

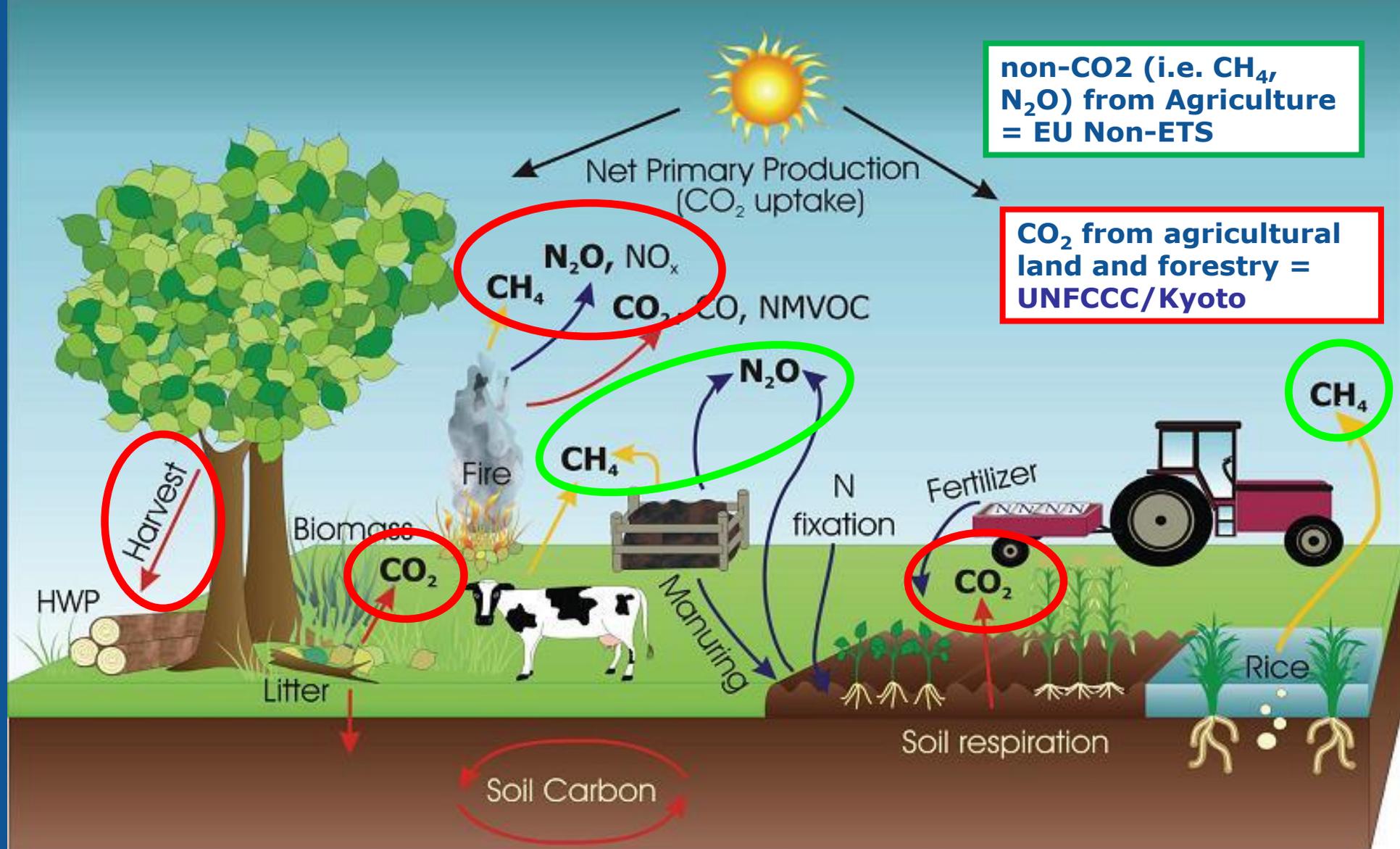


Presentation of the state of play and studies within the new LULUCF climate policy framework

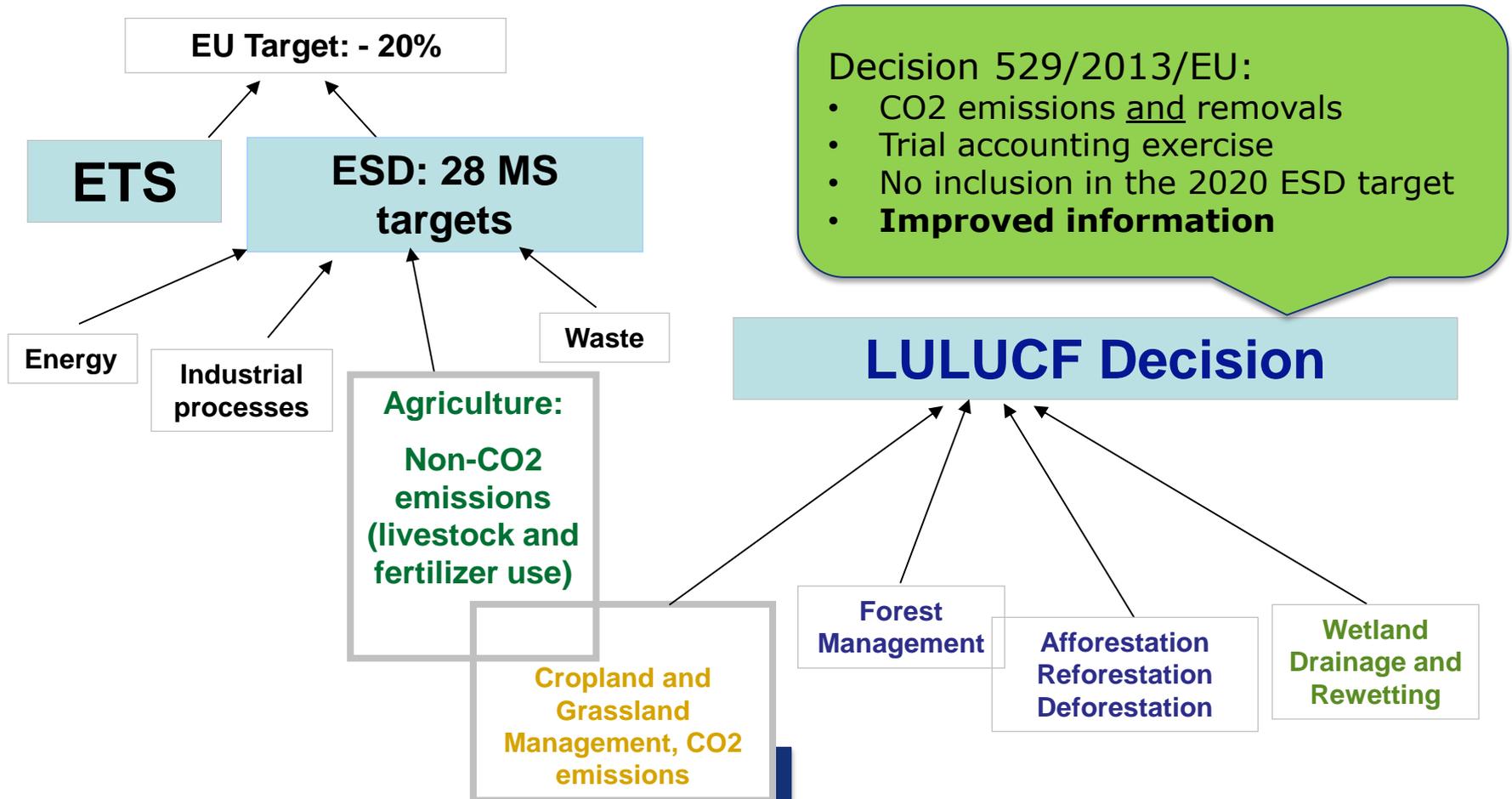
Simon Kay

DG CLIMA Unit C3

8 June 2016



Current policy framework for emissions from agricultural land use and forestry



Agriculture and LULUCF: options for policy architecture post-2020

Greenhouse Gas Reduction Target in 2030: at least -40%

Option 1

ETS

ESD

Agriculture

LULUCF

Option 2

ETS

ESD

Agriculture

LULUCF

Option 3

ETS

ESD

Agriculture

LULUCF

This presentation:

- 1. LULUCF and the Paris Agreement**
- 2. Update on work towards establishing LULUCF policy, post-2020**
- 3. Information on supporting studies**

1. LULUCF and the Paris agreement

Paris Agreement: Long term goals

- *Limiting global warming to below two degrees Celsius*
- *Aspiring to limit temperature rise to one-and-a-half degrees Celsius*
- *Aiming to balance (anthropogenic) global emissions and removals sometime after mid-century*

Agriculture and LULUCF in the 2030 Framework

Final Report

Submitted by ICF Consulting Limited, Alterra, COWI, Ecologic Institute and Umweltbundesamt GmbH

Date: 3 May 2016

Job Number 30300708

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Overall aim of the study

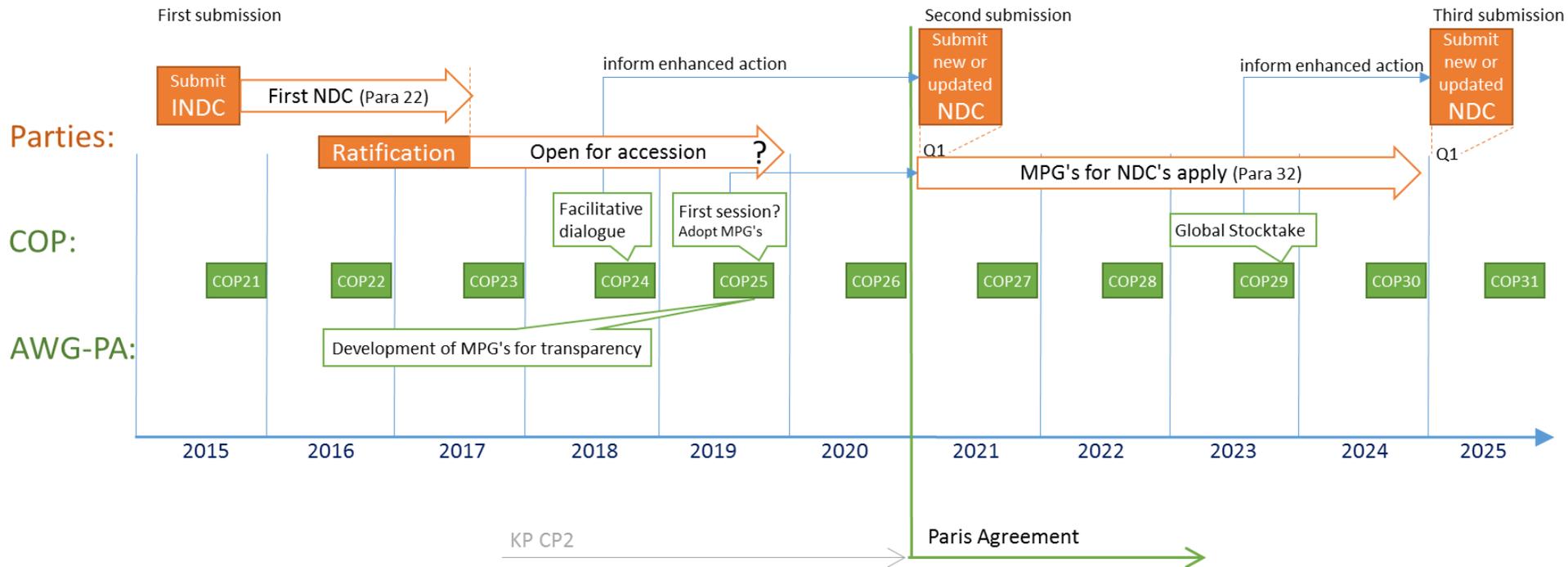
- **Advise the Commission on the implications of the Paris climate agreement for EU climate policy action related to Agriculture and LULUCF,**
- **Review impacts of potential changes, compared to the Kyoto Protocol;**
particular focus on rule changes, processes, data needs, etc.
- **Examine potential implications for related (i.e. to LULUCF) EU policy areas.**

Structure

Two main tasks:

- **Task 1 - undertake a screening and scoping exercise, to provide a thorough assessment of the new elements concerning agriculture and LULUCF in the Paris climate agreement and their implications for the 2030 framework;**
- **Task 2 – identify consequent changes to be brought to the mainstreaming of LULUCF and agriculture related climate actions in EU policy areas.**

The Paris Agreement Timeline: Processes, deadlines and submissions



MPG = Modalities, procedures and guidelines

Accounting rules

*The PA does not provide clear definitions and rules with regard to **accounting**.*

- **The AWG PA will have to elaborate guidance on reporting by 2018 which "may" include some specifications for accounting.**

As the PA is independent of the KP, this provides the opportunity for a thorough analysis of the existing accounting approaches

- **e.g. basis for changing the current KP accounting systems for LULUCF to a simpler system.**

Data needs under the PA

'Enhanced transparency system'; TACCC principles

- **Increases the importance of reporting and accounting systems and**
- **As such require improved data**
- **MS' data sets are diverse, but initiatives such as INSPIRE, COPERNICUS, help address the transparency needs**
- **Biggest gap probably in soil monitoring**
- **Progress underway: Decision 529/2013, Art 3(2)a**

What about other Parties?

Parties	Agriculture	Food Security	Forestry	Land Sector	Accounting principles	LULUCF and agriculture specific measures
Australia					X	
Brazil	X		X	X	X	X
Canada					X	(X)
China	X	X	X	X		X
India	X	X	X			X
Indonesia	X	X	X			
Japan	X		X	X	X	X
Mexico	X	X	X			
New Zealand	X	X	X	X	X	
Norway				X	X	X
Republic of Korea				X		(X)
Russia			X	X	X	X
United States of America				(X)	X	
Switzerland	X		X	X	X	



Parties	LULUCF accounting approach
Australia	UNFCCC inventory reporting categories using a net-net approach. Australia will apply IPCC guidance for treatment of natural disturbance and variation; recognise emissions reductions from all sectors.
Canada	Canada intends to account for LULUCF sector using a net-net approach; will exclude emissions from natural disturbances
USA	Categories of emissions by sources and removals by sinks; net-net approach; may also exclude emissions from natural disturbances, consistent with available IPCC guidance
Japan	Removals by LULUCF sector are accounted in line with approaches equivalent to those under the Kyoto Protocol.
New Zealand	Main principle not decided yet (KP or UNFCCC style)
Switzerland	Land based approach for the LULUCF sector. The same IPCC methodology as used to account for forest management under the Kyoto Protocol 2nd CP will be applied; anticipated accountable emissions/removals from forest land in target year: zero. Switzerland supports that reference levels, when based on a projection, are subject to a [international] technical assessment or review process.
Brazil	Brazil intends to use inventory based approach for estimating and accounting anthropogenic greenhouse gas emissions
China, India, Indonesia, Mexico, Russia	No specific mention of LULUCF accounting approach (RU: reference to IPCC 2006 and 2013 guidance)



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Action*

2. Agriculture and LULUCF in the 2030 Framework

- Paris Agreement endorsed critical role of mitigation by agriculture and forestry globally to stay below 2C
- Thus, in the coming decades the EU in a stepwise manner needs to progressively integrate agriculture and LULUCF into its overall climate and energy policy framework
- First step was the adoption of LULUCF Decision in 2013
- As a second step, the 2030 policy architecture and accounting approach is currently under consideration:
 - ✓ protecting existing sinks
 - ✓ incentivise additional mitigation potential
 - ✓ agricultural challenges understood and acknowledged

LULUCF: policy context

- *October European Council specific guidance*
 - Take into account the multiple objectives of the agriculture and land use sector:
food security **and** climate change mitigation
 - Acknowledge the "lower mitigation potential" of agriculture
- *Principles for the inclusion of LULUCF:*
 - **Build on rules already agreed** with EU domestic LULUCF Decision adopted in 2013, making them fit for purpose for 2020 to 2030
 - **No backsliding** in terms of environmental integrity; **protect existing sinks**; develop additional mitigation potential

The LULUCF impact assessment goals:

- 1. Simplification of reporting/accounting system for LULUCF compared to the one under the KP**
- 2. Determine appropriate EU governance system, esp.**
 - LULUCF compliance in the absence of Kyoto Protocol
 - Accounting for forest management
- 3. Find the balance for the lower mitigation potential of the agriculture sector**
 - Potentially through increased LULUCF action, flexibility
- 4. Ensure appropriate accounting of biomass use**
 - Declining forest removals and increased use of biomass
- 5. Define a suitable overall policy architecture, thereby enhancing Non-ETS flexibility and mitigation**

Need and extent for flexibility towards agriculture in the ESD: key considerations

- *Environmental integrity of non-ETS target:*
 - Allowing unlimited use of LULUCF sink in the ESD would significantly weaken incentives for emissions reductions
 - Places the credibility of the non-ETS target at risk
- *Lower mitigation potential of the agriculture sector:*
 - The European Council established a link between: the lower mitigation potential in agriculture and
 - Optimising the contribution to mitigation from land use, in particular afforestation.
- ✓ **Options quantitatively analysed in respective IAs.**



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3. Studies supporting analysis of effectiveness of mitigation measures for LULUCF policy implementation

Sources of information on measures

- **MS' Art 10 and**
- **MS' Art 3(2) reports**
- **MS' RDP programmes**
 - Study: summary in preparation
- **Study: Mainstreaming climate action in RDPs**
- **Study: Meta-review of climate action in CAP**
- **Study: EcAMPA 2 (under completion)**

LULUCF Decision: Art 10 on Actions - Technical

- Some experiences with climate action
– 2013 programming period, i
Health Check.
- Stimulate discussion of new actions
which explicitly, first and fore
- Guidance and examples:
 - Mainstreaming in rural
 - Art 10 reporting guidance
- Kick-start an ongoing process
climate action in particular rel
Programmes



December 2014

Guidance on Member State reports providing: 'Information on LULUCF actions' in accordance with Article 10 of EU Decision 529/2013/EU

LULUCF Decision Art 3(2)a

From 2016 to 2018, Member States shall report to the Commission by 15 March each year on the systems in place and being developed to estimate emissions and removals from cropland management and grazing land management. Member States should report on how these systems are in accordance with IPCC methodologies and UNFCCC reporting requirements on greenhouse gas emissions and removals.



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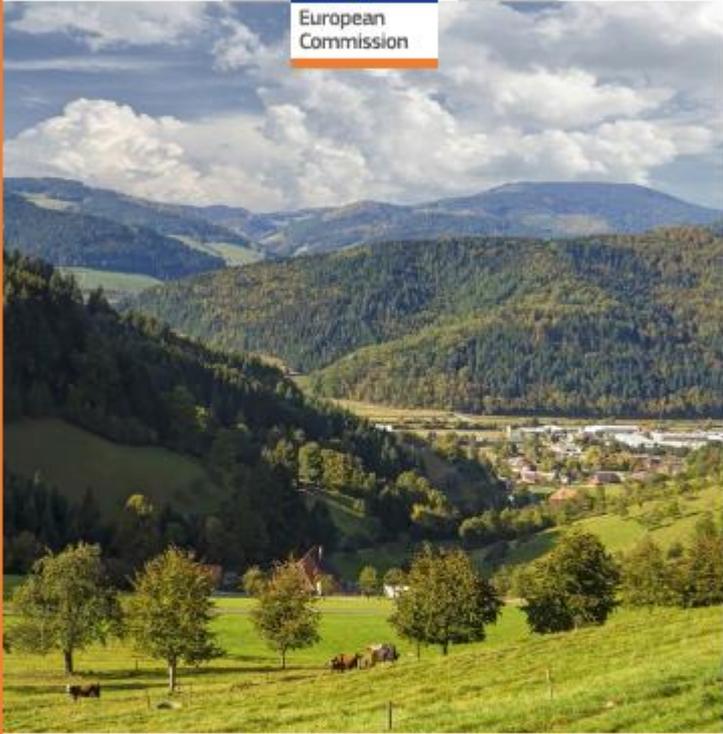
THÜNEN

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February 2015

Guidance on reporting and
accounting for cropland and
grassland management in
accordance with Article 3(2) of EU
Decision 529/2013/EU





Mainstreaming
Climate Change
Into Rural
Development Policy



Downloadable at:
<http://europa.eu/!gm83Pm>

List of measures assessed in project

MITIGATION ACTIONS

M1	Extending the perennial phase of crop rotations
M2	Using cover/catch crops and reducing bare fallow
M3	Improving nitrogen fertiliser use efficiency
M4	Applying nitrogen fertiliser more precisely
M5	Biological nitrogen fixation (i.e. legumes) in rotations and in grass mixtures
M6	No-tillage
M7	Retaining crop residues on the field
M8	Loosening compacted soils and preventing soil compaction
M9	Avoiding the drainage of wetlands and the conversion of peatlands
M10	Feeding a higher fat content diet to cattle
M11	Precision and multi-phase feeding of livestock
M12	Solar fodder dryers
M13	Behavioural change towards better energy efficiency
M14	Climate proofing of planned on-farm investments
M15	Better livestock health planning
M16	Carbon audit

ADAPTATION ACTIONS

A1	Using adapted crops
A2	Using cover crops and reducing bare fallow
A3	Soil erosion control plan
A4	Reduced tillage and zero tillage
A5	Optimising adaptation benefits of shelterbelts and hedges
A6	Optimising the adaptation benefits of land drainage
A7	Improving irrigation efficiency
A8	On farm harvesting and storage of rainwater
A9	Optimising greenhouse cultivation



RICARDO-AEA

**Effective performance of tools for climate
action policy - meta-review of
Common Agricultural Policy (CAP)
mainstreaming**

Specific contract number 340202/2014/688088/SER/CLIMA.A.2
implementing Framework Contract CLIMA.A.4/FRA/2011/0027

Meta-review of mainstreaming climate action in the CAP

An expert-reviewed list of mitigation actions were assessed and information provided per action

- **to aid understanding of their potential, geographic applicability, mode of action and implementation barriers.**

*The study showed that **mitigation actions on agricultural land with highest potential are mostly related to***

- **the management of agricultural soils, land use management and changes to land related practices and to carbon audits.**

Task 1:

Meta-review of mitigation potential and an assessment of policy tools and instruments for climate action.

- a. Screening of Mitigation of Actions to assess mitigation potential and feasibility,
- b. Analysis of the uptake of mitigation actions within the CAP and potential for future uptake.

Task 2:

- Identify and assess how identified (existing or new) actions could be further developed with regards to synergies and efficiency of related climate benefits:
- a. Inventory assessment; determination of IPCC key categories and ability to account for mitigation actions;
 - b. Assessment of administrative effort for implementation of action;
 - c. Assessment of barriers to uptake and recommendation for how the CAP can increase uptake.

22 mitigation actions assessed: 11 showed significant potential

- Eight were related to land use, land use change or crop production, and were focussed on carbon sequestration;
- Two are linked to mitigation of N₂O emissions from improved efficiency fertilizer application,
- One (carbon audits) is a means of identifying relevant actions at a farm business level.
- Two mitigation actions (zero tillage and wetland/peatland conservation/restoration) show low EU level potential, but are notable for high potential at regional level.
- *CO₂ mitigation actions associated with livestock systems performance generally have low(er) potential*

Table 69: Groupings of mitigation actions

Group	Mitigation actions
Land Use	<ul style="list-style-type: none"> • Conversion of arable land to grassland to sequester carbon in the soil • New agroforestry • Wetland/peatland conservation/restoration • Woodland planting • Preventing deforestation and removal of farmland trees • Management of existing woodland, hedgerows, woody buffer strips and trees on agricultural land
Crop Production	<ul style="list-style-type: none"> • Reduced Tillage • Zero Tillage • Leaving crop residues on the soil surface • Ceasing to burn crop residues and vegetation • Use cover/catch crops
Livestock Production	<ul style="list-style-type: none"> • Livestock disease management • Use of sexed semen for breeding dairy replacements • Breeding lower methane emissions in ruminants • Feed additives for ruminant diets • Optimised feeding strategies for livestock
Nutrient and Soil management	<ul style="list-style-type: none"> • Soil and nutrient management plans • Use of nitrification inhibitors • Improved nitrogen efficiency • Biological N fixation in rotations and in grass mixes
Energy	<ul style="list-style-type: none"> • Carbon auditing tools • Improved on-farm energy efficiency



European

Table 70: Mitigation actions in groups of greatest potential, large regional potential, and low potential

Mitigation potential group	Mitigation action
Greatest potential	<p>Conversion of arable land to grassland to sequester carbon in the soil</p> <p>New agroforestry</p> <p>Woodland planting</p> <p>Preventing deforestation and removal of farmland trees</p> <p>Management of existing woodland, hedgerows, woody buffer strips and trees on agricultural land</p> <p>Leaving crop residues on the soil surface</p> <p>Ceasing to burn crop residues and vegetation</p> <p>Use cover/catch crops</p> <p>Use of nitrification inhibitors</p> <p>Biological N fixation in rotations and in grass mixes</p> <p>Carbon auditing tools</p>
Large regional potential	Zero tillage

Low potential	<ul style="list-style-type: none">Wetland/peatland conservation/restorationReduced TillageLivestock disease managementUse of sexed semen for breeding dairy replacementsBreeding lower methane emissions in ruminantsFeed additives for ruminant dietsOptimised feeding strategies for livestockSoil and nutrient management plansImproved nitrogen efficiencyImproved on-farm energy efficiency
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But may show significant regional or local potential (e.g. wetlands)

EU potential, CO₂ mitigation in agricultural land

According to the Ricardo/IEEP study:

- **The CO₂ related feasible additional mitigation potential at EU28 level in 2030 is estimated to be within the range of 25,7 - 56,5 Mt CO₂eq/yr**
- **with a median value 40,7 Mt CO₂eq/yr.**



Non-CO₂

An economic assessment of GHG mitigation policy options for EU agriculture

EcAMPA-2

Ignacio Pérez Domínguez, Thomas Fellmann, Franz Weiss,
Jesús Barreiro Hurlé and Mihaly Himics

European Commission, Joint Research Center

Joint
Research
Centre

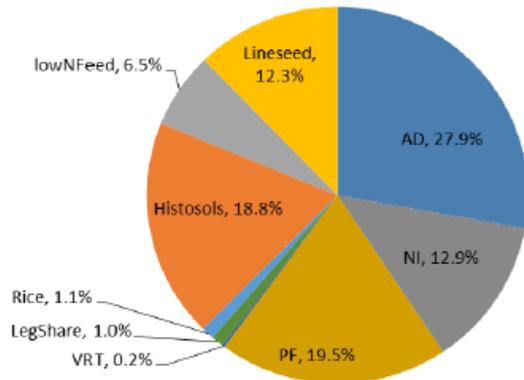


Project objectives

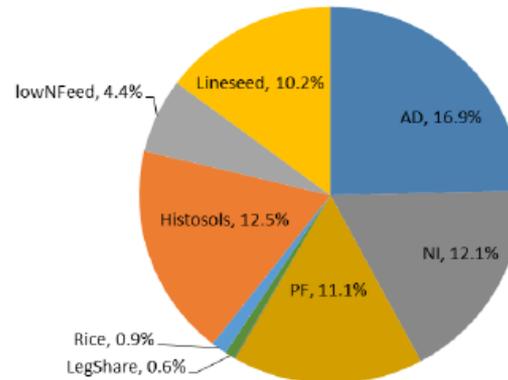
- to update and give an overview of the evolution of agricultural GHG emissions in Europe
- to understand how model-calculated GHG emissions would evolve in a reference scenario (i.e. medium-term projections to 2030)
- to understand which technological mitigation options could be applied and at which costs by EU Member States (i.e. analysis of a mix of policy options regarding emission reduction targets, mitigation options and technological development)
- to understand whether the existing CAP budget and existing policy instruments would be adequate to guarantee net emission reduction in EU agriculture over the medium term (i.e. subsidies for adoption)

Technology adoption: share in total mitigation by tech. option (SUB scenarios)

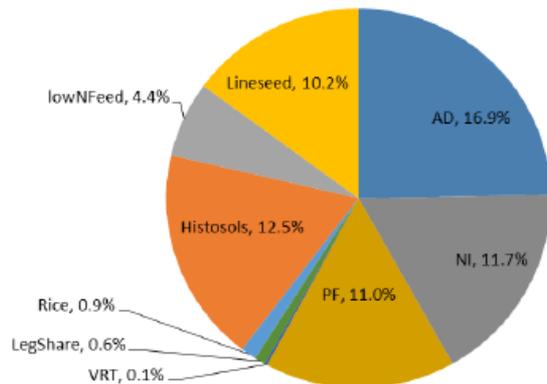
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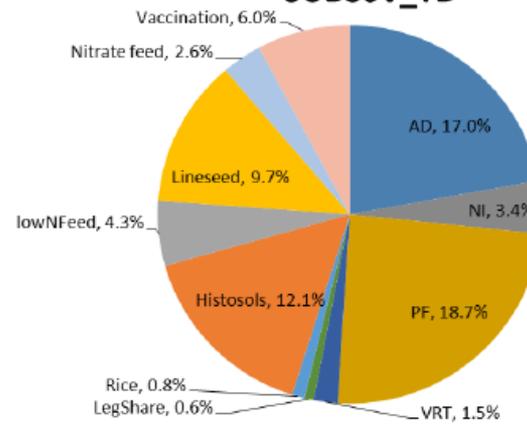
SUB80V



SUB800



SUB80V_TD



* Graphs do not include the mitigation effects from the measures related to genetic improvements (as it is not possible to disentangle the mitigation from the production effects).