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The Finnish Climate Change Panel
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Expert Statement from the Finnish Climate Change Panel on EU rules on land use, land use change and forestry (LULUCF) – evaluation

To reach the climate target set in the Paris Agreement, deep reductions in the anthropogenic greenhouse gas (GHG) emissions and increases in the anthropogenic carbon sinks are required. Globally, the need of the anthropogenic (additional to natural) carbon sink might be even at the level of 10 billion tons of CO₂ annually, on average, by the end of this century. Of that, the fair share for the EU would range from several hundred million to a few billion tons of CO₂ annually.

The net GHG balance in the LULUCF sector constitutes of both GHG emissions and removals. In the EU, the LULUCF sector has been a net sink of approximately 300 million tons (Mt) of CO₂ equivalent annually between 1990 and 2022. However, there is an evident declining trend in the net sink from 2010 onwards. In particular, the forest carbon sink has declined from the 2010 level (-430 Mt) by approximately 100 million tons (-290 Mt in 2022).

It is important to recognise that Earth System Models, which are applied to derive pathways for GHG balances which will stabilize the global temperature increase to well below two degrees in accordance with the Paris Agreement, include a portion of the LULUCF net sink from managed lands inherently in the climate system. Simply, this means that when world aims to reach net zero or net negative GHG emission levels by the current national reporting rules according to the IPCC, part of the forest carbon sink has already been accounted as natural in Earth System Models and should not be further accounted as additional anthropogenic sink in climate policy targets. However, it might be very difficult to reliably separate natural and anthropogenic sinks in managed lands. Thus, the practical solution might be that both are accounted and reported as anthropogenic, like in current GHG inventories, but this should be reflected in the time frame when countries aim to reach net zero or net negative GHG emissions. In the case of natural sinks in managed lands accounted as anthropogenic, the net zero or net negative targets should be reached earlier than if the natural sink is separated from the anthropogenic sink in managed lands.

Setting targets for the LULUCF net carbon sink poses some fundamental challenges. As part of the carbon sink in managed lands is natural and as there are uncertainties related to the quantity and permanence of that carbon sink, it should not be used to lower the ambition of GHG emission reductions from the use of fossil fuels and other sources. Such a case may take place if the carbon sink in managed lands can be used flexibly in the place of GHG emission reductions elsewhere and if the targets set for emissions are not ambitious enough. To respond to these challenges, appropriate LULUCF policy is required alongside appropriate climate policies in the other sectors. Such LULUCF policy would ensure that the effect of biomass harvesting or land-use change affecting the carbon sink in managed lands would be appropriately taken into account. In addition, such policies would ensure that GHG emissions from the use of fossil fuels are reduced and not inappropriately delayed by relying on the carbon sink in managed lands. The key question is that how well the EU's LULUCF policy reflects these requirements.

The LULUCF regulation of the EU between 2021 and 2030 is more ambitious than what was applied in the Kyoto Protocol up to 2020. This direction is in line with the climate science claiming for more efforts from the parties to the Paris Agreement. The LULUCF targets and rules applied in the EU

ensure that the Member States can use the LULUCF sink to a very limited amount in fulfilling their other GHG emission reduction targets. At the same time, the LULUCF targets and rules aim to ensure that either the LULUCF target is reached at the EU level or, if not reached, the deficit is compensated by additional GHG emission reductions in national effort sharing sectors. These features can be considered reasonable. However, several shortages and development needs can be recognised in the existing LULUCF regulation:

- The regulation itself obliges Member States, thus it does not affect economic operators, landowners or land management practices, unless national policies and measures are implemented. The dependency on national policies and measures generates uncertainties on whether they are implemented effectively enough to reach the LULUCF targets.
- The LULUCF targets are subjective to technical corrections made in GHG inventories of the Member States if new methods are introduced. The final targets are known only two years after the end of the compliancy periods (i.e. in 2027 for the period 2021-2025 and 2032 for the period 2026-2030). This also means that the target level of net carbon sink in the LULUCF sector for the whole of the EU is not known and it can be significantly lower than -310 Mt CO₂-eq. in 2030. The first estimations, for example from Finland, show that the technical corrections may significantly lower (decrease) the LULUCF net sink targets set for Finland. The uncertainties related to the targets makes it ambiguous whether Member States are on the track to reach their targets, which may have harmful effects on implementation of the national policies and measures required.
- The LULUCF targets set for the Member States are based on historic data and political decisions. This likely means that the targets can be more ambitious or less ambitious, depending on the Member State. Some Member States may reach the targets with little effort while some Member States may require significant effort. If the targets are reached with little or no additional effort, there may be a lack of incentives for such Member States to implement national policies and measures in the LULUCF sector. Uncertainty about the price and amount of carbon removal units available for purchase generates an additional uncertainty element for those Member States who are in danger of missing their LULUCF targets.
- The LULUCF GHG balances are subject to significant uncertainties due to unpredictable natural disturbances or environmentally induced changes e.g. in annual increment of forests. Such changes may make it difficult for some Member States to reach their LULUCF targets even if appropriate policies and measures are implemented. This may increase inequity between the targets set for the Member States.
- If the fundamental aim of LULUCF regulation is that the Member States implement national policies and measures to reduce GHG emissions and increase carbon sinks in the LULUCF sector, the regulation should be improved to better fit for purpose. This can be done by including more explicit incentives to reduce GHG emissions or increase in carbon sinks into the regulation rather than relying purely on absolute targets set for the GHG balances.
- Tree harvesting is the most significant factor affecting the forest and the whole LULUCF net carbon sink, thus policies and measures should affect tree harvesting rates. LULUCF regulation could, for example, introduce certain carbon penalty for tree harvesting to clearly incentivise increase in net carbon sink regardless of the absolute level of net carbon sink. This way the effect of unpredictable environmentally-induced changes on GHG balances, thus in reaching LULUCF targets, could be avoided. Similar types of elements could be included in the LULUCF regulation to incentivise other anthropogenic measures which increase net carbon sink in the LULUCF sector. The target of the revised LULUCF regulation (-310 Mt CO₂-eq. by 2030) is approximately equal to maintaining the sink at the historic average level between 1990 and 2010. This target is likely an insufficient contribution considering what would be the fair share of the EU to reach the Paris Agreement targets. Consequently, the ambition should be increased.
- As the need of carbon sinks is likely much higher than can be served by the LULUCF sector, technical removals of carbon are also required. As these removals might to significant extent be carried out through bioenergy combined with carbon capture and storage (BECCS), it is

highly important that perverse incentives to increase the use of biomass with the cost of land carbon sink are avoided. Thus, LULUCF regulation ambitious enough to capture the sink effects of biomass harvesting is required. In the long run, better methods for taking into account the effect of biogenic carbon released rather than solely assessing the amount of carbon stored annually would provide an additional indicator to show the effects of harvesting.

- There are synergies and trade-offs between climate and biodiversity conservation measures. These should be better reflected in the EU regulation so that synergies are boosted, and trade-offs are avoided.
- In the current regulation, flexibilities within Member States and between the LULUCF and effort sharing sector are limited, complex and involve uncertainties. Flexibilities is an issue that needs to be carefully considered. On one hand, flexibilities increase risk for free riders if the target and rules are inappropriately set, but on the other hand, flexibilities may improve cost-efficiency and freedom of choices.