



Pricing agricultural emissions and rewarding climate action in the land sector

Technical Workshop

14 June 2023

Brussels

www.trinomics.eu

- In-person participants:
 - Raise your hand to ask for the floor
 - When given the floor, please say your name and organization
 - Turn on your microphone before speaking
 - Please switch off / mute your phone
- Online participants:
 - Post your questions in the chat
- The workshop will be recorded
- Slides will be shared afterwards with all registered participants
- Input to be provided in the online stakeholder survey launched at this workshop (15 June - 28 July)



Agenda

Time (CET)	Activity	Who
13:30-13:35	Welcome	Hans Bolscher, Moderator (Trinomics)
13:35-13:55	Policy context	Alexandre Paquot, DG CLIMA Director Michael Pielke, DG AGRI Acting Director
13:55-14:05	ECA recommendations for climate mitigation in agriculture	Jonas Kathage, European Court of Auditors
Part 1: Emission trading for pricing agricultural GHG emissions along the value chain		
14:05- 14:20	Policy design options and considerations for an ETS	Julia Bognar, IEEP
14:20- 14:55	Panel discussion with representatives from various stakeholder groups to provide different perspectives. Panellists: Jonathan Verschuuren (Tilburg University); Marion Picot (CEJA); Pierre-Marie Brizou (Danone); Amy Hughes (EDF)	Moderated by Trinomics
14:55 - 15:20	Audience Q&A (including possibilities to submit questions online)	Moderated by Trinomics
15:20 - 15:35	Break	



Time (CET)	Activity	Who
Part 2: Rewarding climate action in the land sector through carbon farming		
15:35 - 15:50	Policy models and considerations for using ETS revenues	Aaron Scheid, Ecologic Institute
15:50 - 16:25	Panel discussion with representatives from various stakeholder groups to provide different perspectives. Panellists: Ivo Degn (Climate Farmers); Celia Nyssens (EEB); Shefali Sharma (IATP); Ana Rocha (European Landowners Organisation)	Moderated by Trinomics
16:25 - 16:50	Audience Q&A (including possibilities to submit questions online)	Moderated by Trinomics
16:50 - 16:55	Launch of the online stakeholder survey	Trinomics
16:55 - 17:00	Closing remarks	DG CLIMA





Policy context

Alexandre Paquot

DG CLIMA Director, Directorate C - Innovation for a Low Carbon, Resilient Economy

Michael Pielke

DG AGRI Acting Director, Directorate B - Sustainability



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14 June 2023

Special Report N°16/2021

CAP and climate:
Half of EU climate
spending but farm
emissions are not
decreasing



EUROPEAN
COURT
OF AUDITORS





What questions did we ask?

Audit questions

- ❖ **Did the 2014-2020 CAP support climate mitigation practices with a potential to reduce greenhouse gas emissions?**
- ❖ **Did the CAP better incentivised the uptake of effective mitigation practices in the 2014-2020 period than in the 2007-2013 period?**

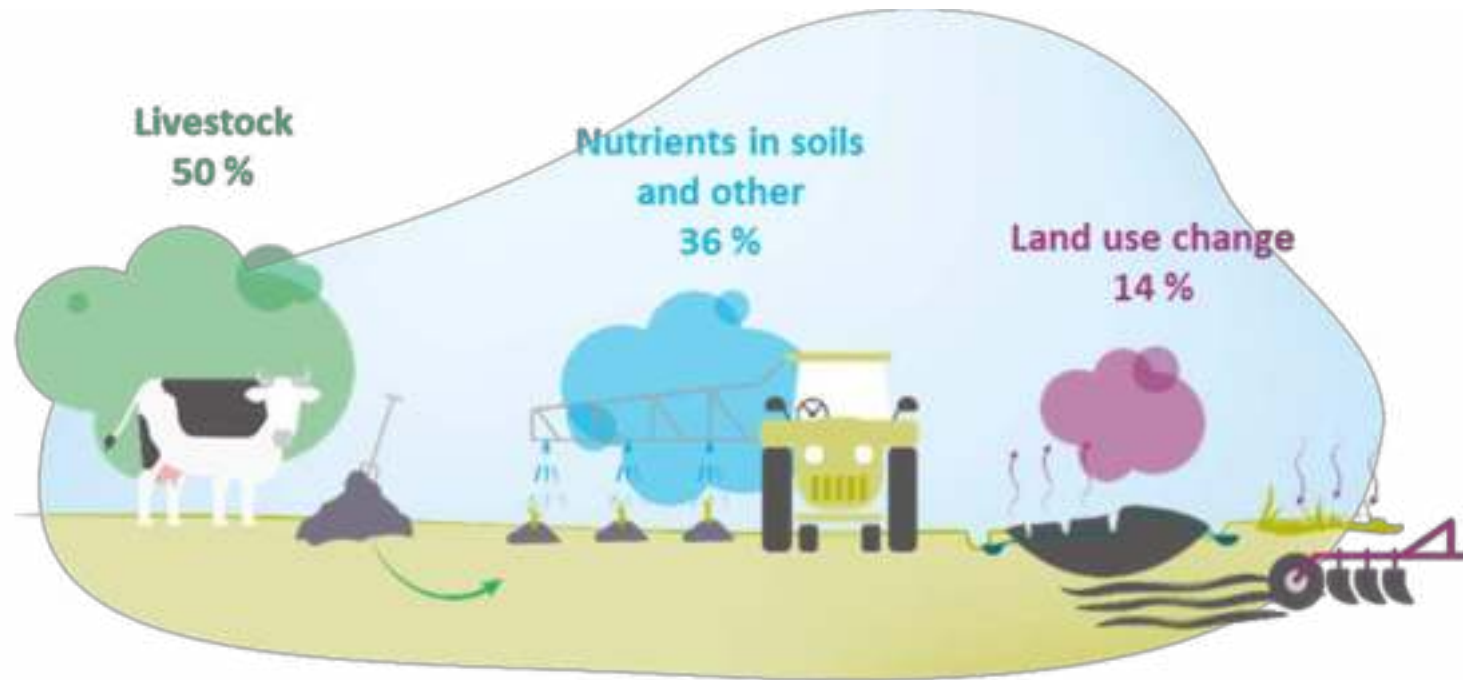
Audit approach

- ✓ review of data and CAP actions taken by 27 MS
- ✓ Interviews with representatives of farmers, environmental and climate NGOs, and national authorities in Ireland, France and Finland
- ✓ review of scientific studies
- ✓ discussions with experts in agriculture and climate change



What did we look at?

Key sources of greenhouse gas emissions



Mainly methane (CH₄) from

- feed digestion by cattle and sheep
- storage of cattle and pig manure

Mainly nitrous oxide (N₂O) from

- application of chemical fertiliser
- manure applied by farmers or deposited by grazing cattle

Mainly carbon dioxide (CO₂) from

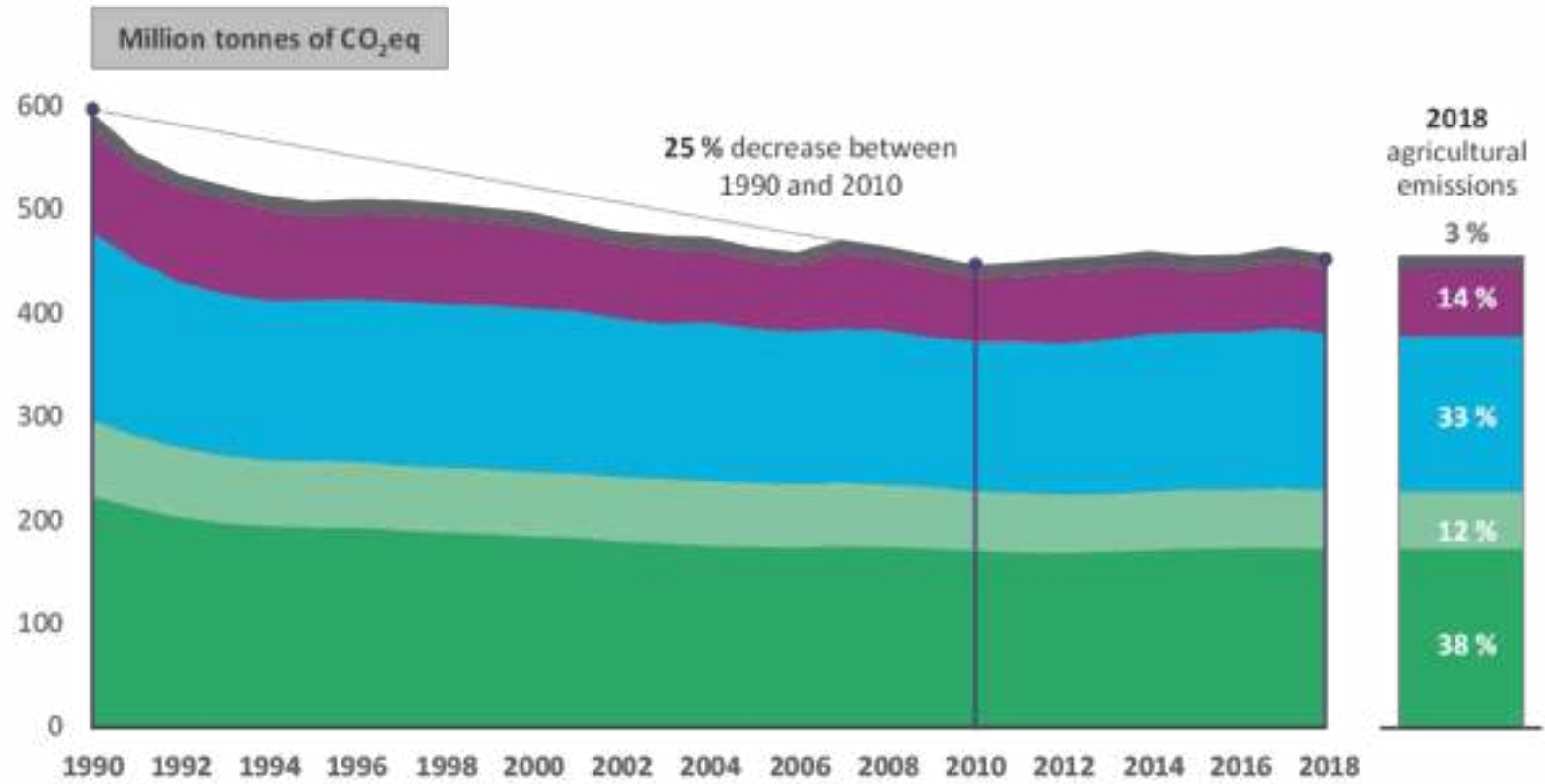
- cultivation of drained organic soils (peatland)
- carbon sequestration on grassland and cropland





What did we find?

Emissions did not decrease since 2010



- Emissions from feed digestion of livestock
- Emissions from manure storage
- Emissions from nutrients on soils
- Net emissions from cropland and grassland
- Other emissions from agriculture





What did we find?

Main findings

- The CAP does not seek to limit/reduce livestock numbers
- Market measures include promotion of animal products
- Emissions from chemical fertilisers and manure increased since 2010
- The CAP has provided little or no support to effective measures to reduce such emissions



Recommendation #1

Take action so that the **CAP reduces emissions from agriculture**

- Invite MS to set target for agricultural GHG emissions
- Assess MS strategic plans to limit risk of increased GHG emissions
- Ensure CAP incentivises reduction of livestock/fertilisers emissions





What did we find?

Main findings

- CAP measures to protect and increase carbon content have not significantly reduced emissions from land use
- Cultivated drained organic soils are eligible for direct payment
- Restored peatlands/wetlands are not always eligible to receive CAP funds



Recommendation #2



Take steps to **reduce emissions from cultivated drained organic soils**

- Assess impact of CAP on peatland/wetland
- Incentivise the rewetting/restoration of drained organic soils



What did we find?

Main findings

- Despite 26% of CAP are associated with climate action, the Commission did not set a specific mitigation target
- Data collected does not allow a proper monitoring of the impact of CAP climate funding on greenhouse gas emissions
- 2014-2020 changes to the CAP did not reflect new climate ambition
- EU law does not apply a polluter-pays principle to greenhouse gas emissions from agriculture



Recommendation #3



Report regularly on the contribution of the CAP to climate mitigation

- Set indicators to assess impact of CAP on climate mitigation
- Apply polluter pays principle, reward farmers for carbon removals

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for your attention!**

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Part 1: Emissions trading for pricing agricultural GHG emissions along the value chain



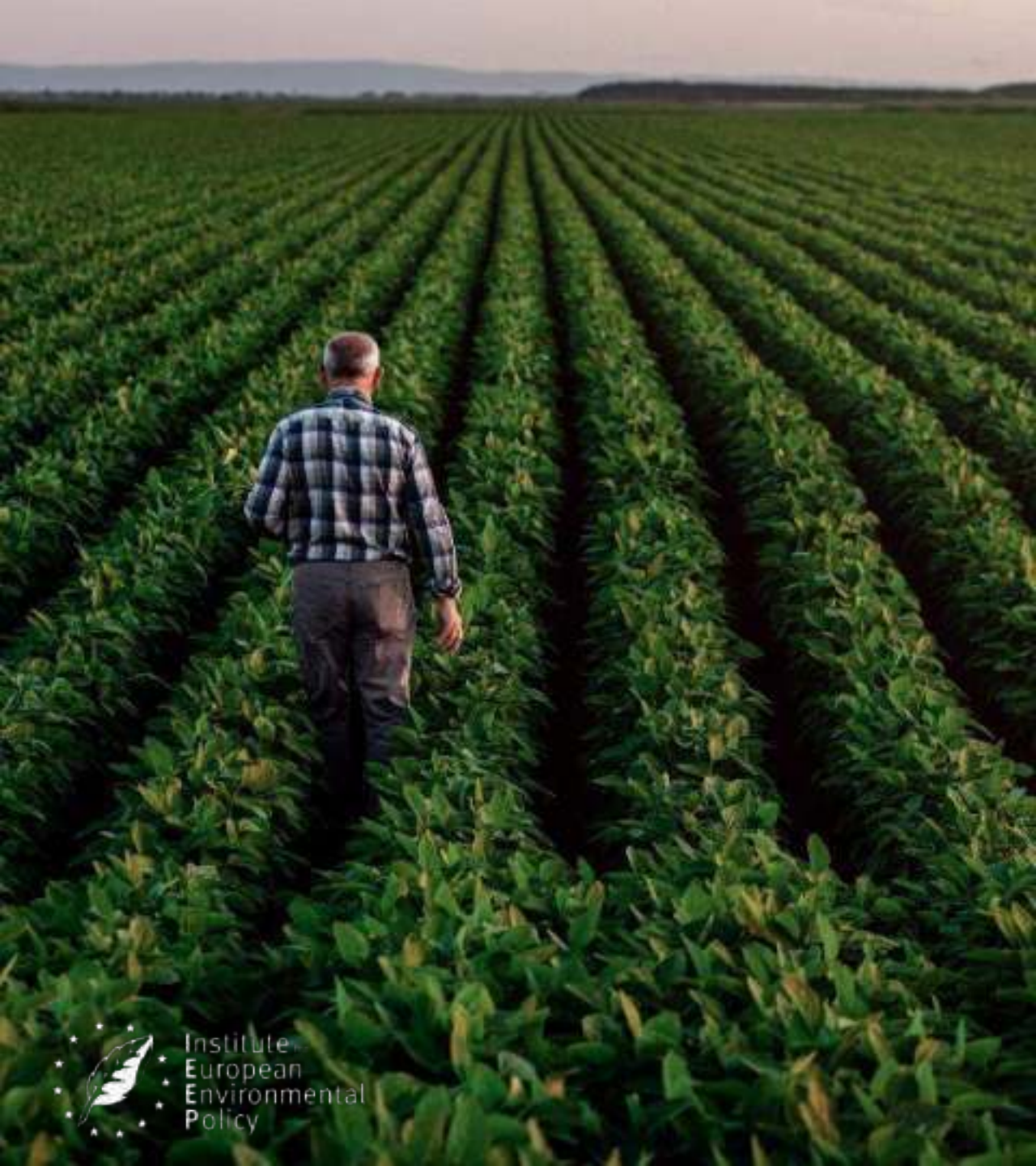
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Emissions trading for pricing agricultural GHG emissions along the value chain

Part 1: Policy design options and considerations for an ETS

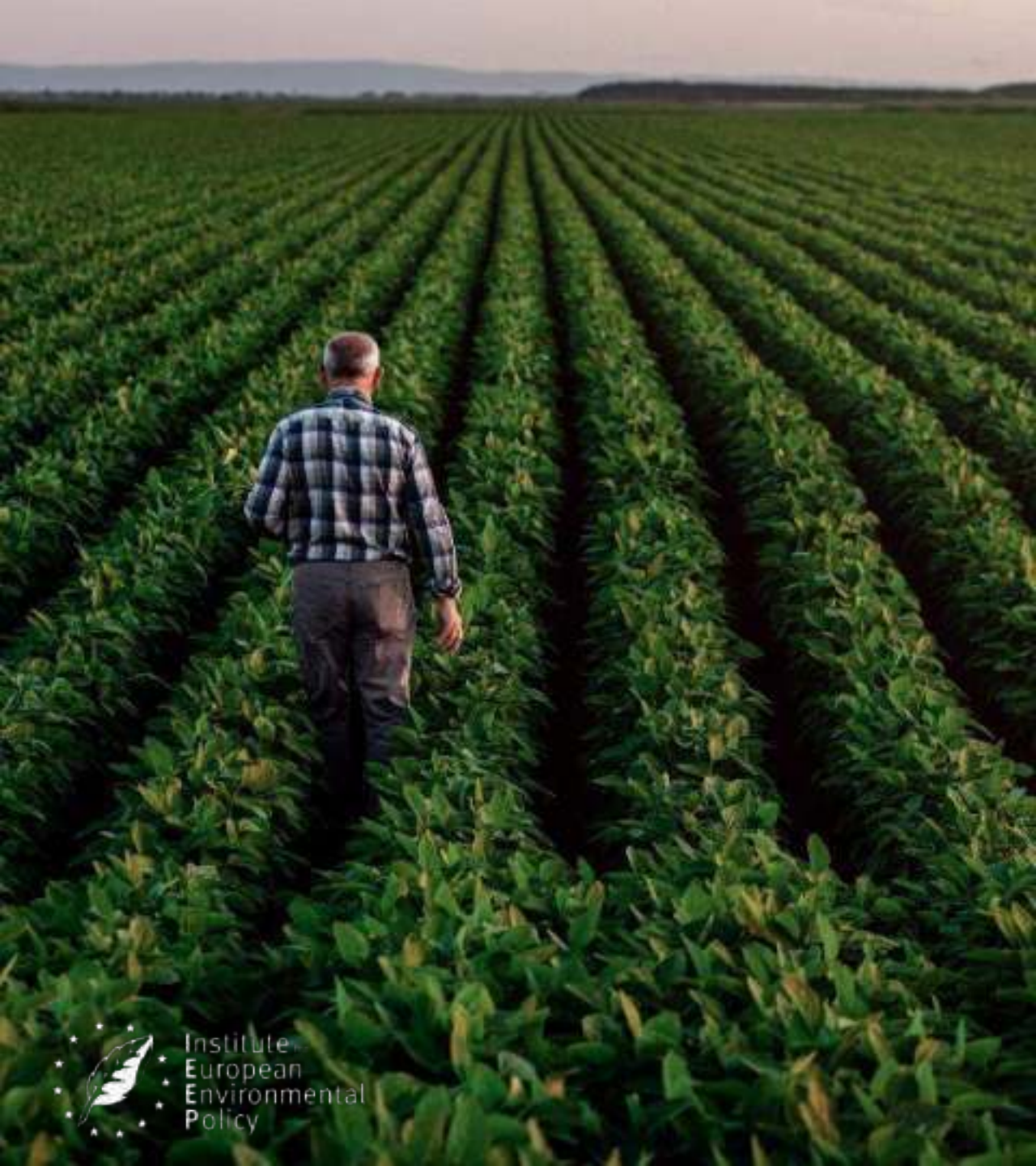
Julia Bognar, Senior Policy Analyst, IEEP
Technical workshop, 14.06.2023





Objective of the study

- Explore and design 5 policy options for applying the polluter pays principle towards agricultural emissions
- Assessment of the proposed policy options against a set of criteria



Key challenges and considerations

- Large number of farms in the EU
 - Consideration: minimise burden of implementation
- GHG MRV. Tools are not yet commonly used by farmers in the EU
 - Consideration: reliable but cost effective MRV
- Risk of production moving outside EU
 - Consideration: safeguards against carbon leakage
- Risks to farmer economic security
 - Consideration: provide financial incentives for innovation and change
- Political barriers to implementation
 - Consideration: options with high public acceptance

Assessment of policy options



Economic



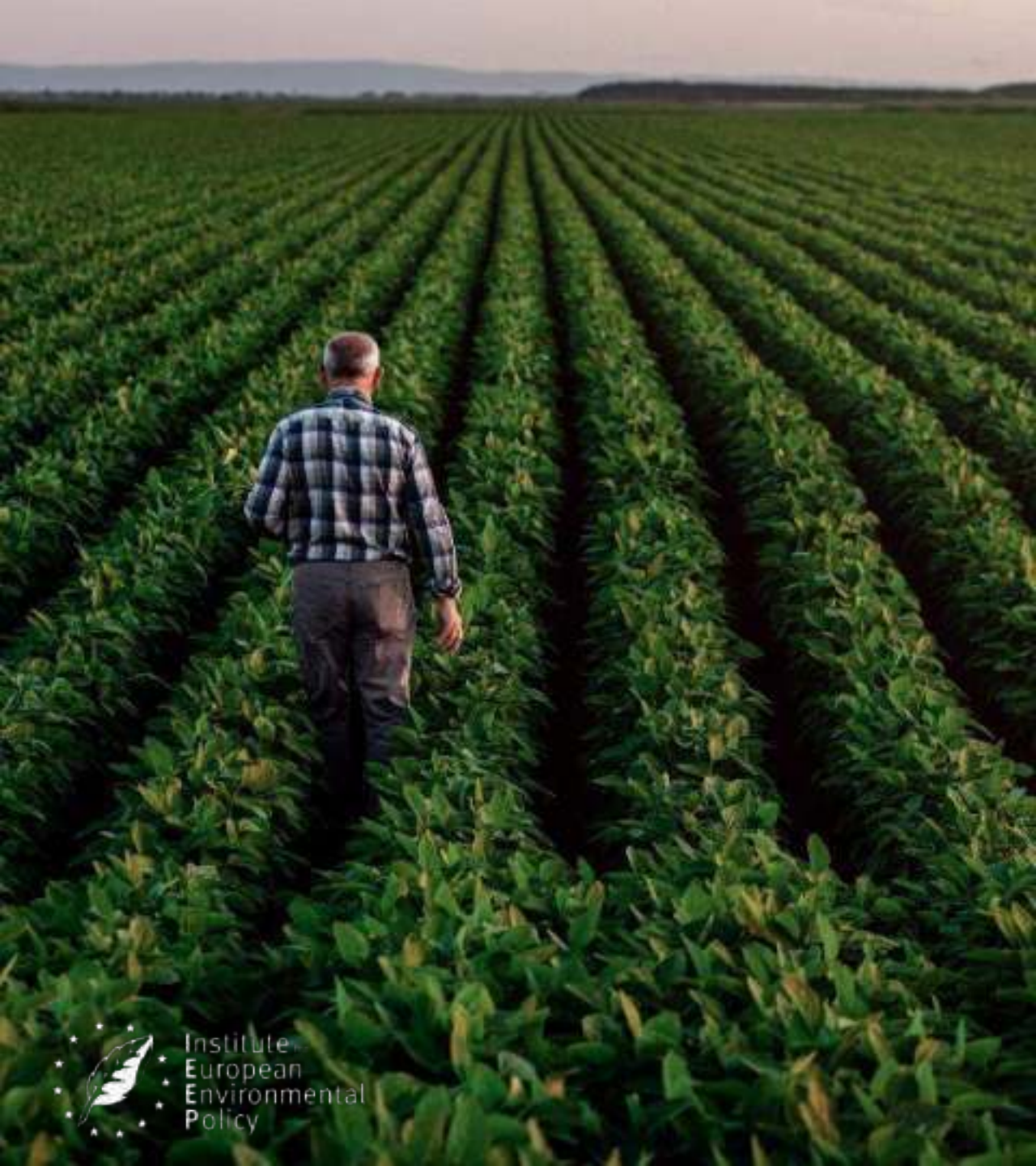
Environmental



Regulatory
& Admin

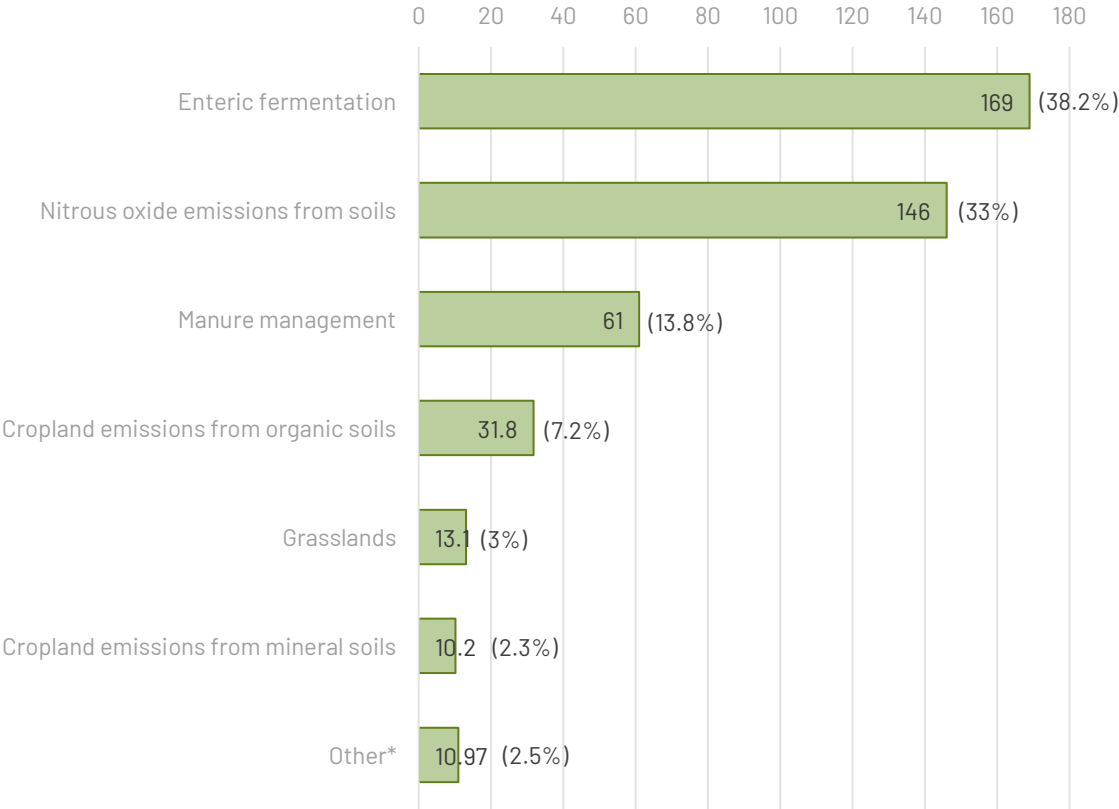


Socio-
political



Sources of GHG emissions

EU agricultural emissions by source
(expressed in MtCO₂e)



*Excludes on-farm energy use

Five proposed policy options



On-Farm ETS

- Point of obligation: farm operators
- Three options
 - All GHG
 - Livestock
 - Peatlands

Upstream ETS

- Point of obligation: fertiliser producers and feed importers

Downstream ETS

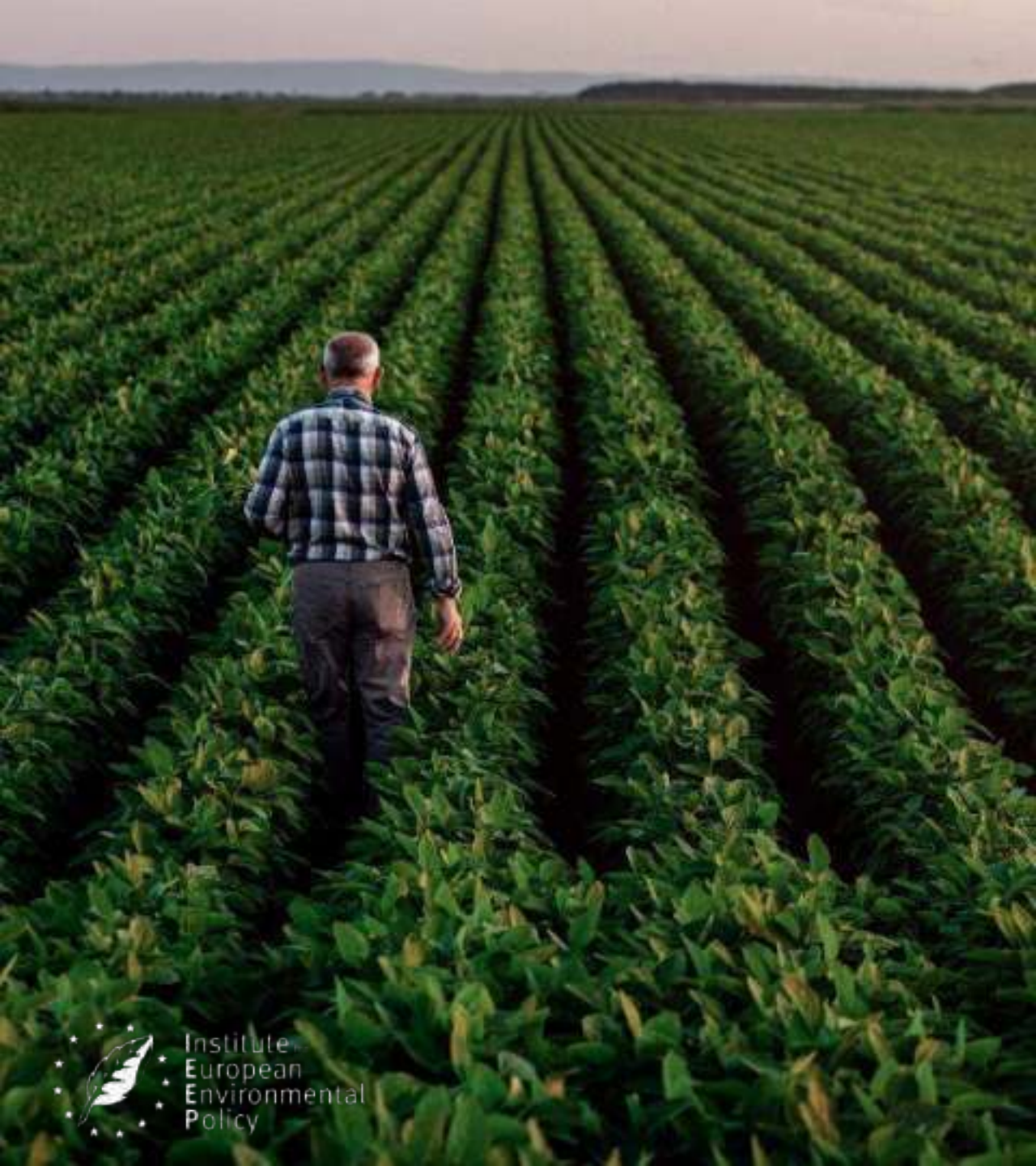
- Point of obligation: meat and dairy processors

On-Farm ETS: Scope

Source of emissions	GHG Type			Net emissions per annum (MtCO ₂ e)	Included in on-farm ETS scope?		
	CH ₄	N ₂ O	CO ₂		All GHG	Livestock	Peatlands
Enteric fermentation	✓			169 MtCO ₂ e	✓	✓	
N ₂ O Emissions from managed agricultural soils		✓		146 MtCO ₂ e	✓		
Manure management	✓	✓		61 MtCO ₂ e	✓	✓	
Soil carbon emissions from organic soils	✓	✓	✓	31.8 MtCO ₂ e	✓		✓
Grasslands			✓	13.1 MtCO ₂ e	✓		
Soil carbon emissions from mineral soils			✓	10.2 MtCO ₂ e	✓		
Liming			✓	5.4 MtCO ₂ e	✓		
Urea application			✓	3.6 MtCO ₂ e	✓		
Rice farming	✓		✓	1.97 MtCO ₂ e	✓		
Burning crop residues	✓	✓		0.54 MtCO ₂ e	✓		
On-farm energy use	✓	✓	✓	?			

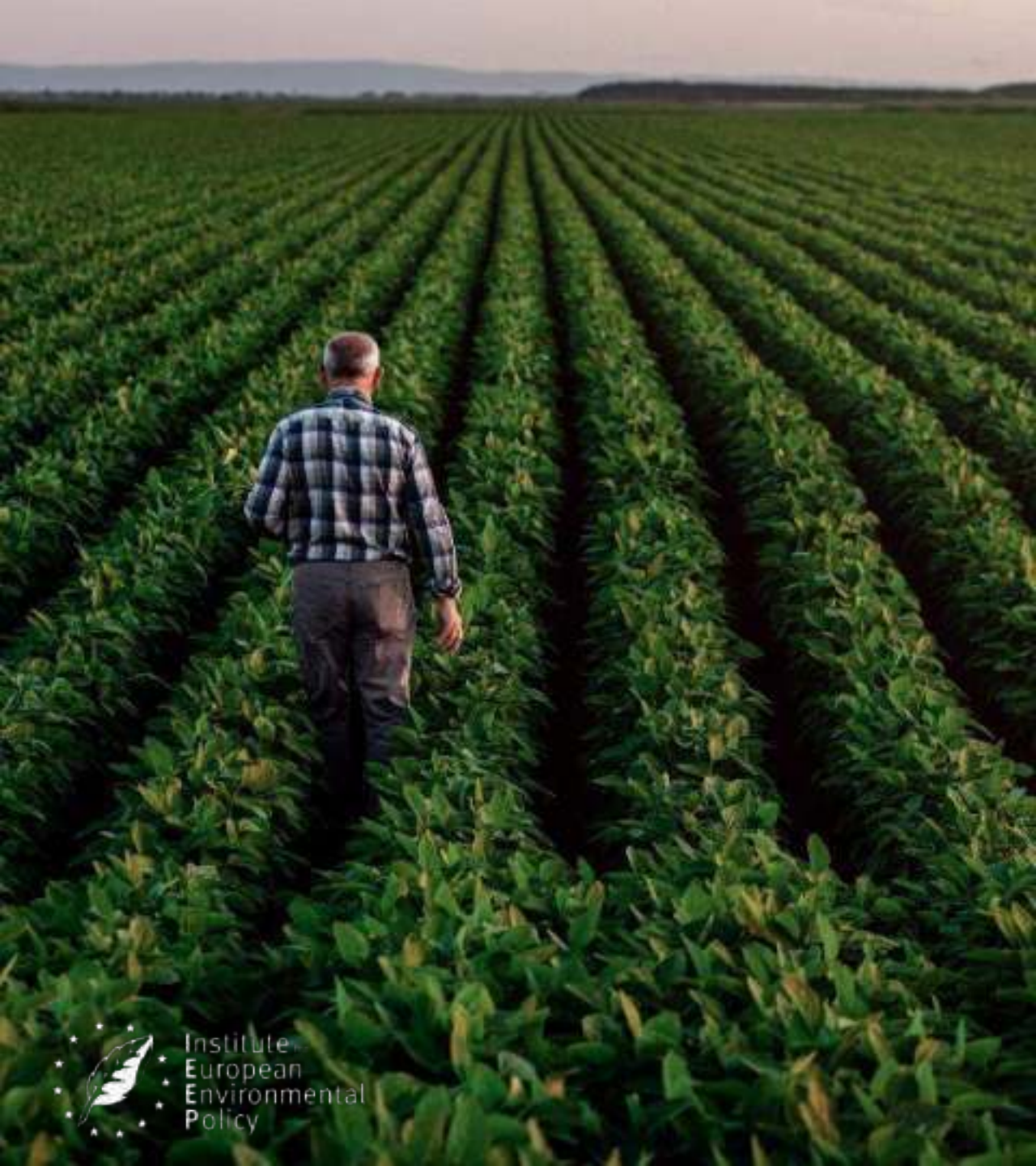
Off-Farm ETS: Scope

Source of emissions	GHG Type			Net emissions per annum (MtCO ₂ e)	Included in ETS scope?	
	CH ₄	N ₂ O	CO ₂		Upstream	Downstream
Enteric fermentation	✓			169 MtCO ₂ e	✓	✓
N ₂ O Emissions from managed agricultural soils		✓		146 MtCO ₂ e	✓	
Manure management	✓	✓		61 MtCO ₂ e		✓
Soil carbon emissions from organic soils	✓	✓	✓	31.8 MtCO ₂ e		
Grasslands			✓	13.1 MtCO ₂ e		
Soil carbon emissions from mineral soils			✓	10.2 MtCO ₂ e		
Liming			✓	5.4 MtCO ₂ e		
Urea application			✓	3.6 MtCO ₂ e	✓	
Rice farming	✓		✓	1.97 MtCO ₂ e		
Burning crop residues	✓	✓		0.54 MtCO ₂ e		
On-farm energy use	✓	✓	✓	?		



Policy option designs

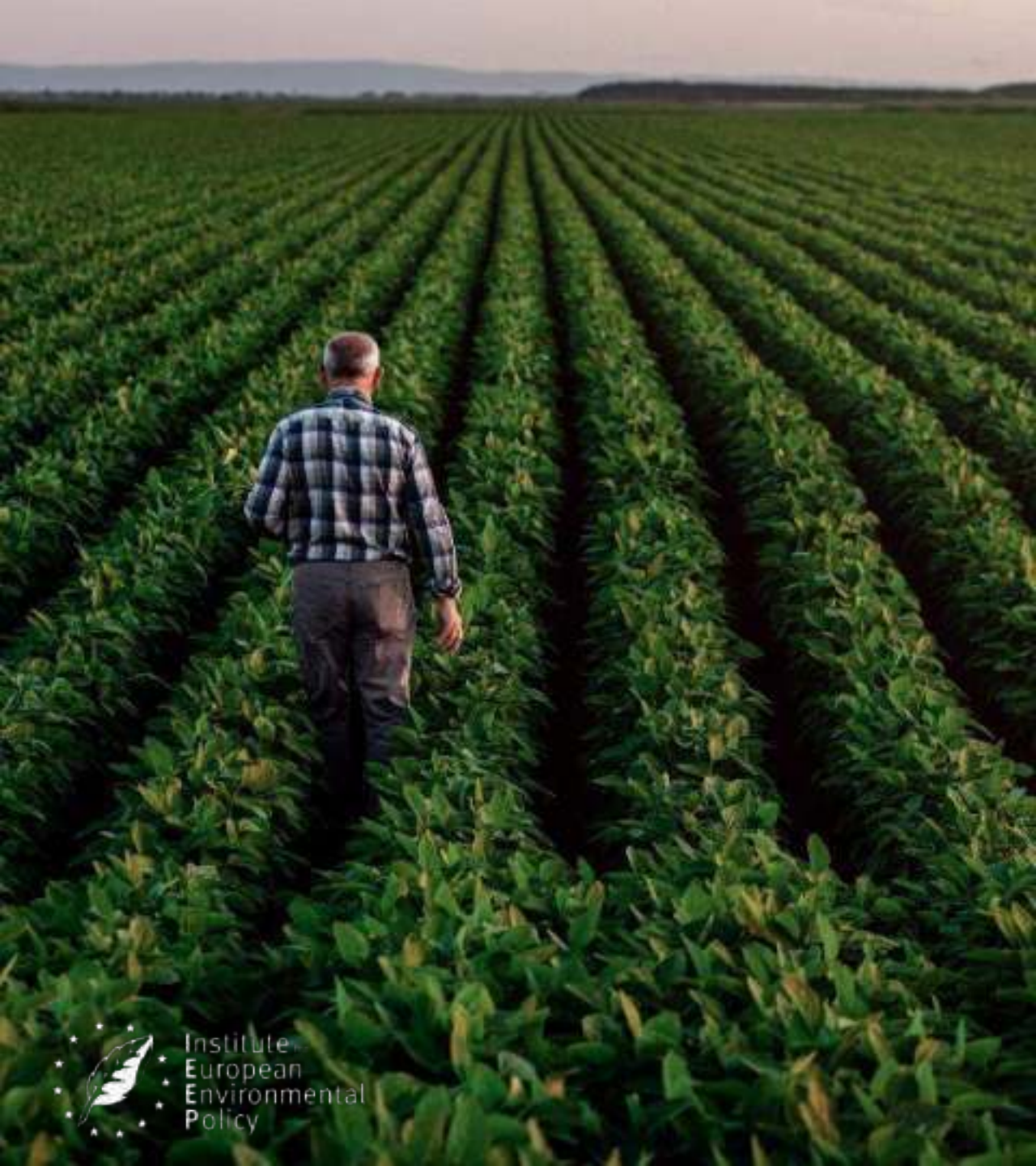
- For each option, the study outlines possible designs in terms of governance and administration
 - Administrative actors involved
 - Requirements for measuring emissions
 - Setting a cap
 - Potential pilot phase for MRV before implementation of an ETS
 - Supporting institutions/frameworks needed
 - Incentivising good on-farm practices



Emission Trading Systems: cross-cutting issues

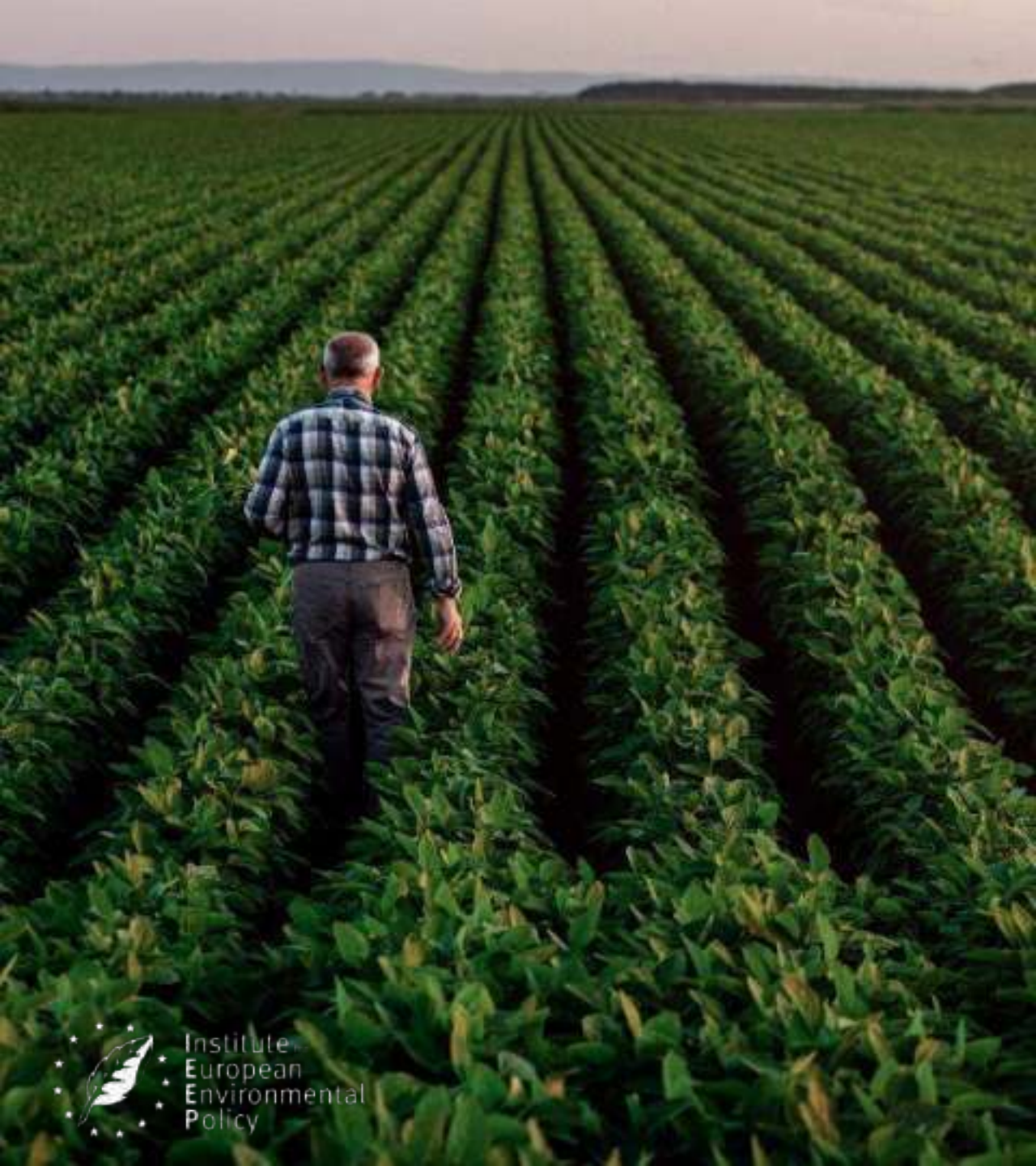
- Monitoring, Reporting and Verification
 - Challenges of MRV
 - Trade-offs between proxies versus on-farm measurements
 - Potential solution to trade-offs: simple versus complex approach

Mitigative practice	EU On-Farm GHG Calculator	He Waka Eke Noa On-Farm Carbon Levy Proposal	Label Bas Carbone
Reduce synthetic fertiliser use	✓	✓	✓
Urease inhibitors	-	✓	-
Improved manure management	✓	-	✓
Convert pastoral land to arable crops	-	✓	✓
Keep soils covered all year	✓	-	✓
Introduce legumes	✓	-	-
No tillage	✓	-	-
Agro-forestry and landscape elements	✓	✓	✓
Feed management	✓	✓	✓
Adjust livestock numbers	-	✓	✓
Improve animal housing			✓
Increase livestock performance	✓	✓	✓
Livestock gene editing	-	✓	✓
Feed additives	-	✓	-
Methane vaccines	-	✓	-
Nitrification inhibitors	-	✓	-
Enhanced fertiliser products	-	✓	-
Avoid burning residues	✓	-	-
Biogas production	✓	✓	-
Improved on-farm energy use	✓	-	✓



Emission Trading Systems: cross-cutting issues

- De Minimis thresholds for participation
 - Exclusion of small farms where possible? (for upstream/downstream small businesses?)
- Regulatory flexibilities
 - Preventing carbon leakage: Free allocation of allowances or CBAM?
- Allocation and auctioning of allowances
 - Potential role of producer organisations



Conclusions

- Policy design complexities to further consider
 - Besides complex approach to MRV, how to create 'buy-in' for farmers
 - How to use revenues from an ETS to support climate actions by farmers
 - Accompanying measures needed to support an ETS – use of a wider toolbox
 - Balancing the timeframe aspect – long period will be needed for this transition, but time is of the essence for climate mitigation



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Break



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Part 2: Rewarding climate action in the land sector through carbon farming



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Part 2: Linking carbon removals in the land sector to an AgETS

Policy options, LULUCF removals and challenges

Aaron Scheid, Fellow, Ecologic Institute

Technical workshop, 14.06.2023



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1. Objective of the study
2. LULUCF removals options & key challenges
3. Removals policy models & key challenges
4. Discussion

Objective of the study



- ▶ How can the revenue or allowance demand from an AgETS (Part 1) be used to reward additional carbon removals in the LULUCF sector?
- ▶ Define the scope of LULUCF removals options and understand their potential and key challenges.
- ▶ Understand potential removal policy models (that link LULUCF removals to an AgETS) – and strengths/weaknesses in LULUCF context
- ▶ Discuss removals policy models design elements

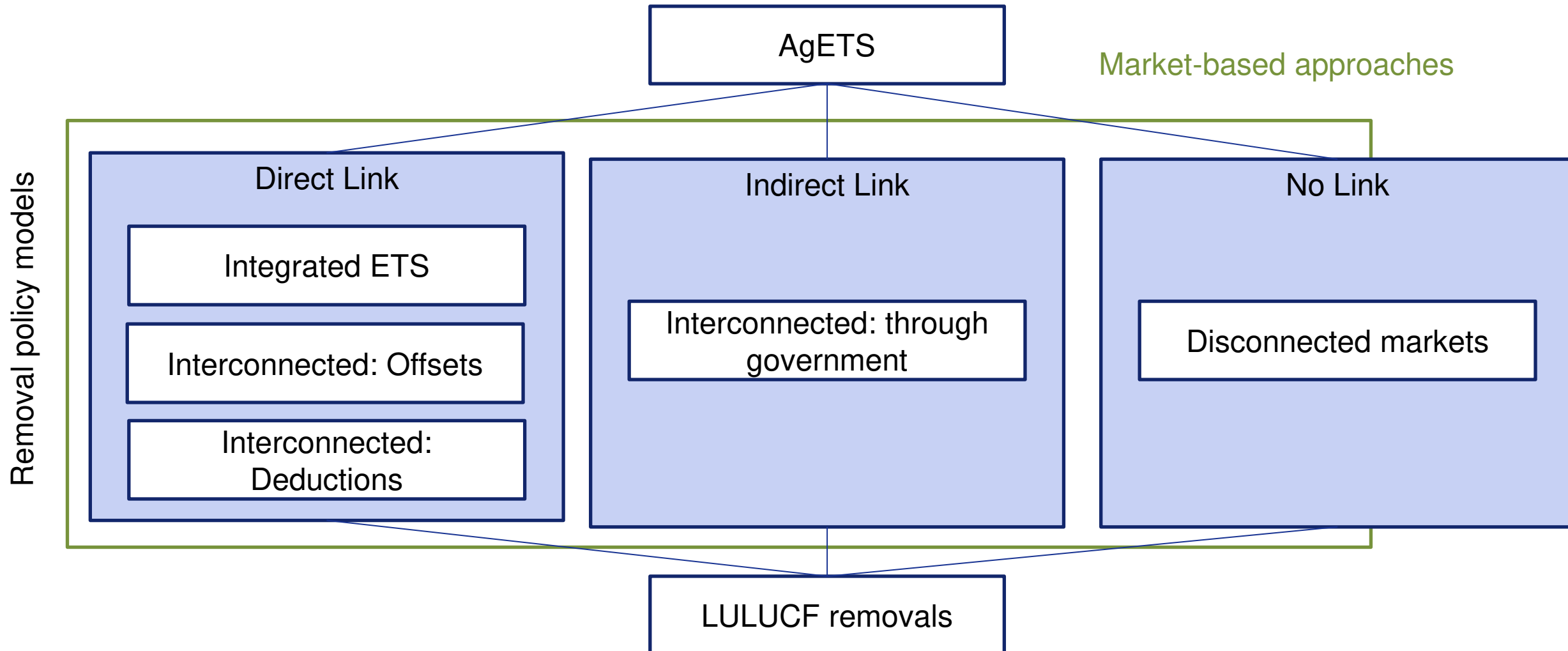
Key challenges of LULUCF removals

LULUCF removal options					
5 Solutions:	Afforestation & reforestation	Agroforestry	Soil Carbon	Forest management	Biochar
Solution maturity					
Removal potential					
Costs					
Permanence / reversibility risk					
Robust MRV					
Co-benefits potential					
Negative externalities/ leakage risks					

- ▶ Mature status of solutions
- ▶ Potentials for co-benefits
- ▶ Some key challenges must be addressed
 - ▶ Robustness & cost of MRV
 - ▶ Permanence
 - ▶ Additionality
 - ▶ Leakage

Adapted graph based on Bay et al. 2021

Removal policy models assessed

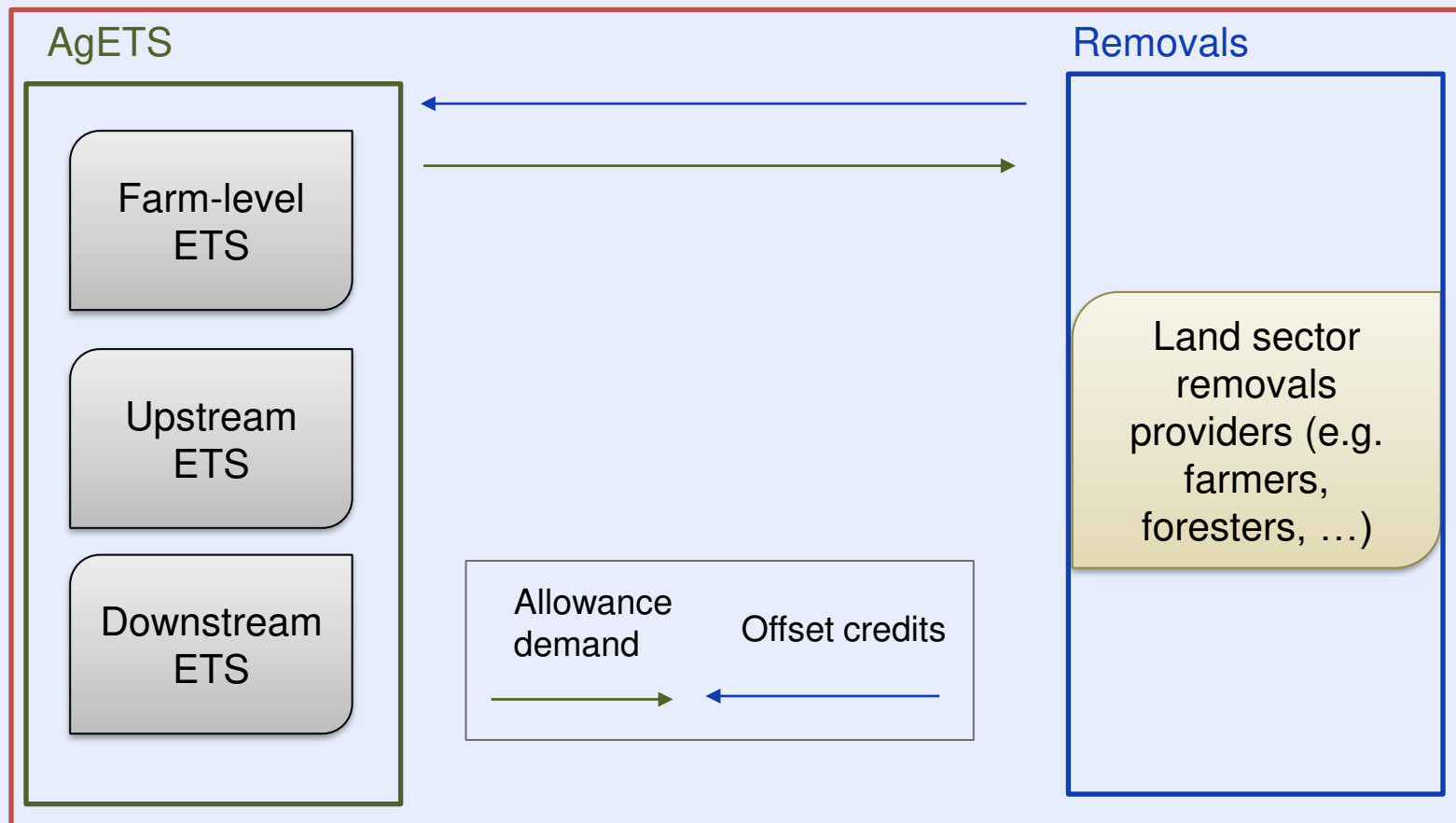


Integrated AgETS

- *Direct, unrestricted link between compliance entities (polluter) and removers, who are also compliance entities in the ETS.*
- *Allowances are fully fungible and can be traded to meet compliance obligations, with no limits.*

Direct Link

ETS scope

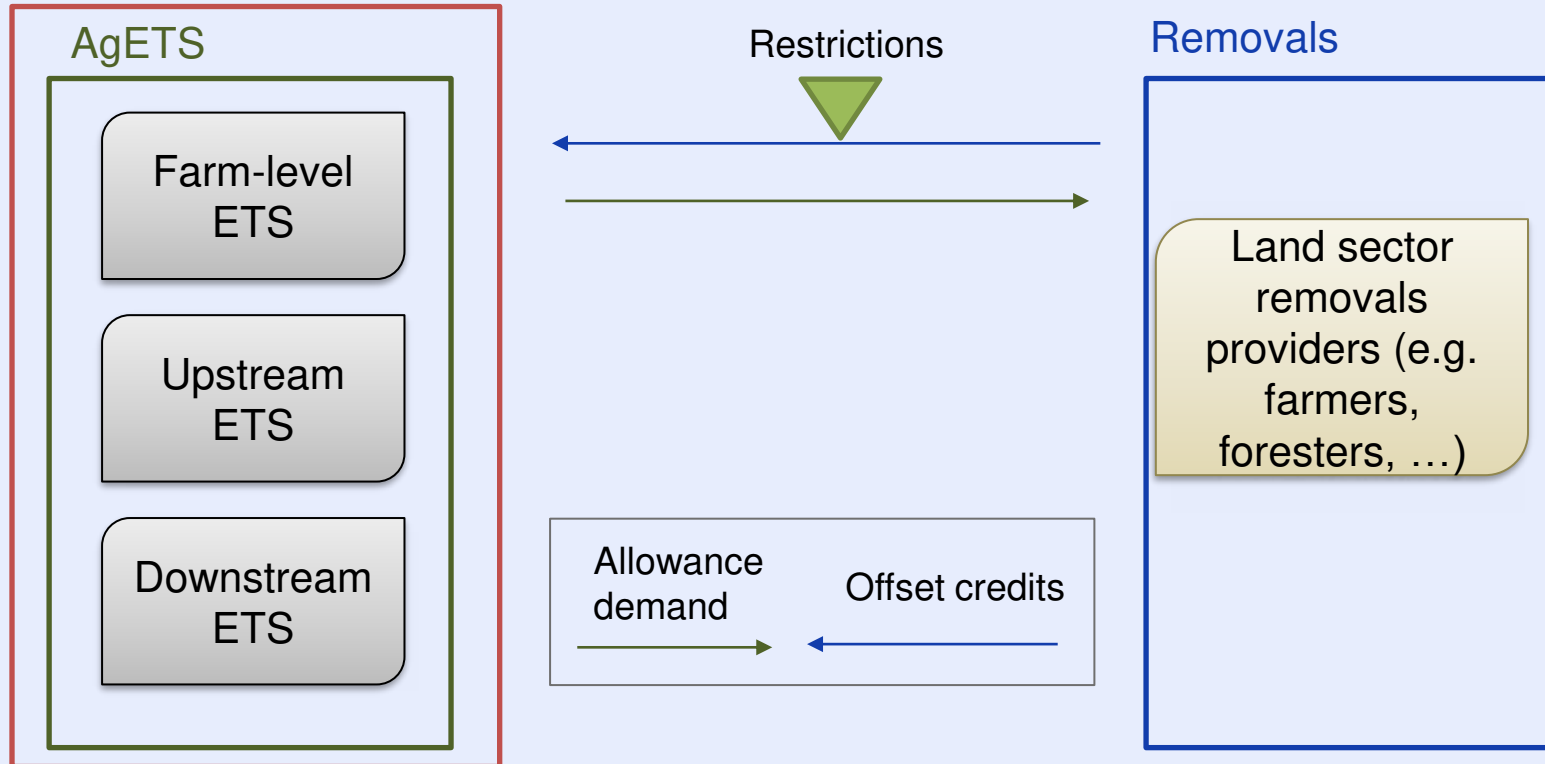


Offsets

- *Removers participate voluntarily and are external to the ETS (not compliance entities)*
- *LULUCF removals not generally covered by an ETS – only mobilised in the form of offsets*

Direct Link

ETS scope

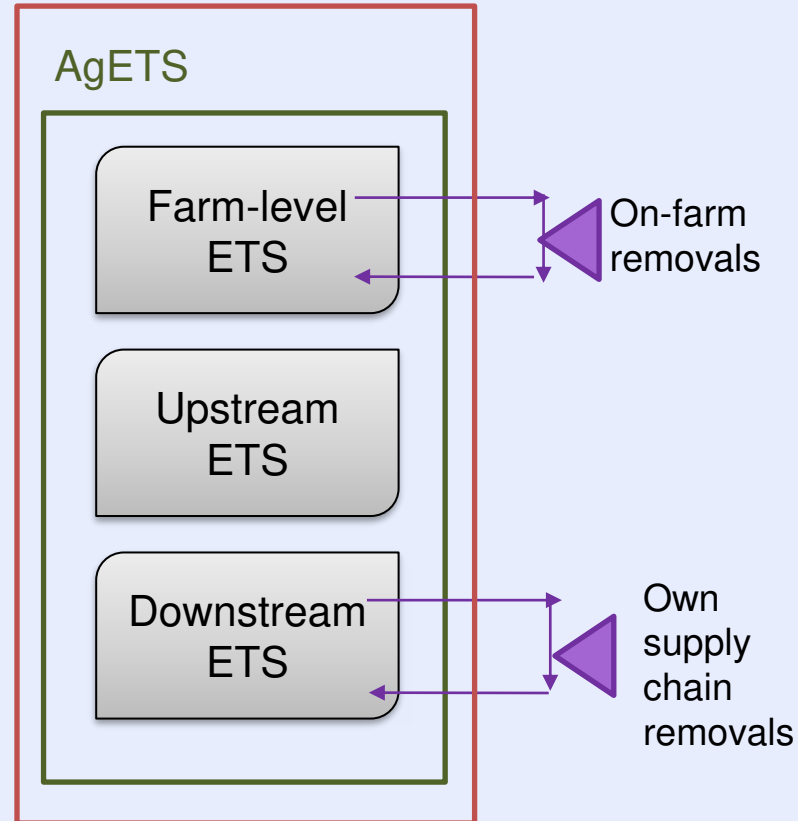


Deductions

- *Remover is a polluter (i.e. compliance entity within the ETS)*
- *LULUCF removals are **not** generally covered by an ETS –removals only mobilised in the form of deductions*
- *Polluter reduces emissions liability through removals on-site (farmer) or by insetting within supply chain (processor)*

Direct Link

ETS scope

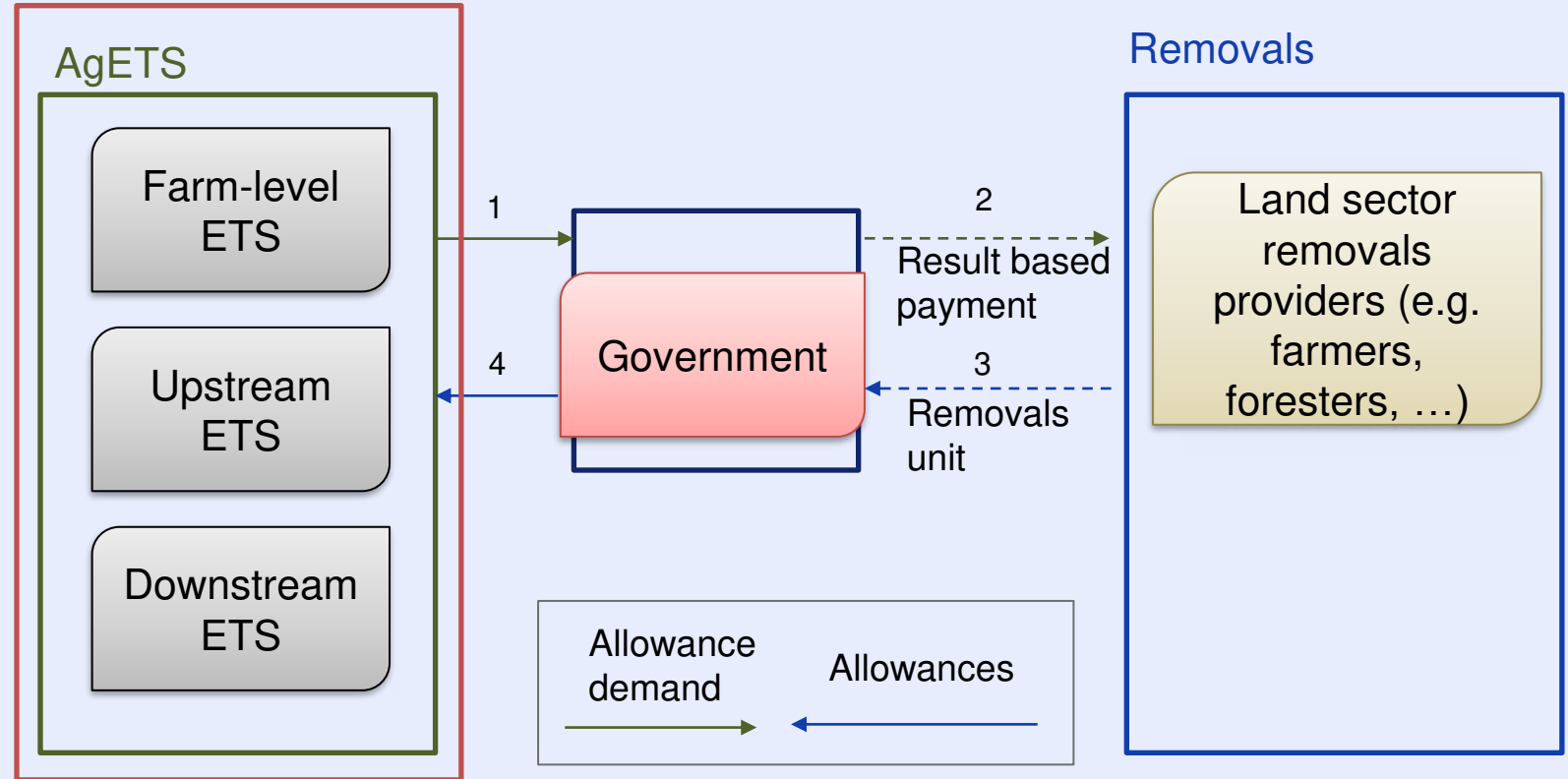


Interconnected: through government

- *Government procures removals using revenue from polluter pays ETS (e.g. by auctioning removals credits or using allocation)*
- *Government sells removal credits to polluters (to meet their compliance obligations)*

Indirect Link

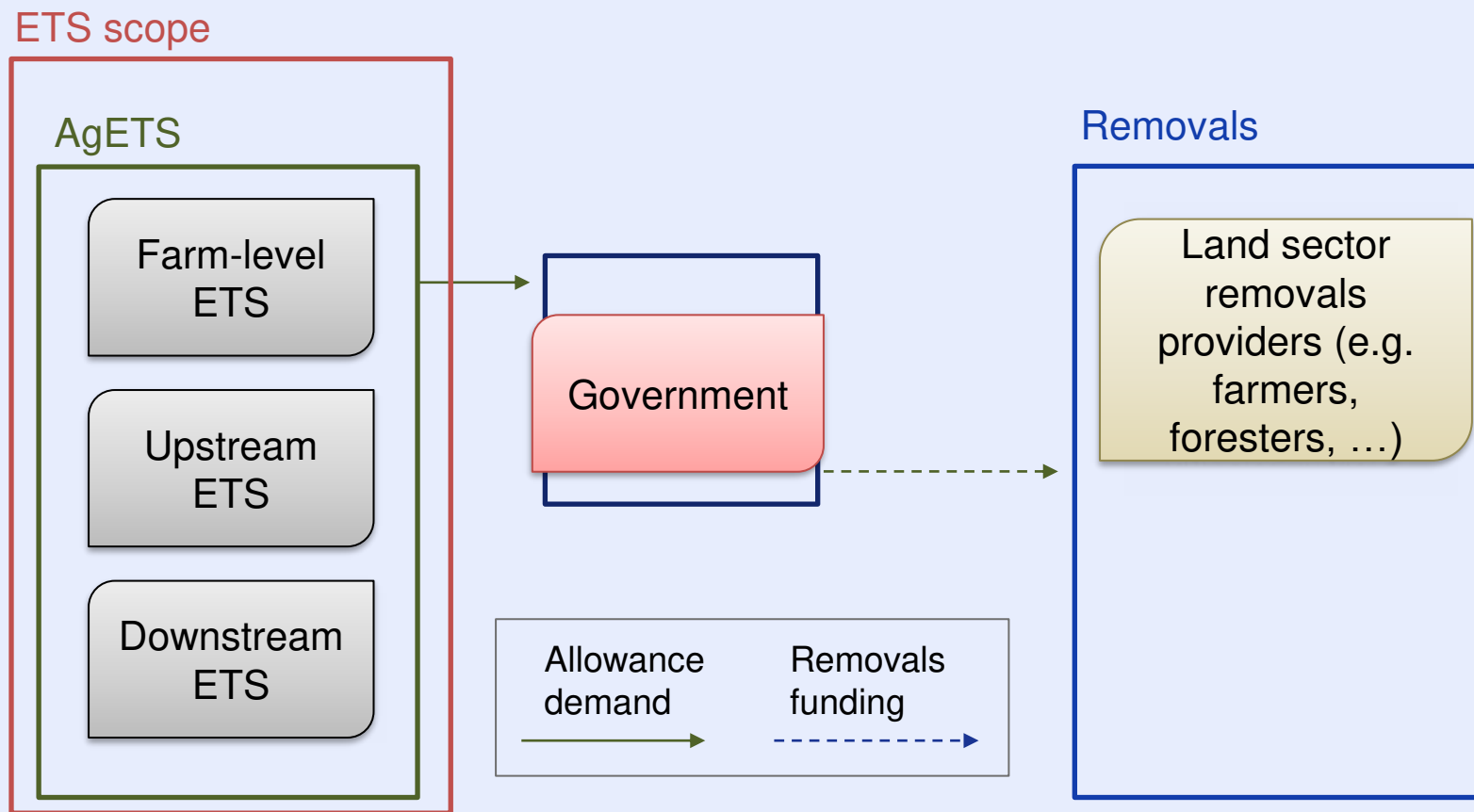
ETS scope



Disconnected markets

- *Government procures LULUCF removals from removers using polluter pays revenue*
- *Removals do not affect ETS: while the government uses revenue generate by ETS, removals provision does not affect ETS supply*

No Link



Key challenges linking AgETS and LULUCF removals

- **Agricultural emissions reduction deterrence**
- **Non-equivalence** (LULUCF removals - emission reductions)

Agricultural emission reduction deterrence

Key issues to discuss:

- ▶ Linking expands AgETS cap – decreases incentives for emissions reductions – “reduction deterrence”
- ▶ Polluters have the option to purchase removals or reduce emissions → availability of cheaper removal options (e.g. Afforestation) deters emissions reduction efforts
- ▶ A key risk for direct link and indirect link policy options (not no link option)

Policy design can try to manage the weaknesses in removal policy models (e.g. quantitative or qualitative restrictions, discount factors)
→ Make removals more costly → delay in the increase of removals?

Non-equivalence

LULUCF removals



Emission reductions

Key issues to discuss:

- ▶ LULUCF removals are not the same as emission reductions
- ▶ Emission avoided by polluter is permanent vs. LULUCF removals can be **re-released** unintentionally or through management change → total amount of GHGs in the atmosphere will be higher
- ▶ **Different quantification** uncertainties between emission reductions and LULUCF removals?
- ▶ **Scope of gases**: LULUCF removals = CO₂, Ag emission reductions = CH₄, N₂O, CO₂ → different warming impacts

Policy design can try to manage the weaknesses in removal policy models (e.g. discount rates, temporary removal units, liability, buffers, etc)



Ecologic Institute
Science and Policy
for a Sustainable World

Thanks!

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Launch of the online stakeholder survey

Survey for written input from stakeholders on

ETS options on agriculture GHG emissions and policy models to link an agricultural ETS to a financial reward system for carbon removals from the land sector

- Open from June 15th until July 28th, 2023
- Link:
<https://ec.europa.eu/eusurvey/runner/PPPAgriStakeholderSurvey2023>
- Registrants agreeing to be contacted for further consultation will receive an email with the link to the survey





Thank you!

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