European Network for Rural Development

Promoting the Transition to a Green Economy

ENRD Thematic Group on Resource Efficiency

Case studies on the implementation of resource efficiency of soils and water

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Thematic Group activities

Three related but distinct strands of work in the context of the TG activities to address resource efficiency through rural development policy:

1. Framing background analysis of the content and focus of RDPs across the EU;
2. A comparative regional analysis in different RDP regions;
3. Identification and collection of good practice examples.

Objectives of the comparative regional analysis

1. To investigate the approaches taken in different RDP regions
2. Identify possible success factors or bottlenecks specific to the region
3. Identify recommendations from the regional perspective

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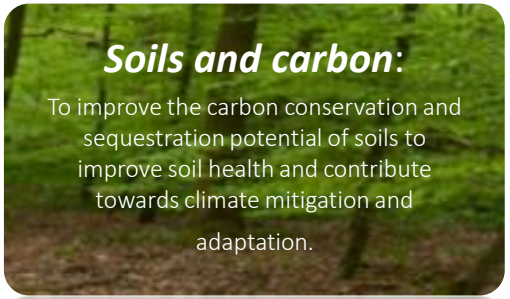
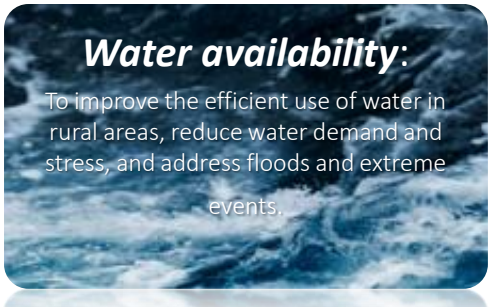
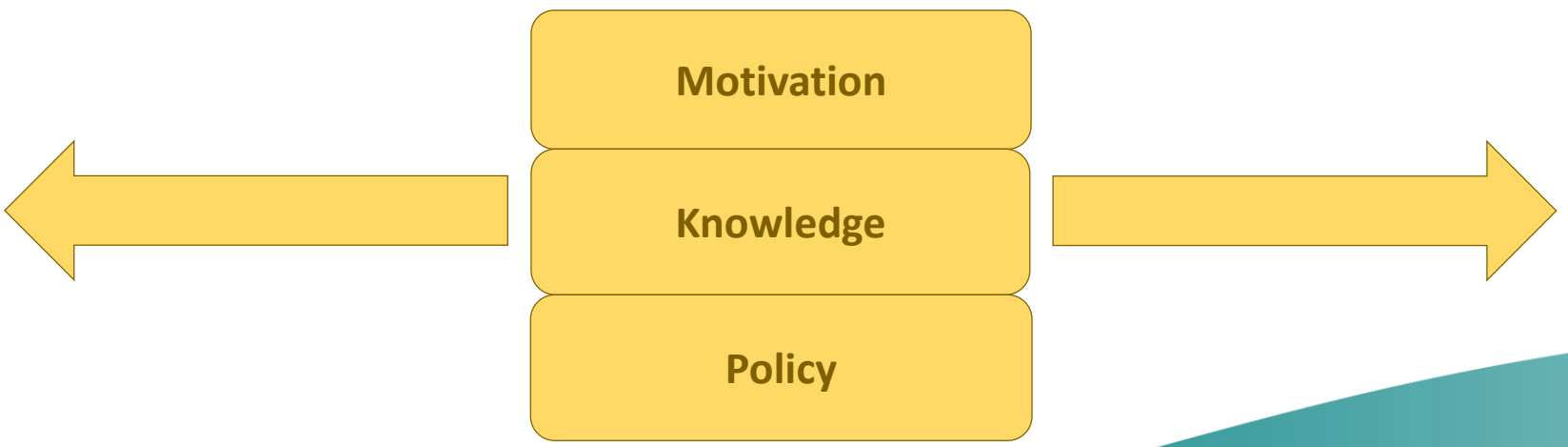
Research focus

Thematic priorities





Cross cutting challenges



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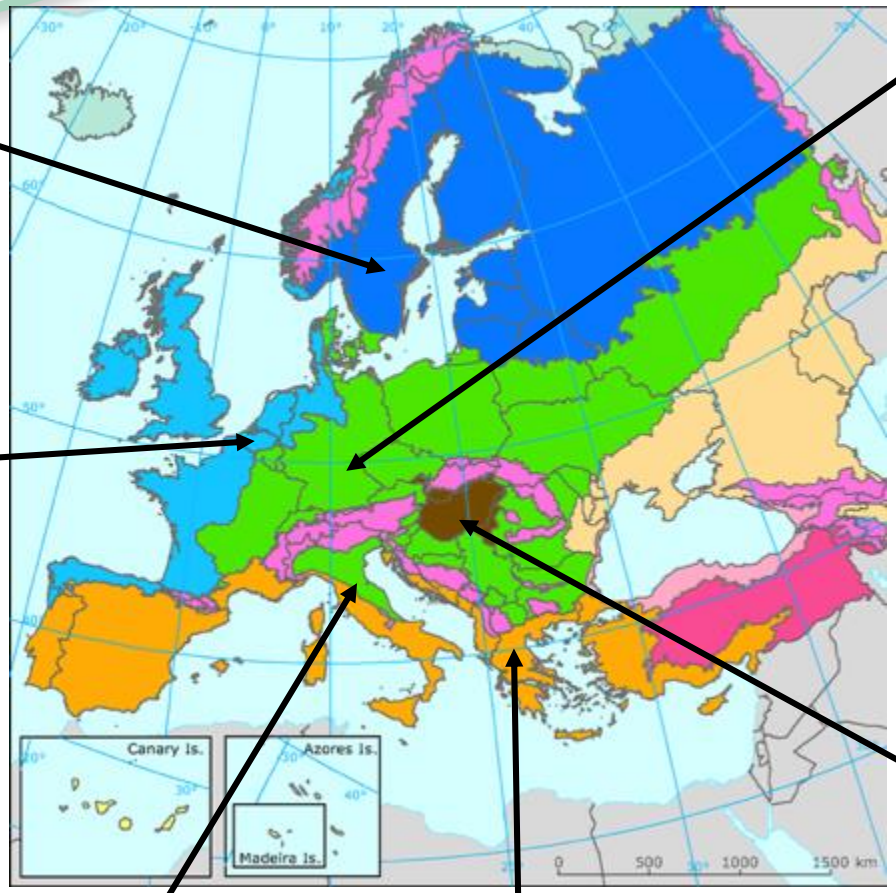
Case studies

Finland
Kari Koppelmäki

Germany (Lower Saxony)
Frederike Kluemper

Belgium (Flanders)
Ann Verspecht



Hungary
Peter Toth

Italy (Emilia Romagna)
Maria Valentina Lasorella

Greece
Alexandros Papakonstantinou

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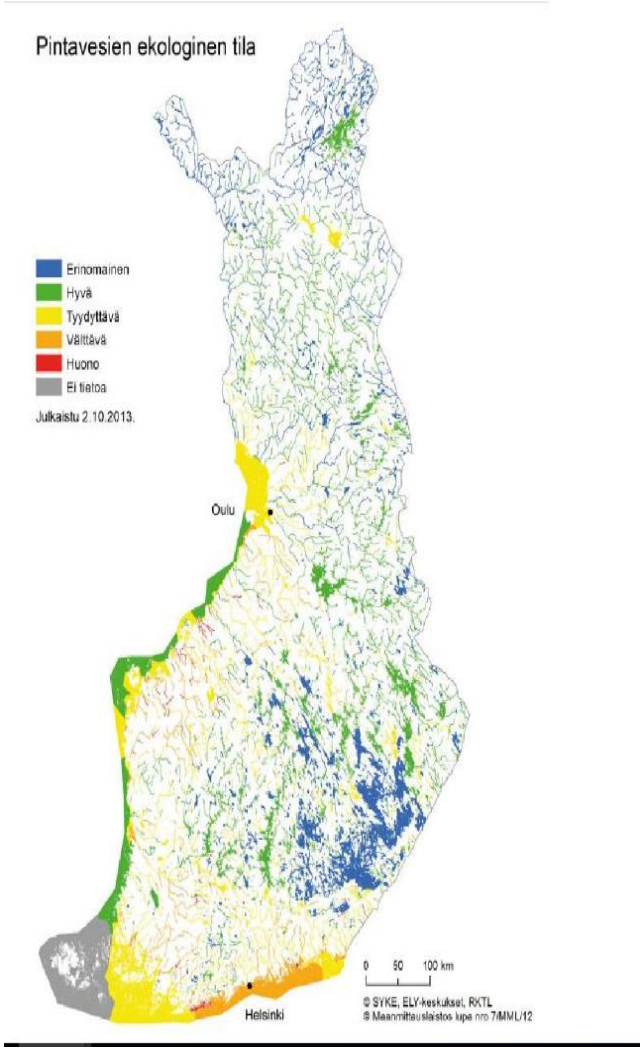
Finland



- Agricultural land covers 7,6 % of the land area
- Water cover 22 % of the total territory
- 50 000 farms (average farm size 45 ha)
- The worlds northernmost agricultural country
  - Short growing season (length of growing period 110-180 days)
- Of arable fields, 58% have subsurface drainage and 27% open drains.
- Irrigation is only used in horticulture
- Nutrient loading from agriculture is considered a major problem
  - The ecological status of surface water bodies is satisfactory in 54 % of the coastal waters, passable in 20 % and poor status in 1 %.
  - The share of agriculture in N loading 56 % and P loading 69 %
- The regional concentration of livestock farming and increased unit size is a challenge for sustainable nutrient management
- Organic carbon content of soils is decreasing

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Measures & Priorities

4B: improving water management

4C: soil (erosion, management)

5A: efficiency in water use

5E: carbon conservation and sequestration

M01 Knowledge transfer and information actions
M02 Advisory services, farm management and farm relief service
M04 Investment in physical assets
M10 Agri-environment-climate
M11 Organic farming
M13 Payment to areas facing natural constraints
M16 Co-operation.

M01 Knowledge transfer and information actions
M02 Advisory services, farm management and farm relief service
M16 Co-operation.

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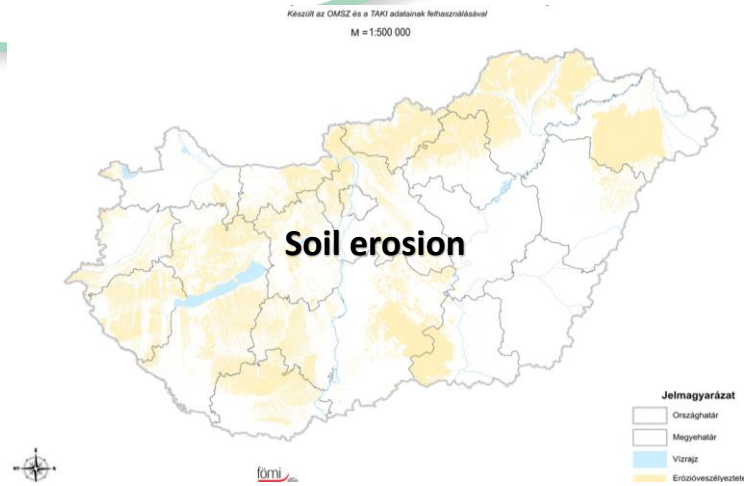
Hungary



Total UAA = 4 656 520 hectares (81.6% arable land)

52.3% of UAA managed at low intensity

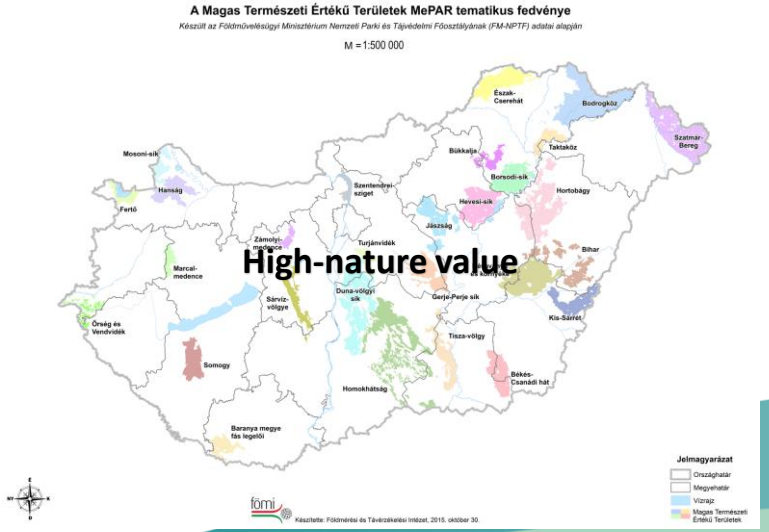
538 876 hectares for management contracts under agri-environment-climate

Frequent water imbalances – droughts, floods, inland inundation

Organic production – on 2.7% of UAA

Average farm size – 8.1 hectares, average age of farmers – 56 years

CO2 emission from agriculture in 2010 was 7 716.4 (1000 tonne CO2 equivalent, 12.1% of total) – carbon capture by forests in Hungary 13% of total



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Measures & Priorities

4A: biodiversity

4B: improving water management

4C: soil (erosion, management)

- M01 - Knowledge transfer and information actions
- M02 - advisory and farm management services
- M04 - physical assets
- M10 - agri-environment-climate
- M11 - organic farming
- M12 - Natura 2000
- M13 - areas facing natural or other specific constraints
- M16 - cooperation

5A: efficiency in water use

- M04 - physical assets

5E: carbon conservation and sequestration

- M01 - KT&I
- M02 - advisory and farm management services
- M16 - cooperation

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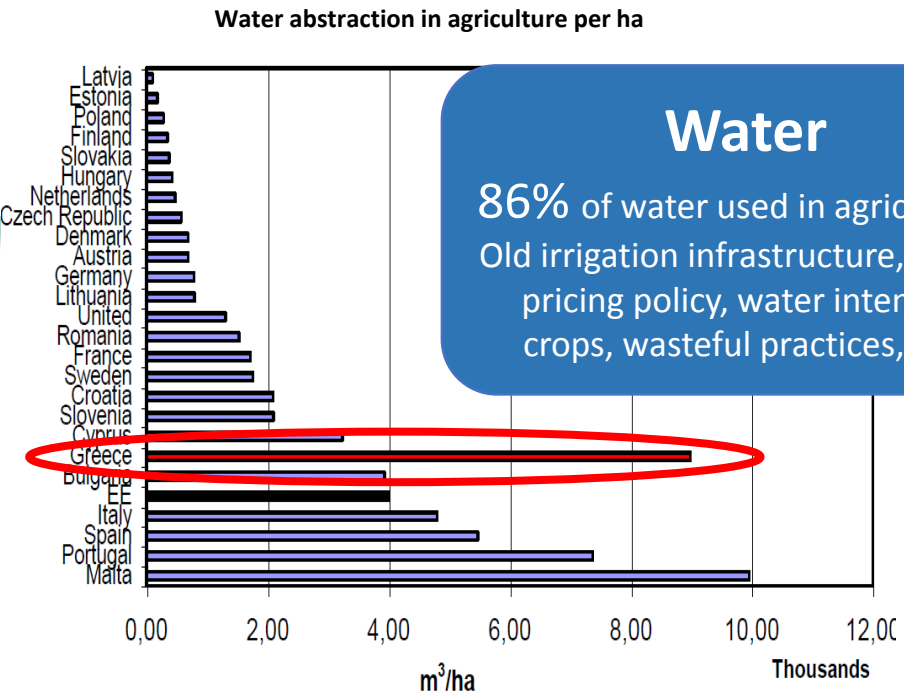
Greece



Water

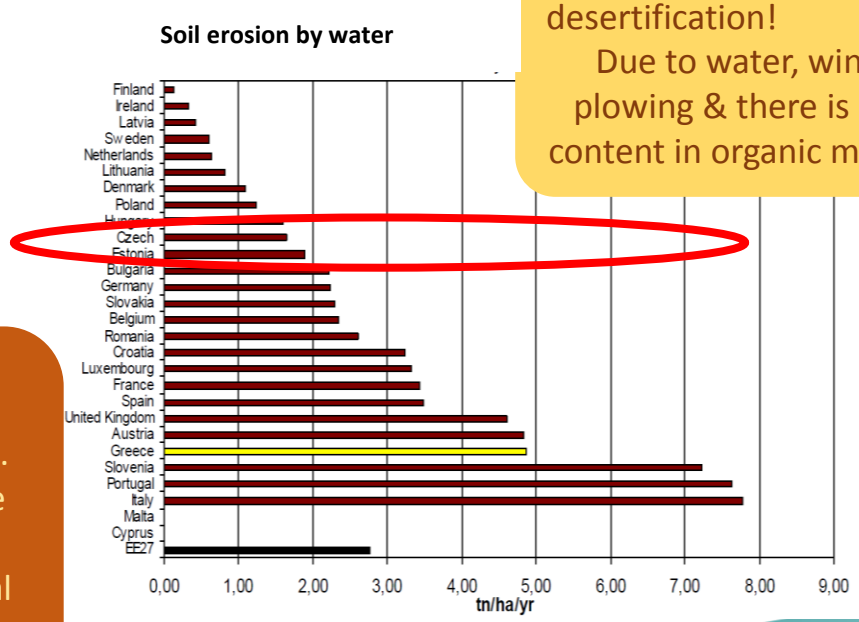
86% of water used in agriculture!

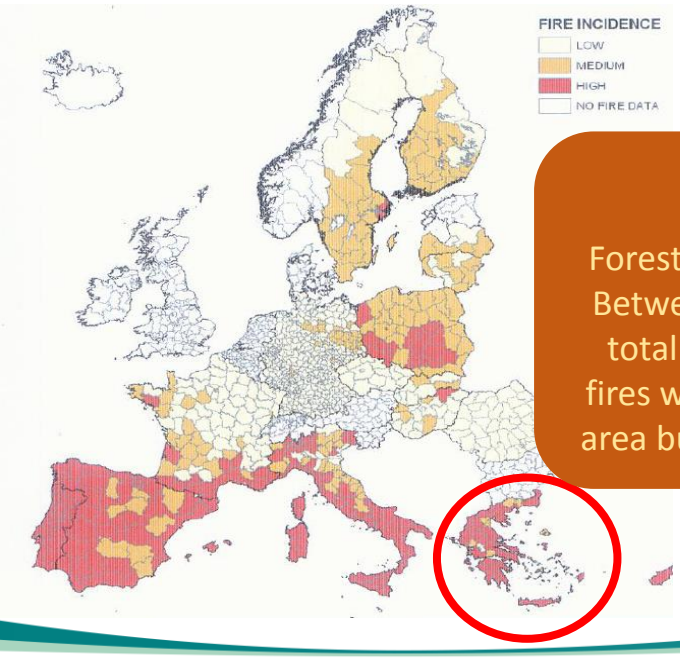
Old irrigation infrastructure, lack of pricing policy, water intensive crops, wasteful practices, etc.

Soil

35-40% of total land territory under threat of desertification!

Due to water, wind, plowing & there is low content in organic matter.





CO_2

Forest fires is a problem. Between 2000-2010 the total number of forest fires was 1 670 and total area burned 497 172 ha.

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Measures & Priorities

4A: biodiversity

4B: improving water management

4C: soil (erosion, management)

- M01 - Knowledge transfer and information actions
- M02 - Advisory services, farm management and farm relief services
- M04 - Investments in physical assets
- M07 - Basic services and village renewal in rural areas
- M08 - Forest investments
- M10 - Agri-environment-climate
- M11 - Organic farming
- M12 - Natura 2000 and Water Framework Directive payments
- M13 - Payments to areas facing natural or other specific constraints
- M16 - Co-operation

5A: efficiency in water use

- M01 - Knowledge transfer and information actions
- M02 - Advisory services, farm management and farm relief services
- M04 - Investments in physical assets
- M16 - Co-operation

5E: carbon conservation and sequestration

- M01 - Knowledge transfer and information actions
- M02 - Advisory services, farm management and farm relief services
- M04 - Investments in physical assets
- M08 - Forest investments
- M10 - Agri-environment-climate
- M16 - Co-operation

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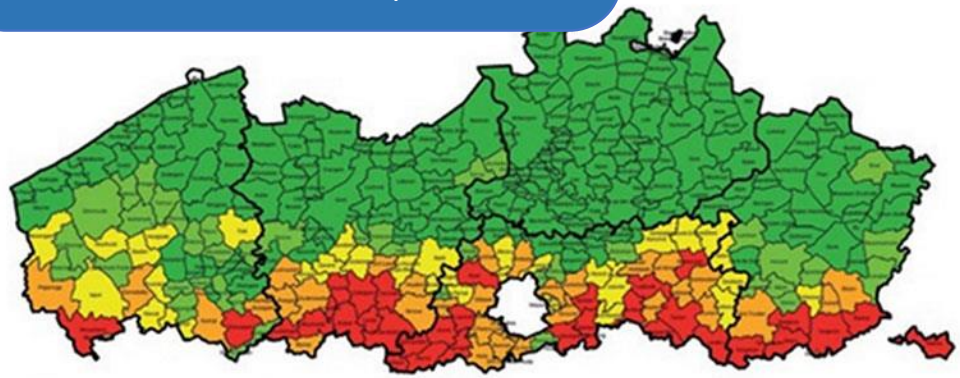
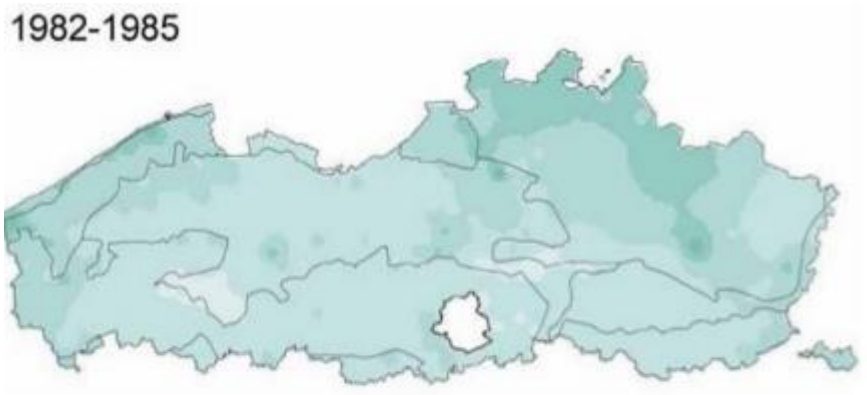
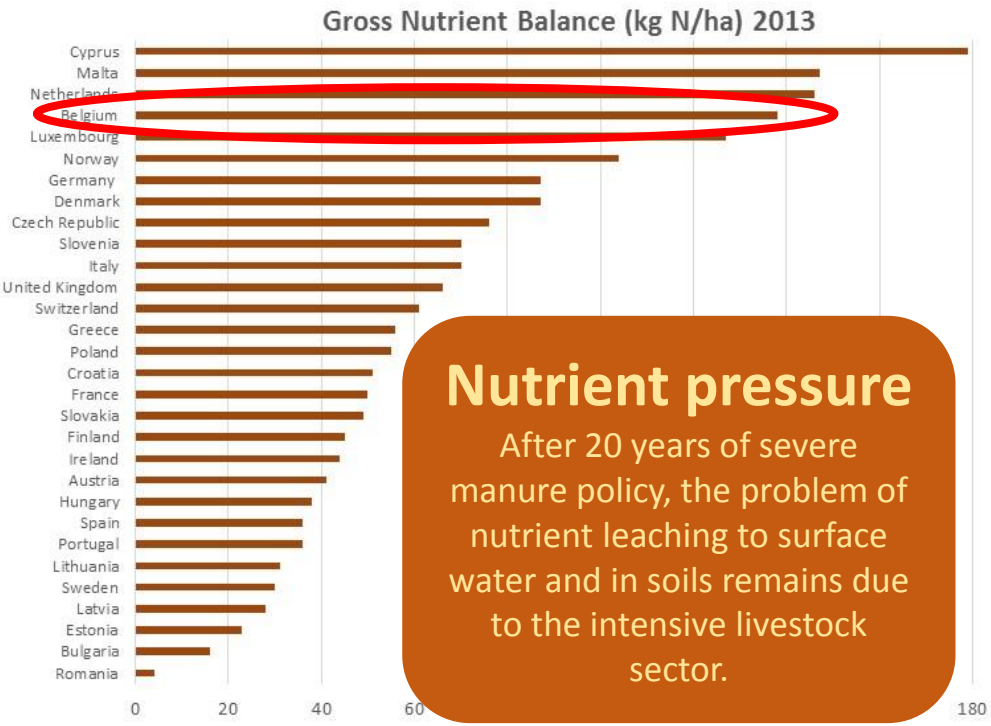
Erosion

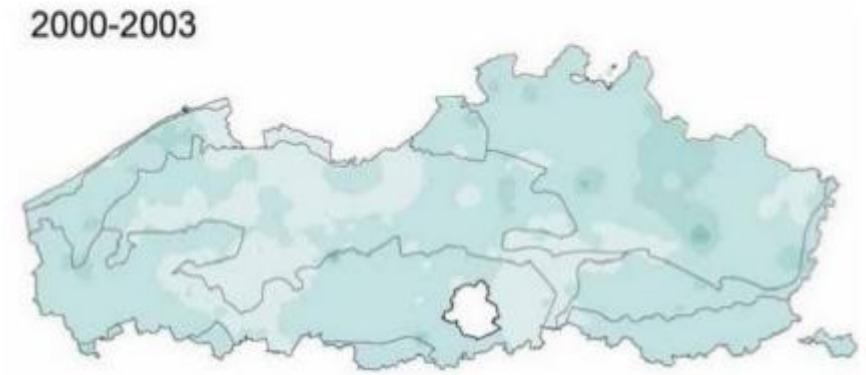
"le plat pays" prone to erosion end mud flows because of intensification and high sealing (roads, residence) which reduces infiltration possibilities.



Flanders







Nutrient pressure

After 20 years of severe manure policy, the problem of nutrient leaching to surface water and in soils remains due to the intensive livestock sector.

Organic matter

Soil organic matter is low and because of stringent nutrient application standards, difficult to counter.

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Measures & Priorities

4B: improving water management

4C: soil (erosion, management)

- M01 - Knowledge transfer
- M02 - Advisory services
- M04 - Investments in Physical assets
- M07 - Basic services
- M08 - Investment in forest areas & agroforestry
- M10 - Agri-environment-climate
- M11 - Organic farming
- M16 - Cooperation

5A: efficiency in water use

- No direct measures

5E: carbon conservation and sequestration

- M08 - Investment in forest areas & agroforestry

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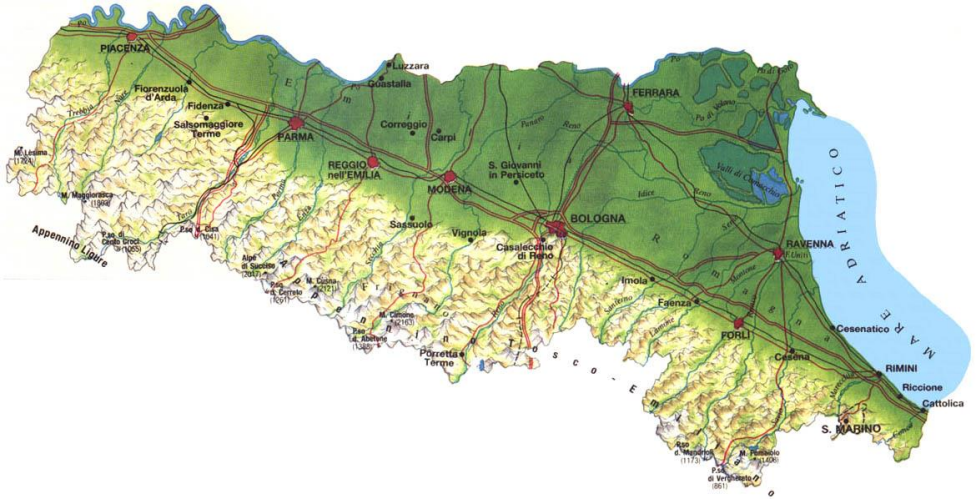
Emilia Romagna



- Regional territory occupies about 22.500 Km², and it is about 48% plain, 27% hilly and 25% mountainous
- Rural areas cover 60% (47% UAA) and the majority of population lives in rural municipalities (76.7%)
- Overage farm size is 15 ha (7.9 ha Italian overage)
- Agriculture represents the 3.8% of the regional GDP

- The 22% of the forests area is affected by regional instability phenomena (landslides, water erosion, flooding, landslides and avalanches) (INFC 2005)
- 42,1 % of UAA classified as HNV farming and 6% of UAA classified as Natura 2000
- Forests cover 49.6% of the total surface
- Nitrate Vulnerable Zones cover the 28% of Regional territoriy
- Main pressure relate to the externalities of intensive farming in the plain areas:
- high concentration of nitrates and phosphorus in freshwater and groundwater
- soil erosion around 6 t/ha/year

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Measures & Priorities

4B: improving water management

4C: soil (erosion, management)

- M01 - Knowledge transfer and information actions
- M02 - advisory and farm management services
- M04 - physical assets
- M07 - Basic services and village renewal in rural areas
- M10 - agri-environment-climate
- M11 - organic farming
- M12 - Natura 2000
- M13 - Areas facing natural or other specific constraints
- M16 - cooperation

5A: efficiency in water use

- M01 - Knowledge transfer and information actions
- M02 - advisory and farm management services
- M04 - physical assets
- M16 – cooperation

5E: carbon conservation and sequestration

- M01 - KT&I
- M02 - advisory and farm management services
- M04 - physical assets
- M08 - Forest investments
- M10 - agri-environment-climate
- M16 – cooperation

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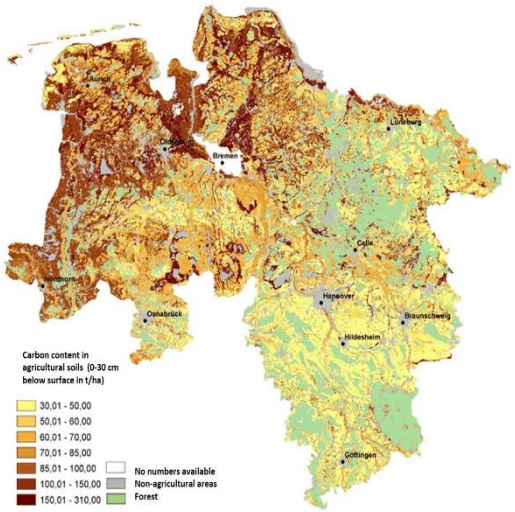
Lower Saxony



- 60 % agricultural area (2.6 million ha), 1 million ha of forest and other wooded lands
- Structural change:
  - Number of farms is decreasing, more specialized large-scale farms (now about 42 000 agricultural holdings, decline of about 2.2 % per year)
  - Average farm size: 65,2 ha and in Germany 61,3 ha (Farms > 50 ha 45 % of all farms (in Germany: 28.5 %)
- 2.8 % of all farms are registered as organic farms, (below the national trend of 9 %)

- High level of (diffuse) water pollution
- High regional concentration of livestock production (very high regional nutrient surplus)
- Ongoing land use change with decreasing area of pasture lands
- Moors only account for 5 % of the total area, ongoing activities of draining the moors (→ up to 30 % of the total emissions)
- Soil erosion, soil loss and high diffuse pollution
- Coastal areas suffer from eutrophication
- In some regions, groundwater use is increasing as they highly depend on irrigation water (use of groundwater)
- Organic farming is still below its potential

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Measures & Priorities

4A: biodiversity

4B: improving water management

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- M01 - Knowledge transfer
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- M16 - Cooperation

5E: carbon conservation and sequestration

- M04 - Investments in Physical assets

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Summary of measures and public expenditure

Percentage of RDP total public expenditure allocated to key measures in P4 and Focus Areas 5A and 5E

	Emilia-Romagna / Italy	Finland	Flanders / Belgium	Greece	Hungary	Lower Saxony / Germany	EU-28
M01 - Knowledge transfer and information actions	0.9%	0.2%	0.7%	0.7%	0.4%	3.3%	**0.4%**
M02 - Advisory services	0.3%	0.3%	1.3%	2.6%	0.3%		**0.3%**
M04 - investments in physical assets	2.2%	0.1%	0.5%	12.1%	1.5%	1.5%	**3.8%**
M10 - agri-environment-climate	15.0%	19.4%	18.8%	7.7%	15.7%	10.9%	**16.6%**
M11 - organic farming	8.5%	4.0%	1.1%	9.1%	5.1%	4.3%	**6.2%**
M12 - Natura2000 and WFD payments	0.7%			0.2%	4.1%		**0.5%**
M13 - payments to areas facing natural or other specific constraints	7.7%	45.6%		19.2%	1.9%	4.4%	**16.9%**
M16 – cooperation	1.9%	0.2%	0.1%	1.1%	0.4%	0.5%	**0.4%**

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Summary of challenges

Factors

Challenges for RDP design / implementation

- Reduce or avoid risks to farmers
- Educate about positive impacts
- Generational change – support those who are willing to change
- Tenancy is a challenge – engage with owners

- Proactive engagement
- Training farm advisors
- Pilot and demonstration projects
- Chanel advice through industry
- Improved reporting requirements

- Results based / voluntary approaches
- How to achieve better join up
- RDPs as a tool for change – collective approaches

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Motivation

Factors

- **Risk**
  - Actions with high sanctions are avoided
  - Safe option to maintain income
  - Familiar / easily integrated practices favoured
  - Semi-permanent transitions are a barrier
  - Approach varies with age / farm size / value
- **Economics**
  - +ve impacts on business accepted but neutral impacts – why change?
  - Some measures are seen as income support
  - Env compliance a requirement not an objective
  - Young / new farmers are reliant on RDP support
  - Tenancy costs reduce ambition for high effort actions
- **Effort and engagement**
  - High compliance effort is a barrier
  - Some large land owners have no connection to their land

Challenges for RDPs

- Reduce or avoid risks to farmers
- Educate about positive impacts
- Generational change – support those who are willing to change
- Tenancy is a challenge – engage with owners

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Knowledge

Factors

- **Understanding**
  - Resource efficiency for production – not for environment
  - Services are available but require effort.
  - Farm business impacts / synergies
- **Trust**
  - Those who advice on business are more trusted
  - Advisors favour particular approaches
  - Conventional approaches are more comfortable
- **Monitoring**
  - Local environmental conditions are still poorly documented
  - Soil and water information could be improved

Challenges for RDPs

- Proactive engagement
- Training farm advisors
- Pilot and demonstration projects
- Chanel advice through industry
- Improved reporting requirements

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Policy

Factors

- **Controls**
  - Do not allow for measures that might be important for resource efficiency
  - Voluntary approaches are sometimes favoured over regulatory ones
- **Working in isolation**
  - Some measures impact resource efficiency
  - Ministries do not always work together / have different priorities
  - Different farms types (crop/livestock) do not interact
  - Policy implementation can run at different timescales
- **The bigger picture**
  - RDPs don't enable larger structural change
  - Many priorities – many measures
  - Young farmers could play a key role.

Challenges for RDPs

- Results based / voluntary approaches
- How to achieve better join up
- RDPs as a tool for change – collective approaches

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Recommendations from the case studies

Tailored advice packages for measures/actions addressing soils & water to convey the benefits & risks of adopting resource efficient practices; the implications for farm businesses, & encourage uptake.

Compulsory training for advisors through continuous professional development to maintain up-to-date knowledge on best practice & support holistic advice across the farm.

Targeted support to areas and issues where improved resource efficiency is a priority & focus funding on priority actions to maximise impacts on the ground.

Good governance frameworks to provide coherence at the programming & implementation level to align environmental, economic & social objectives and outcomes.

Proactive engagement with farmers on the benefits of resource efficiency through the use of demonstration, peer to peer engagement & increasing the ratio of scheme/farm advisors to farmers.

Support famers willing to change through improved access to financial support, sharing ideas through cooperation (e.g. Operational Groups) & targeted advice/education packages.

Transitional support in terms of financing and increased advice & capacity building during the implementation of resource efficiency actions and changing of farm practices.

Multi-stakeholder engagement between all actors within the rural economy, including farmers, from the start of the RDP measure design & implementation process to improve buy-in.

Improved accessibility of schemes, support & projects to farmers whose skills & in land management not in scheme applications.

Demonstrate long term impacts of resource efficiency actions on the environment & sustainability of the farm business through case studies & the development of reliable indicators.

Piloting new approaches by making the most of opportunities under the cooperation measure as well as LIFE to fund to pilot approaches that can then be mainstreamed into RDPs.

Flexible support systems and measures that allow farmers to adapt and tailor practices during implementation to the needs of their farm and to improve the delivery of results.

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Further information on the ENRD TG on Resource Efficient Rural Economy can be found at:

https://enrd.ec.europa.eu/thematic-work/greening-rural-economy/resource-efficiency_en

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