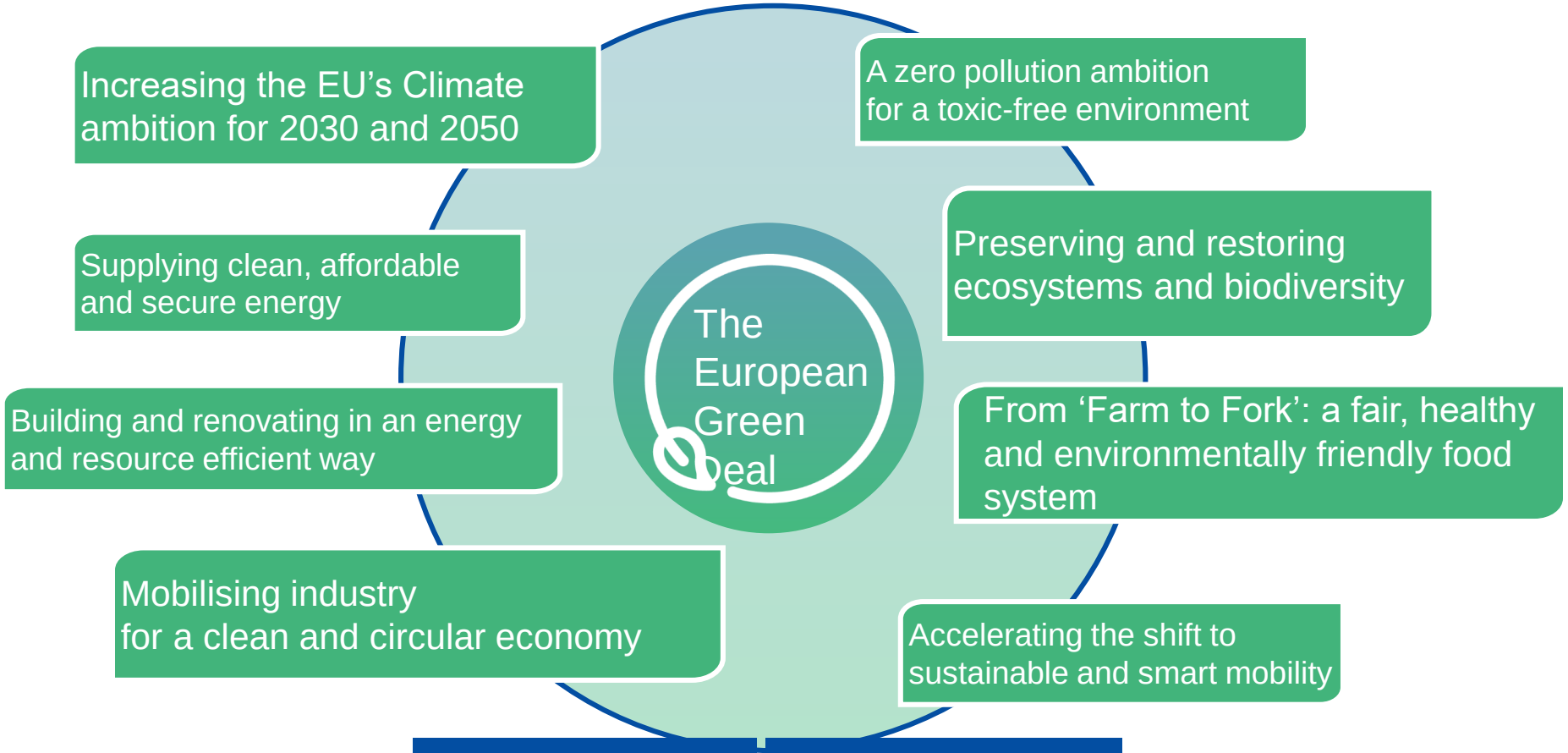
The EU Strategy to address climate change in Agriculture

Herwig Ranner, DG Agriculture, European Commission

11.10.2022

The **European Green Deal**

European Commission



Designing a set of deeply transformative policies	Mainstreaming sustainability in all EU policies
Financing the transition	Leave no one behind (Just Transition)

The EU as a global leader

European Commission
1.134.199 follower
2 giorni •

Deal on the Climate Law!

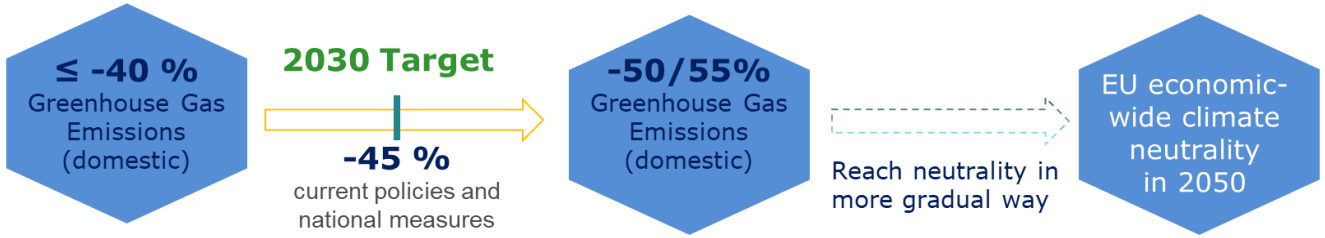
The European Climate Law turns our European Green Deal targets into legal obligations:
📉 reducing net greenhouse gas emissions by at least 55% by 2030
🌍 reaching climate neutrality by 2050

Today's deal between the co-legislators also introduces:
✅ a process for setting a 2040 climate target
✅ a commitment to negative emissions after 2050
✅ the establishment of European Scientific Advisory Board on Climate Change
✅ stronger provisions on adaptation to climate change

Climate neutrality will shape the EU's green recovery and a socially just green transition.

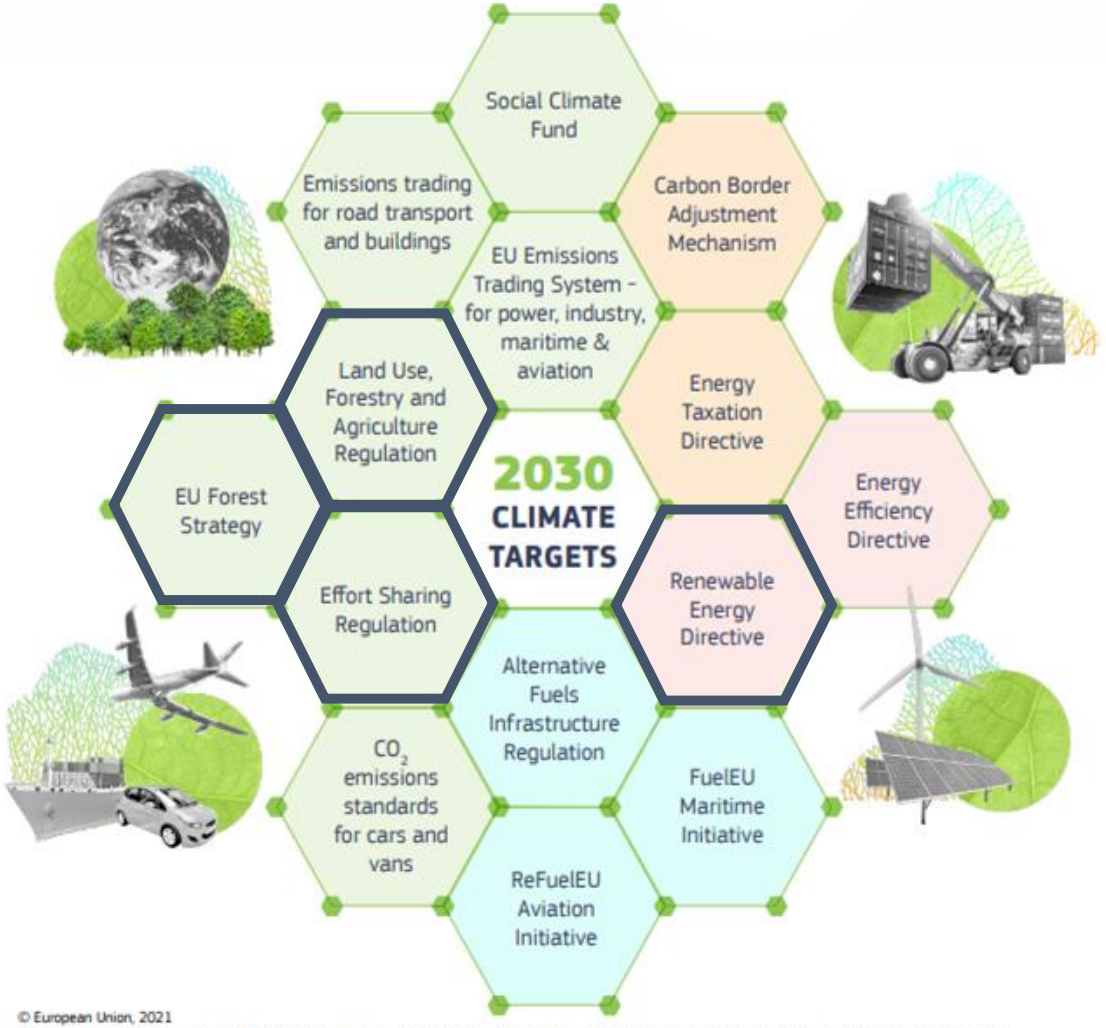
More here → https://europa.eu/!dn66PW

#EUGreenDeal #EuropeanUnion #ClimateAction



'Fit for 55'

On 14 July 2021, the Commission presented proposals for revision of main pieces of legislations to deliver EU's 2030 Climate Target (-55%) on the way to climate neutrality.



Targets

- Stronger ETS including in aviation
- Extending ETS to maritime, road transport, and buildings
- Updates Energy taxation Directive
- New Carbon Border Adjustment Mechanism
- Updated ESR
- Updates LULUCF Regulation
- Updated Renewable Energy Directive

Rules

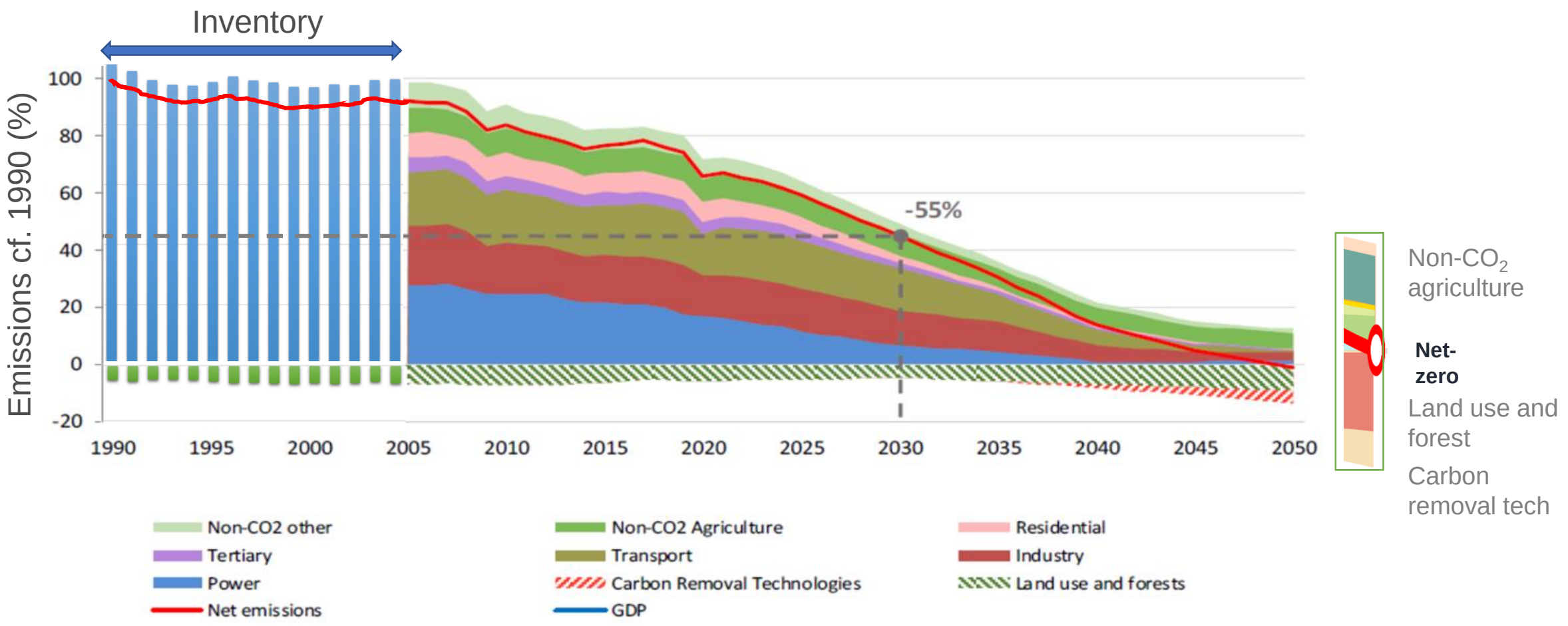
- Stricter CO2 performance for car & vans
- New infrastructure for alternative fuels
- ReFuelEU: more sustainable aviation fuels
- FuelEU: cleaner maritime fuels

Support measures

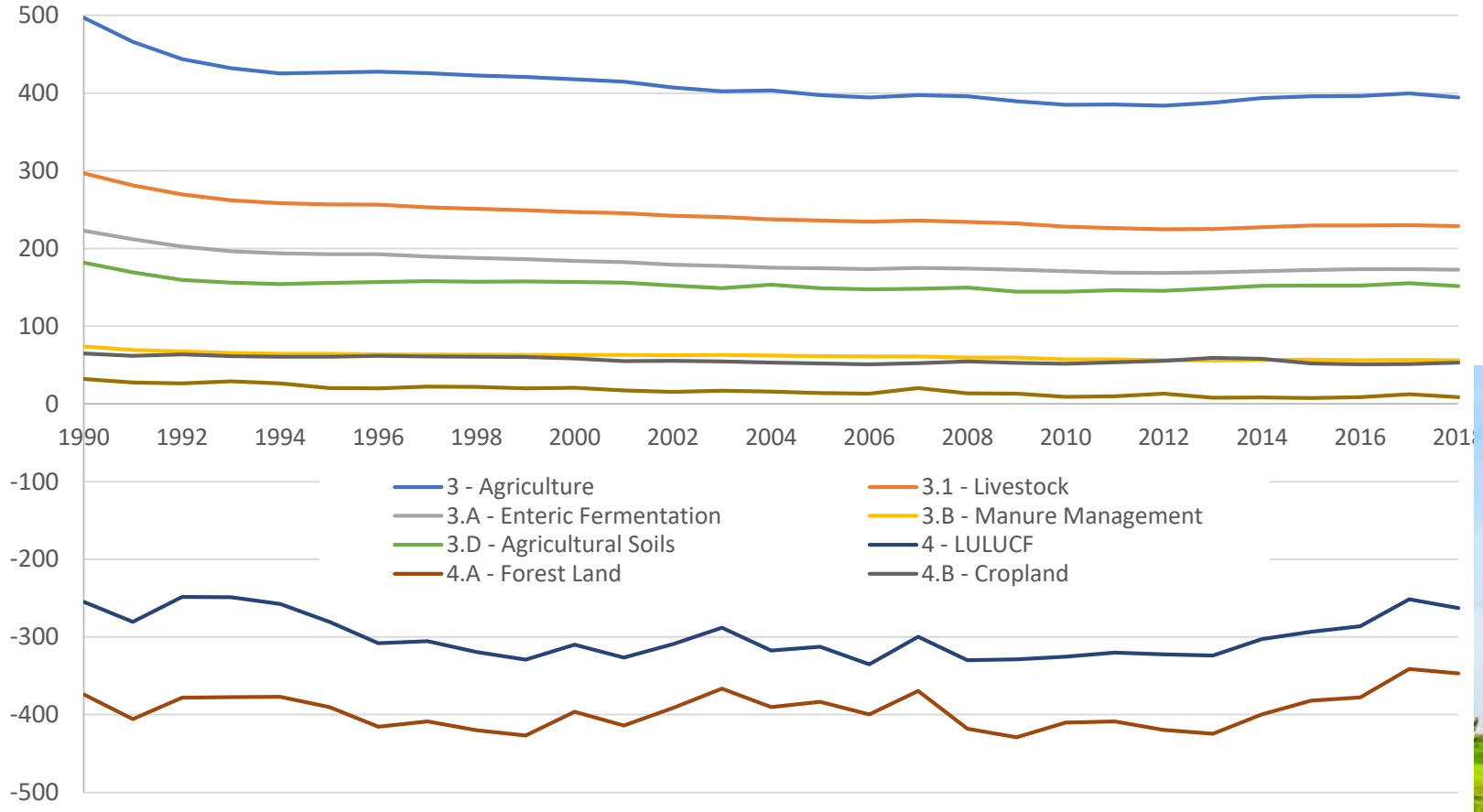
- Using revenues and regulations to promote innovation, build solidarity and mitigate impacts for the vulnerable, notably through the new Social Climate Fund and enhanced Modernization and Innovation Funds.

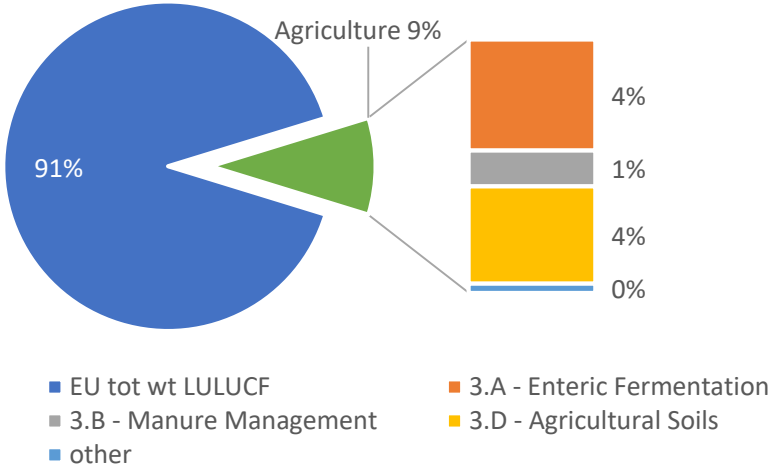
Pathway to climate neutrality in the impact assessment

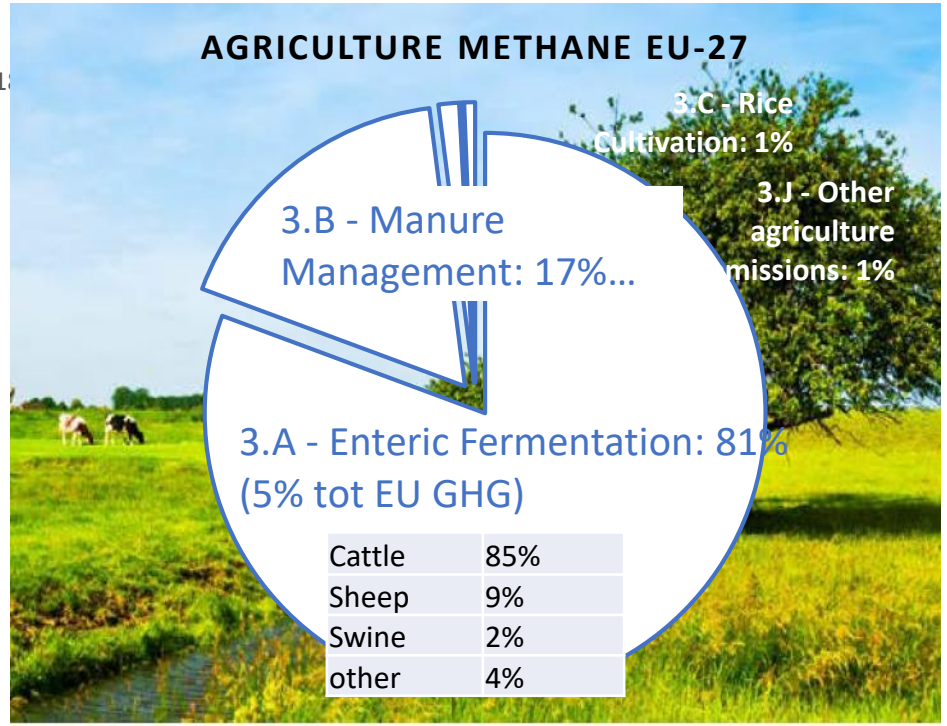
- The impact assessment showed that 55% by 2030 can be achieved in a responsible way
- Economic growth can be decoupled from resource use
- All economic sectors should contribute



EU27 GHG emissions from Agriculture







Cattle	85%
Sheep	9%
Swine	2%
other	4%

Sources: EEA greenhouse gas - data viewer. Total GHG without LULUCF

EU strategy to reduce methane emissions

European Commission @EU_Commission · Oct 14

Methane is the second most powerful greenhouse gas contributor and an important cause of air pollution, causing serious health problems.

Our Methane strategy adopted today will be key to reduce our greenhouse-gas emissions to at least 55% by 2030.

#EUGreenDeal

Energy4Europe @Energy4Europe · Oct 14

The EU #MethaneStrategy aims to **#reducemethane** in all relevant sectors: energy ⚡ agriculture 🚜 waste 🗑 with partner countries and mobilise an international coalition to support emission reduction. #EUGreenDeal

- news europa.eu/!uU86kn
- factsheet europa.eu/!dV78xc

Combine concrete cross-sectorial and sector-specific actions withih EU and promoting internationally

Monitoring, reporting, verification, reduction in all sectors

Legislative proposal in 2021

Sectoral actions in the EU methane strategy – Agriculture

"balance technologies, markets and dietary changes, reduced fossil hydrocarbon inputs and that ensure a livelihood and sustainable business opportunities for farmers"

Expert group — first half of 2021

- analyse life-cycle methane emissions metrics, including new technologies and practices

Inventory of best practices and technologies — end of 2021

- in cooperation with sectoral experts, key stakeholders and Member States
- to explore and promote the wider uptake of innovative mitigating actions
- Special focus on methane from enteric fermentation
- update this inventory with technologies gradually coming onto the market

Carbon-balance calculations at farm level — 2022

- template and guidelines on common pathways for the quantitative calculation of greenhouse gas emissions and removals

Carbon farming — Starting in 2021

- promote the uptake of mitigation technologies through the wider deployment of 'carbon farming' in Member States and their Common Agricultural Policy Strategic Plans

Targeted research — 2021 - 2024

- Horizon Europe strategic plan 2021-2024
- consider proposing data on the different factors that effectively lead to methane emission reductions
- focusing on technology and nature based solutions
- factors leading to dietary shift
- Waste to biomethane technologies (waste sector)

Achieving the higher targets for the EU sink (LULUCF regulation)

Simpler, more transparent and effective compliance rules and targets > move to reported data

Increase EU carbon removals to at least 310 Mt by 2030 > single EU target for the sink

LULUCF 2030 target = 15% higher than the current level of sink

Climate neutral EU land sector by 2035

Combining CO2 net removals from the land sector

- forestry
- agriculture
- peatlands
- settlements

with non-CO2 emissions

- CH4 from enteric fermentation and manure managements
- N2O from use of fertilizers and manure management

Big challenge to protect the current sink, as it has been decreasing substantially

(e.g. the EU27 sink in 2013 was -324 Mt CO2eq, in less than 7 years we lost more than 62 Mt CO2eq, higher than what we need to reach 310 MtCO2eq in 10 years).

Climate neutral EU land sector by 2035

Neutrality can be reached by different **combinations** between LULUCF and non-CO2 agricultural mitigation practices.
Different mitigation potentials are related to **carbon price**.
Carbon removals with **NBS** have low mitigation costs (EUR 10 per ton).
For examples, fallowing histosols shows high mitigations already at low carbon price.

Increase net carbon removals by 20%	• Rewetting of drained peatlands • Afforestation and reforestation • Soil management • Agroforestry • Carbon Storage Products, Harvested Wood Products
Reduce non-CO2 emissions by 20%	• Precision farming • Efficient fertiliser use • Anaerobic digestion • Feed additives and breeding

How to bring better incentives to farmers and foresters and create a better business model for them?

Communication on Sustainable carbon cycles

Published 15 December 2021

Carbon removals happen when CO2 is taken out of the atmosphere and stored in:

SOILS AND BIOMASS (Carbon farming)

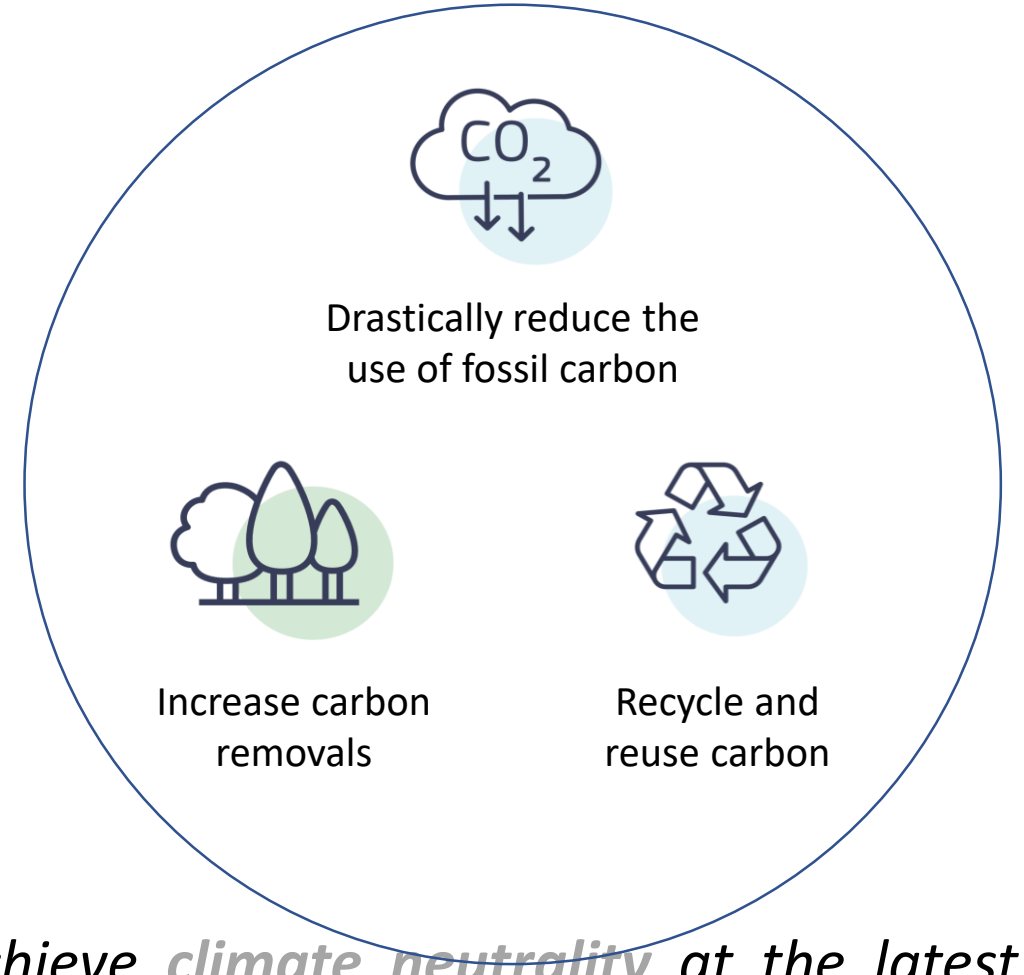
E.g. Afforestation/reforestation, improved forest management, agroforestry, soil carbon sequestration, peatland and coastal wetland restoration …

BIO-BASED MATERIALS (Product storage)

E.g. Use of wood-based materials in construction, use of fibre crops in durable bio-plastics or panels…

GEOLOGICAL RESERVOIRS (Geological Storage)

E.g. Bio-Energy with Carbon Capture and Storage (BECCS), Direct Air Carbon Capture and Storage (DACCS). *Note: capture and storage of carbon of fossil origin is excluded from the scope*.



To achieve climate neutrality at the latest by 2050 and negative emissions thereafter, the EU needs to increase carbon removals and establish sustainable carbon cycles.

Carbon farming

*A **green business model** rewarding land managers for improved land management practices, resulting in carbon sequestration in ecosystems and reducing the release of carbon to the atmosphere.*

Dual opportunity for the agricultural sector:

- New business around carbon **sequestration** in soils and vegetation
- New value chains offering long-term carbon **storage** in bio-based products

Benefits of carbon farming:

- Increased carbon removals
- Additional income for land managers
- More biodiversity and nature
- Increased climate resilience of farm and forest land

Next step

A regulatory framework for the certification of carbon removals

Call for Evidence* (Q1 2022)

Conference (31 January 2022)

Legislative proposal (Q4 2022)

Set **robust requirements** for quality criteria for monitoring, reporting and verification of the carbon removed from the atmosphere

Ensure a high level of **environmental integrity** and biodiversity protection

Enhance the **uptake** of market-based carbon removal solutions, give prospects to carbon farming and industrial projects that **invest** in carbon removals

Establish an effective **governance framework** for effective, cost-efficient and transparent implementation

Involve **stakeholders** (Call for evidence, conference, expert group)

* Inception Impact Assessment open for feedback; Open Public Consultation until 2nd May.

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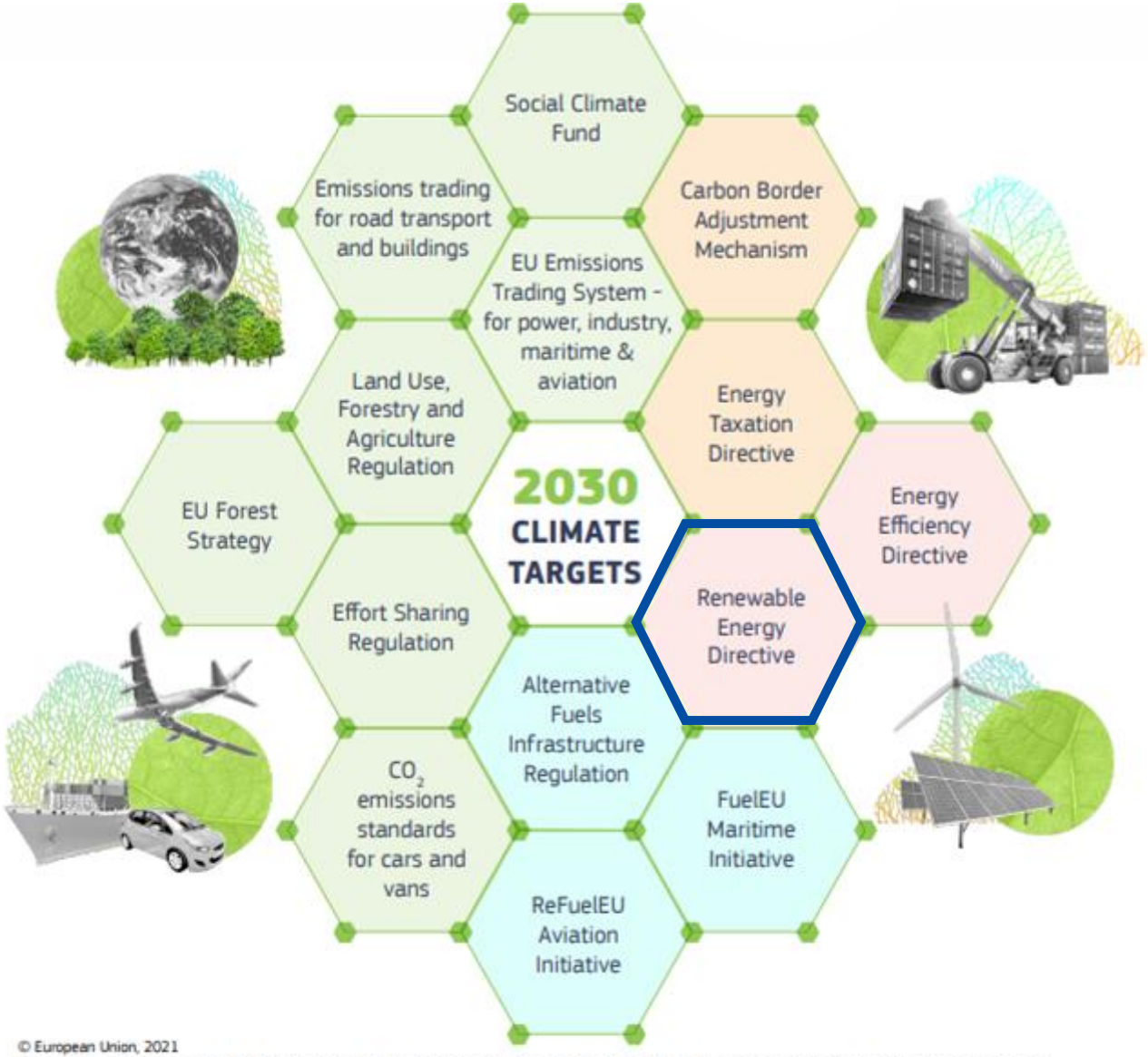

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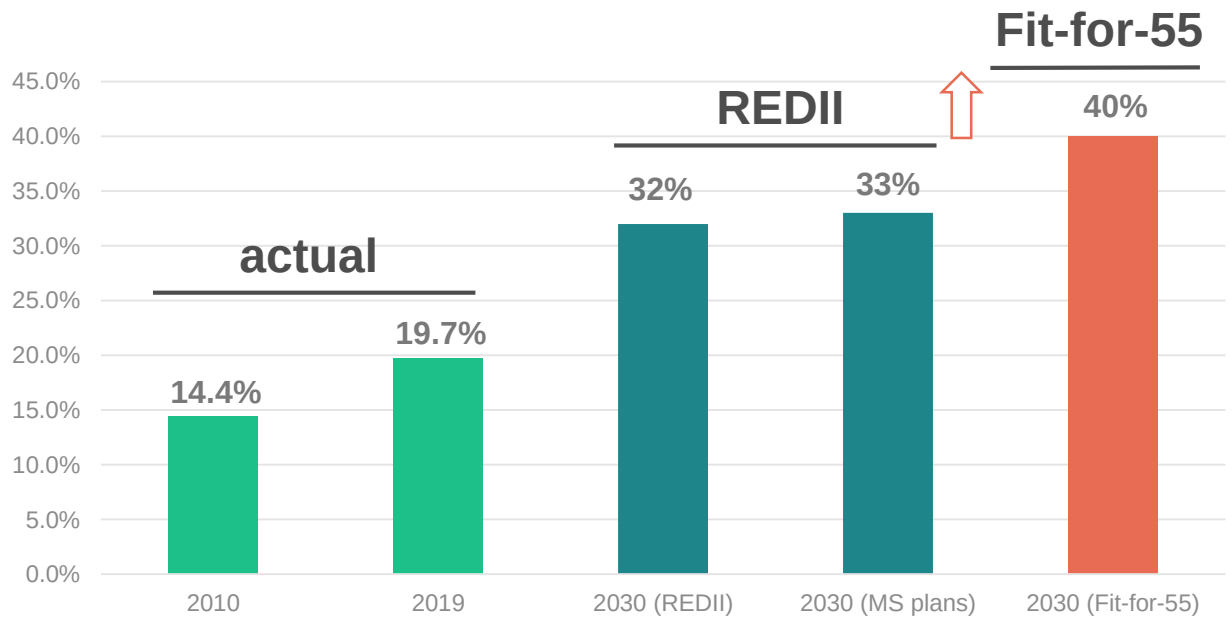
Overall ambition – the EU-level target

	REDII		REDII revision
Overall Renewable Energy Share (RES)	**At least 32%** EU binding MS contributions + indicative formula	→	**At least 40%** EU binding MS contributions + indicative formula



Bioenergy sustainability: targeted strengthening EU criteria

	REDII (enhanced sustainability criteria being implemented)	REDII revision (targeted strengtening)
Sustainaiblity criteria (no-go areas)	**Land criteria for agricultural biomass** Biodiversity/climate criteria for forest biomass (risk-based approach)	**New land criteria for forest biomass:** No sourcing from primary and highly biodiverse forests, peatland and wetland Minimise large clear-cuts
Application of EU bioenergy & GHG saving criteria	Only applicable to heat and power installations equal or above **20 MW** **GHG saving criteria** only for new installations	Application also to small-scale installations equal or above e.g. **5 MW** **GHG saving criteria** apply also to **existing** installations
Cascading principle	MS required to design support schemes with the aim of **avoiding undue distortions** of the raw material market	MS to minimise distortions of biomass market **No support** for saw & veneer logs, stumps/roots Delegated Act on **cascading use of biomass** From 2026, no support for installations producing electricity with forest biomass*

\+

Revised ETD (different taxation rates for sustainable/non-sustainable energy sources)
Revised ETS (zero rating for biomass/biogas only if REDII compliant)
Revised Energy Efficiency Directive (EU and national energy savings obligations)

* With certain exceptions for coal regions in transition

The EU Green Deal: for a new ‘green growth’

The new EU forest strategy

key objectives effective **afforestation**, and forest **preservation** and **restoration** in Europe, to help to increase the absorption of CO2, reduce the incidence and extent of **forest fires**, and promote the b**io-economy**, in full respect for ecological principles favourable to **biodiversity**.

The national strategic plans under the **common agricultural policy** should incentivise forest managers to preserve, grow and manage forests sustainably.

… plus **international dimension**

The European Green Deal communication of 11 December 2019

“ Building on the 2030 biodiversity strategy, the Commission will prepare a new EU forest strategy covering the whole forest cycle and promoting the many services that forests provide.

The new EU forest strategy will have as its key objectives effective afforestation, and forest preservation and restoration in Europe, to help to increase the absorption of CO2, reduce the incidence and extent of forest fires, and promote the bio-economy, in full respect for ecological principles favourable to biodiversity.”

The EU as a global leader

From ‘Farm to Fork’
designing a fair, healthy and environmentally-friendly food system

Main targets in the Farm to Fork strategy

The use of pesticides in agriculture contributes to pollution of soil, water and air. The Commission will take actions to:

- ✓ **reduce by 50%** the use and risk of chemical pesticides by 2030.
- ✓ **reduce by 50%** the use of more hazardous pesticides by 2030.

The **excess of nutrients** in the environment is a major source of air, soil and water pollution, negatively impacting biodiversity and climate. The Commission will act to:

- ✓ **reduce nutrient losses by at least 50%**, while ensuring no deterioration on soil fertility.
- ✓ **reduce fertilizer use by at least 20%** by 2030.

Antimicrobial resistance linked to the use of antimicrobials in animal and human health leads to an estimated 33,000 human deaths in the EU each year. The Commission will **reduce by 50% the sales of antimicrobials for farmed animals and in aquaculture by 2030**.

Organic farming is an environmentally-friendly practice that needs to be further developed. The Commission will boost the development of EU organic farming area with the aim to achieve **25% of total farmland under organic farming by 2030**.

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The new EU-wide Biodiversity Strategy will:

Establish protected areas for at least:

30% **of land in Europe**

30% **of sea in Europe**

With stricter protection of remaining EU primary and old-growth forests legally binding nature restoration targets in 2021.

Restore degraded ecosystems at land and sea across the whole of Europe by:

Increasing organic farming and biodiversity-rich landscape features on agricultural land

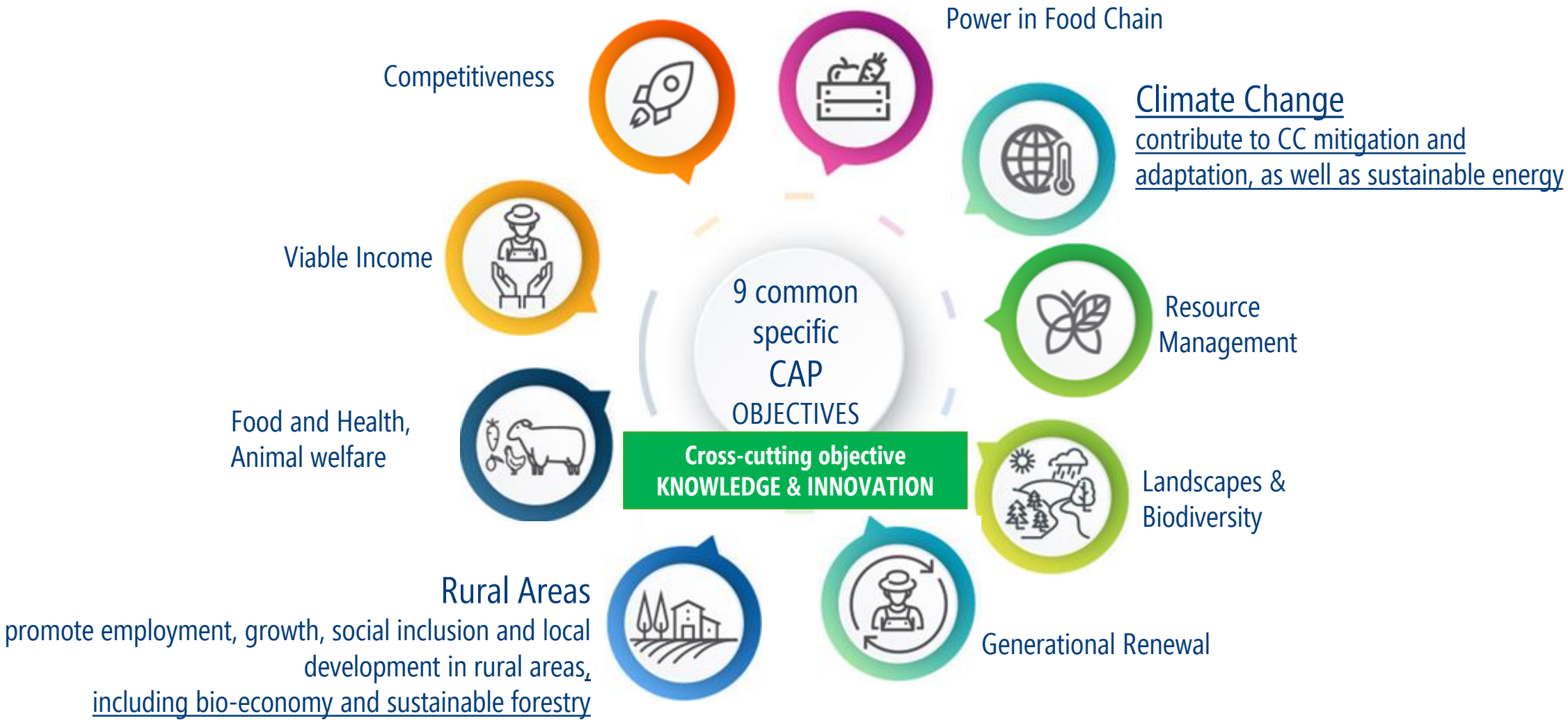
Halting and reversing the decline of pollinators

Restoring at least 25 000 km of EU rivers to a free-flowing state

Reducing the use and risk of pesticides by 50% by 2030

Planting 3 billion trees by 2030

CAP common specific objectives



CAP after 2020 – Increased environment and climate ambition

- Environmental and climatic objectives clearly mentioned among the objectives
- Specific indicators for climate mitigation
- CAP Strategic Plans: Higher level of flexibility, coherence of intervention to meet the needs
- Consistency with EU political priorities and national policies on the ground
- Higher level of responsibility: Result-based policy
- Requirement of no backsliding
- Wider and stronger portfolio of policy tools (conditionality and eco-scheme)
- Green Deal recommendation to MS, reinforced links with key pieces of legislation related to climate goals
- Strategic plans for the CAP
- National recovery and resilience plans

Upscaling climate actions with CAP

Public funding opportunities :

Common Agricultural Policy

- Good Agricultural and Environmental Conditions obligations (Basic conditionality for Direct Payments):
  - preserving carbon stock (GAEC 1 - Maintenance of permanent grassland)
  - protection of carbon-rich soils (GAEC 2 - Protection of wetland and peatland)
  - maintenance of soil organic matter (GAEC 3 - Ban on burning arable stubble)
  - others

- Support to carbon farming practices through **eco-schemes** or **rural development measures** (e.g. Commission list of potential agricultural practices)

- EIP-AGRI and new Agricultural Knowledge Information System, supports cooperation and testing of new approaches

- Advisory services, knowledge exchange, training, collective and cooperation approaches and innovation actions,

- Limitations: land eligible to CAP, timeframe, administrative burdens for a robust MRV for carbon credits.

CAP Plans are built on the objectives

Under the CAP Strategic Plans (2023-2027, Regulation 2021/2115), interventions are programmed by 10 Specific Objectives

Coming CAP (2023-2027)

- (a) to foster a smart, competitive, resilient and diversified agricultural sector ensuring long-term food security; 6.12.2021 EN Official Journal of the European Union L 435/27
- **(b) to support and strengthen environmental protection, including biodiversity, and climate action and to contribute to achieving the environmental and climate-related objectives of the Union, including its commitments under the Paris Agreement;**
- (c) to strengthen the socio-economic fabric of rural areas.

Reg. 2115/2021 – art. 5

SO4: to contribute to **climate change** mitigation and adaptation, including by reducing greenhouse gas emissions and enhancing carbon sequestration, as well as to promote sustainable energy;

- *Minimum 25% of Direct Payments to be dedicated to eco-schemes*
- *Minimum 35% of the EAFRD should be dedicated to environmental and climate objectives*
- *Reinforced links with key pieces of legislation related to climate goals*
- *Impact and Result indicator (e.g. R.14 Share of agricultural area that receives support to reduce emissions or store carbon in soils and biomass)*

Other: R.17 Afforested land, R.19 Improving and protecting soils. R.34 Preserving landscape features.

European Commission

The role of the CAP

- **Support the 3 pillars of sustainability**
- Integrate CAP data in the National inventories (CAP as source of data)
- Promote practices and technologies to reduce non-CO2 emissions
- Promote soil carbon protection (in grassland and peatlands)
- Promote practices for soil carbon increase in depleted soils
- Promote afforestation and agroforestry
- Promote production of sustainable biomass
- Cover upfront investments, support advisory, transation costs, innovation
- Support piloting with bottom-up innovation projects with farmers, knowledge transfer.

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R&I related to carbon farming in Horizon Europe – new projects, open calls

- Topics in **WP 2022** (open until 27 September):
  - Network on *carbon farming* for agricultural and forest soils (Soil Mission, CSA, 3M €)
  - *Monitoring, reporting and verification* of soil carbon and greenhouse gases balance (Soil Mission, RIA, 14M €)
  - Demonstration *network* on climate-smart farming – boosting the role of *advisory service* (Cluster 6, CSA, 20M €)

Research lines and innovation needs

- Improve monitoring, reporting and verification (use of remote sensing, field measurements and multisectorial integrated modelling, set standards for GHG accounting systems)
- Ecosystem monitoring of GHG fluxes. Understand dynamics with future climate scenarios
- Push the reduction of emissions in the agricultural sector, with techonology mainly (to ensure food secutirty) > feed additives; small scale biodigestors, precision agriculture, sustainable fertilization, nutrient recovery, circular economy
- LCA and GHG calculators for farmers, foresters, and policy makers, labelling sustainbility
- Understand forest vulnerability (ensure biomass supply for the bioeconomy)
- Best management of peatlands and wetlands
- Carbon farming (how to reward for C sequestration), how to define C credits
- Land use modelling for land availability and land dynamic > production of non-food crops
- Enzimatic processes for the production of biofuels from lignocellulosic material
- Understand drivers of biodiversity and halt losses
- Citizen involvemnent
- Stricter link bertween research results and policy making and its implementation (EU vision).

> Science.based policy making

Links

- Call for Evidence on Carbon Removal Certification Certification of carbon removals – EU rules (europa.eu)
- Watch the recording of the Conference on Sustainable Carbon Cycles, 31 January 2021 Sustainable Carbon Cycles Conference - About (b2match.io)
- Our webpage and our press release on the Sustainable Carbon Cycles communication
- Our webpage on Carbon Farming (europa.eu)
- Commission list of potential eco-schemes https://europa.eu/!yb74nC
- Study on Carbon Farming: https://data.europa.eu/doi/10.2834/594818
- Study on Wood in construction: https://dx.doi.org/10.2834/421958
- Legislative proposal on a new Regulation for Land use, forestry, and agriculture Delivering the European Green Deal | Climate Action (europa.eu)

Thank you

Slide “Sustainable bioeconomy – examples”: picture BECCS, source: https://www.stockholmexergi.se; picture timber in construction, source: https://www.build-in-wood.eu ; picture fiber crops, source: http://news.europeanflax.com/

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