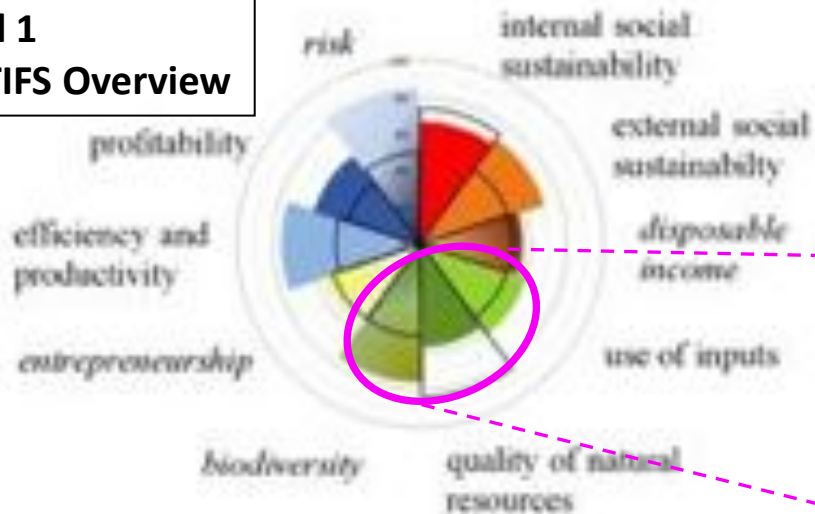
1 MOTIFS

MONITORING TOOL FOR INTEGRATED FARM SUSTAINABILITY

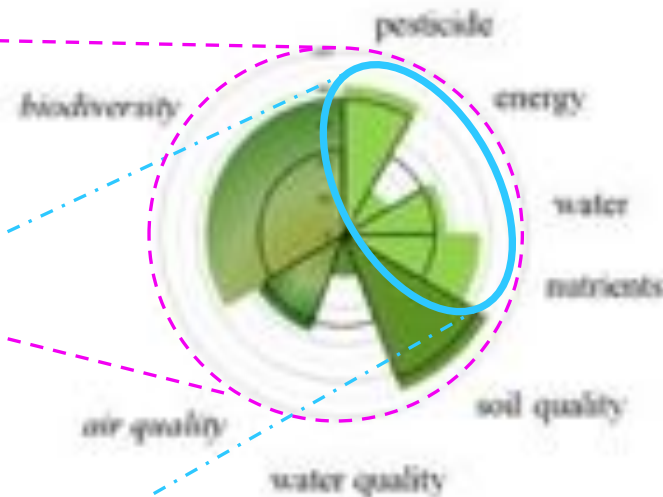


1 MOTIFS

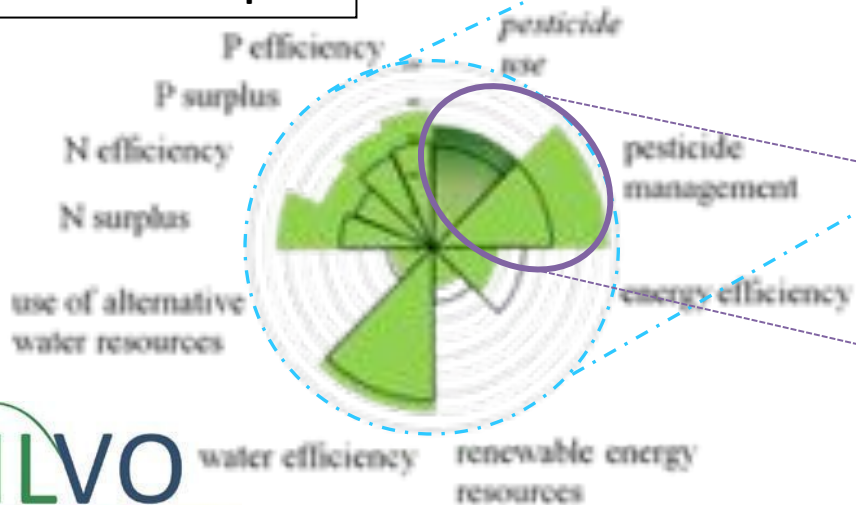
**Level 1
MOTIFS Overview**



**Level 2
MOTIFS Environmental**



**Level 3
Theme 'Use of inputs'**



**Level 4
Indicator Values**

① MOTIFS

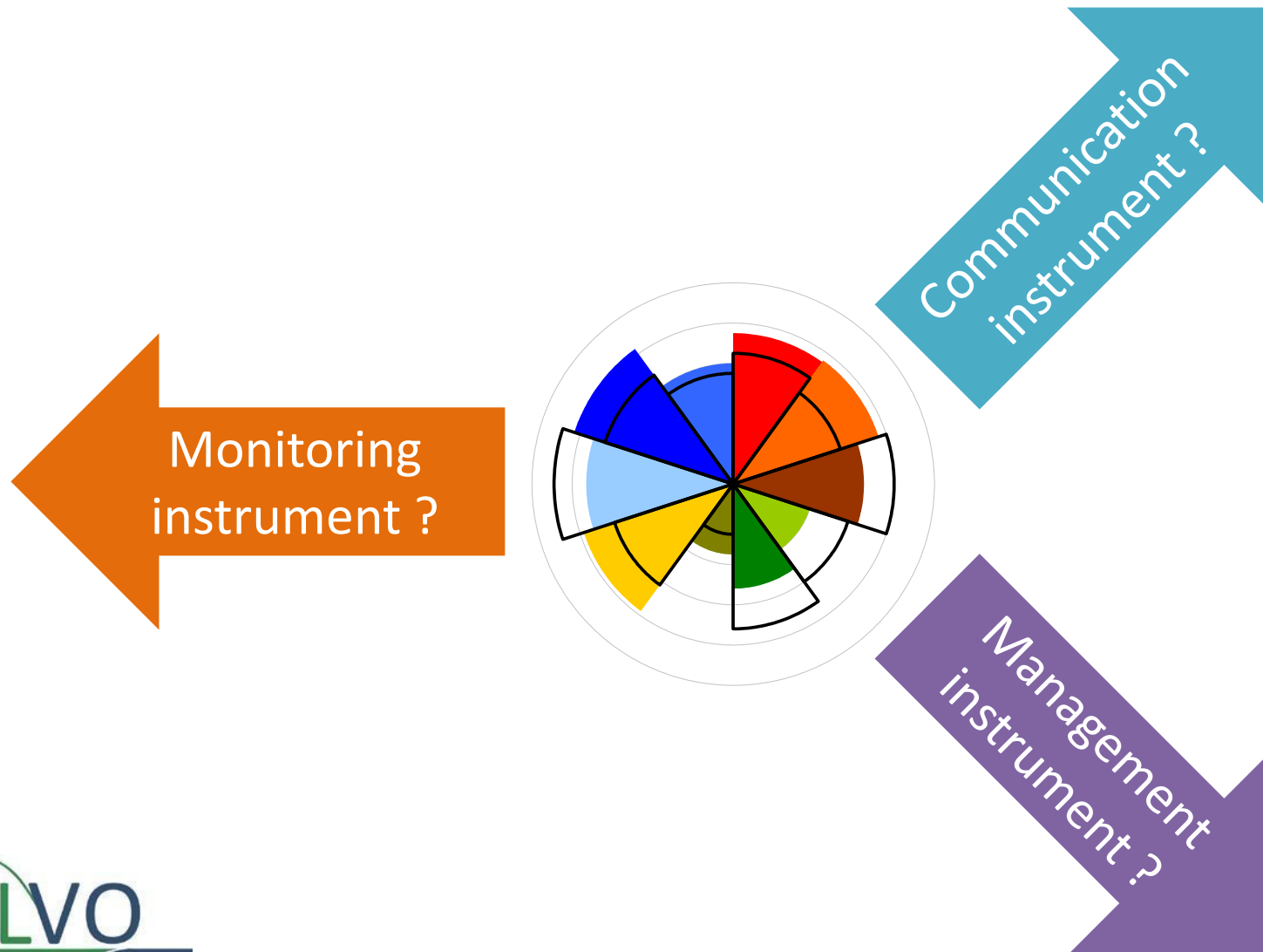
IMPLEMENTATION & VALIDATION

Dairy farms

- “Strong with milk” (*Sterk met melk*) (2006-2008)
- “Dairy Café” (*Melkveecafé*) (2009-2010)
- Private farm accountancy groups (2009-2010)
- Cows put out to pasture ↔ zero grazing (2012)

① MOTIFS

LESSONS LEARNT FROM DEVELOPMENT PROCESS

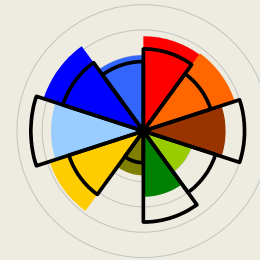


① MOTIFS

LESSONS LEARNT FROM DEVELOPMENT PROCESS

Communication instrument

- Visual representation: power of the image!
- Enables comparison between farms
- Time consuming



Shown to be a useful aid in farmers' discussion groups and learning processes

① MOTIFS

LESSONS LEARNT FROM DEVELOPMENT PROCESS

Monitoring instrument

- Indicators for measurement of most aspects
- Not for all aspects quantitative measures available!
(especially social aspects)

Individual indicators can be used for monitoring

① MOTIFS

LESSONS LEARNT FROM DEVELOPMENT PROCESS

Management instrument

- Highlights a farm's strengths and weaknesses
- Does not provide actual recommendations for innovation
- Advisor / expert coaching remains necessary

Supplemented with an advisor's knowledge it can be used as a decision support system

① MOTIFS

LESSONS LEARNT FROM DEVELOPMENT PROCESS

Communication
instrument



All themes !
aggregated
representation

Monitoring
instrument



Aggregation
abandoned
Individual indicators

Management
instrument



Farmers need
• background info
• advisor input

Ownership !
Social setting !



② Dairyman



④ Sustainable
fruit farms



③ DISCUSS



⑤ Quick scans

2



DISCUSSION GROUPS EXPERIENCES REINFORCED

Themes determined
with stakeholders

Indicators to be discussed next
with farmers



Enhances feeling of ownership
Implementation in social setting

2



DISCUSSION GROUPS EXPERIENCES REINFORCED

Discussion groups organised on farms



Conclusions from implementations on dairy farms

- Farmers thought using **indicators** in discussion groups provided an **added value**
- They value the presence of an **advisor**
 - to help them with interpretation
 - to dig into background information and to relate indicators to each other
 - to suggest possibilities for improvement
- They would prefer **more support** from the advisor when executing innovations on their farms **afterwards**

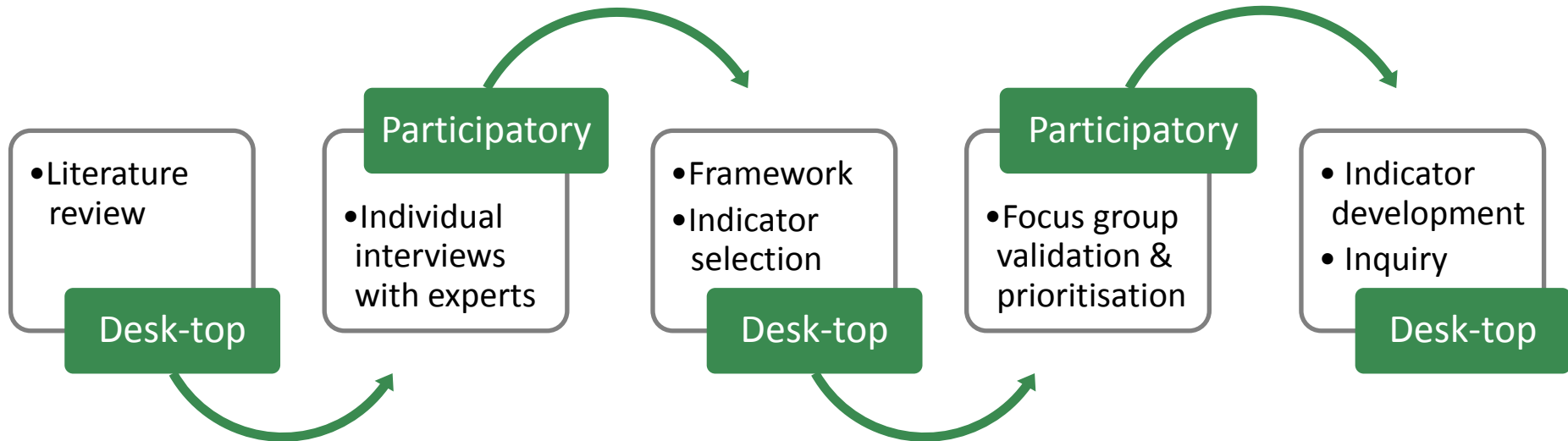
③ DISCUSS



Dual **I**ndicator **S**et for **C**rop protection
Sustainability **S**urveys

3 DISCUSS

DESIGN



3 DISCUSS

• Avoid chemical crop protection

• Choose the least harmful PPPs

• Comply with PPP legislation

• Avoid PPP resistance

• Take safety precautions

• Avoid point pollution

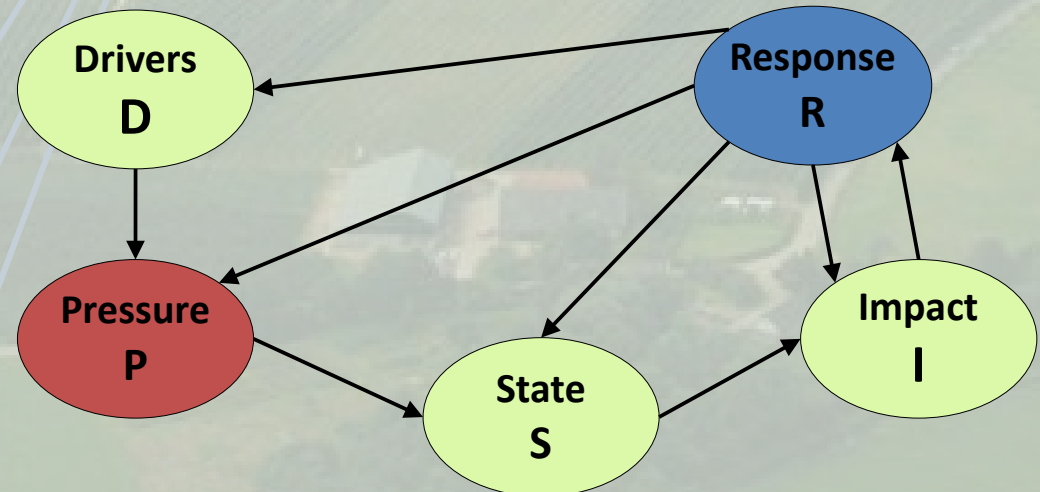
• Avoid diffuse pollution

PIAS

POCER

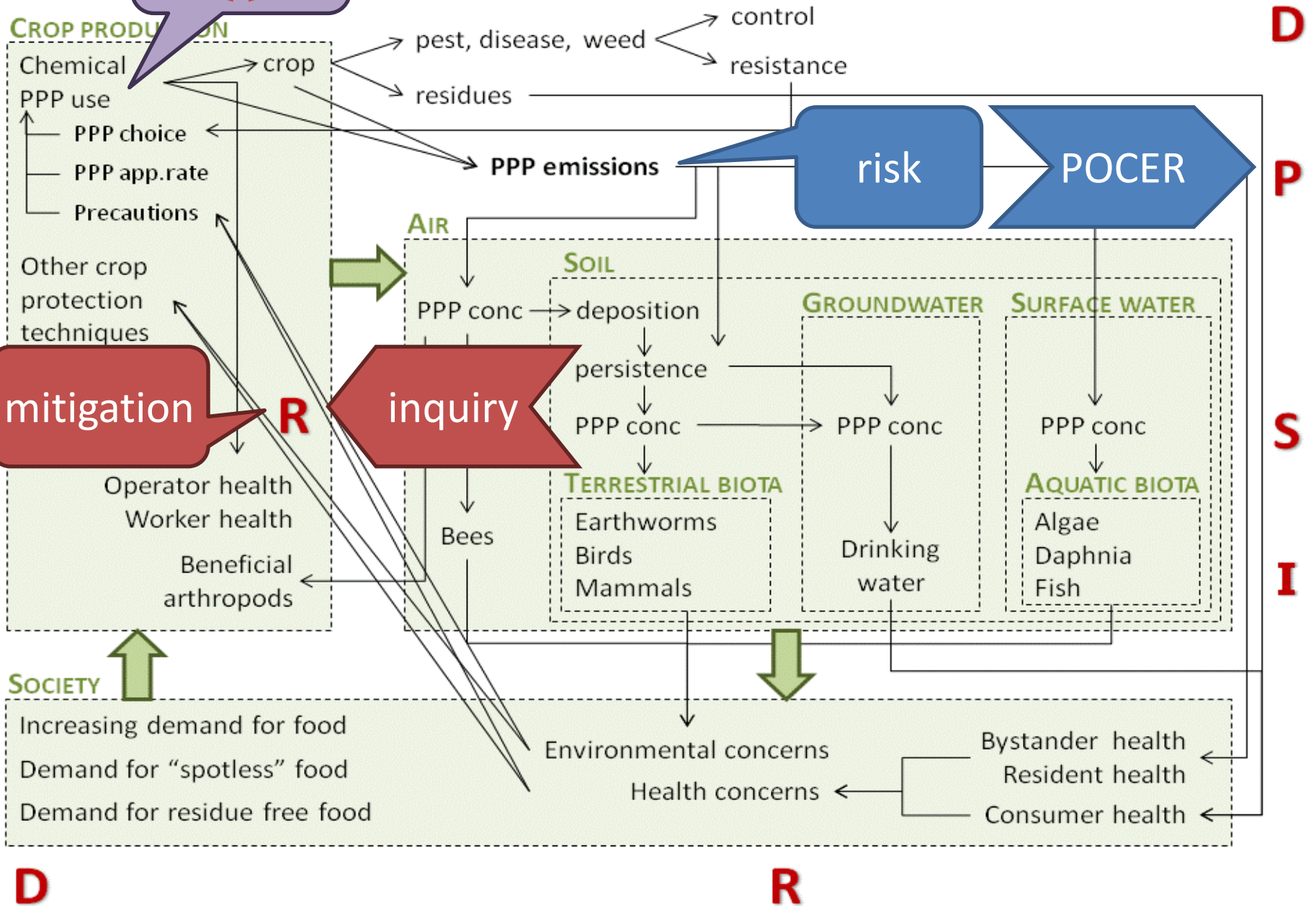
Questionnaire

Dual indicator set



volume

3 DISCUSS: Indicator types



3 DISCUSS: specific indicators

POCER (Pressure)		QUESTIONNAIRE (Respons)	
HUMAN HEALTH	Operator	Knowledge & info acquirement	K-A-A
	Worker	Awareness environmental effects	
	Bystander	Attitude towards pollution paths	
	Resident	Prevention diseases/pests/weeds	IPM
	Consumer	Monitoring & risk-evaluation	
ENVIRONMENT	Persistence	Alternative crop protection	HUMANS
	Groundwater	Choice of chemical pesticides	
	Aquatic organisms	Resistance management	ENVI- RON- MENT
	Earthworms	Safety of operator & others	
	Bees	Infrastructure & equipment	
	Beneficial arthropods	Point pollution prevention	
	Birds	Diffuse pollution prevention	

3 DISCUSS

IMPLEMENTATION

- In farmers' **discussion groups**
- Preferably in collaboration with an **extension research centre**
~ advisors



Applied Scientific Research (TWO)

Zoology (pests)
Mycology (diseases)
Pomology (plant growth)
Environment and Technology

Experimental Garden (PPS)

Variety testing
Crop management

Services Companies (DAB)

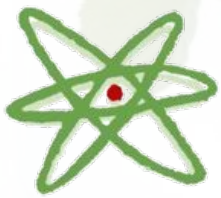
Proof of principles,
Development trials, Official
efficacy testing (GEP),
Phytotoxicity, Resistance
monitoring, ...

Services to Growers (DAT)

Individual support on crop
protection, IPM, nutrition,
irrigation, pruning,

Experimental Garden for strawberry and small fruits (PAH)

Variety testing
Crop management



PCFruit – DAT: Independent advise for growers

Individual farm counselling
apple, pear, cherry

Leaf and fruit analysis
for fertilisation and storage advise

Group meetings on farms

Prediction &
warning

④ Sustainable fruit farms

DETERMING FACTORS - INDICATORS - HOT ISSUES

- Which factors determine sustainability on fruit farms?
- How can we assess them?
- Do they provide leads for improvement?





ECONOMY

**FRUIT
PRODUCTION**

ECOSYSTEM

SOCIETY

④ Sustainable fruit farms

SELECTION SUSTAINABILITY THEMES



④ Sustainable fruit farms

SUSTAINABILITY THEMES

Economy	Environment & ecology	Social aspects
Productivity	Crop protection	External social sust.
Risk	Energy	Internal social sust.
Selling price	Water	
Profitability	Biodiversity	Entrepreneurship
Stability	Waste	
	Nutrients	
	Soil quality	

④ Sustainable fruit farms

INDICATORS

Dimension	Theme	Indicators
Environment & ecology	Crop protection	Pressure from PPPs Crop protection management
	Energy	Energy efficiency Energy sources
	Water	Water efficiency Water sources Water quality
	Biodiversity	Associated biodiversity
	Waste	Waste prevention Waste handling

④ Sustainable fruit farms

FULL SCAN ↔ QUICK SCAN INDICATORS

Entrepreneurship

- **Full scan** = 24 p. questionnaire on 7 themes
(1) Vision – strategy, (2) Planning – organisation – monitoring – evaluation, (3) Information searching - networking – collaboration, (4) Risk management, (5) Recognizing and making use of opportunities, (6) Innovation, (7) Technical craftsmanship
- **Quick scan** = 4 questions on 2 main themes

	yes	partly	no
Have you got a clear long term vision and strategy for your farm?			
Have you got a short or medium term planning for implementing measures to improve your farm's economic performance			
measures to improve your farm's environmental performance			
measures to improve your farm's social performance			

5 Quick scans

BOERENBOND

- Developed with stakeholders, i.e. the farmers' union
- **Communication instruments!**
raise awareness about sustainability
- Needs to be shown whether they point in the same direction as full scans

Conclusions

- We have a toolbox of indicators ready for use
- ≠ indicators for ≠ purposes
- Useful tools in social learning about sustainability

