HIGH NATURE VALUE FARMING: FROM INDICATION TO CONSERVATION

Sebastian Klimek[a], Doreen Gabriel[b], Jens Dauber[a], Sabrina Jerrentrup[a], Stefan Mecke[a], Michael Strohbach[c]

[a]Thünen Institute of Biodiversity, Braunschweig, Germany,
[b]Julius Kühn Institute, Institute for Crop and Soil Science, Braunschweig, Germany
[c]Humboldt-Universität zu Berlin, Department of Geography, Berlin, Germany

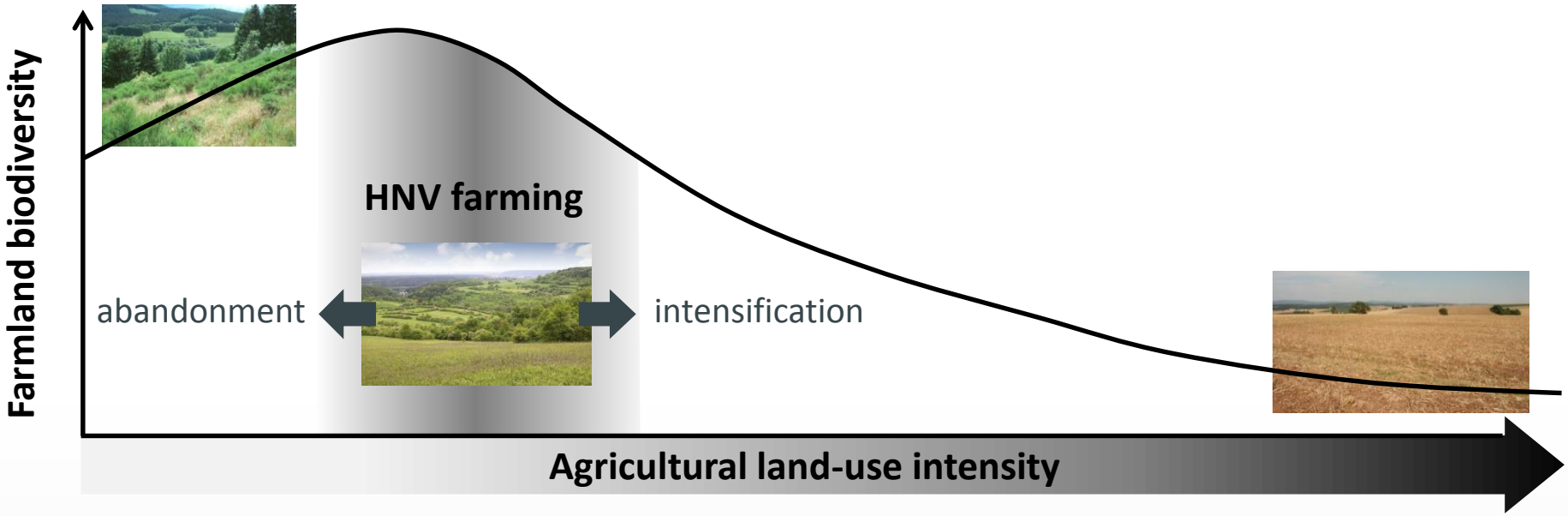
EEF 2015 - ECOLOGY AT INTERFACE, ROME, ITALY

24 SEPTEMBER 2015

Outline

- Putting the concept into a conservation ecology perspective
- Setting the scene: Indication and conservation of HNV farmlands
- Steps taken at the national level: Modelling the spatial distribution of species-rich farmland
- Next steps and concluding remarks

Farmland biodiversity and agricultural practices

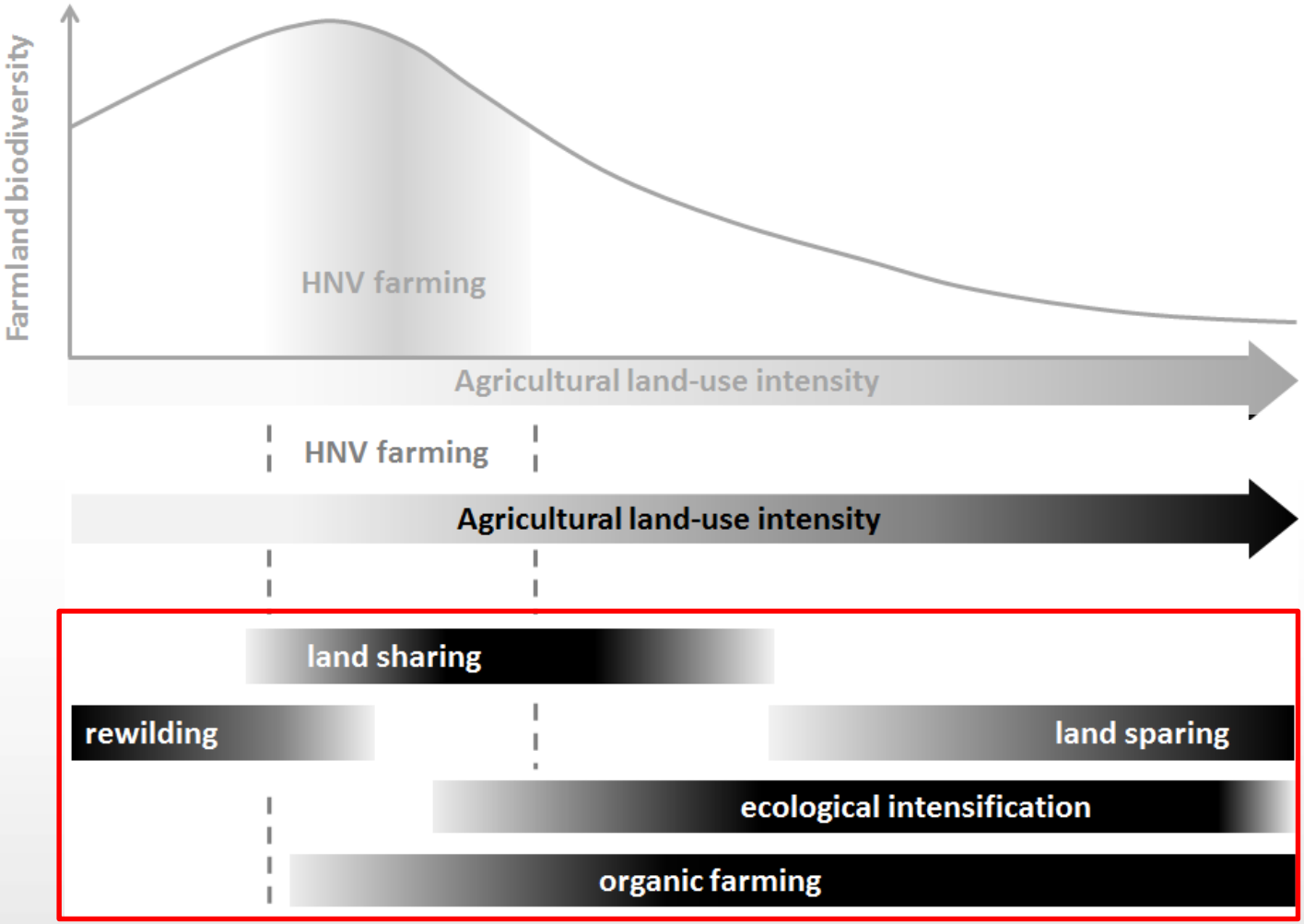


- Conservation of species-rich habitats and landscapes is to a large part linked to the continuation of low-intensity farming systems
- Supporting and maintaining HNV farming has been a priority for EU rural development policy since 2005

modified after Hoogeveen et al. (2001)

Putting the concept into a conservation ecology perspective

M. Strohbach



Strohbach et al. (2015) Ecological Indicators

THÜNEN

Setting the scene: HNV farming and EU common agricultural policy

- Agri-environment schemes (AES) key policy tool to halt or reverse negative farmland biodiversity trends
- Mixed effects on farmland biodiversity

  Kleijn et al. (2006) Ecology Letters
- Current AES mainly failed to safeguard HNV farming systems

  Sutherland et al. (2010) Journal of Applied Ecology
- AES need to be tailored at regional scales depending on the landscape's structure and productivity, the size and composition of the available species pool and the underlying socio-ecological system
- To facilitate spatial targeting of AES, information on the spatial distribution of farmland biodiversity and its major drivers is a prerequisite

Aichi Biodiversity Targets

Strategic Goal A (Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society)

Target 3: "…incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed …, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied,… "

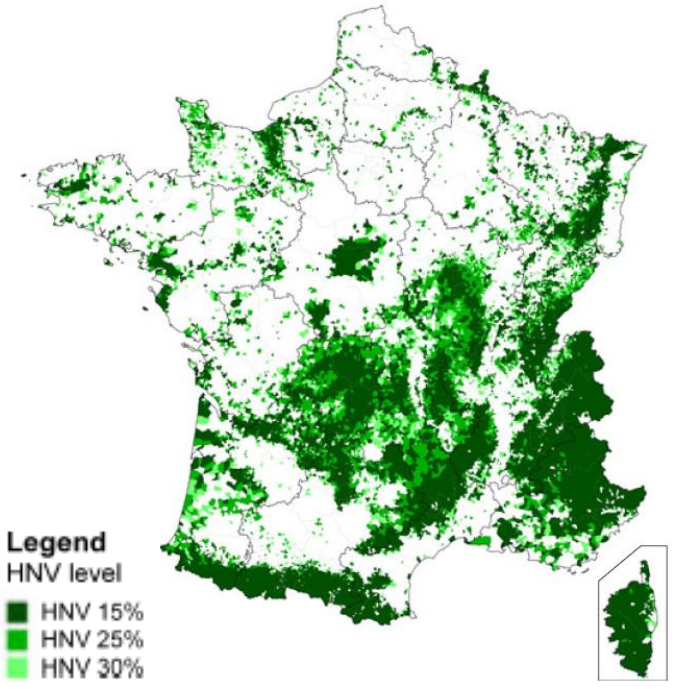
Incentives, including subsidies, harmful to biodiversity, eliminated, phased out or reformed in order to minimize or avoid negative impacts		No significant overall progress, some advances but some backward movement. Increasing recognition of harmful subsidies but little action
Positive incentives for conservation and sustainable use of biodiversity developed and applied		Good progress but better targeting needed. Too small and still outweighed by perverse incentives

→ Better targeting and integration of agri-environmental schemes and other policy instruments towards desired biodiversity outcomes is needed

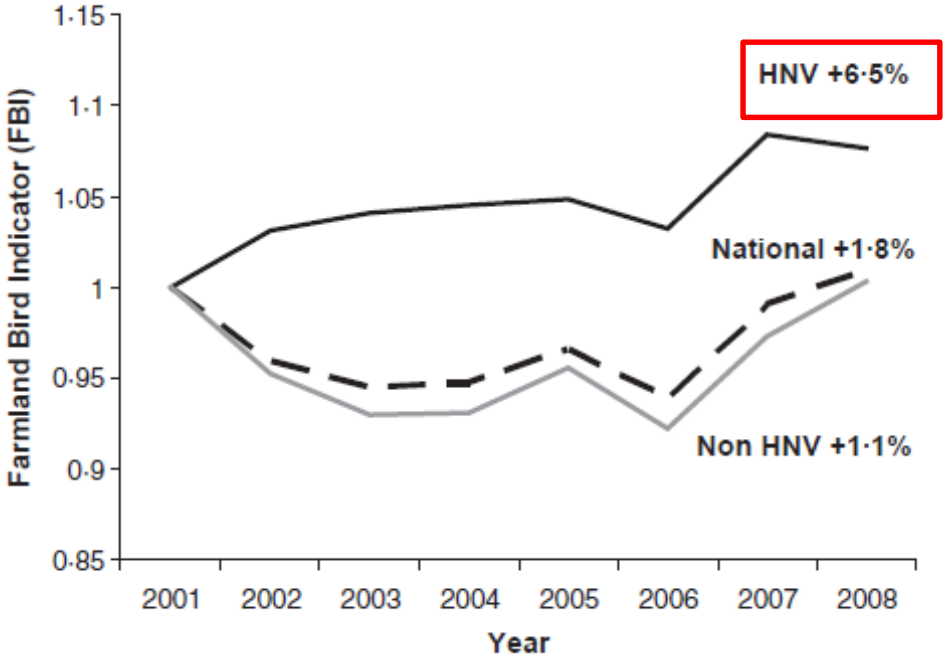
Secretariat of the Convention on Biological Diversity (2014) Global Biodiversity Outlook 4

THÜNEN

Low-intensity agriculture increases farmland bird abundances in France



Location of HNV farmland in France



The Farmland Bird Indicator for high nature value (HNV, black solid line) and non-HNV farmland (black dashed line)

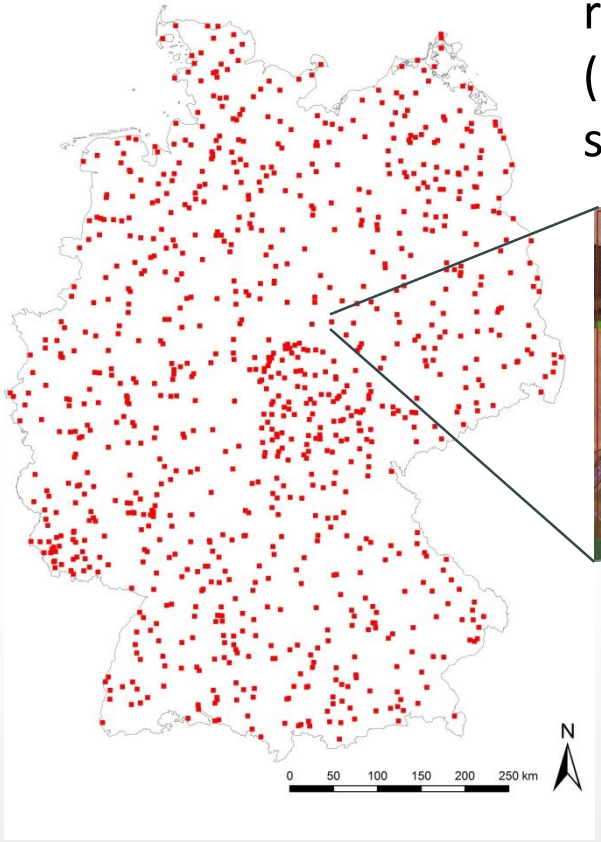
- Appropriate management of HNV areas is crucial for halting biodiversity loss
- Future measures aimed at maintaining HNV farmland and associated farming systems should shift from a species-specific to an ecosystem approach

Doxa et al. (2010) Journal of Applied Ecology

THÜNEN

Modelling the spatial distribution of species-rich farmland at national scale

D. Gabriel



Location of the 915 1-km² sampling areas in Germany (BfN 2009)

Data on species-rich farmland (plant indicator species)

species-rich farmland

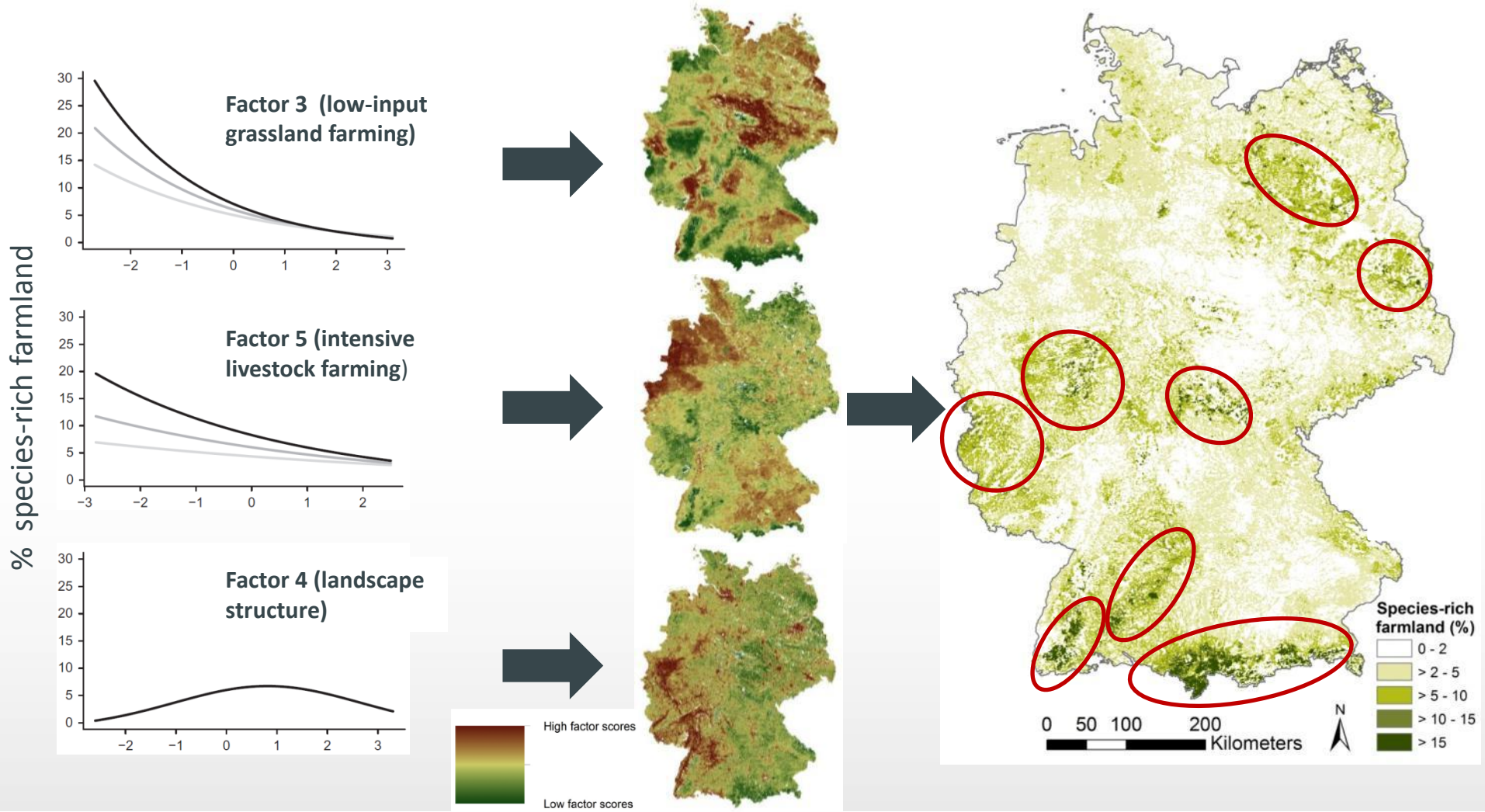
Agri-environmental variables (n=40)

- Topography
- Agriculture
- Landscape
- Soil
- Climate

THÜNEN

Identifying priority regions for conservation actions

D. Gabriel



Klimek et al. (2014) Biological Conservation

THÜNEN

Conclusions and policy implications


D. Gabriel

- The predicted share of species-rich farmland is highest in upland and structurally complex grassland-dominated regions where extensive livestock is practised
- The map can be used to facilitate the spatial targeting of conservation actions
- Priority should be given to sustaining low-input grassland farming by keeping farmers in business and preventing farmland abandonment



THÜNEN

Implications for delineating HNV farmlands


D. Gabriel

- The generated map of the spatial distribution of species-rich farmland makes a valuable contribution to identifying areas with a high probability of being HNV farmland
- The top-down mapping approach does **not** define HNV farming systems
  - course spatial resolution of GIS-data (municipality level, LAU 2)
- Data on other taxa (e.g. farmland birds) should be included

➢ To improve the indication of potential HNV farmlands, high resolution farm-level data (i.e. IACS data) and bird distribution data need to be considered (bottom-up approach)

Concluding remarks

- Good progress is being made towards assessing the extent of HNV farmland (fulfilling reporting obligations)
- To provide targeted financial support for HNV farming systems eligibility criteria are needed that reflect their characteristics
- What are the societal benefits (in terms of ecosystem service provision) best delivered by HNV farming?
- What are the social and economic threats to HNV farming and what measures can be used to overcome them?

Sutherland et al. (2010) Journal of Applied Ecology

http://www.ti.bund.de/de/bd/

THANKS FOR YOUR ATTENTION!

Sebastian Klimek
Thünen Institute of Biodiversity, Germany
E-Mail: sebastian.klimek@ti.bund.de

Acknowledgements

This research was partly funded by the German Federal Ministry of Education and Research (CC-LandStraD). Thanks to the German Federal Agency for Nature Conservation for kindly permitting us to use the monitoring data on HNV farmland.

CC-LandStraD Climate Change — Land Use Strategies
Federal Ministry of Education and Research
FONA Research for Sustainable Development BMBF
SUSTAINABLE LAND MANAGEMENT
THÜNEN