



POSITION PAPER

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FIT FOR 55: REFORM OF THE EU LULUCF REGULATION

SUMMARY

Stopping runaway climate change requires dramatic cuts in fossil fuel and other emissions, but also a rapid increase in net removals by the land use sector. The EU's Land Use, Land Use Change and Forestry (LULUCF) Regulation is not consistent with this aim and far-reaching changes to it are needed as part of the 'Fit for 55' package, commensurate with the speed and scale of the climate emergency we face. These changes are:

1. Increase annual net removals in the LULUCF sector by 2030 to 600 Mt CO₂-eq

The 'no-debit' rule in the current LULUCF Regulation is far too weak, and given the accounting rules applied in different LULUCF sectors allows for a decline in the LULUCF net sink to as little as 225 Mt CO₂-eq per year in 2030¹. The EU should instead aim to increase net removals to 600 Mt CO₂-eq per year, to be met through the rapid expansion of nature restoration and sustainable agricultural and forestry practices that are a win-win for the climate and biodiversity. The Commission and Member States should undertake urgent work on how to achieve this goal collectively across the EU. It will need to be accompanied by a significant reduction in EU production and consumption of animal products such as meat and dairy, reform of the seriously flawed bioenergy rules in the EU Renewable Energy Directive, a shift to a circular economy, and support for a just transition in the land use sector.

2. Keep the LULUCF sector separate

In the long term the EU is aiming for zero net emissions, and then for removals to exceed emissions. But that does not mean that emissions and removals in the LULUCF sector should be treated at a policy level as 'tonne-for-tonne' equivalent to emissions in other sectors. On the contrary, there are fundamental differences between them, and the EU should therefore:

¹ This amount has also been agreed in negotiations on the EU Climate Law as the maximum that can be counted from the LULUCF sector towards the EU's new 55% net emissions reduction target for 2030, meaning that anything over 225 Mt CO₂-eq per year will lead to a reduction of over 55%.

- Scrap existing offsetting ('flexibility') afforded to Member States between the LULUCF sector and sectors covered by the Effort Sharing Regulation (ESR);
- Keep fertiliser and livestock-related emissions in the ESR, rather than merge them with LULUCF emissions to create an Agriculture, Forestry and Other Land Use (AFOLU) Regulation; and
- Avoid any official EU trading system for carbon offsets between the LULUCF and other sectors. Climate action in the LULUCF sector should not be sold to GHG-emitting companies as an alternative to cutting emissions in their own value chains. Instead there should be a major increase in public funding, through national support schemes, the Common Agricultural Policy, revenues from the Emissions Trading System, or other emissions-related levies.

3. Base accounting rules on actual emissions and removals

The current accounting rules for land use categories such as cropland and forests are not only complicated but also 'bake-in' historical levels of emissions - effectively rewarding past bad practice (in the case of forests, the 'forest reference levels' also factor in future harvesting). Accounting in all categories should instead be based on the actual emissions and removals seen by the atmosphere and reported to the UNFCCC - not historical baselines or planned future policies.

4. Ensure action to increase sinks also improves resilience and biodiversity

Action to increase the EU LULUCF net sink can bring many co-benefits, but only if done right. This means any and all public support in this area must be linked to strict sustainability criteria in the relevant legislation, to ensure for example that only win-wins for climate and biodiversity are incentivised. In this context it is essential that the LULUCF Regulation be fully consistent with the Commission's biodiversity strategy. This includes the upcoming legislation on nature restoration, which will contribute to achieving a higher LULUCF target.

DETAIL

Introduction

Keeping average global temperature rise to 1.5°C, and so avoiding catastrophic climate impacts, means massive and very rapid reductions in emissions from fossil fuels. But no less urgent, given the emergency we now face, is the need to cut emissions - and increase the removal of carbon dioxide from the atmosphere - in the land use sector.

The EU's [LULUCF Regulation](#), which the European Commission is currently reviewing, is therefore a key pillar of the EU's climate governance architecture, covering as it does emissions and removals in six land use categories: afforested land, deforested land, managed cropland, managed grassland, managed forest land and, from 2026, managed wetland (unmanaged land such as rocky or ice-covered mountain areas is not covered by the Regulation). For a detailed explanation of the EU LULUCF Regulation and the various accounting rules it uses, see [this paper](#) from the Öko-Institut.

If the LULUCF Regulation is to be brought in line with the goals set out in the Paris Agreement and the EU's biodiversity strategy, major changes to it are required.

Increase net removals in the LULUCF sector by 2030 to 600 Mt CO₂-eq per year

The EU's LULUCF sector is currently a significant net carbon sink, with removals by forests in any one year significantly exceeding emissions from agricultural land or the conversion of land to settlements. But over the last decade the level of this annual net sink has steadily declined, and is projected to fall further between now and 2030. This is due to a range of factors, including increased harvesting of EU forests, changes in their age class structure, and greater expected probability of natural disturbances.

Under the current LULUCF Regulation Member States are required to ensure over the next decade that 'accounted emissions' in the sectors covered by the Regulation are no greater than accounted removals - something referred to as the 'no-debit' rule. But this is a very weak target compared to the targets for sectors covered by the ESR or the Emissions Trading System (ETS). And given the accounting rules applied in the various different LULUCF land use categories (see below) it allows for a decline in the LULUCF net sink to only 225 Mt CO₂-eq per year by 2030, for the reasons mentioned above. A much more demanding, science-based target is required - one that reflects the need to protect, restore and sustainably manage ecosystems and landscapes - if the EU's LULUCF sector is to play its due role in both averting runaway climate change and tackling the biodiversity crisis.

On the basis of the available evidence (see annex) we believe that the EU should aim to increase net removals in the LULUCF sector by 2030 to 600 Mt CO₂-eq per year, and by a higher level thereafter. Further 'bottom-up' work by the Commission and Member States should be undertaken in order to establish how to achieve this goal collectively across the EU, but it is clear that doing so will require radical changes to how we use land across the EU, including:

- Dramatic cuts in LULUCF sector emissions (for example by re-wetting organic agricultural soils and ending peat extraction from wetlands);
- Changes to agricultural practices to protect and increase the carbon content of mineral soils on cropland and grassland;
- A major expansion, in appropriate areas, of agroforestry systems, in which trees or shrubs are grown in combination with crops or livestock farming;

- Significant changes in forest practices, in favour of closer-to-nature forestry and reduced levels of forest harvesting, combined with innovation in the design and the circular use of materials in long-lived products; and
- Reforestation of suitable agricultural land of low nature and farming value, governed by strict environmental and social criteria.

Action to increase the LULUCF net sink needs to be accompanied by safeguards in other legislation (see below) to ensure that the 600 Mt CO₂-eq target is achieved using solutions that are a win-win for climate and biodiversity, and that increase the resilience of carbon stocks to future climate impacts. Meeting the target while avoiding any unintended displacement effects will also require other changes, including a major reduction in EU production and consumption of animal products such as meat and dairy - products that today account for [nearly three-quarters](#) of EU agricultural land use.

Other essential changes include reform of the seriously flawed rules on bioenergy in the EU Renewable Energy Directive, which currently incentivise the burning of trees and dedicated biofuel or energy crops. Use of such feedstocks - which is not prevented by the LULUCF Regulation² - directly undermines efforts to boost the EU carbon sink and typically increases emissions compared to fossil fuels - either in general or over the timeframe we have available to stop runaway climate change. Finally, there needs to be a rapid shift towards a circular EU economy, and support to ensure the necessary transition in the land use sector is achieved in a socially fair way.

Keep the LULUCF sector separate

In the long term we are aiming for zero net emissions, and for removals then to exceed emissions. But that does not mean that emissions and removals in the land use sector should be treated at policy level as tonne-for-tonne equivalent. On the contrary, there is a clear scientific consensus that there are fundamental differences between land use emissions and removals, and emissions in other sectors, and that the two cannot simply be considered interchangeable, and need to be treated separately.

Emissions outside the land use sector, such as from fossil fuels or other man-made chemicals, are relatively easily quantifiable and typically result from the combustion, processing, creation or release of materials that (when underground or in mineral form) are inert and/or stable. Non-CO₂ emissions relating to fertiliser use or livestock, though linked to land use, are also specific in terms of their physical, chemical & temporal characteristics. In contrast, GHG emissions and removals of CO₂ in the land use sector are not only subject to high levels of [uncertainty](#), but also to changes in managed and natural ecosystems that are not predictable or “directly human-induced”, for example those resulting from forest fires, pests, disease or other climate-related changes - all of which can be expected to increase in future. So while much greater action is urgently needed in the LULUCF sector to help prevent climate catastrophe, its net removals cannot be relied upon in the near term to be permanent or to compensate for a specific level of emissions from other sectors.

This has a number of implications for reform of the LULUCF Regulation and for the ‘Fit for 55’ package more generally, namely:

- The LULUCF sector should retain its current scope, and not be extended to include non-CO₂ emissions from agriculture (to create an ‘Agriculture, Forestry and Other Land Use’ or ‘AFOLU’ sector);

² See the Annex to this 2017 WWF briefing paper on EU bioenergy policy for a detailed explanation of why EU LULUCF rules, while much improved, do not solve the problem of high carbon bioenergy use:

https://wwfeu.awsassets.panda.org/downloads/eu_bioenergy_policy_wwf_briefing_paper_final_4.pdf

- There should be no offsetting (sometimes euphemistically referred to as ‘flexibility’) between the LULUCF and other sectors, meaning that the possibility afforded to some Member States to use credits from the LULUCF sector in order to meet their ESR targets should be deleted; and
- There should be no official EU market-based trading system for certified removals or emission reduction credits that allows polluting companies to use uncertain and potentially reversible offsets in the land use sector as a means of avoiding carbon taxes or emissions cuts in their own value chains. Instead there should be a major increase in public funding of climate action in the land use sector, through national support schemes, the Common Agricultural Policy, revenues from the Emission Trading System, or other levies on greenhouse gas emitting companies. More rigorous and harmonised standards for voluntary offsetting schemes that are additional to emissions reductions may also be appropriate, not least to ensure that these benefit farmers, foresters or other land managers rather than intermediaries.

Base accounting rules on actual emissions and removals, not historical baselines

At present, Member States’ performance against the ‘no-debit rule’ is based on accounted, rather than actual, reported emissions. For most land use categories this means that emissions in a given year are compared with emissions in a historical base year or period, with only the difference being counted. This effectively means that the continuation of previous practices associated with emissions (such as the draining of peatlands, harvesting of forests etc.) is not penalised. In the case of managed forests, accounting is based on an extremely complicated system of ‘forest reference levels’, which are to some extent manipulated by Member States in order to allow not just historical levels of harvesting but also [future increases](#).

The EU should instead implement a [much simpler system](#) based on absolute gains and losses in carbon stocks, rather than changes compared with business-as-usual or an arbitrary historical reference period³. Such an approach should also be extended immediately to wetlands, which as it stands are exempted from the LULUCF Regulation until 2026, and efforts made to strengthen the reliability of carbon stock assessment and reporting within different LULUCF sectors.

In the case of forest land, Member States should also be required to report separately on (i) production forests and (ii) conservation or set-aside areas (where logging is not allowed). At present, Member States are not required to differentiate between such areas, and requiring them to do so would help identify unsustainable or poor forest management practices in the former that are harmful for the climate.

Ensure action to increase sinks improves resilience and biodiversity

Action to increase net removals by the LULUCF sector has the potential to contribute to multiple other EU objectives, including biodiversity, flood prevention, employment and health, and indeed the resilience of carbon stocks in forests and other ecosystems to future changes in climate⁴. But only if pursued in the right way: it could just as easily incentivise approaches that undermine such aims.

To the extent that this issue is not regulated under the LULUCF Regulation, the EU must ensure through other legislation that increases in net removals are achieved through changes to agricultural and forestry practices that are ecologically sustainable. Most importantly, EU rules must ensure that any and all public support for action on net removals, whether under the CAP, the planned carbon farming initiative, national measures or a new EU fund,

³ Provided that such an approach is complemented by a demanding new target for the LULUCF sector and/or an end to offsetting between that and others, as argued for in this paper; otherwise it could lead to a windfall in carbon credits for certain Member States that could delay emissions reductions elsewhere.

⁴ <https://www.cbd.int/doc/publications/cbd-ts-43-en.pdf>

be tied to strict sustainability criteria, to avoid incentivising bad outcomes such as the afforestation of biodiverse grasslands.

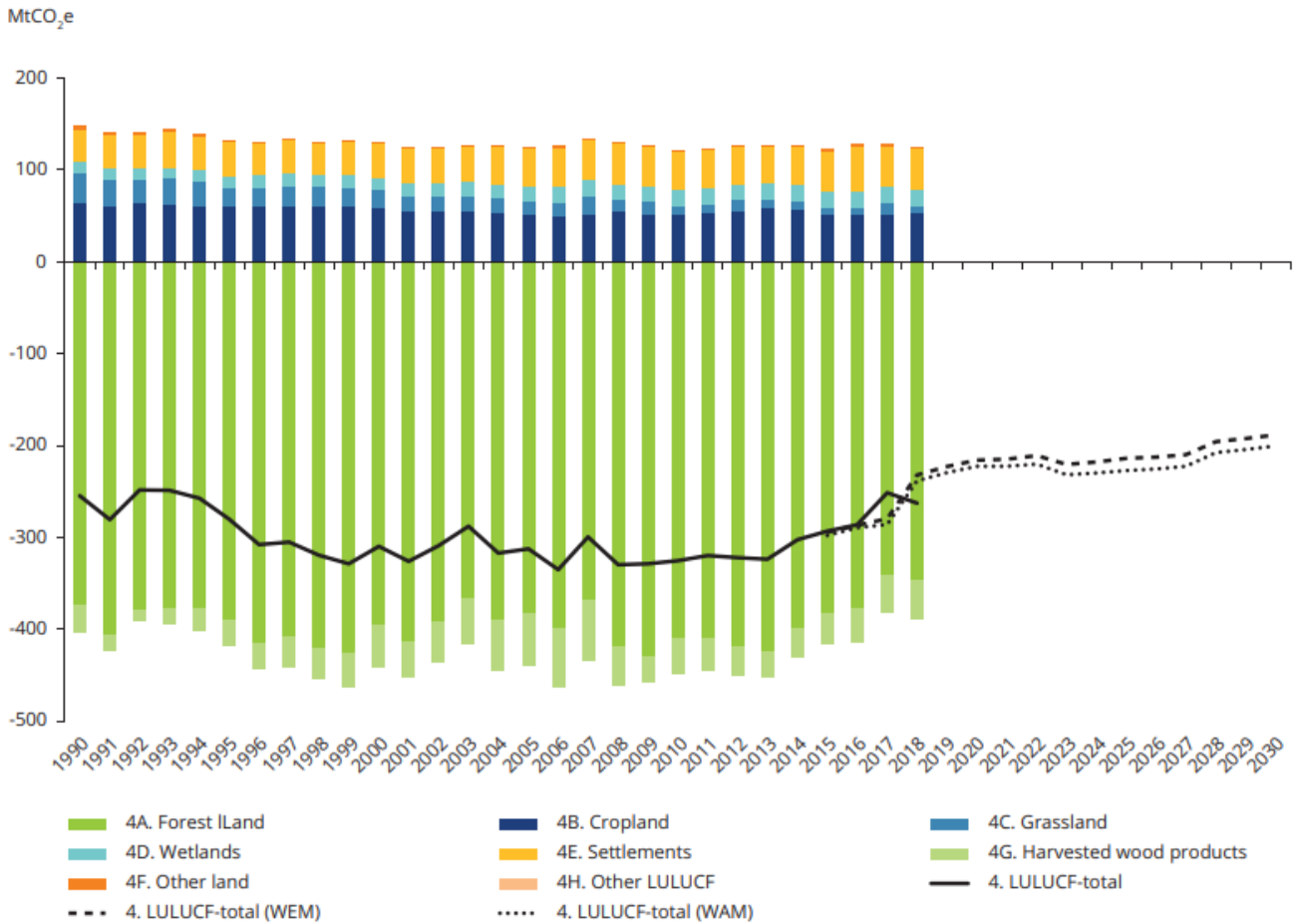
In this context it is essential that the LULUCF Regulation be fully consistent with the Commission's biodiversity strategy, including the upcoming legislation on nature restoration. While it is possible that some of the land targeted under the latter may, in terms of the LULUCF Regulation, be considered 'unmanaged land', and so not subject to LULUCF rules, there will be areas of overlap, and the new nature restoration targets will therefore contribute to achieving a higher LULUCF target.

ANNEX

Doubling the EU's net LULUCF sink by 2030

The EU LULUCF sector contains both emissions, for example from the loss of soil carbon from cropland and grassland, and removals, for example carbon sequestration by forests. In 2018 the LULUCF sector was reported as a net sink of -263 Mt CO₂-eq (see figure below from the EEA⁵).

Figure 2.5 Reported EU-27 LULUCF emissions and removals by land use category



Note: Bars and solid lines represent historical GHG emissions (available for the period 1990-2018). Dashed lines represent projections for the scenario with existing measures (WEM). Dotted lines represent projections for the scenario with additional measures (WAM).

Sources: EEA (2020f, 2020j).

Various assessments have been made in recent years of what level the EU's LULUCF net sink could reach in 2030 if policies were introduced to cut emissions and increase removals. These range from 340 Mt CO₂-eq per year at the lower end (the European Commission's [impact assessment](#) for the 2030 target) to as much as 1,200 Mt CO₂-eq per year at the high end⁶, with the latter relying on high levels of reforestation. The [EUCalc](#) model, under scenarios that prioritise rapid cuts in emissions and high levels of nature protection, leads to a net sink of around 700 Mt CO₂-eq per year, again largely through reforestation of agricultural land, while the Naturwald Akademie [estimated](#) that

⁵ <https://www.eea.europa.eu/publications/trends-and-projections-in-europe-2020>

⁶ For example see Roe et al 2019 (https://www.researchgate.net/publication/336710262_Contribution_of_the_land_sector_to_a_15_C_world) building on data from Griscom et al 2017 (https://www.researchgate.net/publication/320536154_Natural_climate_solutions).

forest restoration, even without any expansion in forest area, could provide a (forest) carbon sink of -488 Mt CO₂-eq in 2050 (the equivalent figure for 2030 would be around -430 Mt CO₂-eq⁷). A comprehensive recent review of such studies can be found in the Öko Institut's [Exploratory Analysis of an EU Sink and Restoration Target](#), which concludes that a net LULUCF sink of 400-600 Mt CO₂-eq per year by 2030 would be feasible, given appropriate policy measures, without incurring major trade-offs with other sustainability constraints such as biodiversity or food security.

The main areas of potential when it comes to increasing the EU's net LULUCF sink, as explained in, for example, the Öko Institute's report (see section "3.1.2 Options for emission reduction and enhancement of carbon storage and their potential"), are:

- Re-wetting of organic agricultural soils, which represent a small percentage of cropland or grassland⁸ but are a major source of emissions in the LULUCF sector, and the ending of peat extraction from wetlands (the re-wetting of forested peatland also has significant potential, but in all cases re-wetting needs to be carried out carefully in order to avoid unintended climate or biodiversity impacts);
- Increasing the carbon content of mineral soils on cropland, for example through practices such as no-till agriculture and organic farming, and a reduction in the use of chemical fertilisers (something that can also increase carbon losses);
- A major expansion in appropriate areas of agroforestry systems, in which trees or shrubs are grown in combination with crops or livestock farming. This has the potential not just to reduce overall demand for land⁹ but also to provide numerous other benefits, including increased soil fertility, protection against drought or other extreme weather conditions and reduced soil erosion;
- Increasing carbon stocks in existing forests through biodiversity-friendly and site-appropriate changes to forest practices, in favour of closer-to-nature forestry and reduced levels of forest harvesting (the Naturwald Akademie study mentioned above, for example, envisages a reduction in average harvesting intensity in EU forests from 77% of annual growth to 60% by 2030). This needs to be combined with innovation in the design and the circular use of materials, in order to maximise the lifetime of harvested wood products and the persistence in the technosphere of the carbon they contain;
- Allowing or encouraging the return of biodiverse, natural forests on previously forested land of low nature and farming value, governed by strict environmental and social criteria. This should be prioritised over the use of such land for dedicated biofuel or energy crops, something proposed in the European Commission's long term EU climate strategy, as that will typically result in higher net emissions and is therefore counterproductive in climate terms¹⁰.

Studies suggest there is also potential to increase carbon dioxide removal in marine and coastal ecosystems, including saltmarshes, seagrass beds and sea shelf areas, but these are not areas covered by the LULUCF Regulation.

The European Commission and EU Member States should undertake urgent work from a 'bottom-up' perspective on how to achieve the technical potential for increased net removals identified by the academic studies discussed above, and the policy framework needed to ensure that this is done in a socially fair, inclusive, and ecologically sustainable way.

⁷ Calculated by the Öko Institut on the basis of Naturwald Akademie analysis.

⁸ According to the European Commission only 1.5% of EU cropland consists of organic soils but they account for 55% of total cropland soil emissions, and the 3% of grassland on such soils emits as much carbon as is sequestered by the remaining 97% (for further information see analysis of the European Commission's long term EU climate strategy here:

https://wwfeu.awsassets.panda.org/downloads/eu_long_term_climate_strategy_wwf_briefing_paper.pdf)

⁹ See explanation of the productivity benefits of agroforestry compared with monoculture production (the 'land-equivalent ratio') here: <http://www.fao.org/sustainable-forest-management/toolbox/modules/agroforestry/basic-knowledge/en/?type=111>

¹⁰ For further explanation on this point and references to relevant scientific evidence see:

https://wwfeu.awsassets.panda.org/downloads/eu_bioenergy_policy_wwf_briefing_paper_final_4.pdf

For more information

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