



Climate considerations in rural development programmes - assistance for Member States

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**Quality design of environmental and climate measures
for 2014-2020 RDPS**

Brussels, 4 March 2013



- **Indications on how to ensure “successful programming” of climate actions in RDPs 2014-2020**

- How to make good choices in view of climate objectives?
How to design mainstreaming in the programming cycle
- Building on existing knowledge –examples from various studies
- Glimpse on available tools





- 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)

- Identify **climate action related needs and hotspots**
- Assess **potential** for the regional GHG mitigation and adaptation
- Identify possible **mitigation and adaptation options**
- Role of climate in the intervention logic/targets

STEP 1
SWOT
Needs
assessment

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

STEP 2
Strategic
planning

- Use **climate criteria** while designing sub-measures
- **Innovate on** climate measures
- Rank and select relevant measures and sub-measures
- Ensure **additionality**, avoid **re-labelling** of measures by just **adding 'climate'**
- Incorporate **LEADER** in integrating climate objectives

STEP 3
Designing of a
programme

- 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

STEP 4
Implementing

STEP 5
Monitoring and
evaluation

Figure: Step approach of mainstreaming climate actions into rural development

STEP 1

SWOT AND NEEDS ASSESSMENT

Possible Hotspots ?

JRC study

Emission sources considered in the **GGELS project**.

LINK:

<http://ec.europa.eu/agriculture/analysis/external/livestock-gas/>

Emission source	Livestock rearing	Feed production	Gases
• Enteric fermentation	X		CH ₄
• Livestock excretions			
○ Manure management (housing and storage)	X		NH ₃ , N ₂ O, CH ₄ , NO _x
○ Depositions by grazing animals	X		NH ₃ , N ₂ O, NO _x
○ Manure application to agricultural soils	X		NH ₃ , N ₂ O, NO _x
○ Indirect emissions, indirect emissions following N-deposition of volatilized NH ₃ /NO _x from agricultural soils and leaching/run-off of nitrate	X		N ₂ O
• Use of fertilizers for production of crops dedicated to animal feeding crops (directly or as blends or feed concentrates, including imported feed)			
○ Manufacturing of fertilizers		X	CO ₂ , N ₂ O
○ Use of fertilizers, direct emissions from agricultural soils and indirect emissions		X	NH ₃ , N ₂ O
○ Use of fertilizers, indirect emissions following N-deposition of volatilized NH ₃ /NO _x from agricultural soils and leaching/run-off of nitrate		X	N ₂ O
• Cultivation of organic soils		X	CO ₂ , N ₂ O
• Emissions from crop residues (including leguminous feed crops)		X	N ₂ O
• Feed transport (including imported feed)		X	CO ₂ -eq
• On-farm energy use (diesel fuel and other fuel electricity, indirect energy use by machinery and buildings)		X	CO ₂ -eq
• Pesticide use		X	
• Feed processing and feed transport		X	CO ₂
• Emissions (or removals) of land use changes induced by livestock activities (feed production or grazing)			
○ carbon stock changes in above and below ground biomass and dead organic matter		X	CO ₂
○ soil carbon stock change		X	CO ₂
○ biomass burning		X	CH ₄ and N ₂ O
• Emissions or removals from pastures, grassland and cropland	X	X	CO ₂

OSCAR study

Regional hotspots | Average values for region

Hotspot Report: test1

The table below shows the percent of each NUTS3 area which falls into the high risk band for the criteria shown.

Hotspots are relative to: the EU-27.

Risk of forest fires

Risk of nitrate leaching

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

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

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

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

http://ec.europa.eu/clima/events/0061/index_en.htm

STEP 2

STRATEGIC PLANNING

Climate related priorities and focus areas

European
Commission

M-Mitigation **A- Adaptation**

Union priorities for rural development	M	A
Priority 3: Promoting food chain organisation and risk management in agriculture		
(b) Supporting farm risk management		√
Priority 4: Restoring, preserving and enhancing ecosystems dependent on agriculture and forestry		
(a) Restoring and preserving biodiversity, including in Natura 2000 areas and high nature value farming, and the state of European landscapes	√	√
(b) Improving water management		
(c) Improving soil management		
Priority 5: Promoting resource efficiency and supporting the shift towards a low carbon and climate resilient economy in agriculture, food and forestry sectors		
(a) Increasing efficiency in water use by agriculture		√
(b) Increasing efficiency in energy use in agriculture and food processing	√	
(c) Facilitating the supply and use of renewable sources of energy, of by-products, wastes, residues and other non-food raw material for purposes of the bio-economy		
(d) Reducing nitrous oxide and methane emissions from agriculture		
(e) Fostering carbon sequestration in agriculture and forestry	√	√

STEP 3

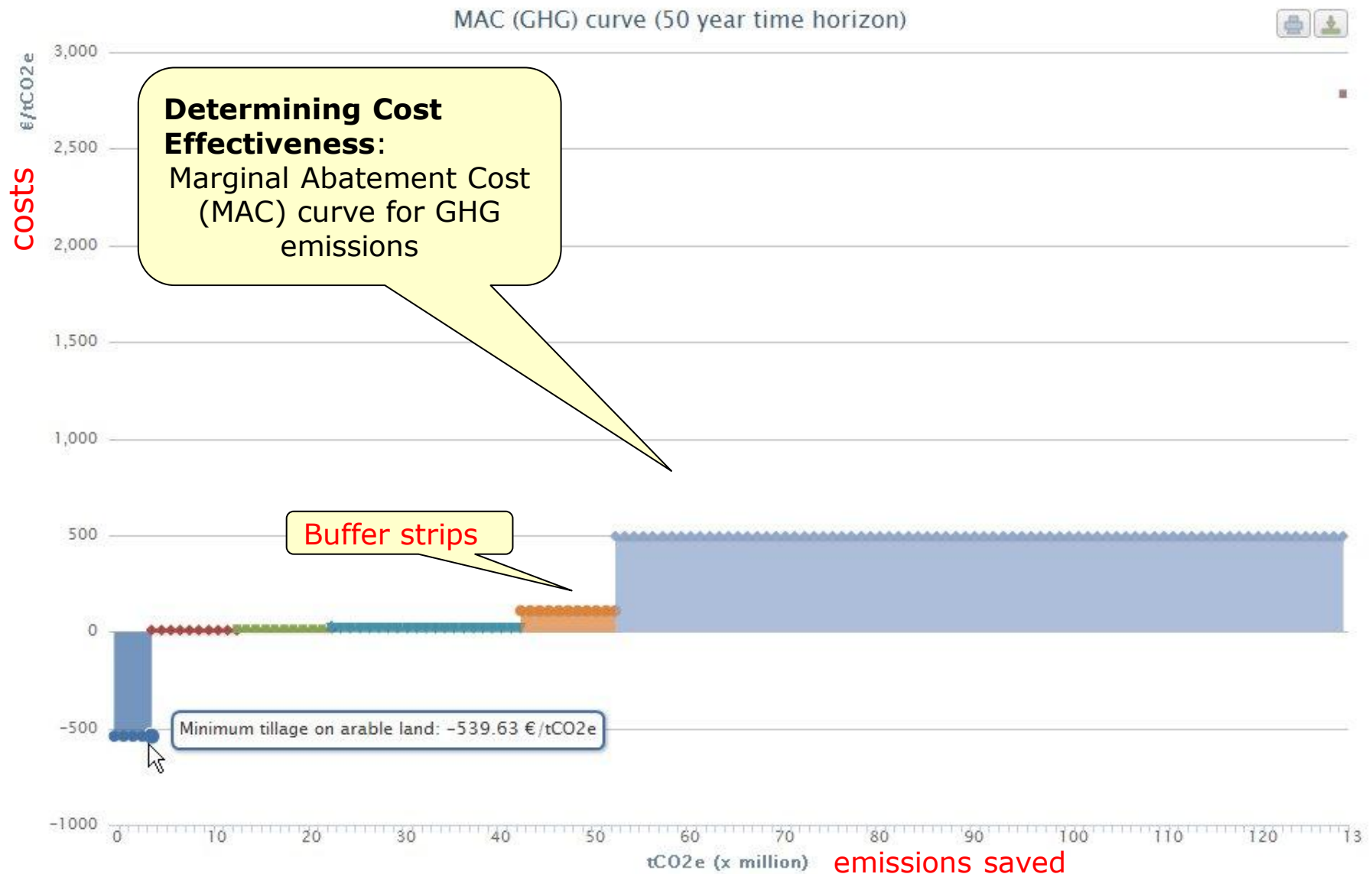
DESIGNING OF A PROGRAMME

Criteria to assess mitigation effects of measures at the regional level

European
Commission

- Identified sources of emissions
- Potential of GHG savings
- Permanence: temporary/reversible fixation of soil carbon
- Leakage: indirect effects such as competition for land (e.g. between crops for biofuels and permanent grassland)
- Additionality of GHG savings (GHG saving in CO₂-eq/year)
- Scale effect
- Measurability: how can the effects be measured?
- Cost-effectiveness (costs in €/t CO₂-eq)

Studie zur Vorbereitung einer effizienten und gut abgestimmten Klimaschutzpolitik für den Agrarsektor (Von Thünen Institute, Germany)



- Minimum tillage on arable land
- Beetle banks on arable land
- In-field grass areas to prevent erosion or run-off on arable land
- Fallow plots within arable fields for ground nesting birds such as the Skylark (*Alauda arvensis*)
- Creation/restoration of grassland for birds from upland semi-improved grassland (cattle)
- Buffer strips on cultivated land next to a watercourse

Innovate on climate sub-measures?(1)

From RDPs 2007-2013

- Restoring forestry potential and introducing prevention actions for restoration of an old reservoir in the Slovak part of Beskidy Mountains
- Adapt livestock systems to new climatic conditions by increase ventilation in livestock sheds, adjustment to the fodder (Sweden, Finland)

Study: Methodologies of climate proofing investments and measures under ... and the CAP

Actions for farmers in UK To be more energy efficient

- Electricity metering and sub-metering and monitoring of fuel bills
- Efficient building ventilation and insulation
- Adjust time and temperature controls on heating and servicing boilers regularly
- Replace lightening with more efficient types
- Efficient technologies for refrigeration and produce storage

Innovate on climate sub-measures? (2)

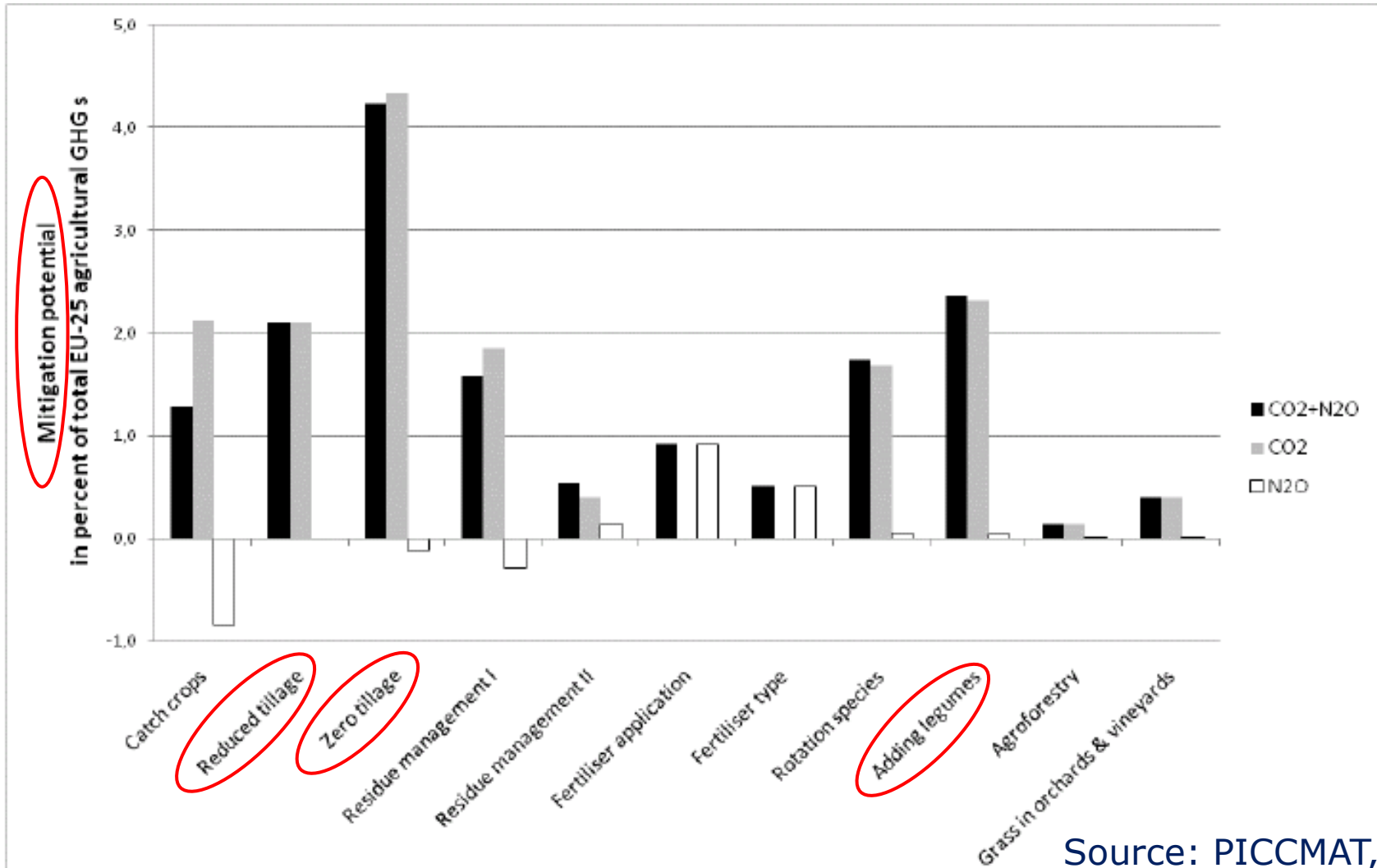
How can soil management help mitigate climate change?

- examples

- Reduce cultivation and/or drainage of peat soils
- Store carbon in soils by regular addition of crop residues and manures or organic materials such as compost
- Reduce the intensity and frequency of disturbance to protect soil carbon sinks (reduced cultivation techniques: minimum or no tillage)
- Precision in nitrogen management to reduce N₂O
- Conserve and maintain uncultivated areas within arable landscape as soil carbon sinks (woodlands, buffer strips, permanent grasslands)

Study: Methodologies of climate proofing investments and measures under ... and the CAP

Mitigation potential of selected management actions



Evaluating Climate Change Impact:

Selected operations – ranked by MAPP criteria

OSCAR study

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	■

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 (unfer
- Archaeology: Arable reversion to lowland semi-ir
- 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) i
- 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 ai
- Coniferous forest management: grey squirrel cont
- Conservation headlands in arable fields
- Conservation headlands in arable fields (unfertilis
- Conservation of blanket bogs, heaths and upland
- Creation of new wooded meadows from arable le
- 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 up
- Creation/restoration of grassland for birds from up
- Creation/restoration of grassland for birds from up

STEP 4

IMPLEMENTING

Safeguards = eligibility? examples for adaptation

European
Commission

- Define minimum water efficiency savings for any investment support for irrigation
- For afforestation: new planting species are suited to future climate conditions
- Resilient investments in infrastructure
- Eligibility for payments for risk management: insurance schemes and mutual funds accompanied with a business plan demonstrating climate adaptation considerations
- Provide training and advice on climate mitigation and adaptation issues

Selection criteria for projects- examples

- Consider giving **preference to climate friendly/resilient projects** (e.g. higher energy efficiency, reduction of GHG emissions)
- Preference either to type of investment or investments to equipment and technology over investments to buildings?
- Consider giving preference to applicants who are planning investments e.g. in view of adaptation to climate change in the same county (ensuring a scale effect)?

Available tools?



- OSCAR software
- Carbon calculator (JRC)



- CALM www.calm.cla.org.uk
- CPLAN GHG calculator www.cplan.org.uk



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 and 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

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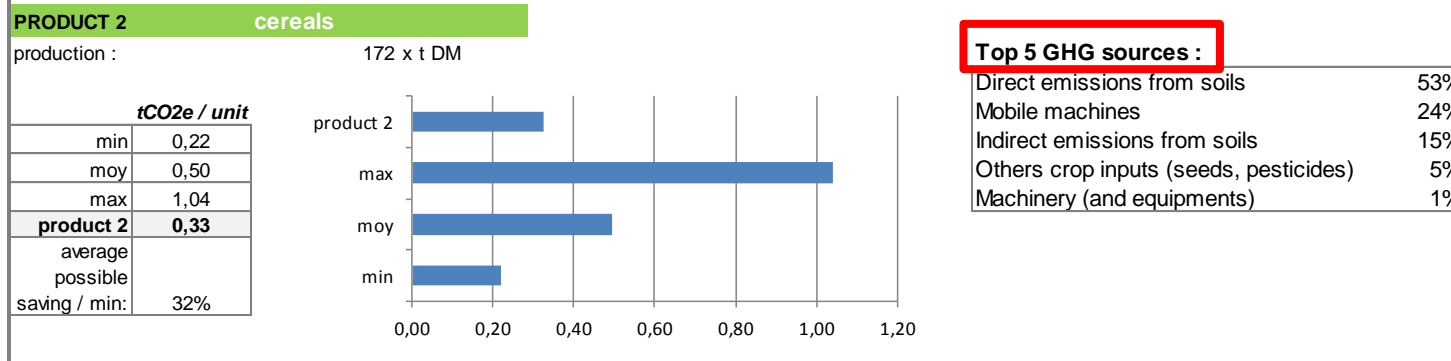
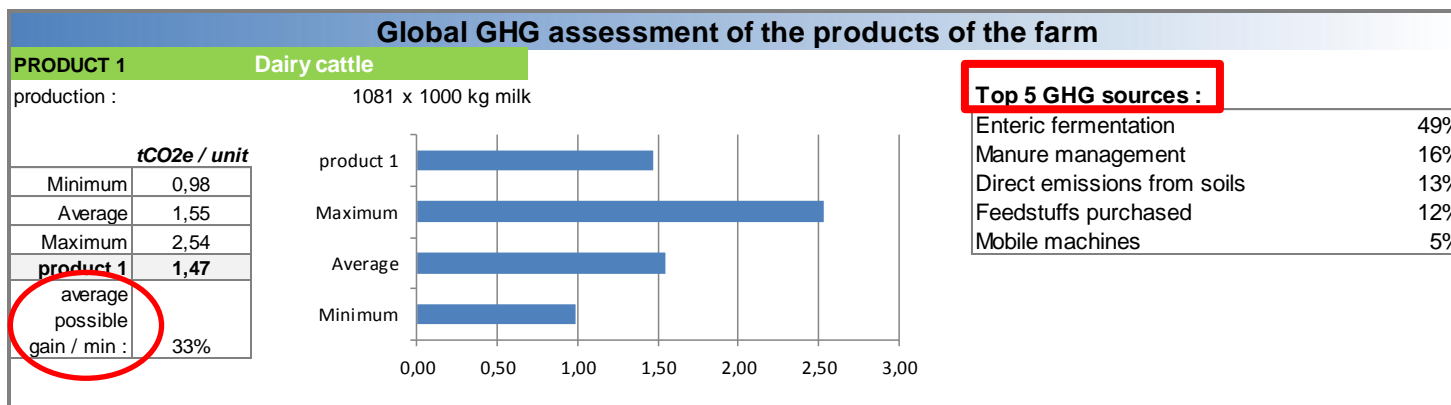
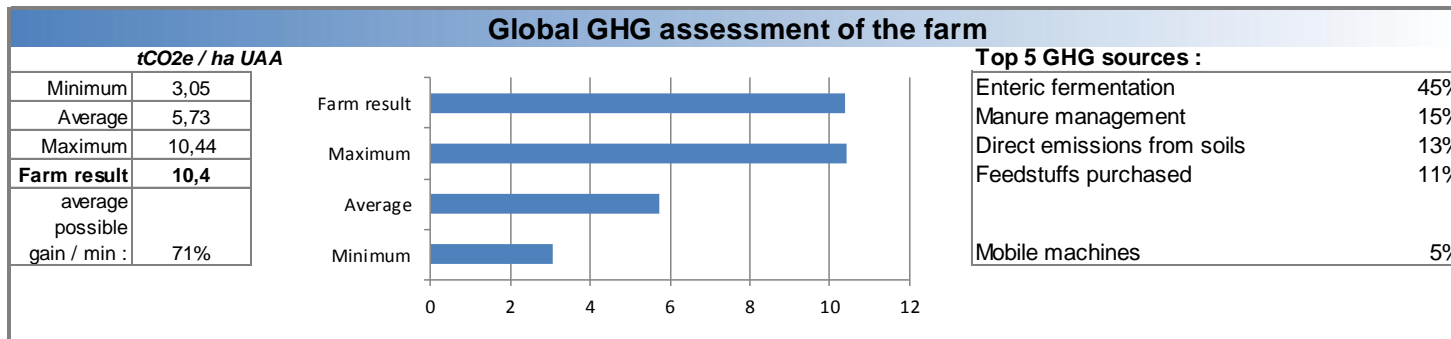
Assessment identification :

Dairy milk with crops
0
France

Agricultural area: 166,3 ha
Labour unit: 3 AWU

Assessment Author: BOCHU JL / METAYER

Survey date: 00/01/1900



Useful LINKS :



- OSCAR study

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

http://ec.europa.eu/clima/events/0061/index_en.htm

- Carbon Calculator - JRC

<http://www.solagro.org/site/476.html>

- Studie zur Vorbereitung einer effizienten und gut abgestimmten Klimaschutzpolitik für den Agrarsektor (Von Thünen-Institute, Germany)

http://www.ml.niedersachsen.de/portal/live.php?navigation_id=1367&article_id=4724&psmand=7

- GGELS study - JRC

<http://ec.europa.eu/agriculture/analysis/external/livestock-gas/>

- Study: Methodologies for climate proofing investments and measures under cohesion and regional policy and the CAP (soon available on the website of DG Climate Action)

- Climate-ADAPT: the European Climate adaptation platform

<http://climate-adapt.eea.europa.eu/>



Thank you for your efforts and attention!

Climate Commissioner **Connie Hedegaard on the European Budget agreement** 08/02/2013

*"This is a major step forward Rather than being parked in a corner of the EU budget, **climate action will now be integrated into all main spending areas – cohesion, innovation, infrastructure, agriculture etc.***

It is now up to all involved parties... to ensure that the overall ambition is duly reflected with clear targets and transparent measuring methods in all the relevant policies and programmes, not least the Common Agricultural Policy."