



Building Resilience for
Adaptation to Climate Change
in the Agriculture sector

Crop production in a northern climate

Helena Kahiluoto

FAO / OECD WORKSHOP

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Outline

- Why a new strategy
- From assessment to enhancement
- Determinants for adaptive capacity of agrifood systems
- Cropping in a northern climate

Why a new strategy?

- Climate change with its indirect consequences
 - Market turbulence, global integration
- Complexity and uncertainty!

Predict → adapt?

Determining risks → prepare?

From assessing to enhancement

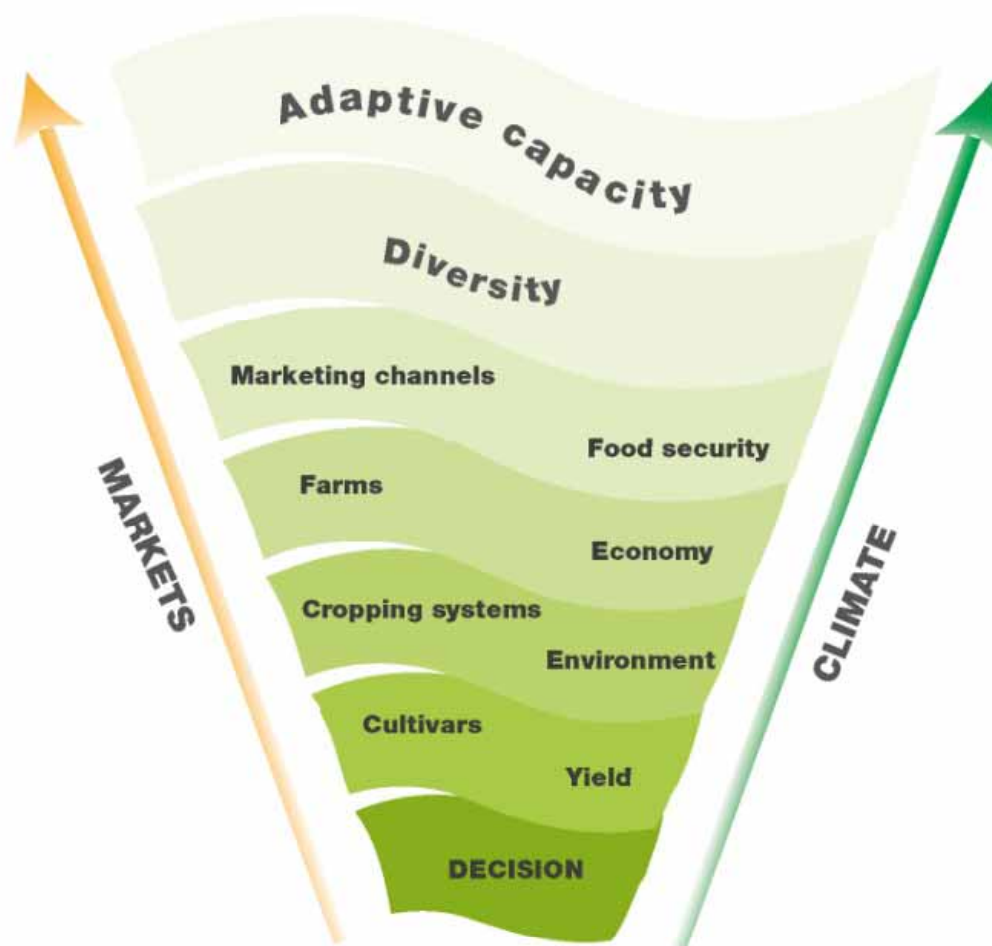
- From conceptual work to empirical assessment
- From indicators to assess towards means to enhance

– TOOLS FOR ACTORS!

Research questions

- What are the determinants for adaptive capacity of agrifood systems?
- Does diversity enhance resilience / adaptive capacity?
- Is there trade-off between diversity and efficiency?

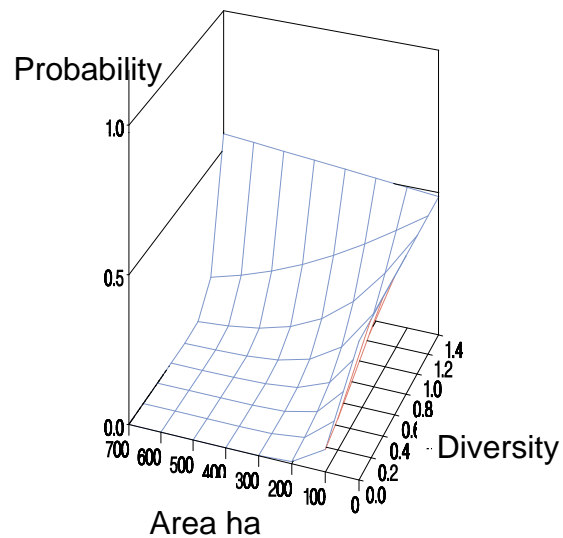
UNCERTAIN FUTURE



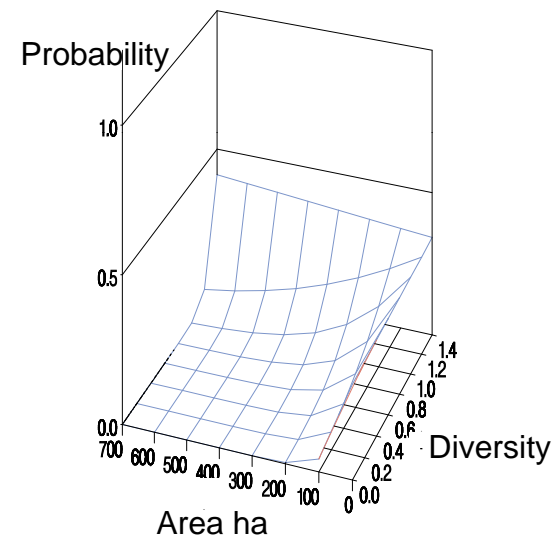
Determinants for adaptive capacity of food supply chain

- Adaptive capacity - a new view with value added
- Understandable through practical examples
- Transparency, dialogue – social capital
- Innovativeness, learning – social learning
- Energy and nutrient sovereignty, energy efficiency

Dependence of revenue on income source diversity



Farm has
forest income



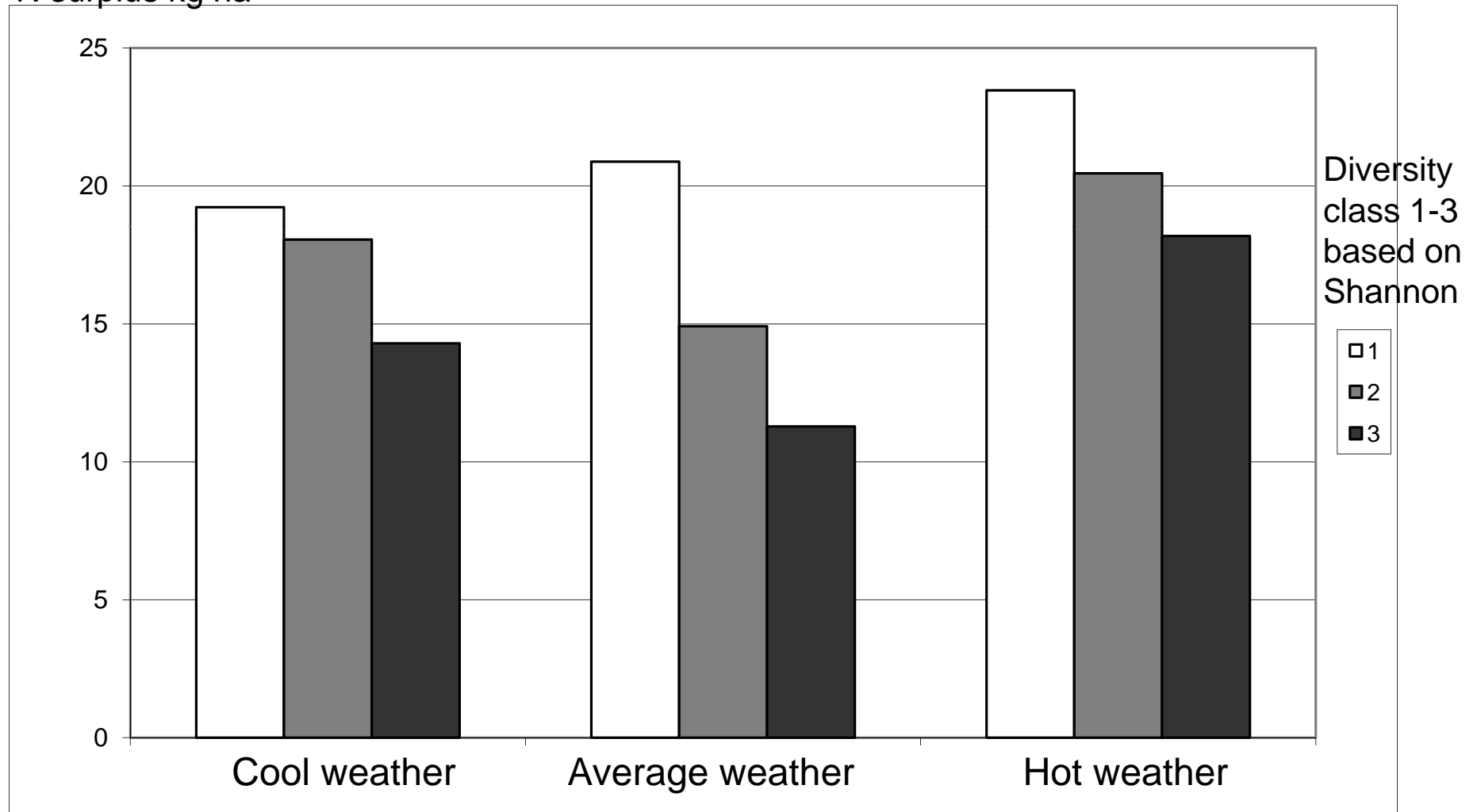
Farm has no
forest income

Farm resilience vs. efficiency

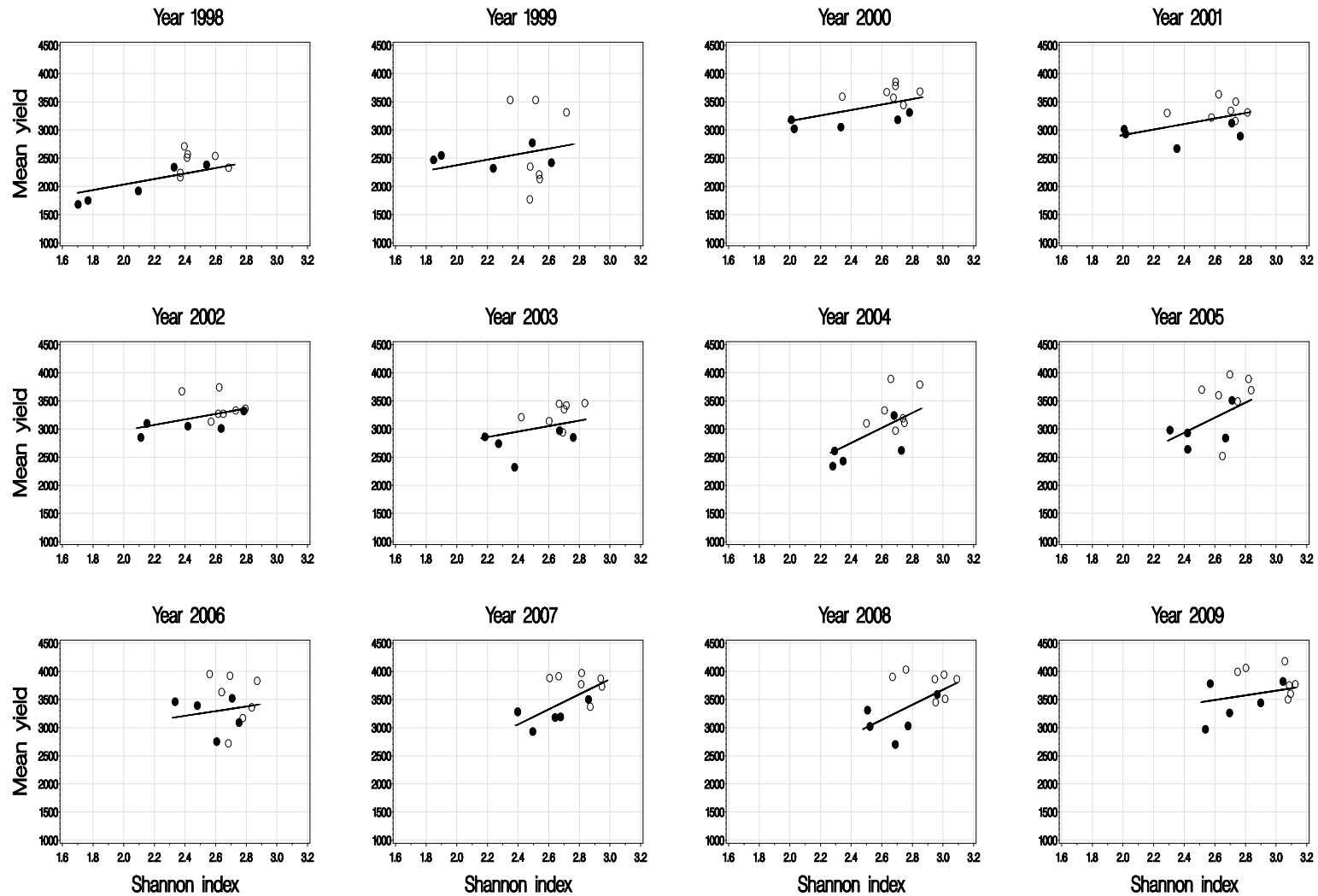
- No trade-off in land use diversity vs. resource use efficiency
- Not even in a stable situation
- Diversity does not constrain efficiency
- Decisive, what kind of diversity (system management)

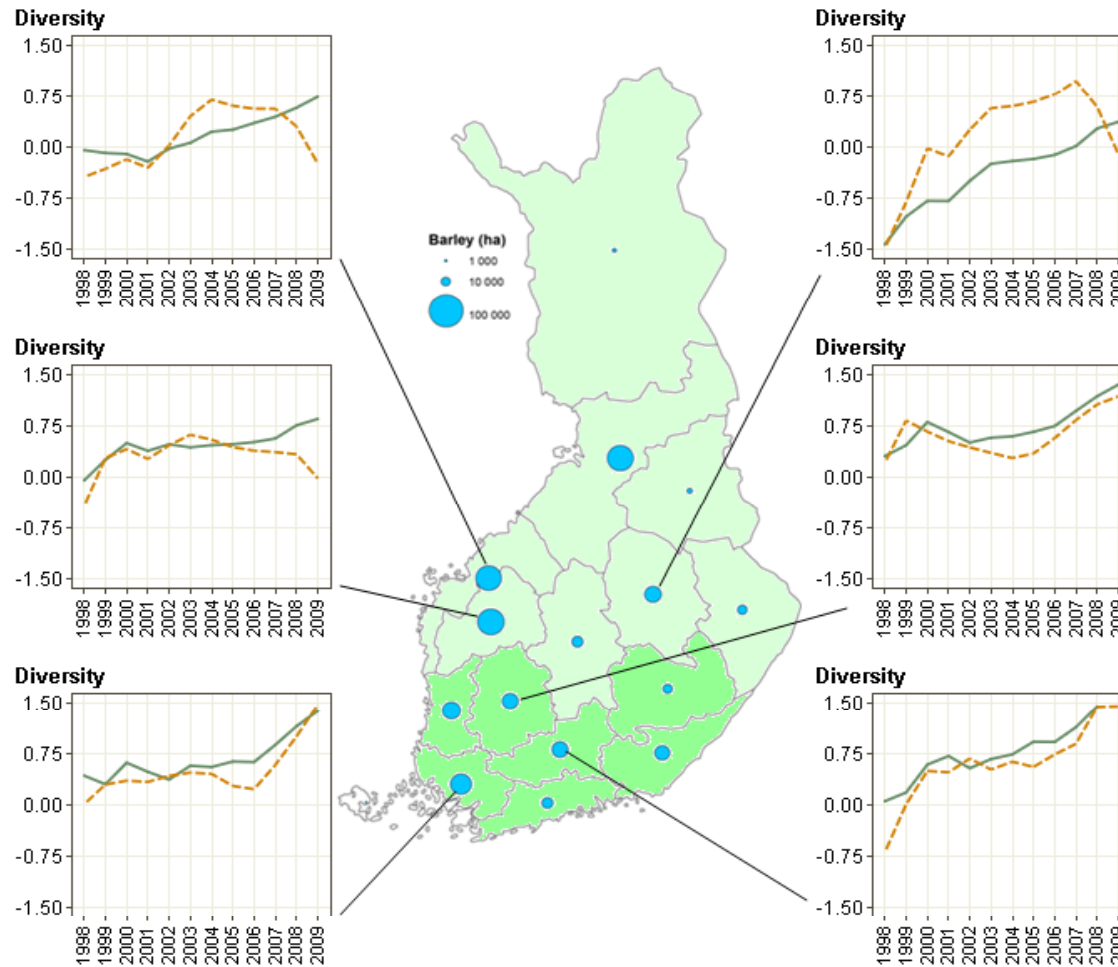
N surplus depending on farm crop diversity

N surplus kg ha⁻¹



Barley cultivar diversity and regional yield





Standardized Shannon Weaver indices for barley cultivar type diversity (continuous line) and response diversity (dashed line). Development in regions with the smallest and greatest disparity between these two indices since 2006 is shown. Dark green indicates regions with small and light green with a great disparity. The size of the circles illustrates barley cultivation area in 2005-2009.

Conclusions

- New approach gives 'value added'
- Sovereignty, dialogue and social learning
- Targeted diversity offers tools
- Efficiency can be combined with diversity

Thank you!

www.mtt.fi/adacapa

helena.kahiluoto@mtt.fi