Advancing towards sustainable and resilient agri-food systems in the EU

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Why an agri-food systems transition is needed

Societal challenges

- Climate change mitigation
- Reversing biodiversity loss
- Management of non-renewable or slowly renewable resources
- Reduction of health and environmental impacts of harmful agricultural practices
- Animal welfare improvement
- Preserving, and if possible increasing, the European continent's food security
- Affordability of healthy foods and diets
- Shifting of unhealthy dietary patterns and reduction of associated NCDs

Agricultural challenges

- Viable farm incomes through income support measures
- Reduction of inter-annual variability of farm incomes
- Increasing farm resilience in the face of shocks
- Increasing farm competitiveness
- Improving farmers' position in the food value chain
- Encouraging and supporting generational renewal

Source: Guyomard et al (2025) The next reform of the CAP: The variables in the equation, https://bit.ly/3PJ10Y

What do we mean by ‘transition’?

- A period of concerted and accelerated change in the agri-food sector.
- Finite period of specific, substantive changes of around 7 – 10 years.
- Detailed transition blueprint cannot be defined for the EU due to regional differences
- Bur key elements that sum up the changes needed to meet climate, biodiversity and health objectives whilst ensuring sufficient supply of food can be identified.

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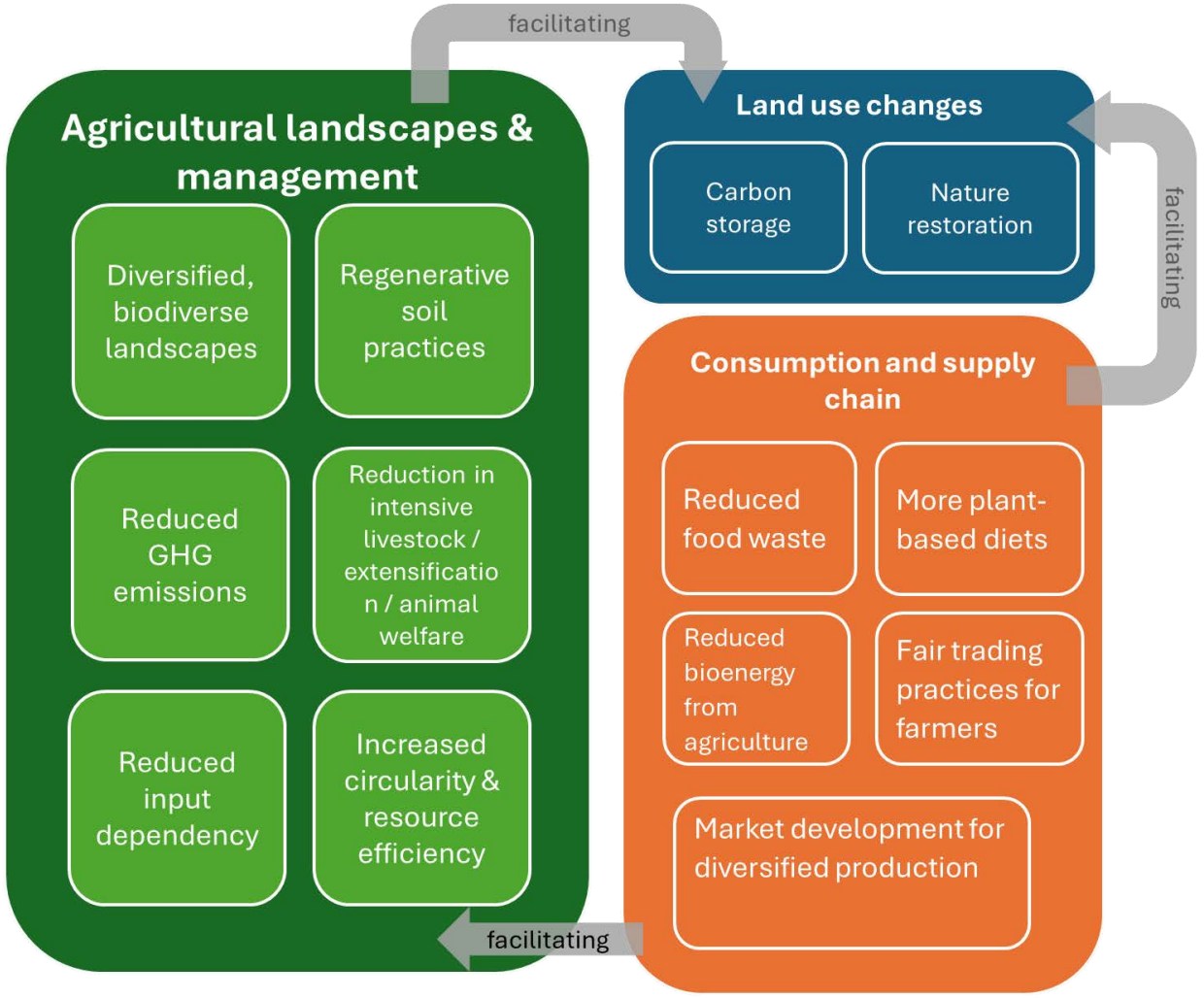
Key elements of a green transition in agriculture, food and land use



The costs of transition

- FoodDrinkEurope (2023): estimates the first-year costs of adoption on all EU agricultural land of
  - reduced tillage = in the range of **EUR 2.88–7.76 billion**
  - cover crops = in the range **EUR 6–8.89 billion**
  - fuller set of sustainable practices = in the range of **EUR 28–35.69 billion**

- IEEP (2011): estimates the needs for environmental management on agricultural and forested land in the EU along with associated expenditure on investments and training at **EUR 43 billion/year (+/- €8.5 billion)** from EU and national funds (€27 billion/year from just EU funds).

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The costs and benefits of transitioning to sustainable agriculture in the EU

A synthesis of existing knowledge

This brief summarises the main findings of a literature review of 60 studies on the financial impacts at farm level of transitioning towards sustainable agriculture:

- Adopting sustainable agricultural practices induces both upfront investments and maintenance costs.
- During the transition period, farmers benefit from reduced input costs, but might be faced with yield uncertainty and an increase in labour costs.
- Evidence suggests that sustainable farming practices do not necessarily negatively affect profitability when compared to conventional farming, and are likely to increase resilience to extreme weather events and market disruptions.
- Additional transitional aid is needed to boost the uptake of sustainable practices.

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As an increase in extreme weather events, soil degradation and conflicts over water uses pose crucial challenges to European agriculture, a **wider uptake of sustainable practices is needed** (Baldock & Bradley, 2023; van Dijk et al., 2024; Midler, 2022; Nadeu, 2022). Sustainable practices can be defined as sets of changes implemented at farm level, aiming to deliver the following long-term goals: diversified, biodiverse landscapes; increased soil health; reduced GHG emissions; reduced intensity of livestock, increased extensification, and animal welfare; reduced input dependency (agrochemicals, fuel, water); and increased circularity and resource efficiency.

Sustainable practice	Average implementation cost (EUR/ha) [range in brackets]	Average running cost (EUR/ha/y) [range in brackets]	Investment level	Range of action	Benefits	Transition Timeframe
reduced tillage	**961 [25-2833]** **336** without one 4ha farm	**50 [18-126]**	**high**	purchase of new machinery for no-till and direct drilling (upfront cost); increased labour costs (e.g. for mechanical weeding); potential lower yields at first	less fuel consumption and savings on machinery; less input consumption if coupled with cover crops; increased soil health leads to better yields usually after 5 years	**3 years** (5 to 10 years for full benefits; down to 1-2 years if pooled purchases)
cover crops	x	**144 [94-347]**	**low**	buying seeds and additional inputs, sowing, growing, and harvesting/terminating crops	less input consumption (fertiliser, pesticides, fuel if mulching); better yield mid-term (especially if legumes are used)	**5 years**
regenerative agriculture	**[385-2833]**	**125 [100-150]**	x	higher upfront investments for reduced tillage; running costs for cover crops.	lower input costs (fuel, fertiliser, water)	**5-10 years**
creating biodiversity-enhancing features	**591 [20-1277]** 200-300 for most	**134 [22-410]**	**high**	tree planting/ponds/hedges/flowering strips = upfront investments (including for equipment like brush cutters and seeds); income forgone from sparing land	savings in inputs (water/fertiliser/pesticides) more than outweigh initial costs after timeframe; new revenue streams (public money, wood).	**5-10 years** (up to 20 years for full benefits)
reducing water consumption	**[431-2500]**	x	**high**	new equipment e.g. drip irrigation	less input costs; more resilience against droughts	x
organic fertilisation	**200 [90-361]**	**294 [222-365]**	**medium**	equipment (manure spreader); cover crops if green manure; buying organic fertiliser; increased labour	lower input costs (fertiliser); increased soil health leads to better yields in mid-term.	5-10 years
grassland grazing – extensification	x	x	x	more management charges, more space needed, material and seed cost if no existing grassland	less feed and fodder costs; less slightly less veterinary and machinery costs; more profitable although less output	**3-4 years**
diversified crop rotations	**300 [200-400]**	**585 [545-625]**	**medium**	increased labour, equipment, and material (upfront costs); seed cost depends on crop mix	lower input (fertiliser) costs and better yield mid-term (especially if legumes in crop rotation)	**3 to 5-10 years**; 3-4 years to trial longer rotations
increased animal welfare	x	**+10-16% [10%-31%]**	**low**	new materials (straw for bedding) and building arrangements; increased labour	lower AMR	x
grouped transition, knowledge and training	x	**20**	**low**	agronomic advice and pooled purchases (cost = hub fee)	transition better planned; less trialling; lower upfront investment	x

How to fund the transition?

"Access to finance is a central condition for a successful transition of the European agri-food sector. [...] To ensure a sufficiently funded transition, both public and private capital needs to be mobilized. This includes returns from the market [...] public financial support [...], private investments, and access to capital."

Strategic Dialogue on the Future of EU Agriculture (2024), p. 45

Public funding sources	Private funding sources
CAP both in the present programming period and, on a larger scale, in the next one	Private incentives
Transition fund	Bank loans/credits
State aid	Ag ETS
National initiative	Carbon farming
…	…

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Supporting farmers in the transition – the future CAP

"The future CAP should focus on these central objectives:

- *(1) providing socioeconomic support to the farmers who need it most;*
- *(2) promoting positive environmental, social and animal welfare outcomes for society and*
- *(3) invigorating enabling conditions for rural areas.*
- *In addition (4), a complementary and temporary Just Transition Fund should be created to accelerate the sector's sustainability transition barriers to transition at farm."*

"When preparing a more targeted CAP [...], it must be ensured: that funds are not allocated to practices detrimental to ecosystem services and social and labour standards [...]."

Strategic Dialogue on the Future of EU Agriculture (2024), p.43 & 44

Forthcoming IEEP report

Purpose and scope of the report

- Make the case for “repurposing” selected schemes.
- Explore broad repurposing options.
- Highlight potential advantages and drawbacks.
- Assumes that support would remain about the same as now.
- Environmental sustainability is the main concern, but economic and social sustainability also considered**.**

Repurposing means **phasing out of payments that produce negligible or negative environmental sustainability outcomes** and **reallocation of** the financial support to existing or new types of payments that deliver the desired sustainability benefits (FAO, UNDP and UNEP, 2021).

- Remove and re-invest
- Redesign

EAGF (formerly Pillar I)
Decoupled direct payments: Basic Income Support for Sustainability (BISS): Decoupled payment based on the number of eligible hectares on a farm, with few conditions. This measure absorbs the largest share of CAP expenditure.
Coupled direct payments: Coupled income support (CIS): Member States can offer payments directly attached to levels of production (e.g. number of cows) in sectors that they judge important for the economy or environment but are facing challenges.
EAFRD (formerly Pillar II)
Investment aid measures: Support for investments in tangible and intangible assets, generally on farms, that contribute to one or more of the 10 specific objectives of the CAP.
Areas of natural constraints payments (ANC): Payments to farms in areas that are relatively difficult to farm, like mountains or regions with poor soil or extreme weather conditions (amounting to about half of the whole farmed area in the EU).

Basic Income Support for Sustainability (BISS)

Farm size class	% of Beneficiaries	% Area	% BISS payments
<=5 ha	48.9%	4.9%	5.8%
5-250 ha	50.0%	68.7%	72.1%
>250 ha	1.1%	26.4%	22.1%

Source: DG AGRI, 2023

Total financial allocation for 2023 – 2027: EUR 96.7 billion = 25% of the EU budget

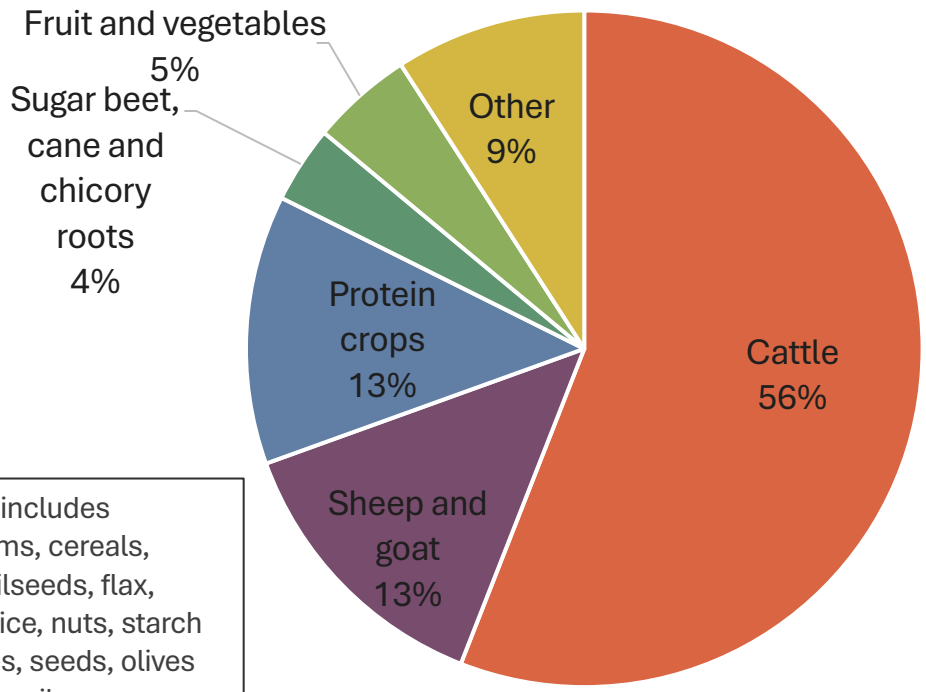
Main criticisms:

- Correlated to size of farm: bigger farms get higher share of the EU budget
- Policy variations designed to limit the scale of area-based payments to larger farms and redirect them to small and mid-sized operations (e.g. redistributive payments have not led to any meaningful changes to date.
- Weak MS implementation and derogations limit effectiveness of environmental conditionality standards.

Options for repurposing subsidies	How would this prevent negative effects/create positive effects for environment and climate?	What are the potential risks/constraints of the proposed options?	What supporting actions need to be in place to minimise/mitigate potential risks?
Remove + reinvest in provision of environment and climate services and investments; phase out over a period of approx. 7 years; potentially retain a smaller, targeted, socio-economic element	Reduce pressures stemming from excessive output/investment' Increases funds for environmental measures and increases incentives to adopt them.	Acceleration of the loss of small and marginal farms, some with higher-than-average environmental performance. Possible reduction of labour on farms drives changes in practice, some with negative consequences. Some farms adopting more intensive methods or larger scale e.g. increased field sizes	Targeted support for farmers in need Attractive and effective environmental schemes with sufficient budgets, creating major new income source Enhanced advice, support, and aid for cooperative initiatives. Improved advice and aid to diversify
Re-design options include introducing targeted version, increasing conditionality, requiring beneficiaries to enter agri-environment schemes**.**	Could in principle exclude certain categories/sizes of farm. More tailored conditionality would increase respect of minimum requirements that are relevant for the different sectors	Difficult to reach consensus on re-design and MS like the relative simplicity of scheme. More conditions/targets add to administration. Differences between MS, if permitted, could affect level playing field.	Close Commission scrutiny needed. Better enforcement of conditions needs to be put in place. More environmental monitoring needed e.g. through remote sensing.

Coupled income support (CIS)

Share of the total EU CIS budget (in %) allocated to different crop and lifestock categories for 2023 to 2027



* Other includes silkworms, cereals, hops, oilseeds, flax, hemp, rice, nuts, starch potatoes, seeds, olives and olive oil

Source: own compilation based on budget allocations submitted with the CAP Strategic Plans

Total planned financial allocation to CIS for the 2023-2027 period is EUR 23 billion

69% allocated to livestock, of which 55% is reserved for cattle, and around 30% to crops.

Main criticisms:

- CIS contributes to the maintenance of livestock numbers above the counterfactual level -> increase in the corresponding environmental footprint, including GHG emissions.
- In contrast, not enough support for potentially beneficial crops, like legumes.

Options for repurposing subsidies	How would this prevent negative effects/create positive effects for environment and climate?	What are the potential risks/constraints of the proposed options?	What supporting actions need to be in place to minimise/mitigate potential risks?
Remove + reinvest in more environmentally focused schemes	Removes incentives for inflated livestock numbers, increases efficiency on claimant farms, potentially less livestock and more land for other uses Reduce GHG emissions May reduce excessive stocking levels in some locations and cut use of concentrated feed.	Reduction in livestock numbers/farms may impact HNV/organic producers with small margins. Possible abandonment of land where grazing a good environmental option The emission reduction associated with less important livestock could be partially cancelled out by emissions leakage	Any significant reduction of livestock numbers should be balanced by action on the consumption side, if necessary, to avoid emissions leakage On land where continued grazing is best environmental option support this via ag-environmental schemes incentivising appropriate stocking and management. Well targeted advice re sustainable options for future
Re-design: Strict conditionality on coupled support, restricting it to demonstrable public good provision only, shrinking scope of scheme	If rigorous enough, would reduce inflated production levels and associated environmental costs. Some release of budget for other purposes	Failure to respect strict conditionality at MS and more local levels. Difficult for Commission to monitor remotely. Added admin and risk of limited benefit.	Investment in local agencies with better capacity to oversee targeted measures. More monitoring and reporting.

Do we need additional transition funding?

- CAP spending focused mainly on sustaining existing and needed forms of agricultural management.
- The funds devoted to moving up to the next level fall short of supporting the step change now required.
- Targeted investments to accelerate change is needed.
- Ensuring equitable access to support for those who need it most and preventing anyone from being left behind.
- Align public and private incentives, fostering coherence across funding streams.

Key questions for designing a transition fund

1. **Objectives:** What specific outcomes should the fund prioritise? How can it balance environmental, social, and economic goals?
2. **Funding Sources:** Where will the resources come from? Should the fund draw solely from EU budgets, or should it also leverage national contributions, private sector investments, or innovative instruments such as green bonds?
3. **Type of Instrument:** Should the fund primarily provide grants, loans, guarantees, or a mix of these? How can the chosen instrument best address the diverse needs of farmers and food system actors?
4. **Eligibility:** Who should qualify for funding—farmers, food system actors, or other stakeholders? How can the process ensure fairness across diverse agricultural regions and practices?
5. **Scope:** What actions should the fund support? Beyond material investments, should it cover capacity building, training , and knowledge transfer? Should it support actors to 'transition out' of the sector?
6. **Duration:** How long should the fund operate? What timeline aligns with both the transition's urgency and its long-term goals?
7. **Allocation:** How should resources be distributed among Member States and sectors? What criteria will ensure efficiency and equity?
8. **Integration:** How will the fund interact with existing mechanisms like the CAP and potential new policy instruments, such as an Emissions Trading System (ETS) for agriculture, private sector initiatives, and national programs? How can duplication or conflict be avoided?
9. **Monitoring:** What systems will measure the fund's impact? How can transparency and accountability be ensured!

Further reading

- Increasing climate change resilience through sustainable agricultural practices (IEEP 2024)
- The costs and benefits of transitioning to sustainable agriculture in the EU – a synthesis of existing knowledge IEEP (2024)
- Securing greater environmental and climate performance from EU agricultural funds (IEEP 2024)
- Exploring policy options for funding nature restoration in the next MFF (IEEP 2023)
- Agri-environmental policies in England after Brexit (IEEP UK 2025)
- Repurposing selected CAP payment schemes towards sustainable agriculture (forthcoming)