Successful mainstreaming of climate action into post-2013 Rural Development Policy

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Why *mainstreaming* of climate into EU's rural development programmes?

- *Agriculture and forest world wide account for about 30% of emissions;*

- *Agriculture and forests have significant potential to be a sink and reduce athmospheric carbon by increasing carbon pools in wood, biomass, and soils;*

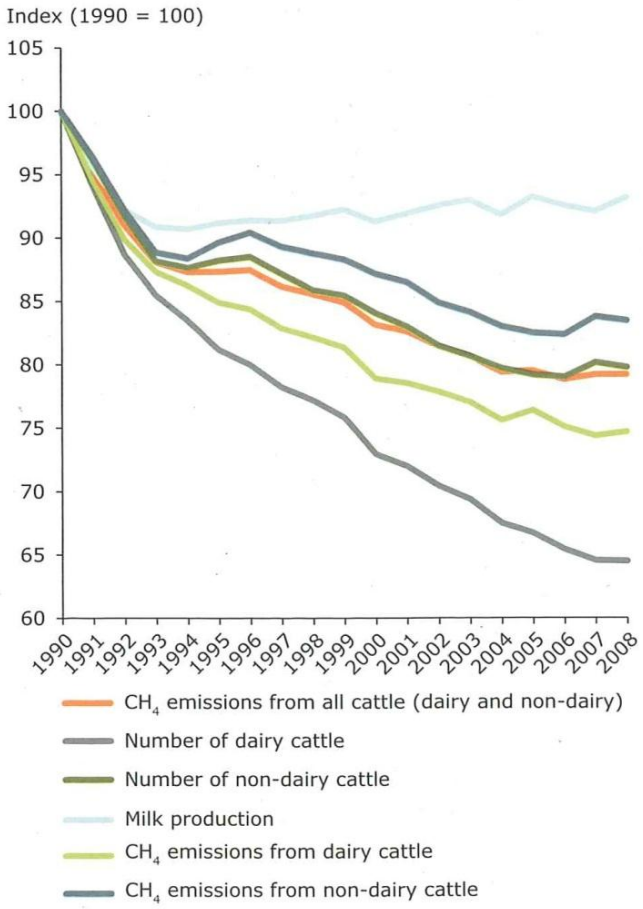
- *Agriculture and rural areas obviously also exposed to risks, have to adapt!*

Objective: *Make EU agriculture and rural areas more climate-friendly and resilient!*

Question: Is that possible? Can the CAP make a difference?

Yes, Change is possible and the CAP/Rural Development can make a difference!

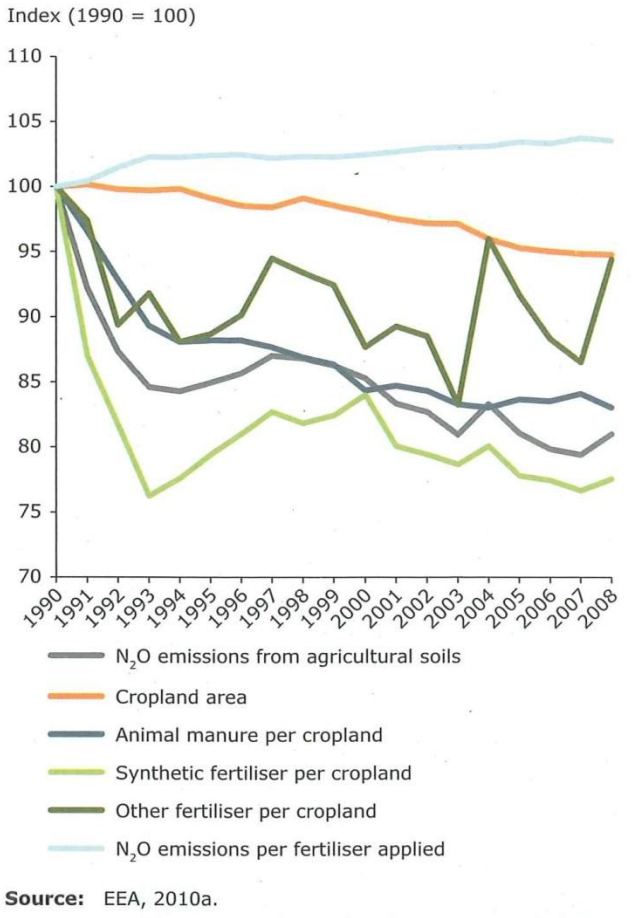
Example 1: **CH4 emissions** from enteric fermentation **significantly declined** between, 1990 – 2008, milk production increased, example for increased resource efficiency



Source: EEA, 2010a.

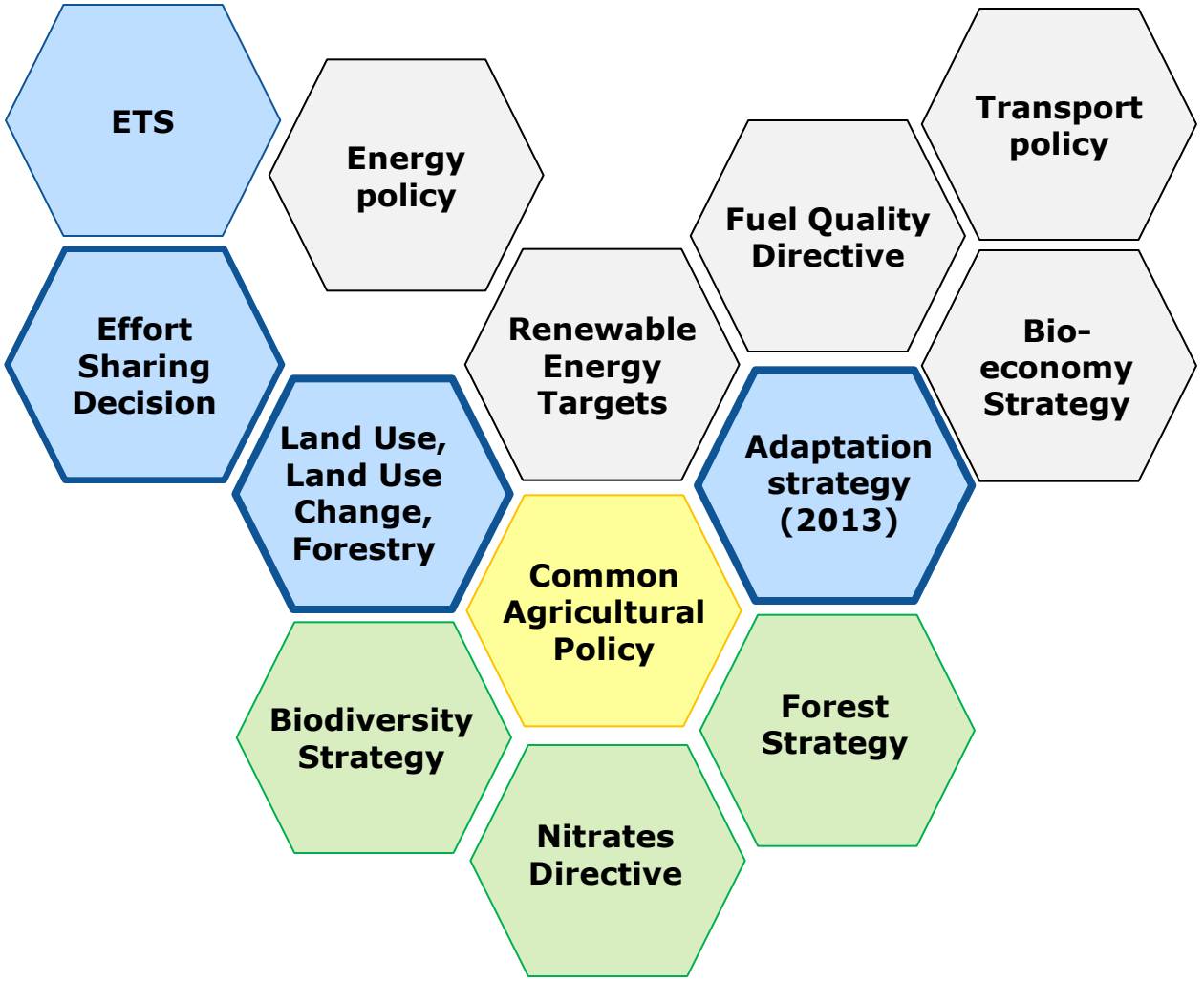
Example 2: **N2O emissions** from EU agricultural soils **significantly declined** between, 1990 – 2008,

Figure 5.5 **Drivers of N_2O emissions from EU agricultural soils, 1990–2008**

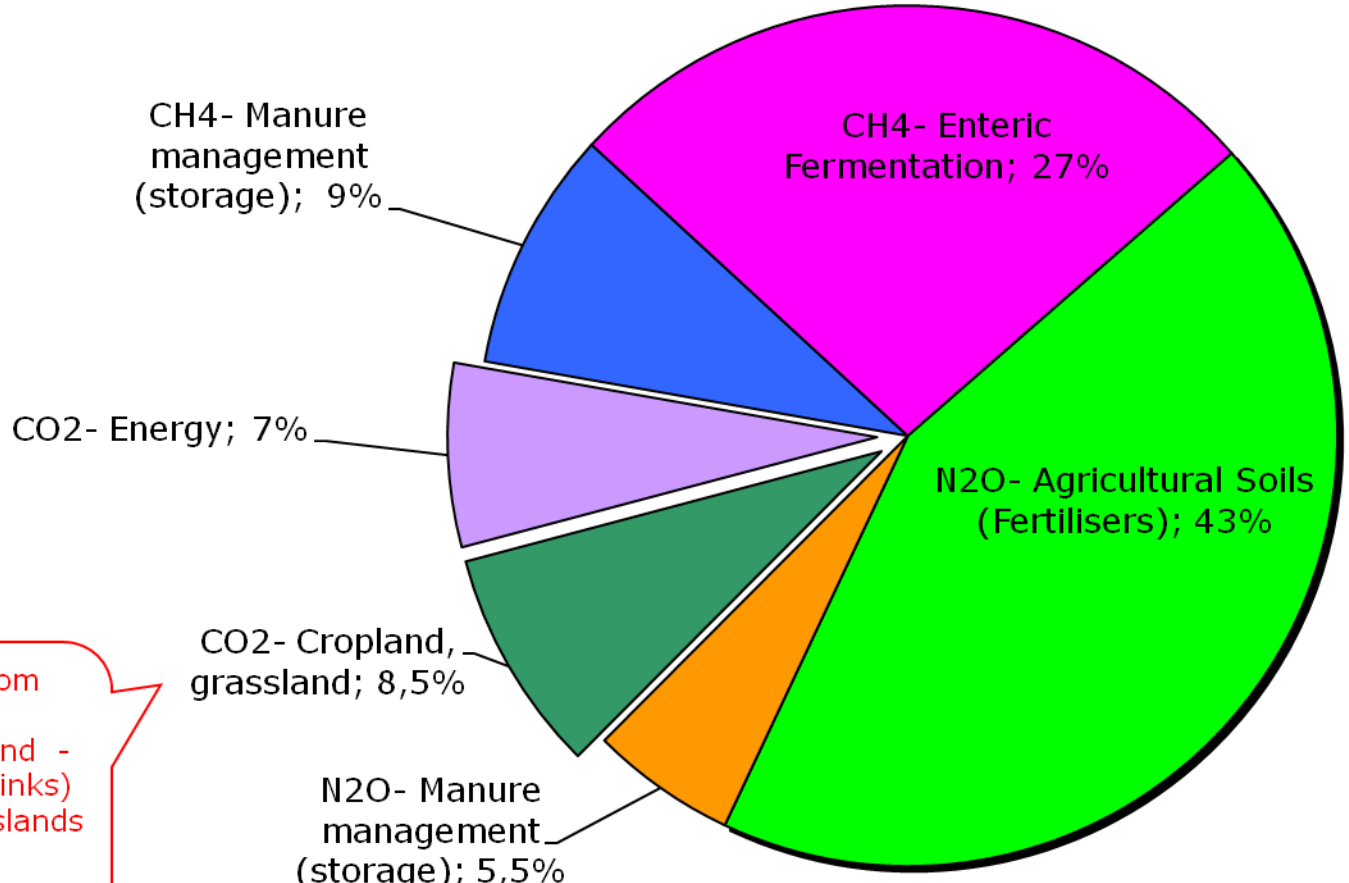


Source: EEA, 2010a.

Important links between CAP/rural development and other EU policies: climate policy, renewables, biofuels, adaptation strategy (2013), bio-economy…



Emissions inventory for sectors in 2010



56,9 Mt from croplands (source) and - 11,4 Mt (sinks) from grasslands

Sectors "Agriculture", "Energy" and "LULUCF", EU-27, 2010 (source: DG AGRI)

EU's Climate regulation related to Agriculture

LULUCF (accounting only)

Timber

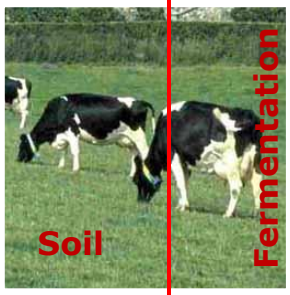
Managed forests

Wetlands

Annual crops

Carbon in annual crops not accounted

Grazing land



Biogas on farm

Carbon in perennial energy crops accounted as emission when harvested

Energy crops

Manure management

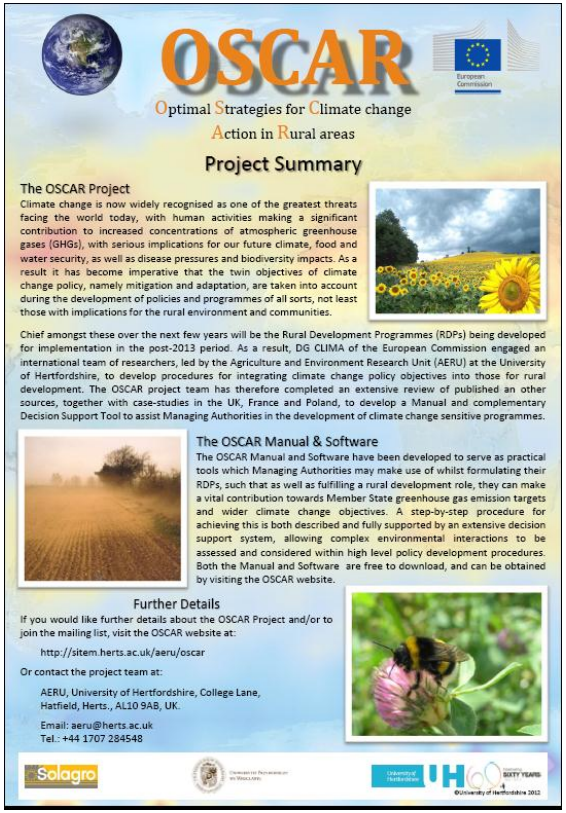
N2O in agricultural soils

Effort Sharing Decision (part of EU's reduction target)

How can climate objectives be mainstreamed into rural development programs?

OSCAR – *Study aims and objectives*

- DG CLIMA has launched this project to provide guidance material for the design of climate action in RDPs post-2013:
  - **Support tool** for the identification of optimal strategies to address climate change objectives in rural areas
  - Assessment of national/regional climate "**hotspots**" - mitigation and adaptation
  - Estimates of **cost and effects** of different RDP operations in view of potential **climate benefits**
  - Due to substantial amount of data and calculations: design of a **SOFTWARE tool** replaces a 'paper' manual
  - Geographical Information System (GIS) used to generate **Regional Variation Categories** (RVCs), assess different impact


OSCAR

Optimal Strategies for Climate change Action in Rural areas

Project Summary

The OSCAR Project

Climate change is now widely recognised as one of the greatest threats facing the world today, with human activities making a significant contribution to increased concentrations of atmospheric greenhouse gases (GHGs), with serious implications for our future climate, food and water security, as well as disease pressures and biodiversity impacts. As a result it has become imperative that the twin objectives of climate change policy, namely mitigation and adaptation, are taken into account during the development of policies and programmes of all sorts, not least those with implications for the rural environment and communities.

Chief amongst these over the next few years will be the Rural Development Programmes (RDPs) being developed for implementation in the post-2013 period. As a result, DG CLIMA of the European Commission engaged an international team of researchers, led by the Agriculture and Environment Research Unit (AERU) at the University of Hertfordshire, to develop procedures for integrating climate change policy objectives into those for rural development. The OSCAR project team has therefore completed an extensive review of published an other sources, together with case-studies in the UK, France and Poland, to develop a Manual and complementary Decision Support Tool to assist Managing Authorities in the development of climate change sensitive programmes.

The OSCAR Manual & Software

The OSCAR Manual and Software have been developed to serve as practical tools which Managing Authorities may make use of whilst formulating their RDPs, such that as well as fulfilling a rural development role, they can make a vital contribution towards Member State greenhouse gas emission targets and wider climate change objectives. A step-by-step procedure for achieving this is both described and fully supported by an extensive decision support system, allowing complex environmental interactions to be assessed and considered within high level policy development procedures. Both the Manual and Software are free to download, and can be obtained by visiting the OSCAR website.

Further Details

If you would like further details about the OSCAR Project and/or to join the mailing list, visit the OSCAR website at:

http://sitem.herts.ac.uk/aeru/oscar

Or contact the project team at:

AERU, University of Hertfordshire, College Lane, Hatfield, Herts., AL10 9AB, UK.

Email: aeru@herts.ac.uk

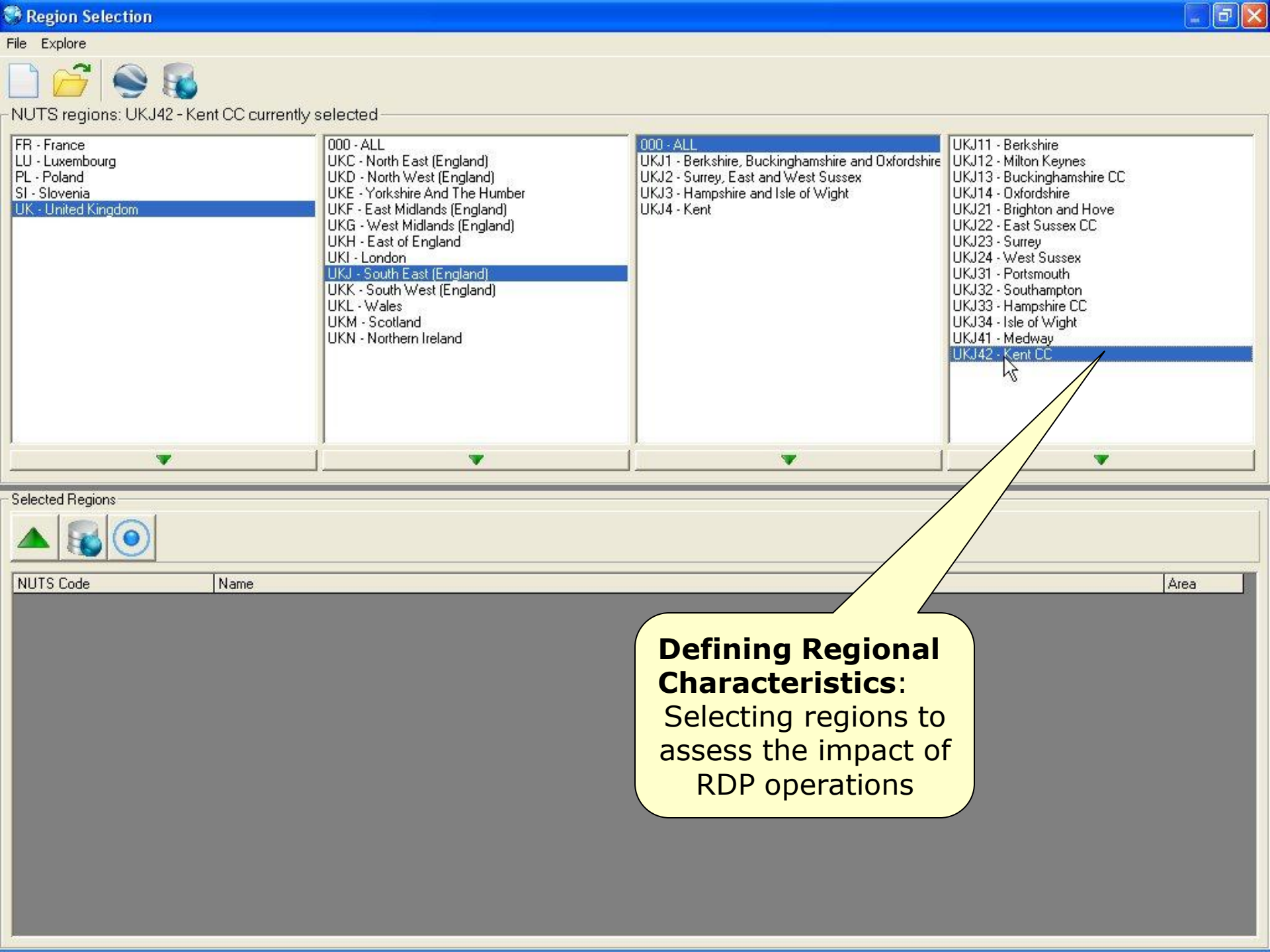
Tel.: +44 1707 284548

Solagro

OSCAR study: conceptual framework

Assessment of rural development operations in terms of its "**MAPP criteria**":

- **Mitigation potential** via the quantification of the change in GHG emissions it causes.
- **Adaptive Capacity impact** via a description of its potential to affect the ability of an ecosystem service to adapt under climate change stresses.
- **Productivity impact** via the affect it will have on agricultural production within a specified area.
- **Practicality assessment** via the identification of factors which will influence the climate change benefits realised


Region Selection
File
Explore
NUTS regions: UKJ42 - Kent CC currently selected
FR - France
LU - Luxembourg
PL - Poland
SI - Slovenia
UK - United Kingdom
000 - ALL
UKC - North East (England)
UKD - North West (England)
UKE - Yorkshire And The Humber
UKF - East Midlands (England)
UKG - West Midlands (England)
UKH - East of England
UKI - London
UKJ - South East (England)
UKK - South West (England)
UKL - Wales
UKM - Scotland
UKN - Northern Ireland
000 - ALL
UKJ1 - Berkshire, Buckinghamshire and Oxfordshire
UKJ2 - Surrey, East and West Sussex
UKJ3 - Hampshire and Isle of Wight
UKJ4 - Kent
UKJ11 - Berkshire
UKJ12 - Milton Keynes
UKJ13 - Buckinghamshire CC
UKJ14 - Oxfordshire
UKJ21 - Brighton and Hove
UKJ22 - East Sussex CC
UKJ23 - Surrey
UKJ24 - West Sussex
UKJ31 - Portsmouth
UKJ32 - Southampton
UKJ33 - Hampshire CC
UKJ34 - Isle of Wight
UKJ41 - Medway
UKJ42 - Kent CC
Selected Regions
NUTS Code
Name
Area
Defining Regional Characteristics: Selecting regions to assess the impact of RDP operations

Potential 'hotspots'

Mitigation

Minimize emissions from:
- livestock manure and enteric fermentation,
- manure management,
- grassland nitrogen fertilizer use,
- drainage of high soil organic carbon,
- peatland under agricultural production
- soil erosion
- soil management

Removals from:
- increase soil organic matter
- preserve soil carbon stock

Adaptation

Increase resilience against:
- drought,
- hail,
- water stress,
- temperature increase,
- habitat fragmentation,
- loss of biodiversity

OSCAR study can generate "hotspot" reports at national and regional level (NUTS 1 to NUTS 3)

RVC Browser

File Toolbox

Regional hotspots | Average values for region

Risk of nitrate leaching

NATURA 2000

Risk of forest fires

Hotspot Report: test1

The table below shows the n falls into gh risk band for the crit hown.

Hotspots are relative to: the EU-27.

NUTS3	CFF	CST	DEN	DLA	FFR	FLO	LAN	LER	N2K	POL	SER	SOS	FLA	WPS	SCS
Ariège	10	0	0	0	100	0	0	52	100	0	0	11	0	0	0
Aveyron	1	0	0	0	0	0	0	43	100	0	0	4	0	0	0
Haute-Garonne	32	0	0	0	100	0	0	13	40	0	0	4	0	0	0
Gers	35	0	0	0	100	0	0	20	100	0	0	0	0	0	0
Lot	32	0	0	0	100	0	0	36	75	0	0	0	0	0	0
Hautes-Pyrénées	0	0	0	0	100	0	0	50	85	0	0	17	0	0	0
Tarn	23	0	0	0	100	0	0	31	100	0	0	0	0	0	0
Tarn-et-Garonne	36	0	0	0	0	0	0	4	50	0	0	0	0	0	0

RVC Key

Code	Short name	Description
CFF	CO2 Fossil Fuel	Carbon dioxide from field operations
CST	CO2 Soil Tillage	Carbon dioxide release from soil due to tillage
DEN	Denitrification Risk	N2O from denitrification
DLA	Dilution_A	Water quality (average/typical quality data) dilution
FFR	Forest Fire	Risk of forest fires
FLO	Flooding	Flooding: Projected change in damage of river floods with a 100-year return period between 2071–2100 and 1961–1990
LAN	Landscape	Impact on nationally designated areas of landscape value (National - CDDA) from soil erosion and forest fires
LER	Leaching Risk	Risk of nitrate leaching
N2K	Natura 2000	Risk to biodiversity in Natura 2000 sites from temperature increase
POL	Pollination	Risk to pollinators
SER	Soil Erosion	Soil erosion increase due to increase in rainfall and increase in heavy rainfall
SOS	SOM Stress	Loss of Soil Organic Matter due to hotter and drier conditions
FLA	Filter_A	Water quality (average/typical quality data) filtration

Identifying Issues of Concern:
Identifying 'hotspots' within a region

Combination of measures - examples:

P5D: Reducing CH_4 and N_2O from agriculture

- Investments in physical assets (art. 18)
- Farm and business development (art. 20)
- AECM (art. 29)
- Organic farming (art. 30)
- Restoring agricultural production potential damaged by natural disasters and catastrophic events and introduction of appropriate prevention actions (art. 19)
- Prevention and restoration of damage to forests from forest fires and natural disasters and catastrophic events (art. 25)
- Advisory services, farm management and farm relief services (art. 16)

P5B: Increasing efficiency in energy use

- Investments in physical assets (art. 18)
- Farm and business development (art. 20)
- Basic services and village renewal in rural areas (art. 21)
- Advisory services, farm management and farm relief services (art. 16)
- Knowledge transfer and information actions (art. 15)

P5E: Fostering carbon sequestration in agriculture and forestry

- Afforestation and creation of woodland (art. 23)
- AECM (art. 29)
- Establishment of agro-forestry systems (art. 24)
- Investments improving the resilience and environmental vale of forest ecosystems (art. 26)
- Forest-environmental and climate services and forest conservation (art. 35)
- Investments in forest area development and improvement of the viability of forests (art. 22)
- Knowledge transfer and information actions (art. 15)

Evaluating Climate Change Impact: Selected operations – ranked by MAP criteria

Search...

My Operations...

- Afforestation to buffer watercourses or to preven
- Ancient trees in arable fields
- Ancient trees in intensively managed grass (cattl
- Ancient trees in intensively managed grass (shee
- Arable reversion to lowland semi-improved grassl
- Arable reversion to permanent unimproved (unfe
- Archaeology: Arable reversion to lowland semi-im
- Archaeology: Protection of archaeological featur
- Archaeology: Reduce cultivation depth on arable
- Ban on cutting vegetation on set-aside land
- Beetle banks on arable land
- Brassica fodder crops followed by over-wintered
- Buffer strips on cultivated land during the nesting
- Buffer strips on cultivated land next to a hedgero
- Buffer strips on cultivated land next to a waterco
- Buffer strips on cultivated land to reduce bystanc
- Buffer strips on semi-improved grassland (cattle)
- Buffer strips on semi-improved grassland (sheep)
- Buffer strips on temporary grassland (cattle) next
- Cattle grazing (replacing sheep) on upland moorl
- Coniferous forest management: control of deer a
- Coniferous forest management: grey squirrel con
- Conservation headlands in arable fields
- Conservation headlands in arable fields (unfertilis
- Conservation of blanket bogs, heaths and uplan
- Creation of new wooded meadows from arable la
- Creation of traditional orchards from lowland sem
- Creation of traditional orchards from lowland sem
- Creation of wood pasture from arable land
- Creation/restoration of grassland for birds from u
- Creation/restoration of grassland for birds from u
- Creation/restoration of grassland for birds from u

test3.osc

Ranked | Mitigation | Adaptation | Production | Operations | Aggregated

My Operations

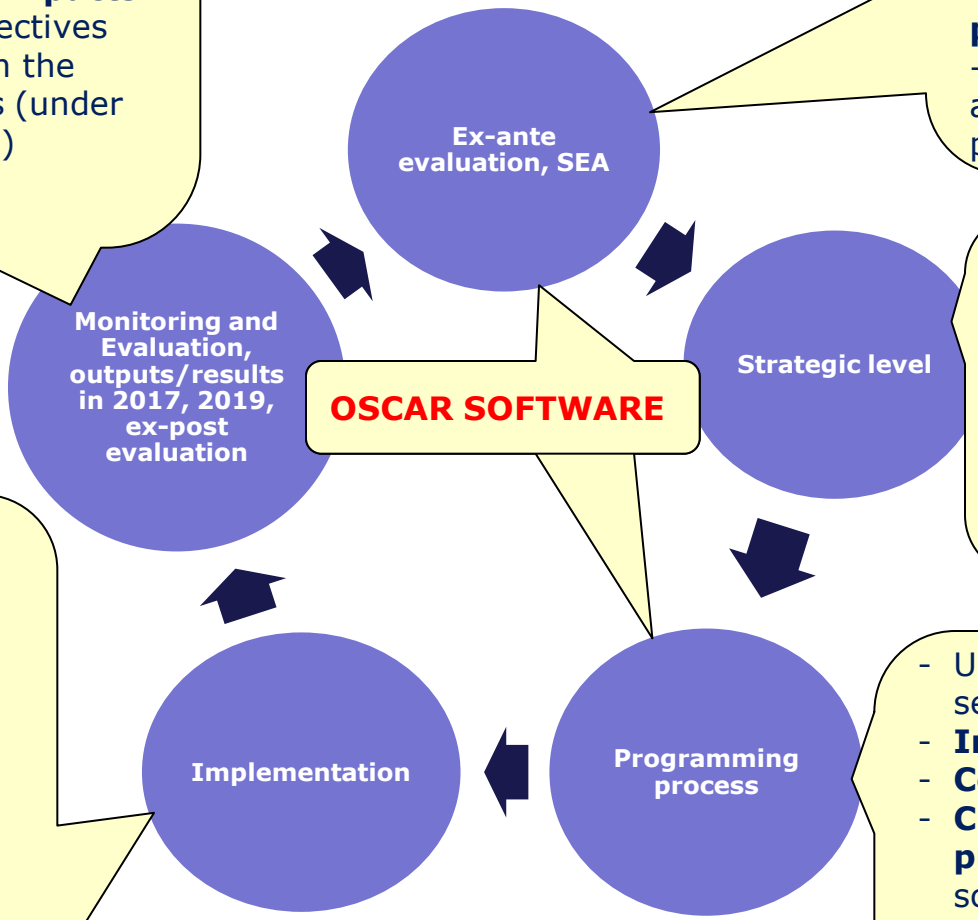
Ranked by total regional impact using the 250 year time horizon.

Operation name	Mitigation	Adaptation	Production	Combined	Data Quality
Pollen and nectar seed mixtures in lowland unimproved grassland (sheep)	0	100	0	33	
Pollen and nectar seed mixtures in lowland unimproved grassland (cattle)	0	100	-1	33	
Wild bird seed mixture in grassland (sheep)	-3	100	0	32	
Wild bird seed mixture in grassland (cattle)	-3	100	-1	32	
Brassica fodder crops followed by over-wintered stubbles	53	0	0	18	
Buffer strips on semi-improved grassland (sheep) next to a hedgerow	0	54	-2	17	
Buffer strips on semi-improved grassland (cattle) next to a hedgerow	0	54	-4	17	
Forestry: Improvement of forest infrastructure including that to address fire fighting	0	49	0	16	

nsure successfu
ning into rural de

- Annual **Monitoring Tables** (committed climate related expenditure and realised climate related expenditure/outputs
- **Outputs/results/impacts** related to climate objectives demonstrated through the appropriate indicators (under discussion of the RDC)

- Role of climate in the intervention logic/targets
- Climate **needs** and **hotspots**?
- Assess regional mitigation and adaptation potential
- Scaling up '**from field to programme**'
- Assess cost-effectiveness and cost-benefit, practicality



- Choose climate related **priorities and targets** in view of the needs and hotspots
- Possible **contribution of EAFRD** to the 20 % climate expenditure target in the EU budget (2014-2020)

- Provide **Training, Education and Advice** on climate friendly and resilient agriculture in the regional context
- Ensure a prominent role of **climate criteria** in the selection process
- Ensure **'sound'** implementation

- Use **climate criteria** in selection of operations
- **Innovative** climate measures
- **Combinations** of measures
- **Climate** related **sub-programmes (**e.g. for water scarcity)
- Ensure **additionality**, avoid **re-labelling** of measures **by** just **adding 'climate'**
- Incorporate **LEADER** in integrating climate objectives

Figure: Step approach of mainstreaming climate actions into rural development

'Climate' potential of LEADER? examples

- **Example**: Energy efficiency of street lights - Modernization of about 120 points of light in the community (Sachsenwald-Elbe, DE)
  - Contribution to climate protection
  - Lower costs and usage of energy
  - Improved lighting quality
- **Example**: Zero emissions region - Implementation concept for Regenerative Self-Generation of Electricity in Dörpum (Schleswig Holstein, DE)
  - Generation of electricity from biogas, wind and photovoltaic – innovative energy management and self-sufficiency
  - To provide long-term benefit for private households, companies and local authorities

Thank you for your attention!

"We can bail out banks. We can bail out states. But no one can bail out the climate, if we don't get our act together."
Climate Commissioner Connie Hedegaard
International climate negotiations in Doha, 4 Dec. 2012

Further information on:

Commisioner for climate action, Connie Hedegaard:

- http://ec.europa.eu/commission_2010-2014/hedegaard/

EU Climate Action:

- http://ec.europa.eu/clima/

On forests, agriculture and climate:

- http://ec.europa.eu/clima/policies/forests/