

*Briefing paper for Christian Holzleitner (DG Clima, European Commission)  
June 7th, 2023*

## **The collapsed LULUCF sink in Finland**

The Finnish LULUCF net sink changed from sink to source for the first time in 2021: 0.5 Mt CO<sub>2</sub>-eq. While fossil emissions in Finland have reduced steadily since 2005, net emissions show growth since 2015 due to the decreasing LULUCF net sink.

The main causes of the collapsed sink are i) high harvesting levels over a long time (2016-2022 avg. 73.4 Mm<sup>3</sup>/a), ii) higher soil emissions from peatland forests, iii) observed decrease in forest growth (too strong thinning, final cuttings for younger & smaller trees than before). In the background, there is a policy failure: there is no sufficient policy to maintain sinks and reduce soil emissions (both forestry and agriculture).

## **Achieving LULUCF targets**

### *National Climate Act*

According to the Finnish Climate Act, Finland should be carbon neutral in 2035 – sinks ought to cover all territorial emissions. No specific target for LULUCF is laid down in the Act. The target year for carbon neutrality was suggested by the Finnish Climate Change Panel<sup>1</sup> based on the assumption that Finland would be able to uphold its average historical net sink of -21 Mt CO<sub>2</sub>-eq. Current rapid reduction in fossil emissions will decrease the size of the required net sink (approx. 18 Mt CO<sub>2</sub>-eq). Achieving the EU 2030 LULUCF obligations would significantly help Finland to achieve its own carbon neutrality target in 2035, though additional negative emissions from BECCS might be needed.

### *EU LULUCF 2021-2025*

Finland will not achieve its 2021-2025 EU target; we have estimated<sup>2</sup> that Finland will fall short by approx. 48-77 Mt CO<sub>2</sub>-eq, given that flexibilities will be available.

- Uncertainties: How much will the reference level change due to technical corrections? At what level will harvesting in Finland be in 2023-2025? Will the flexibilities be available?

Finland has limited options to influence the sink during this period until 2025: only limiting harvesting would quickly increase the sink. More information on additional measures is presented in attachment 1.

A more viable option to cover the missing LULUCF sinks is that Finland buys LULUCF removals from MSs that overachieve their 2021-2025 targets.

- Uncertainty: who is willing to sell and at what price?
  - o Upside: Our analysis<sup>3</sup> shows that the EU is on its way to achieve the 2021-2025 LULUCF target level & there should be incentives for selling, since MSs cannot carry their own LULUCF removals over to the LULUCF 2026-2030 period.

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<sup>1</sup> Suomen ilmastopaneeli 2021. [https://www.ilmastopaneeli.fi/wp-content/uploads/2021/02/ilmastopaneelin-raportti\\_ilmastolain-suositukset\\_final.pdf](https://www.ilmastopaneeli.fi/wp-content/uploads/2021/02/ilmastopaneelin-raportti_ilmastolain-suositukset_final.pdf) (in Finnish)

<sup>2</sup> Based on LUKE's previous estimation: [https://jukuri.luke.fi/bitstream/handle/10024/552866/VerTa\\_lausunto\\_2022\\_12\\_14\\_v3.pdf?sequence=1&isAllowed=y](https://jukuri.luke.fi/bitstream/handle/10024/552866/VerTa_lausunto_2022_12_14_v3.pdf?sequence=1&isAllowed=y) (in Finnish)

<sup>3</sup> Draft briefing paper, The Finnish Climate Change Panel (2023), not yet published.

Reducing soil emissions is crucial in the longer term. Unfortunately, the policy to tackle soil emissions is only in preparation and will not be able to contribute to 2025 emissions levels.

Worst-case scenario: the underachieving of LULUCF targets will shift to the EU ESR sector 2021-2025 and then carried to 2026-2030. Compensating LULUCF underachievement in ESR would be expensive and difficult.

### *EU LULUCF 2026-2030*

Achieving the 2026-2030 LULUCF targets in Finland is highly uncertain – it depends much on harvesting levels, how fast and effectively other policy measures, for example to tackle soil emissions, will be in place, and will there be changes made to the 2030 target due to technical corrections, and will it then affect the budget 2026-2030 as well?

According to initial estimates, the overall situation of achieving the EU -310 Mt CO<sub>2</sub>-eq target seems to be uncertain, so there might not be flexibilities to use or removals to buy from other MSs. This underlines the importance of swift national level action.

### **Panel's recommendations: new and updated policy plans needed**

A comprehensive new plan how to restore the sink is needed. Obligations to do this come from the Finnish Climate Act & the EU level regulation. An additional plan to buy LULUCF removals from other MSs is also needed for the 2021-2025 period to compensate the underachievement of 2021-2025 targets.

So far government action has been insufficient; the government has not yet provided any updates to the LULUCF plan it published in 2022. Finland's first climate litigation case also deals with the claim that the government has not taken sufficient action due to the decreasing sink<sup>4</sup>. There is no ruling yet (as of 6th June 2023).

The ESR emissions reduction plan also needs to be updated – the current one relies on flexibilities gained from the LULUCF sector. While overall emissions in Finland are declining, especially due to the ETS sector, uncertainties remain in the ESR – especially in transportation.

### **EU 2040 target – initial thoughts**

The Paris Agreement and EU's fair share would require significantly higher target levels in 2040 than currently set for 2030. Our estimate: The EU Climate Law target to be climate neutral in 2050 is not in line with the EU's fair share. EU should be carbon negative by 2050.<sup>5</sup>

A separate headline target for sinks and emissions could be useful in order to secure sufficient progress in both. A clear path for eliminating emissions from fossil fuels is needed.

A clear signal for where negative emissions, BECCS, CCS and DACCS, will fall in the EU climate policy architecture is needed.

The upcoming advice from the European Scientific Advisory Board on Climate Change should be carefully considered.

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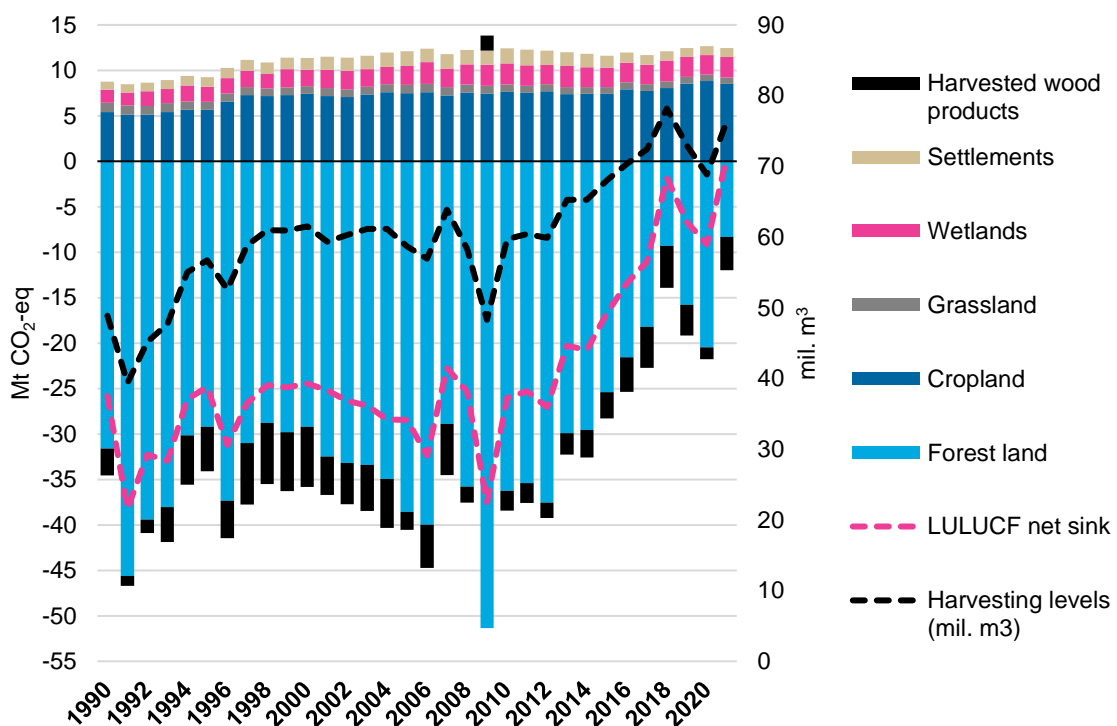
<sup>4</sup> Kulovesi et al. 2023. <https://sites.uef.fi/cceel/finlands-first-climate-lawsuit-watching-the-forest-sink/>

<sup>5</sup> Ollikainen et al. 2019. [https://www.ilmastopaneeli.fi/wp-content/uploads/2019/10/Finlands-globally-responsible-contribution\\_final.pdf](https://www.ilmastopaneeli.fi/wp-content/uploads/2019/10/Finlands-globally-responsible-contribution_final.pdf)

## Attachment 1.

### How to increase LULUCF sink by 2030 in Finland?<sup>6</sup>

- Cost-efficiency ranking: deforestation – soil emissions – shift to continuous cover forestry in peatland forests – increasing forest growth – regulation of harvesting
- Regulation of harvesting needed to achieve EU 2030 targets
- Soil emissions from peatlands
  - Peat production areas (119 000 ha): rewetting lands with thick peat layers and afforesting lands with depleted peat
  - Peatland in cultivation (270 000 ha): rewetting – swift implementation of EU Nature Restoration Law could help
  - Restoration – careful targeting
  - Our estimation: Finland could reduce up to 7 Mt CO<sub>2</sub>-eq soil emissions by 2030 – requires updated policy
- Forestry
  - Increasing fertilization (growth increase limited)
  - Increasing carbon sequestration via lengthening rotation ages & higher timber volume per hectare (in practice leads to a decrease in felling)
- Instruments
  - Tendering for rewetting peatlands; regulation (reforming forest law) and subsidy to carbon sequestration to forest landowners; tax on timber use in forest industry or emissions trading system for forestry.



**Figure 1.** LULUCF sector GHG emissions, sinks and harvesting levels 1990-2022 in Finland.

<sup>6</sup> Based on our previous briefing paper, with some updates. Suomen ilmastopaneeli 2022. <https://www.ilmastopaneeli.fi/tiedotteet/maankayttosektorin-nettonielua-on-vahvistettava-kiireellisesti/> (in Finnish)