

Agriculture and rural areas, and their role in modern society

Some critical questions



Karlheinz Knickel

- Some questions to start with
- Societal demands
- New challenges
- Future research

Data and maps from Eurostat, ESPON, EEA, European Commission

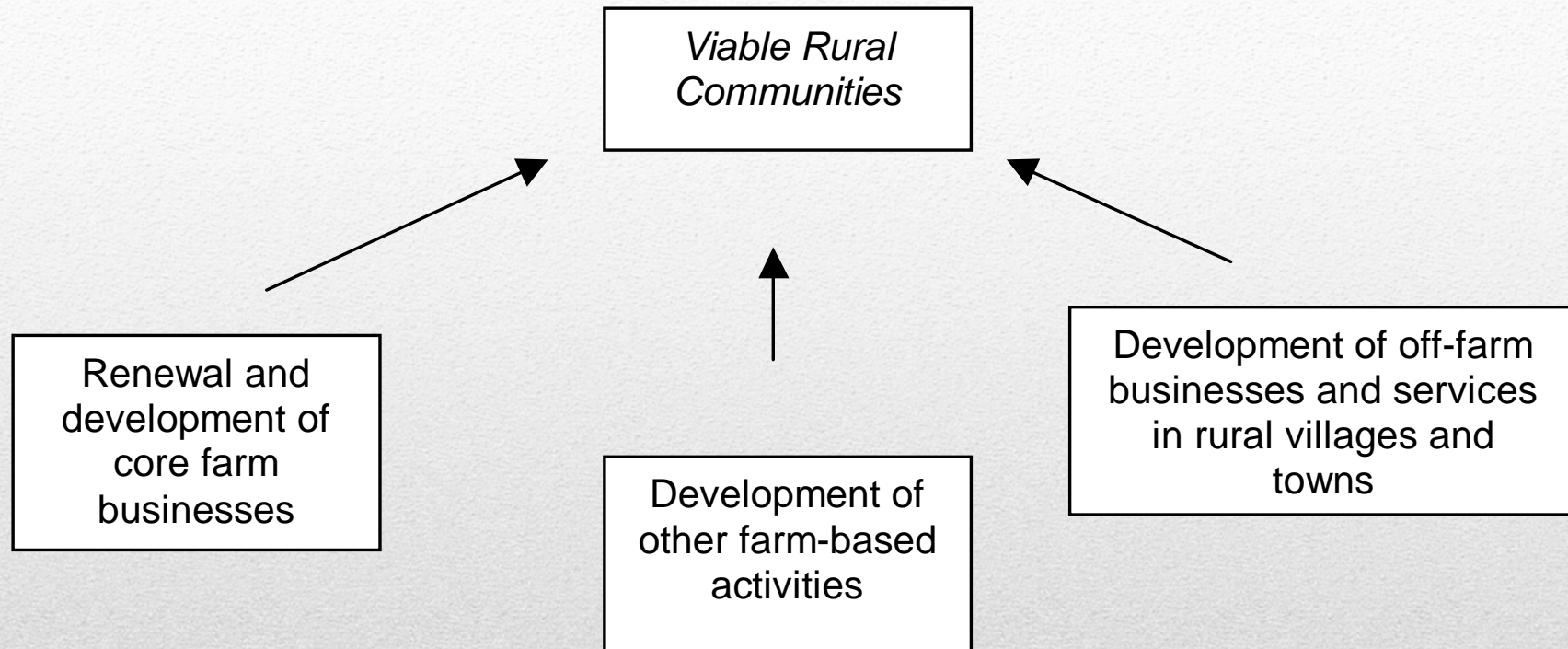
Overview



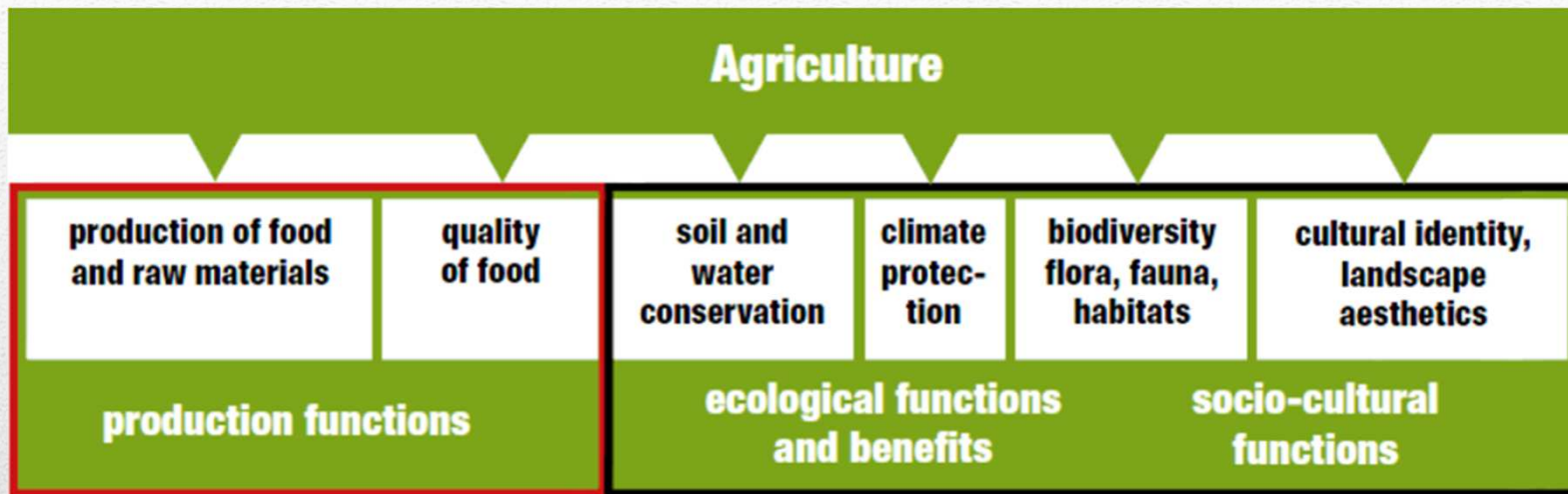
Is agriculture an economic sector like any other?



**What is the role of agriculture
in rural development, and in
modern society?**



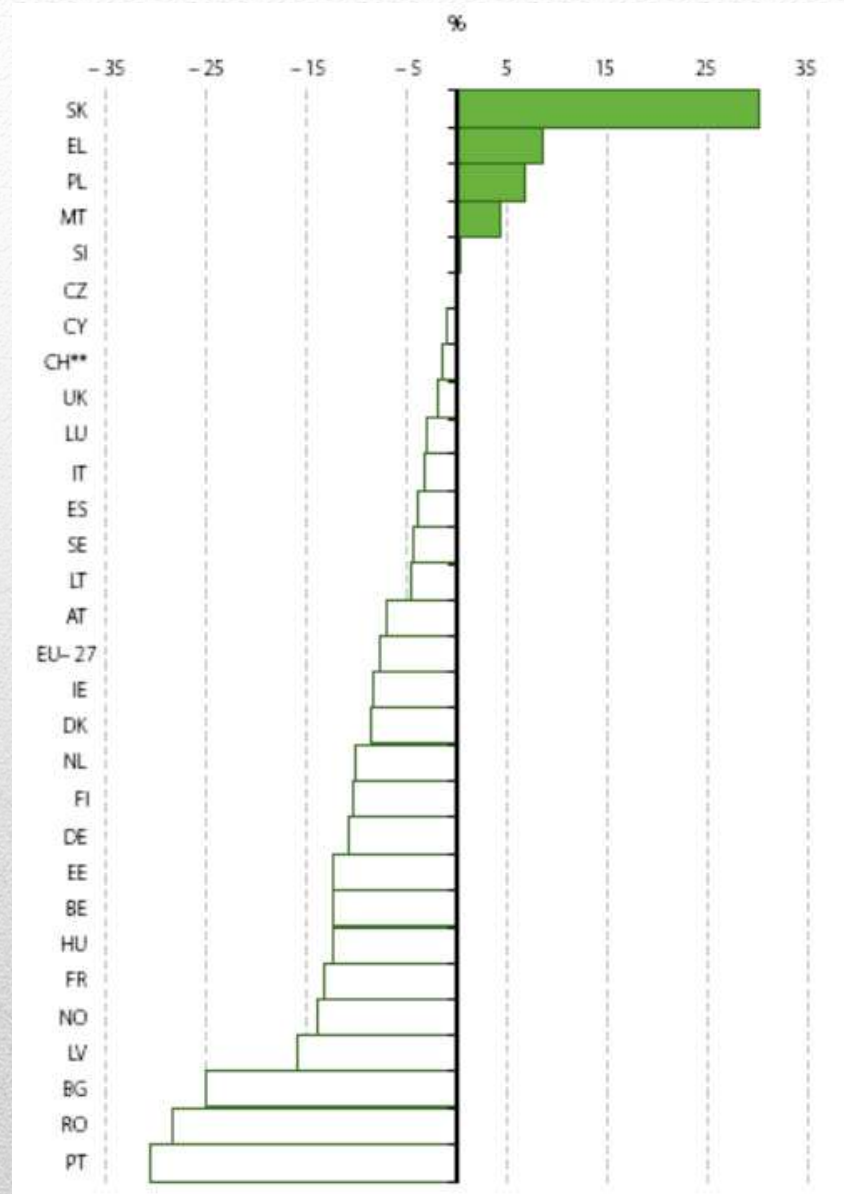
The living countryside



Multifunctionality of agriculture

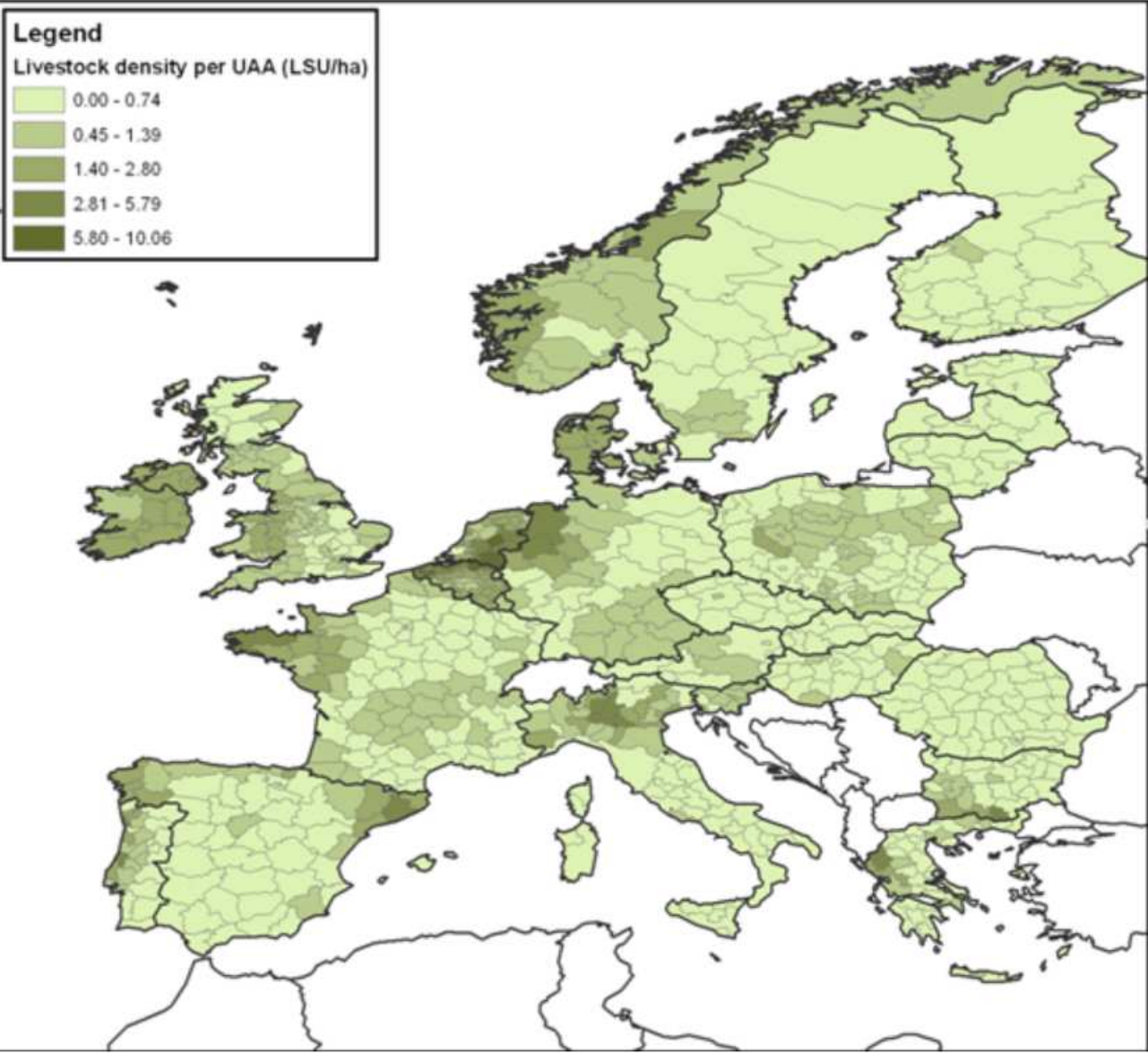


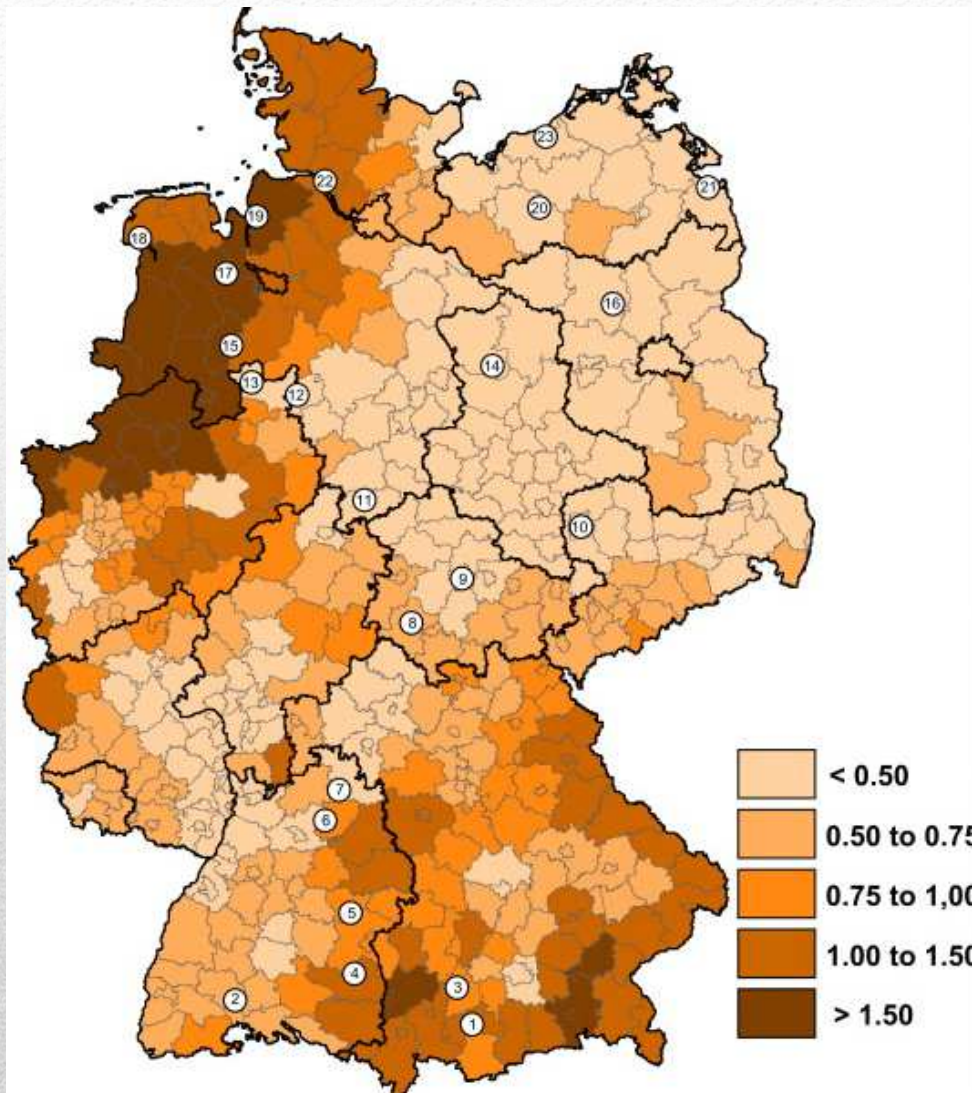
**What then is the meaning of
'agricultural development' and
'farm modernization'?**



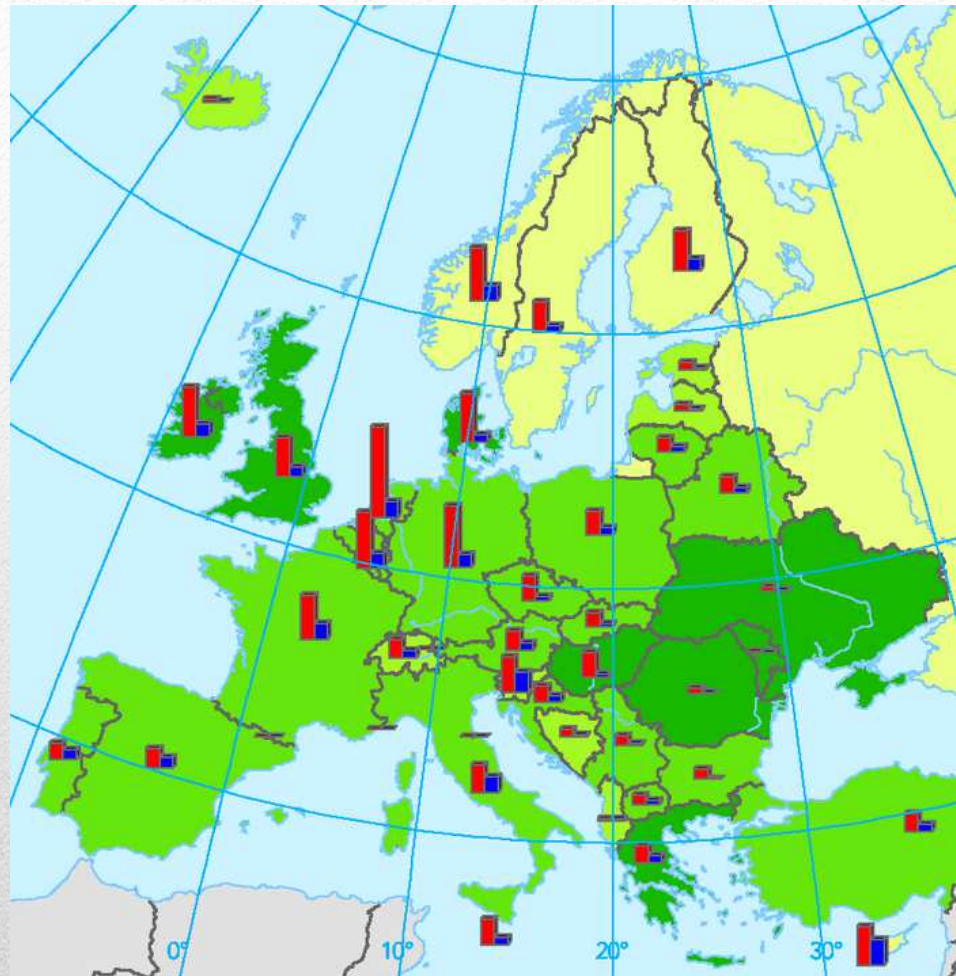
% change in number of holdings by country, 2003-2007

Graph created with data from April 2010






Livestock density
(LU/ha) in Germany
in 2007
(Source: vTI)



Fertiliser consumption
per agricultural land
area unit

Year 1999

Metric ton/100 ha


 Median = 8.7 ton

 Nitrogenous


 Phosphate


Agricultural land area
in % of total country
area

 0 –20

 20 –40

 40 –60

 60 –80

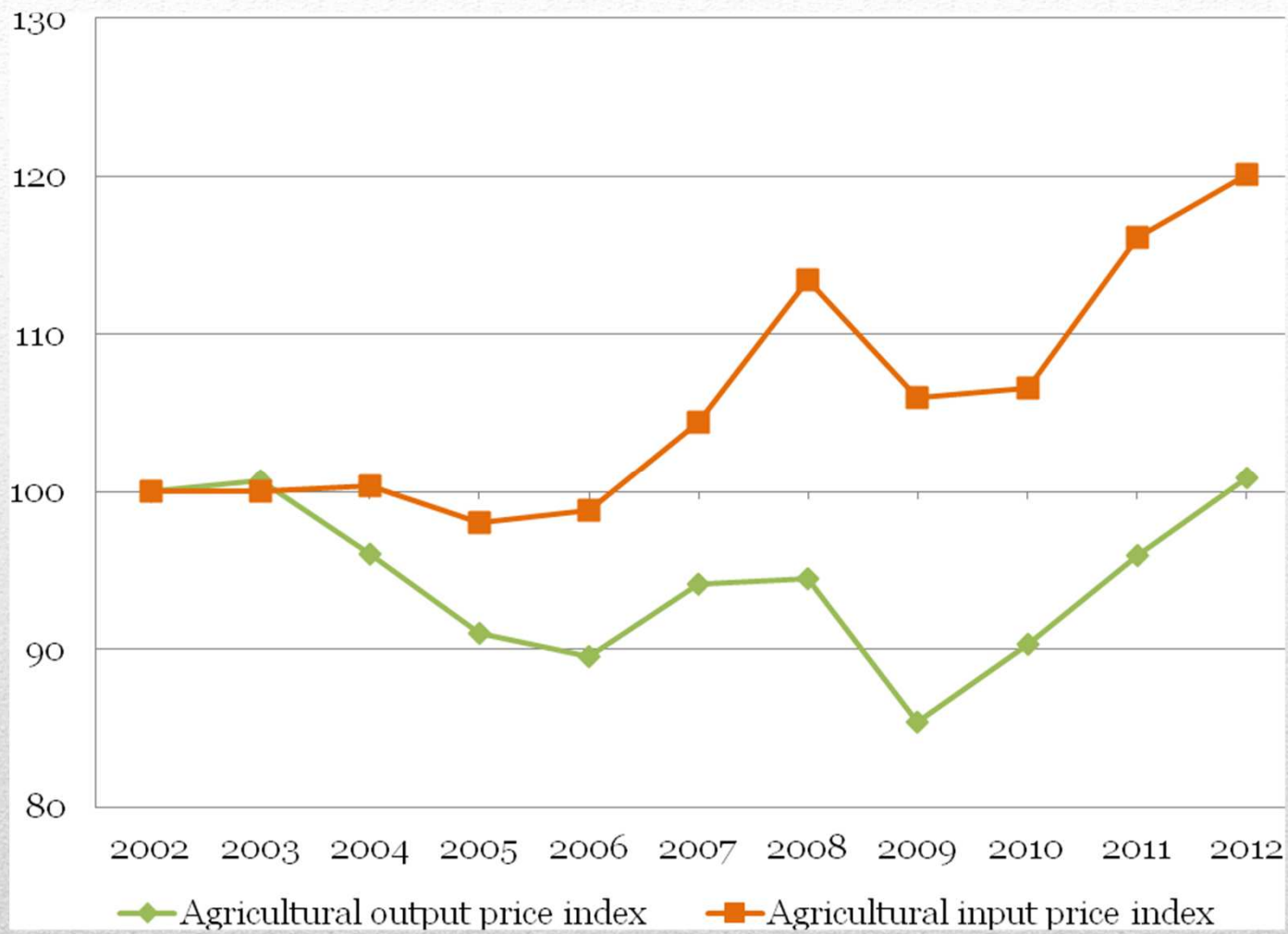
 Outside data
coverage

Source: FAO

Nitrogen and phosphate fertilizer consumption per agricultural land area unit

- Economic limits
 - European agriculture is struggling with a continuously deepening economic crisis
 - Stagnating returns and increasing costs in primary production
 - Downward spiral: production costs, producer prices, consumer prices
 - Increasing external / societal costs: unemployment, pollution, degradation of rural areas

Limits to rationalisation

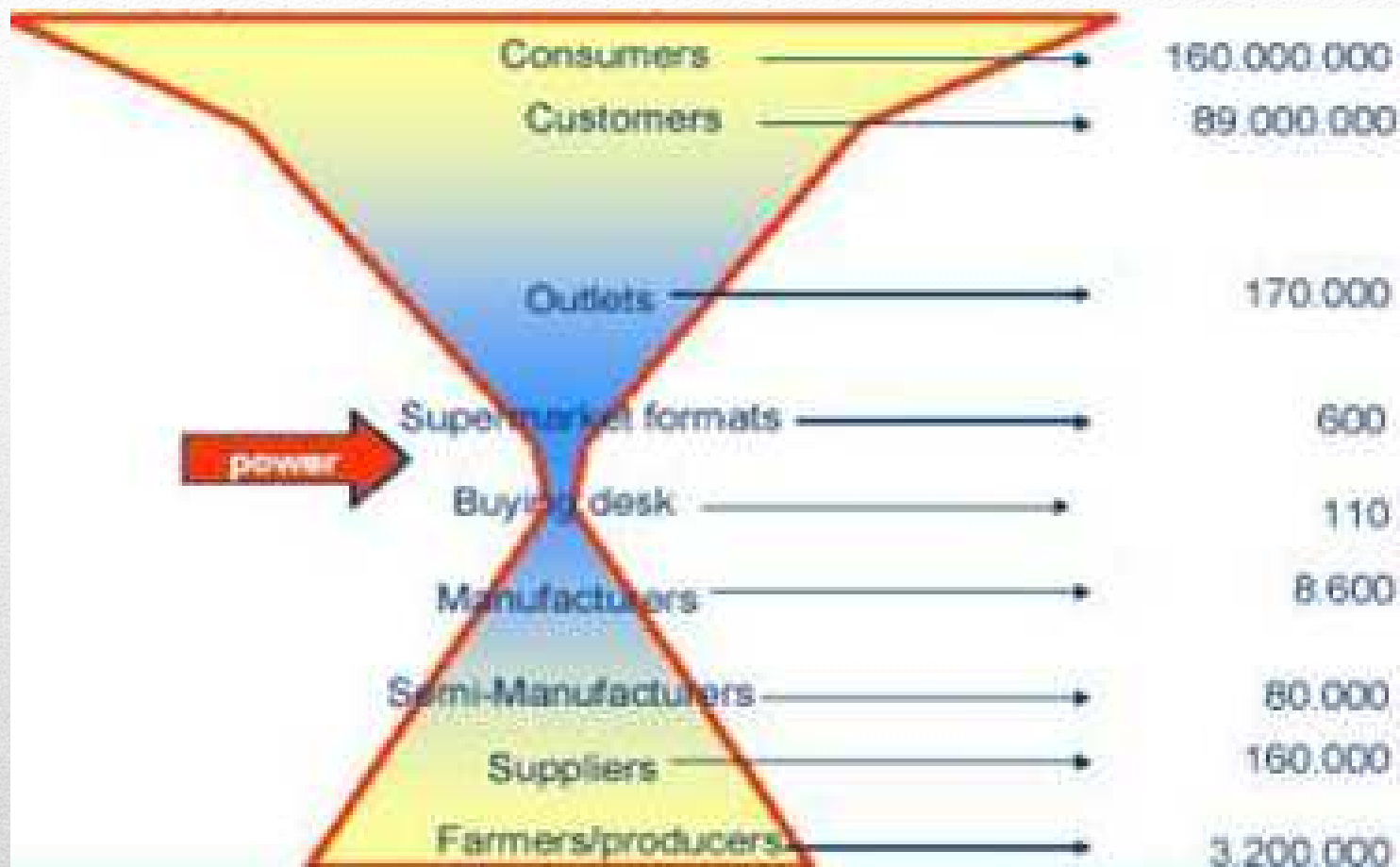


Cost-price squeeze in the EU27

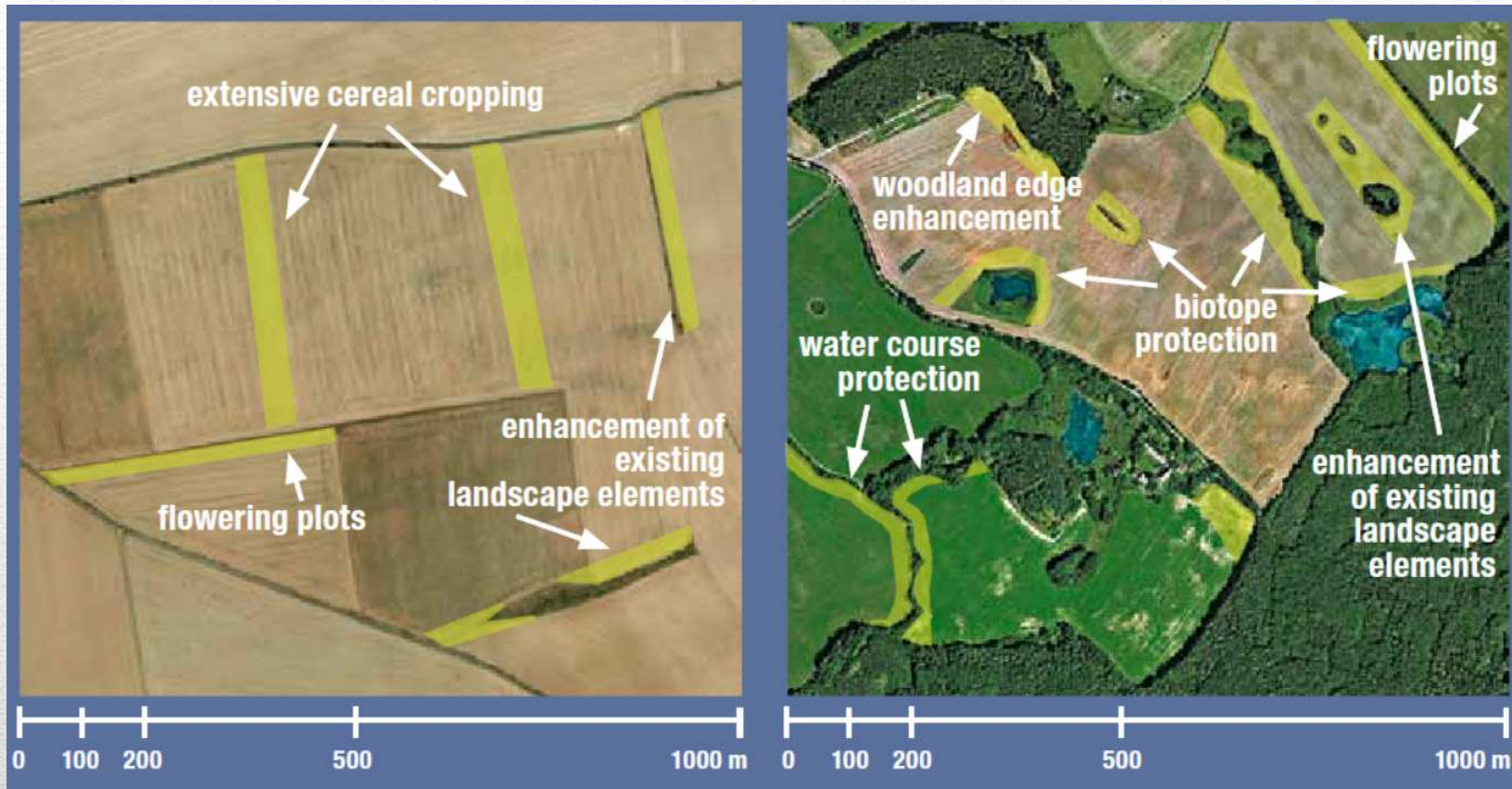


SOCIETAL DEMANDS








The supply chain funnel in Europe









Public demands on rural space ... 'greening'



Preliminary distribution map of high nature value (HNV) farmland in western and central Europe

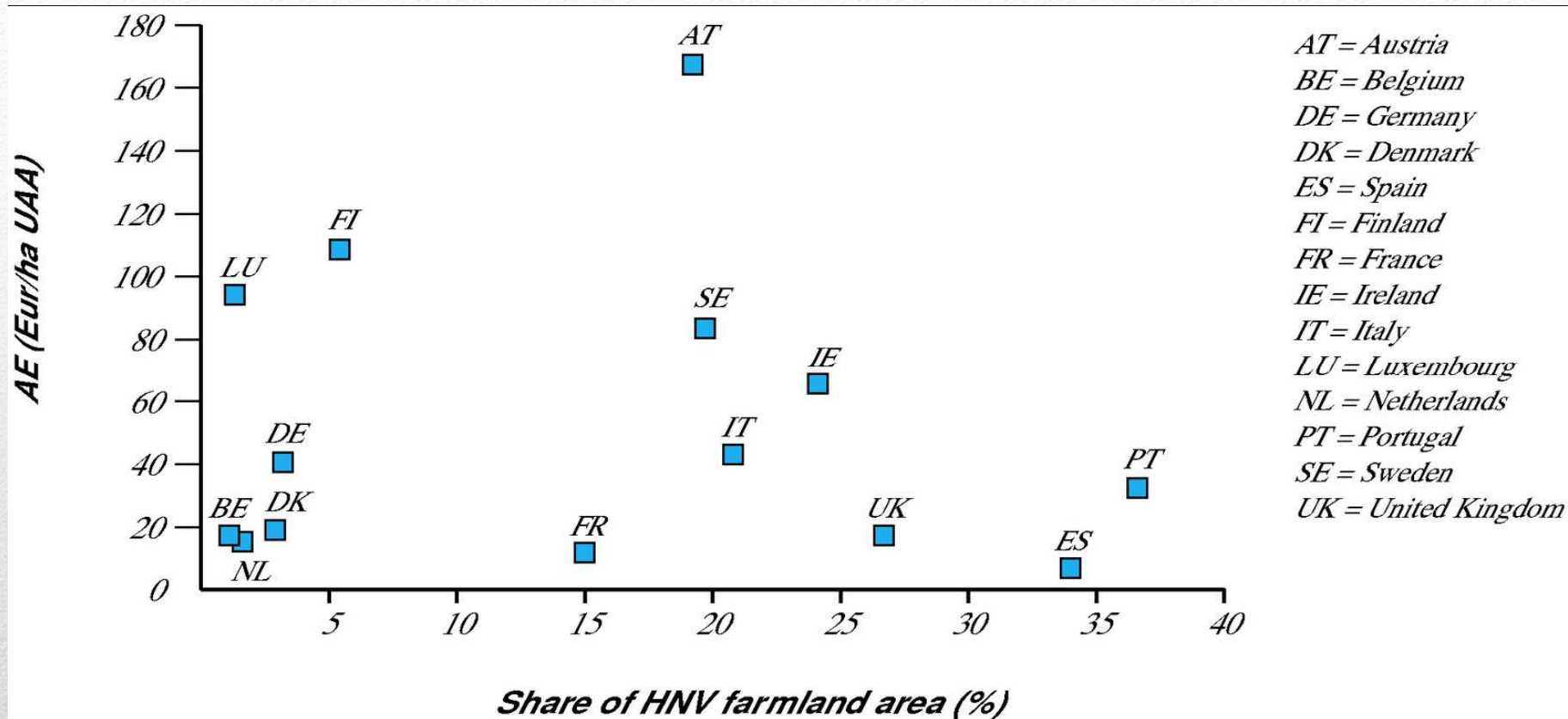
-  Natura 2000
-  Prime butterfly areas
-  Important bird areas

HNV farmland %
(Corine land cover based estimate)

-  0
-  1-25
-  25-50
-  50-75
-  75-100
-  Outside report coverage

Dark green agri-environmental measures on arable land	Support premiums in €/ha
Field border strips, extensive management of wild herbs and plant communities on arable land, arable land conservation management agreements	450 € - 1.160 €
European Hamster conservation, conservation of foraging areas and nest sites, Red Kite conservation, support foraging winter arctic visitors (geese and swans) on arable fields	280 € - 450 €
Setting-aside arable fields for conservation purposes	140 €
Agri-ecological use of arable land and creation of flowering areas, flowering and buffer strips, border and ribbon structures	200 € - 600 €
Buffer strips for water and soil protection, strips along ditches and streams	370 € - 1.000 €
Transformation of arable land to grassland	320 € - 745 €
Preservation of typical regional cultivated plant species and types	150 € - 400 €

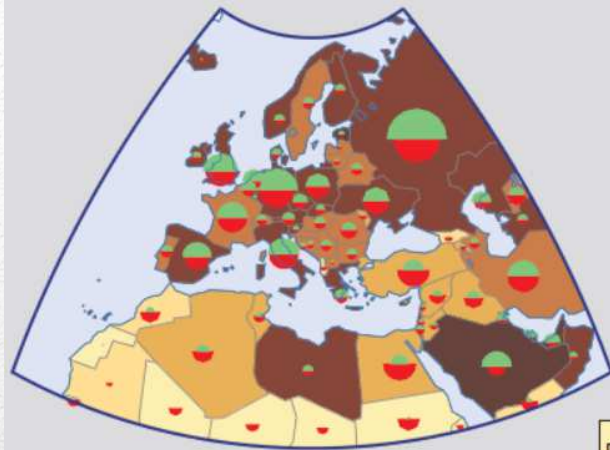
It's about public goods – and money?



Agri-environment spending in relation to share of high nature value farmland per country



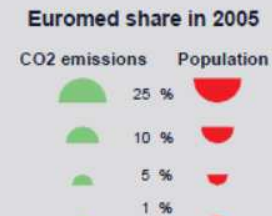
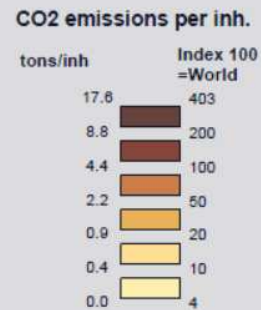
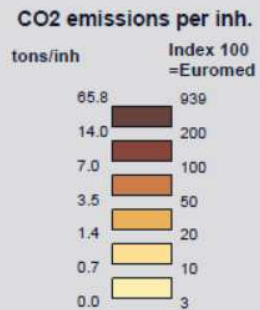
NEW CHALLENGES



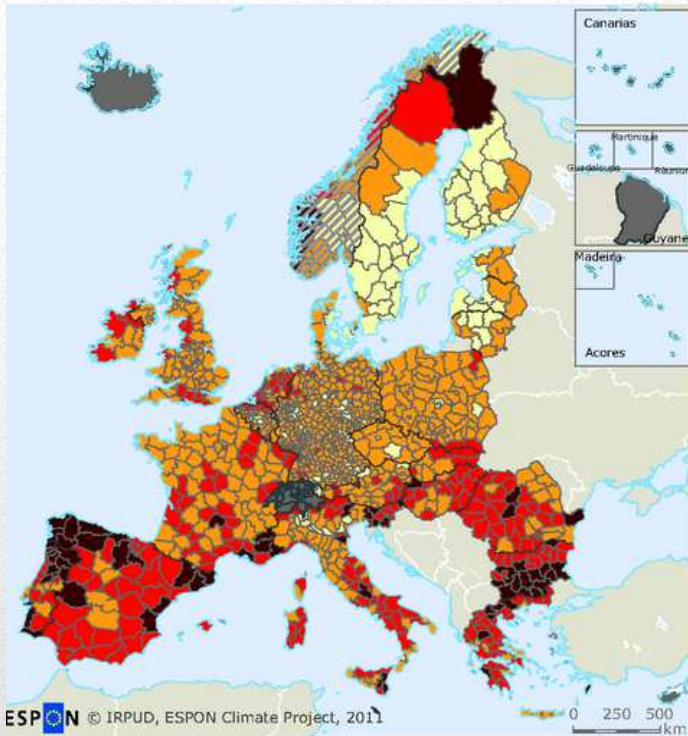
This map does not necessarily reflect the opinion of the ESPON Monitoring Committee

In EuroMed

In the World

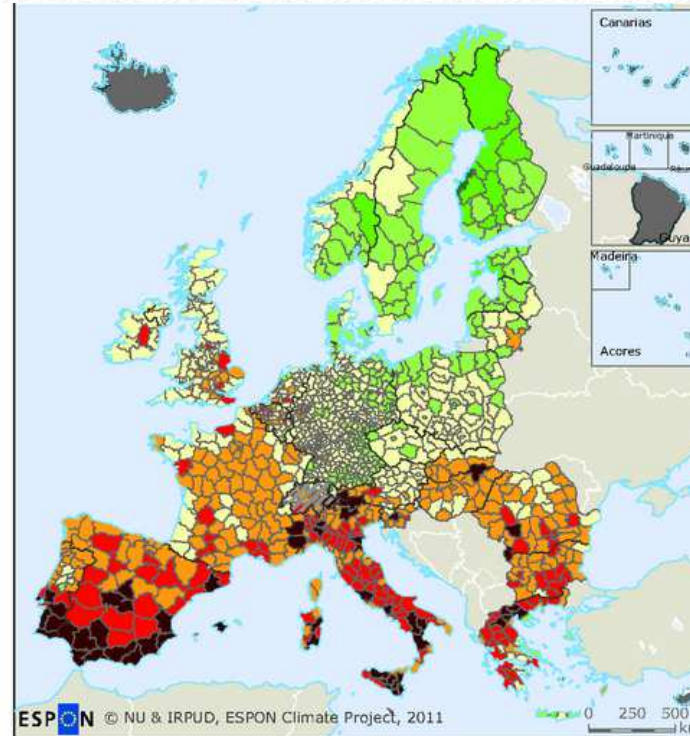


GHG emissions



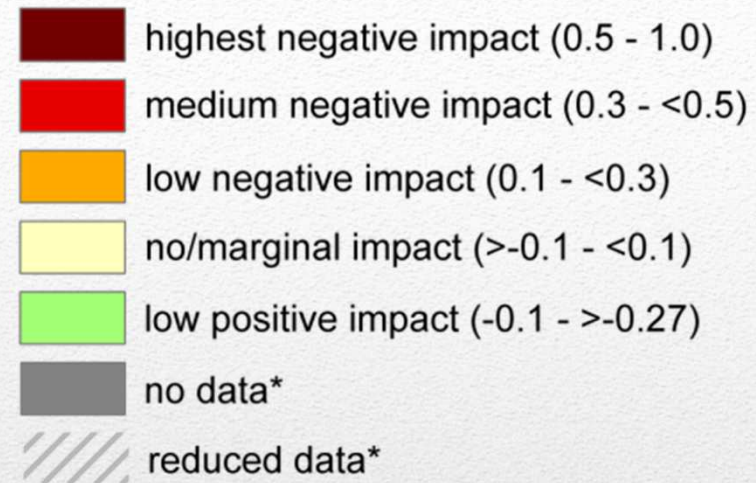
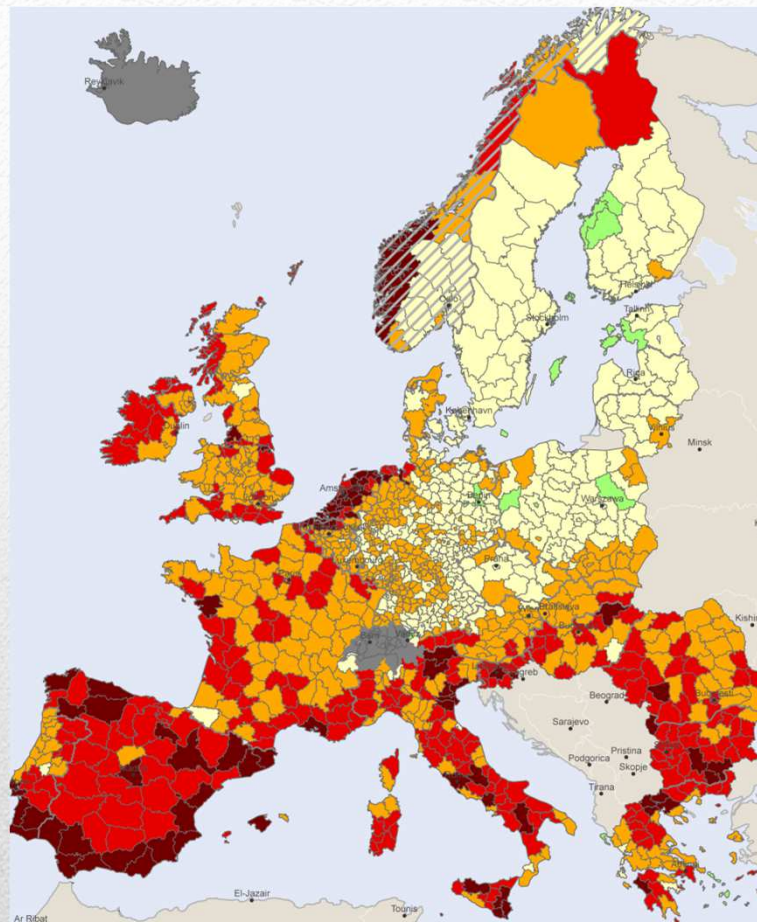
Potential environmental impact of climate change

- Highest negative impact
- Medium negative impact
- Low negative impact
- No/marginal impact
- No data
- Reduced data

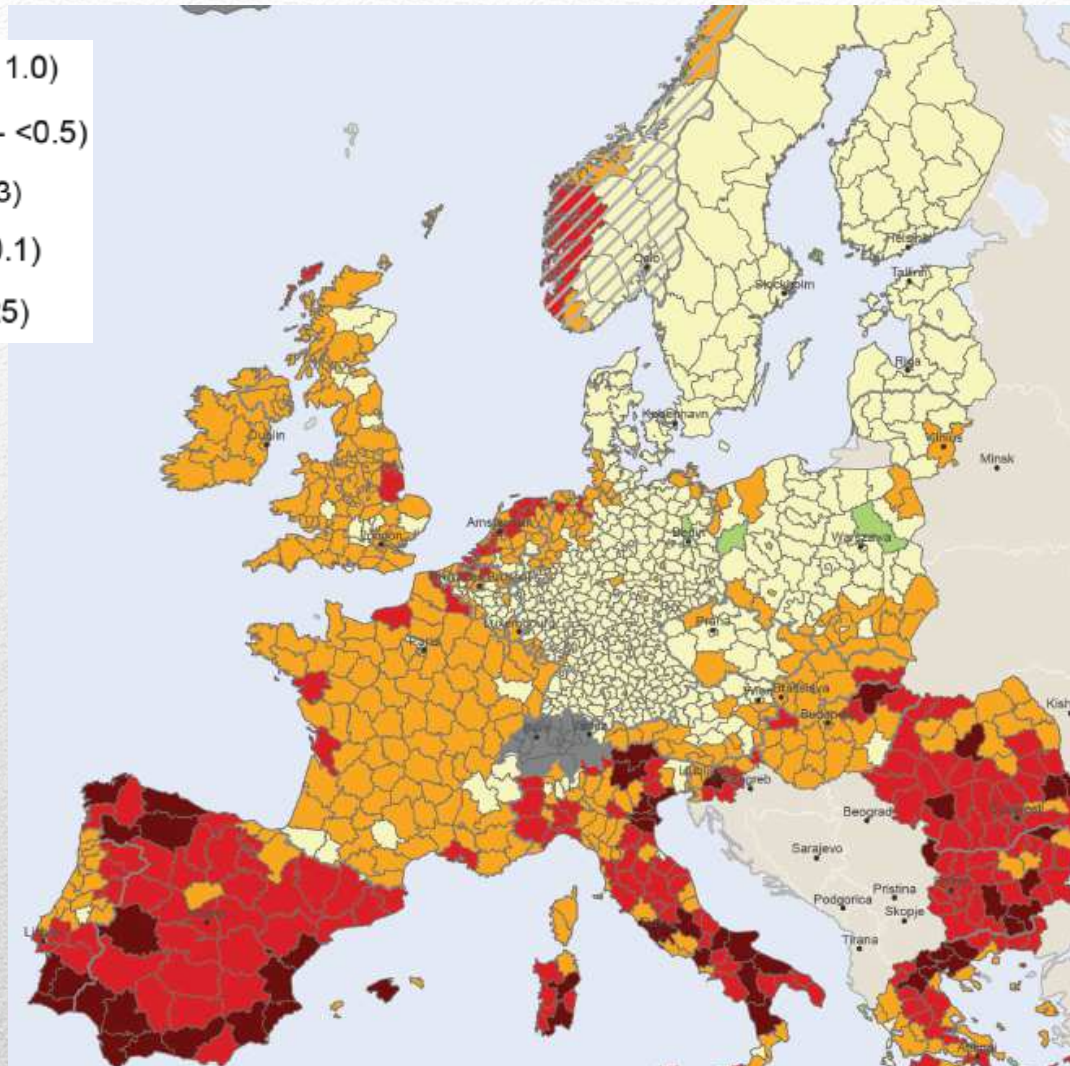
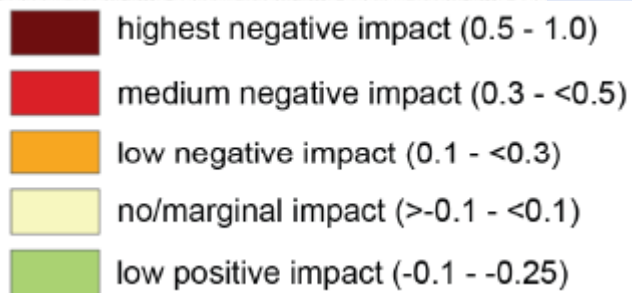


Potential economic impact of climate change

- Highest negative impact
- Medium negative impact
- Low negative impact
- No/marginal impact
- Low positive impact
- Medium positive impact
- High positive impact
- No data
- Reduced data



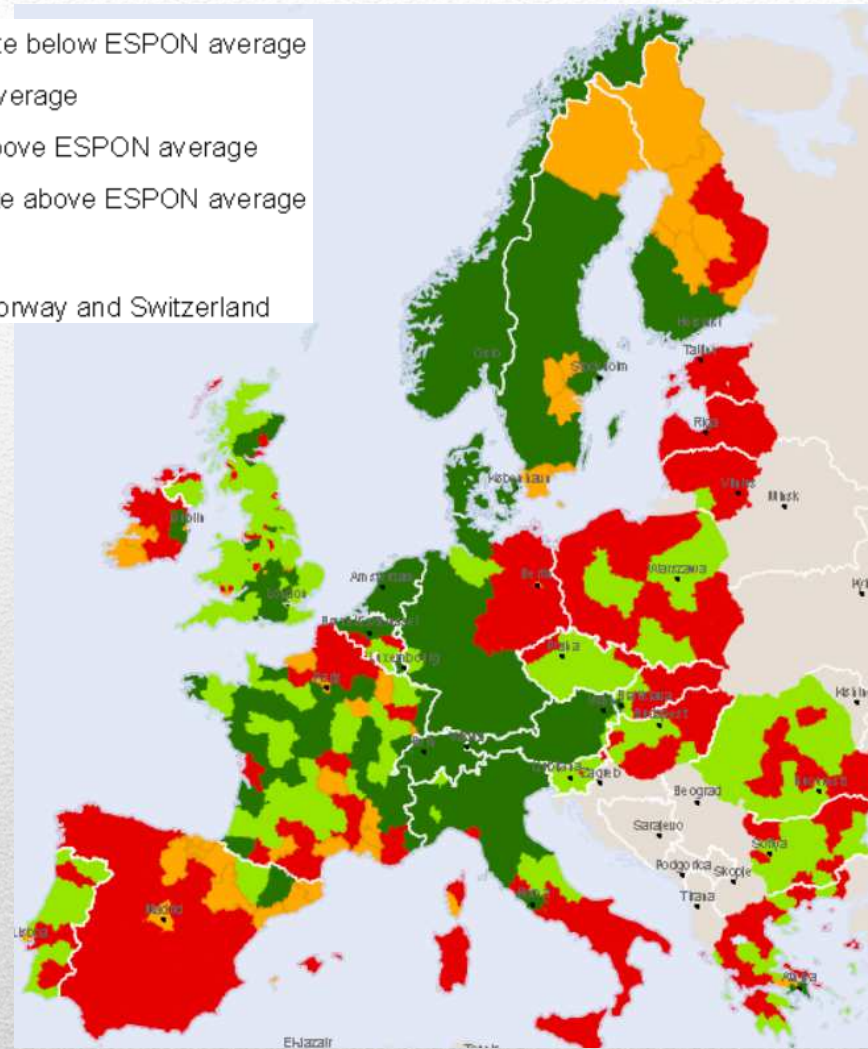
Aggregate potential climate change impacts



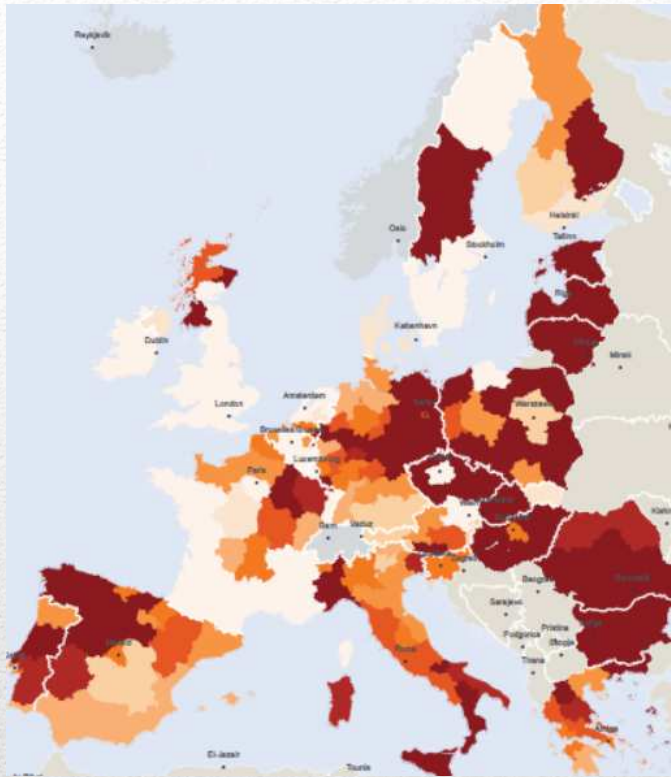
Vulnerability to climate change

- Regions with GDP above and unemployment rate below ESPON average
- Intermediate regions with GDP below ESPON average
- Intermediate regions with unemployment rate above ESPON average
- Regions with GDP below and unemployment rate above ESPON average
- No data

ESPON average = EU27 plus Iceland, Liechtenstein, Norway and Switzerland



Income and employment

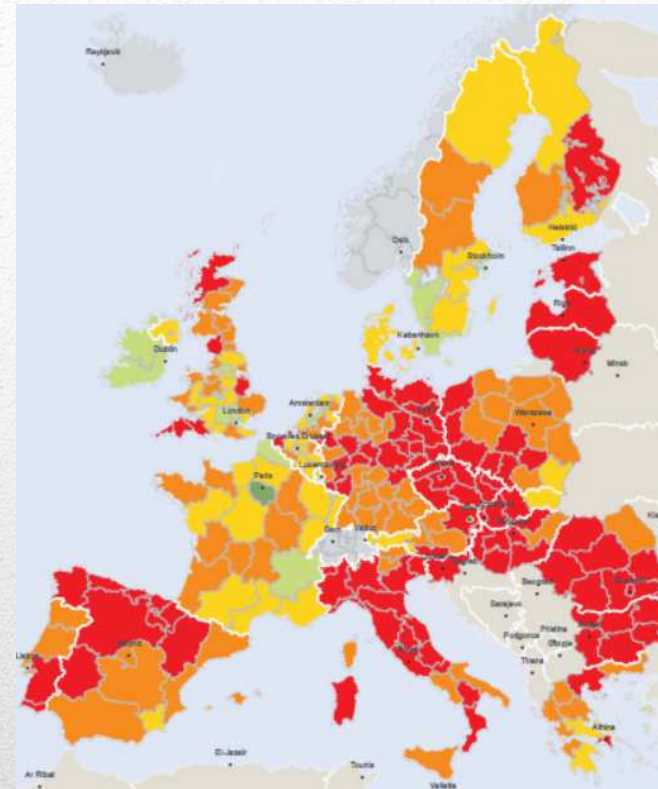


Estimation of the year when population will start to decrease

DIFFUSION →



2007 2012 2017 2022 2027 2032 2037 2042



Synthetic index of ageing in 2030
(mean age / healthy life expectancy)



49% 52% 55% 58% 61%

LIGHT MODERATE STRONG →

Population decline and aging

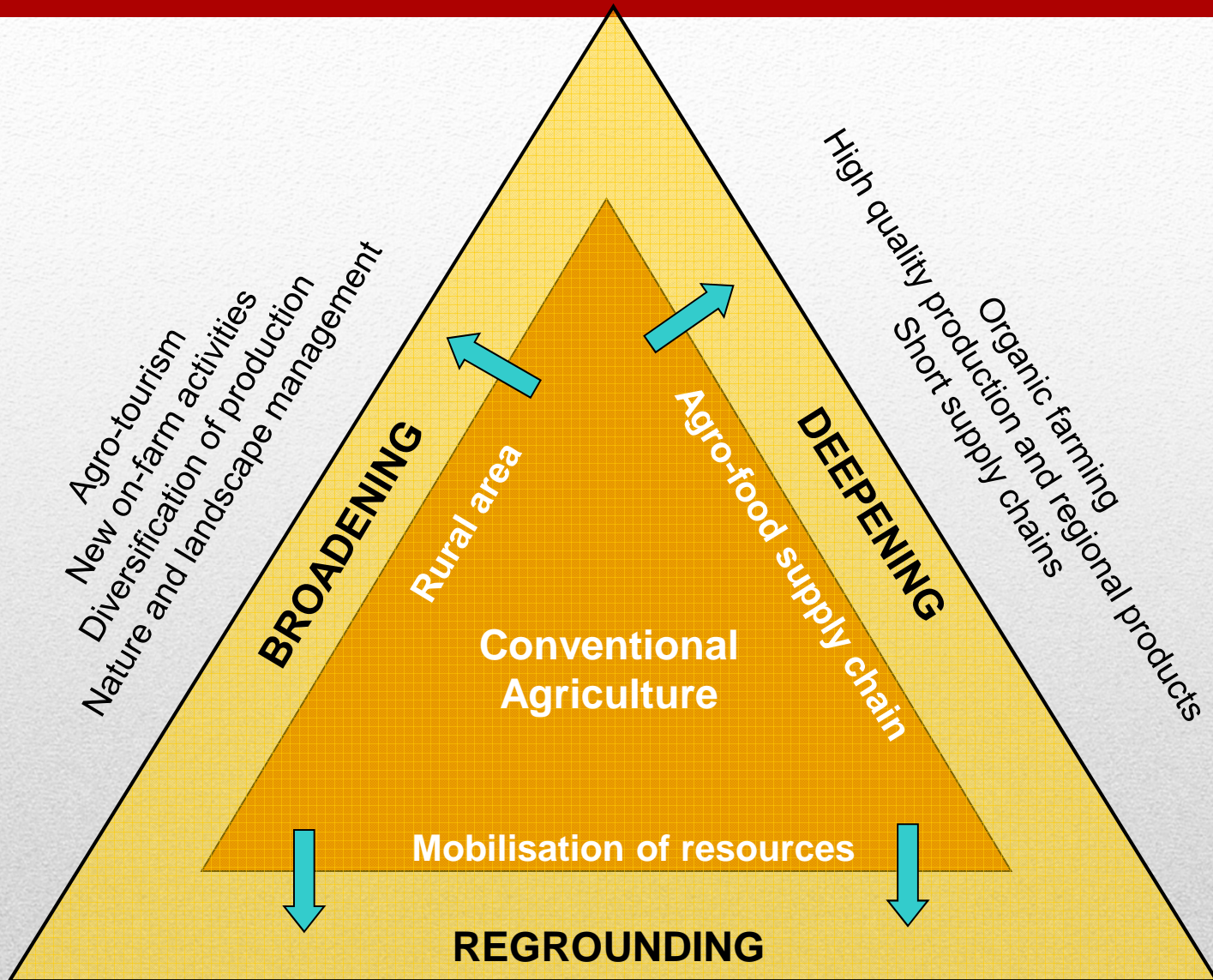


**“You’re obsessed with money.
You need to think outside of the bucks!”**


Future research

- from a production orientation towards multifunctional and sustainable pathways
- distinctiveness ... local quality markets ... using new opportunities, (re)localisation
- greening ... green economy / UNEP
- governing changes ... governance

Changes in strategic orientations



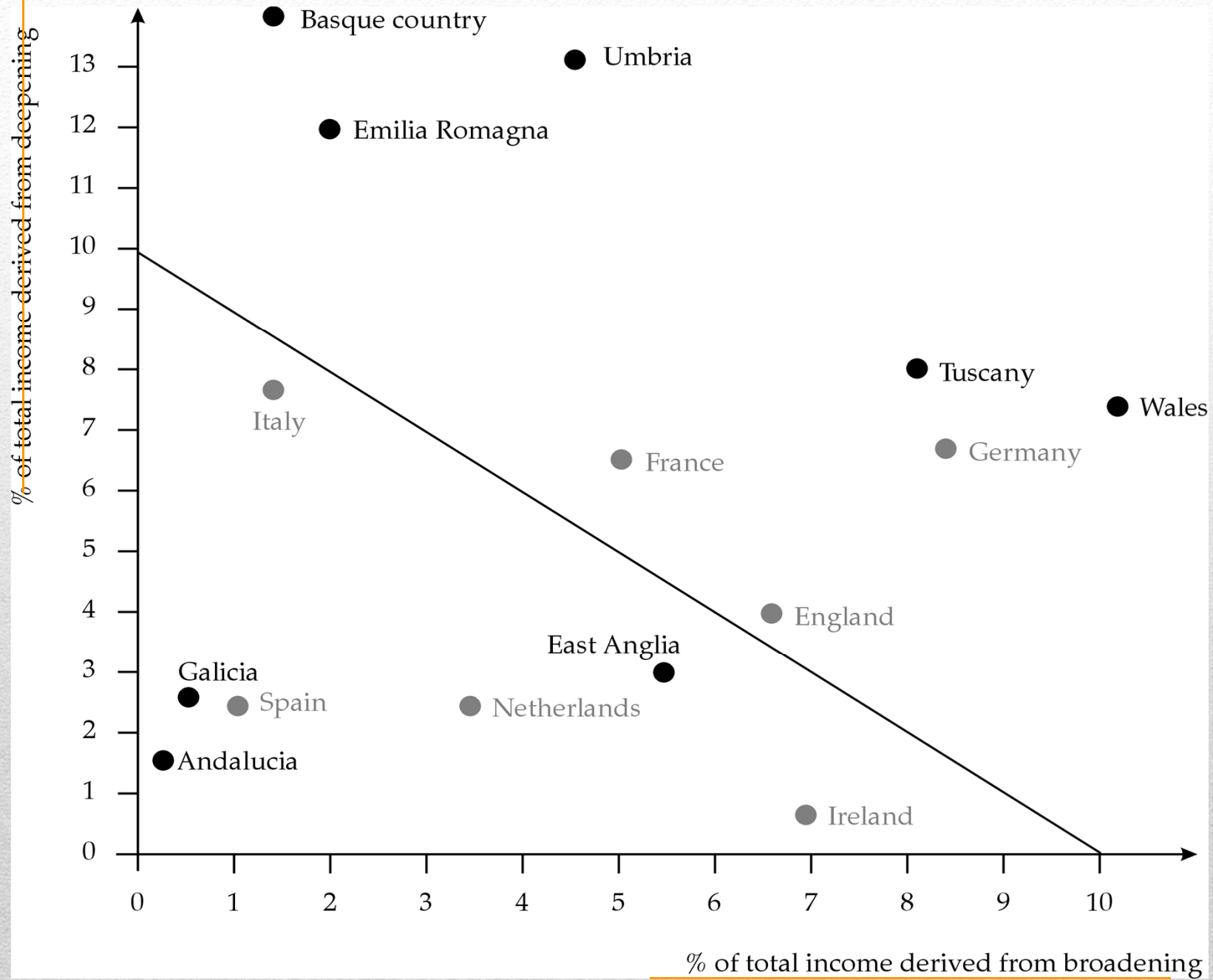
New forms of cost reduction and co-operative management
Income combination / off-farm income



EU-6 (1998)	Engaged (%)	Interested (%)
Organic farming	6.7	23.9
Quality production and processing	32.1	47.5
Short chains	13.2	22.4
Agro-tourism	9.9	17.1
New on-farm activities	9.6	54.7
Diversification in production	4.6	22.1
Nature and landscape management	14.2	37.0

Source: IMPACT survey

Potentials for rural areas





- Pilot projects and model regions show that alternative paths of development are possible
- They are an expression of the creativity of local actors and practitioners
- Model regions are windows into the future - e.g. biosphere reserves

Windows into the future



- **Building bridges between**
 - ... quantitative methods and tools
 - ... qualitative methods
 - ... discursive consultative approaches and tools

Challenges for researchers



1. Conventional development model for agriculture increasingly at odds with society's expectations
2. Multifunctionality represents a new developmental model for the agricultural sector
3. Adaptive capacity and resilience becoming important
4. Changes in strategic orientations: need to realign agricultural and societal goals
5. Need to reorient research, education and training

Summary of key messages



**“I have no objection to creative problem solving
as long as it’s not too creative and
it’s not a real problem.”**

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