

Managing sustainable primary food production: farm map as a tool of risk identification

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Introduction

- Purpose is to model and test management tools for farm producers
- The case of map tests to identify environmental risks



Introduction

Demands of rapid changes in

- technology,
- markets,
- farm unit size,
- strategies,
- industry structure,
- consumer preferences
- increasing environmental concerns

**are challenging primary food producers
managerial abilities and are threaten
farming sustainability and security.**

(FAO 2003, Suutarinen 2003, Wagner 1998)



Introduction

Risk management and sustainable management work well for the same direction –

- Preventing damages
- Consideration of the **future** events and future generations.

(FAO 2003)



Sustainable food chain: Prevent harmful effects on farm to table chain and environment!



Methods

How could farmers best manage the entity of farm risks in practice?

- How the tool or model promote the risk identification on farm and gives useful management information?

- Problem

Modelling the farm processes and farm risk categories

- Case farms: crop, milk, meat and vegetable producers

- Solutions

Modelling the information gathering tools for the farm risk management

Testing the tools with the case farmers

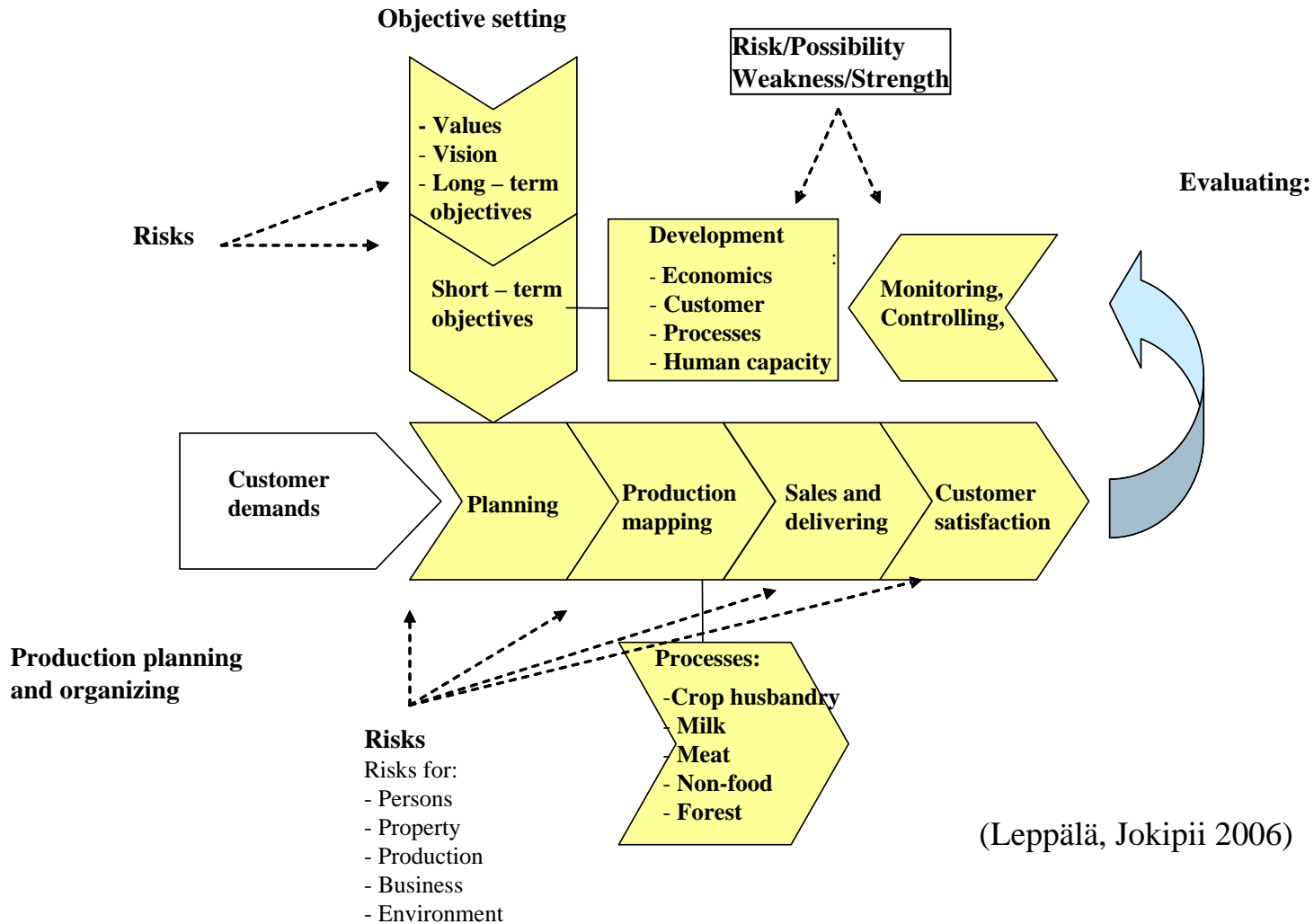
- Workshops,
- Exercises
- Farm visits

- Testing

Theoretical connections and contributions



Framework for tool analysis



Testing environmental risk assessment with a farm map

Objective setting assumed: Environment is valued by business utility, human, existence or mythical value point of view (Pietarinen 1997).

Applied framework for the map test:

- Objective defined in advance as existence value within a list of environmental risks
- Risks affect to water, air or land caused by wastes, emissions, smell and noise
- Identify risks which threaten the defined objectives by numbering them to the map
- Evaluate risks and do prioritization
- What controlling operations has been/can be done?
- Comments



Results

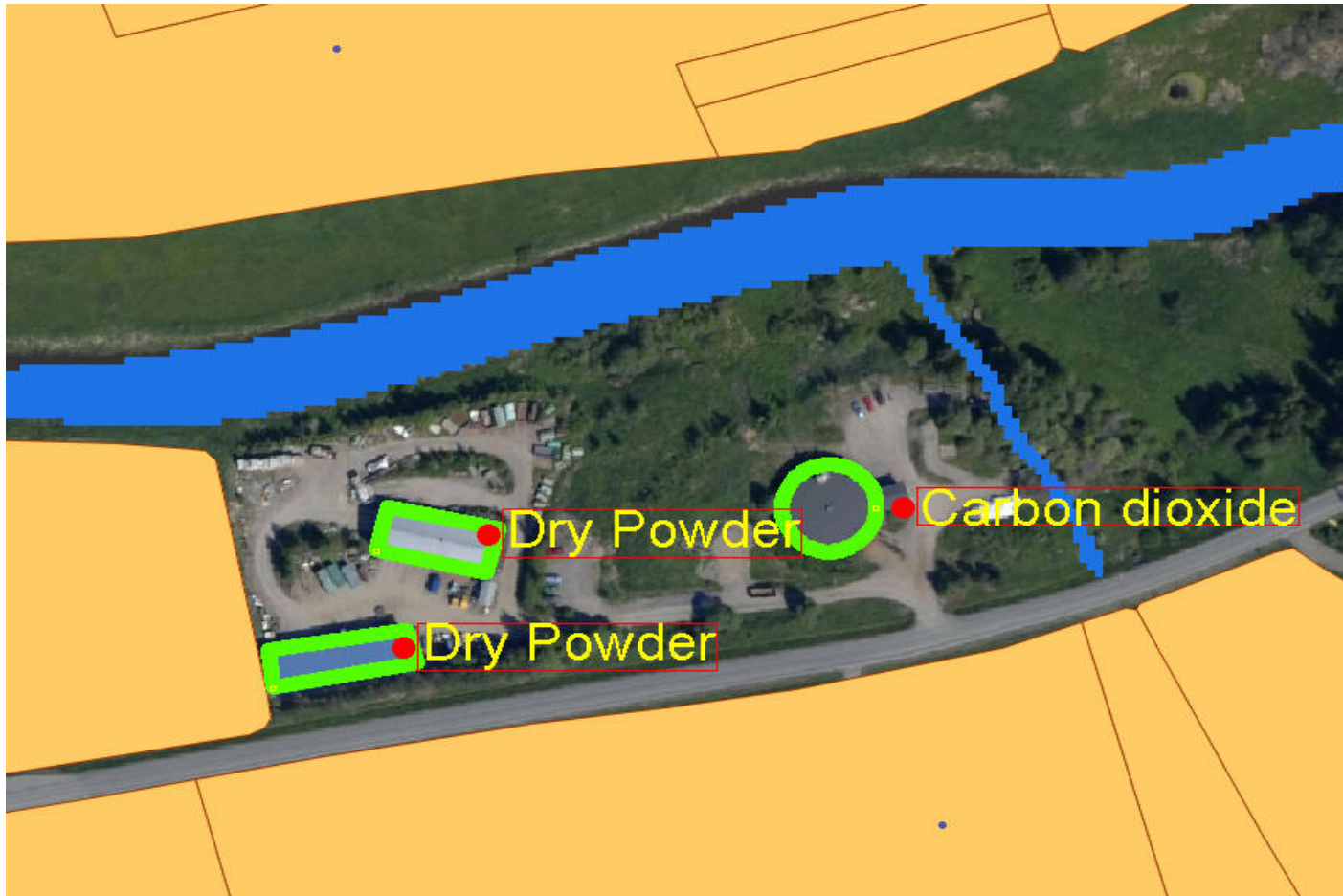
Observations	Conclusions
<p data-bbox="382 244 864 334">-Identified risks were very diverse</p> <p data-bbox="382 419 891 509">-Farmers identified 27 risks in 15 minutes</p> <p data-bbox="382 595 845 795">-Risk identification needs information about production type, size and processes</p> <p data-bbox="382 881 864 1219">- Worst risks in own farm: Oil leaks and stealing Traffic through the farm Pesticides Dust Fire risk</p>	<p data-bbox="953 244 1448 334">-Risk consequences may be unclear at the farm level</p> <p data-bbox="953 419 1315 509">-All risks weren't environmental risks</p> <p data-bbox="953 595 1454 733">-Assistance tool was needed for evaluation and controlling the risks</p> <p data-bbox="953 819 1477 1019">-Work processes and background information should be included in framework setting</p> <p data-bbox="953 1105 1462 1195">-Map tool can help to figure many kind of risks</p>



- Spatial database brings new possibilities to graphically present risky places, centres of risk and the effects of risks.
- Assistance tools could be risk checklists, process or operation analysis and walk-through checking.
- Spatial database contributes the use of holistic perspective on environmental issues.
- Information collection for documentation is possible by using GIS – map tools.
- Environmental performance information and other sustainability issues can locate in to the graphical map and easy to use database for reporting.



Further study with GIS - tool



Thank you for your attention!

