

Technical corrections to Forest Reference Level - adjustment without revising FRL modelling

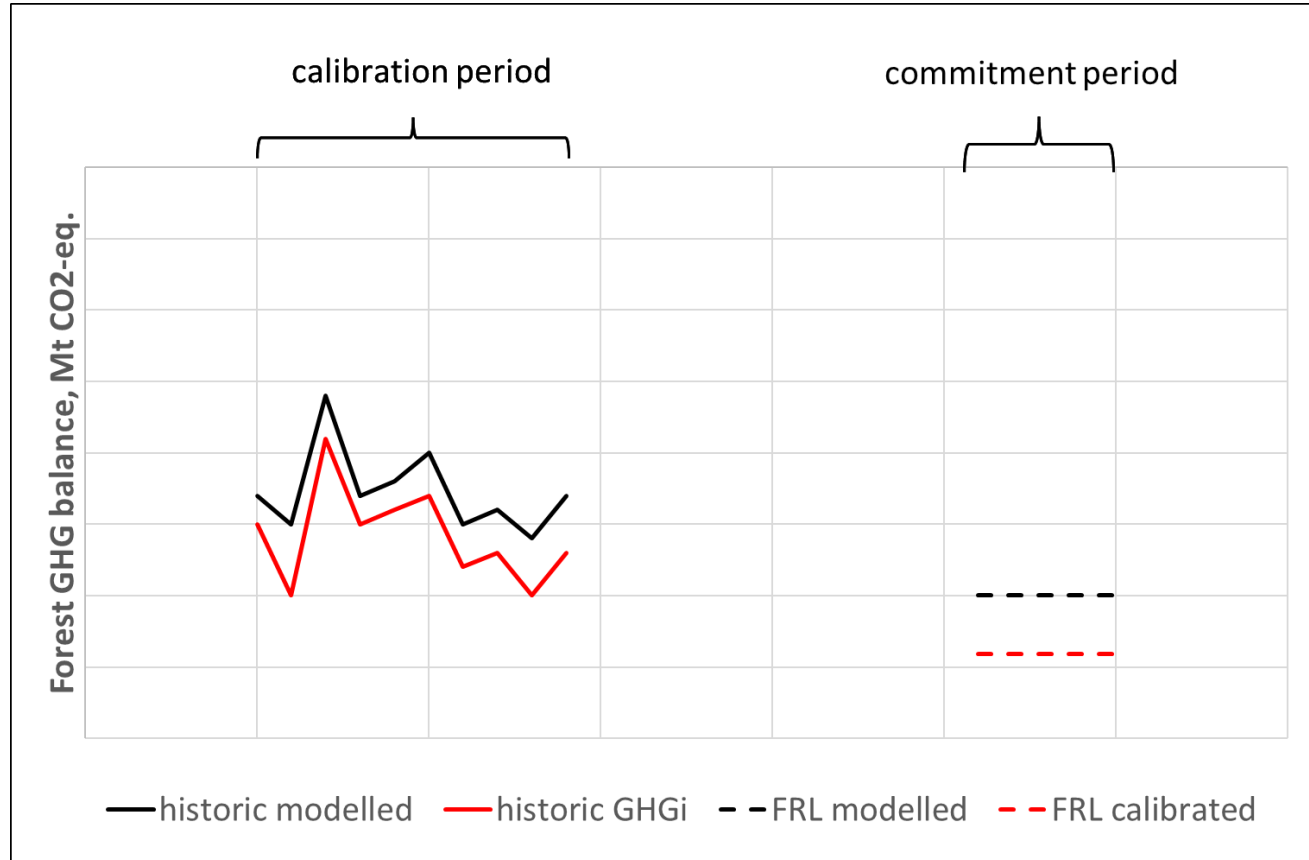
JRC LULUCF Workshop, ISPRA, Italy

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Determination of FRL

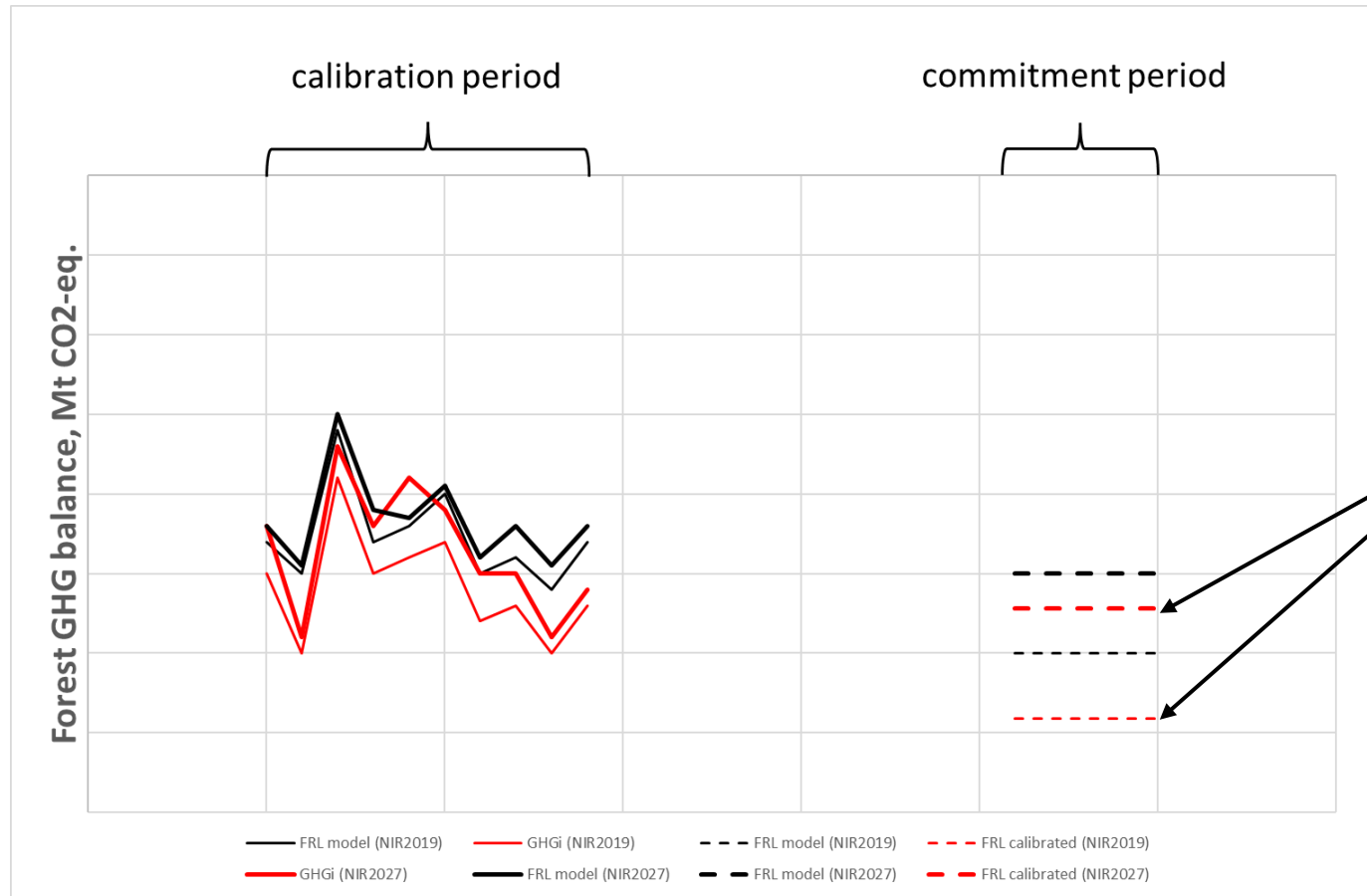


Modelled FRL for the commitment period was calibrated using the relative difference between GHGi and FRL model results for selected historic (calibration) period

Technical corrections and FRL

- “Once a technical correction has been calculated and applied, **the calibration of the corrected FRL needs to be performed again**, as it was done for the FRL, to ensure that no inconsistencies in the time series originated from the recalculation.” (EC 2018, section 2.6, p. 83)
- “If a technical correction is to be applied, it is good practice to justify and transparently document the updates as implemented.” (EC 2018, section 2.6, p. 83)

Technical corrections to FRL modelling and ex-post calibration



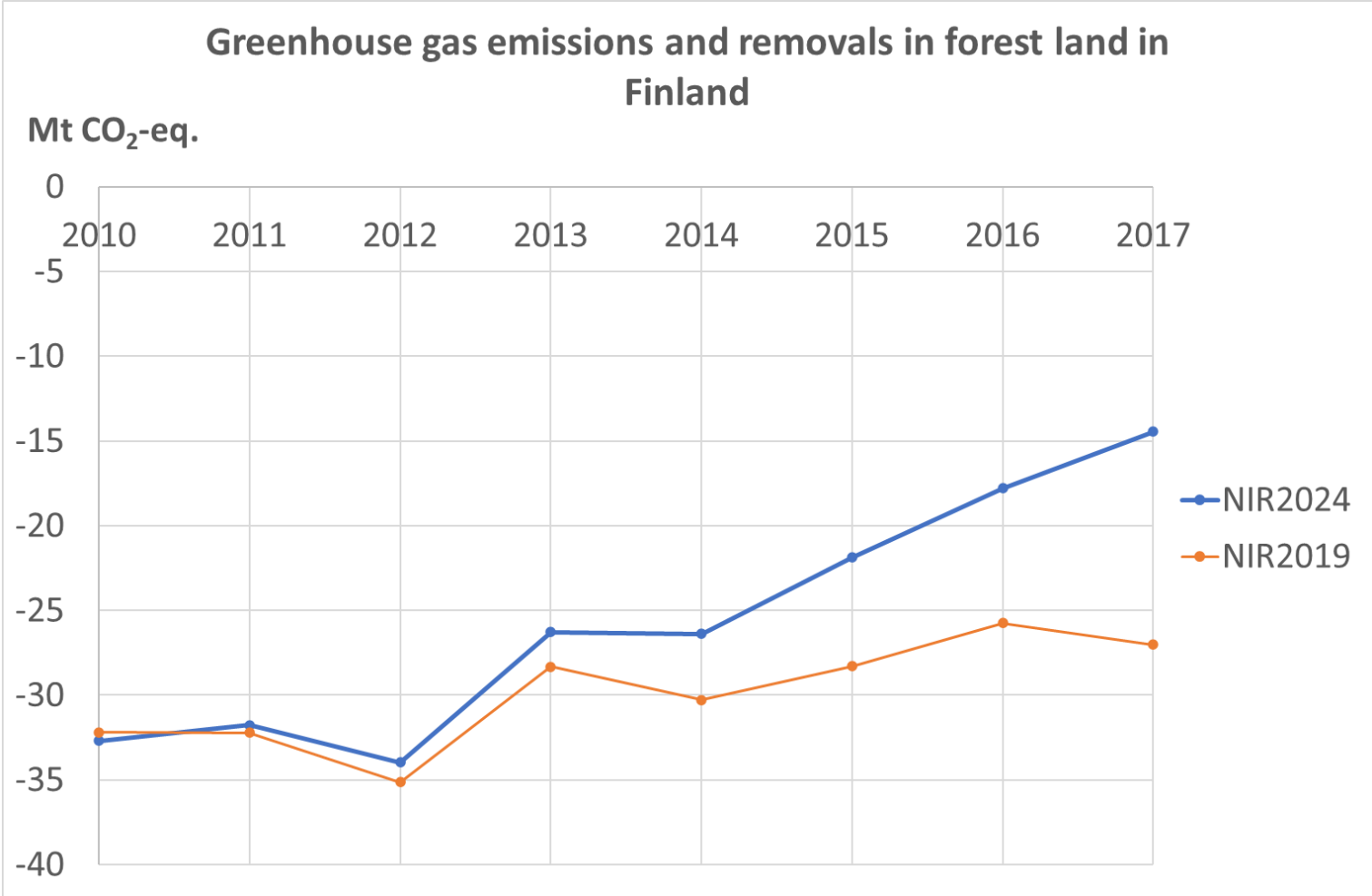
Is the technical correction consistent?

Do we understand why the FRL changed?

Is the change in FRL reasonable?

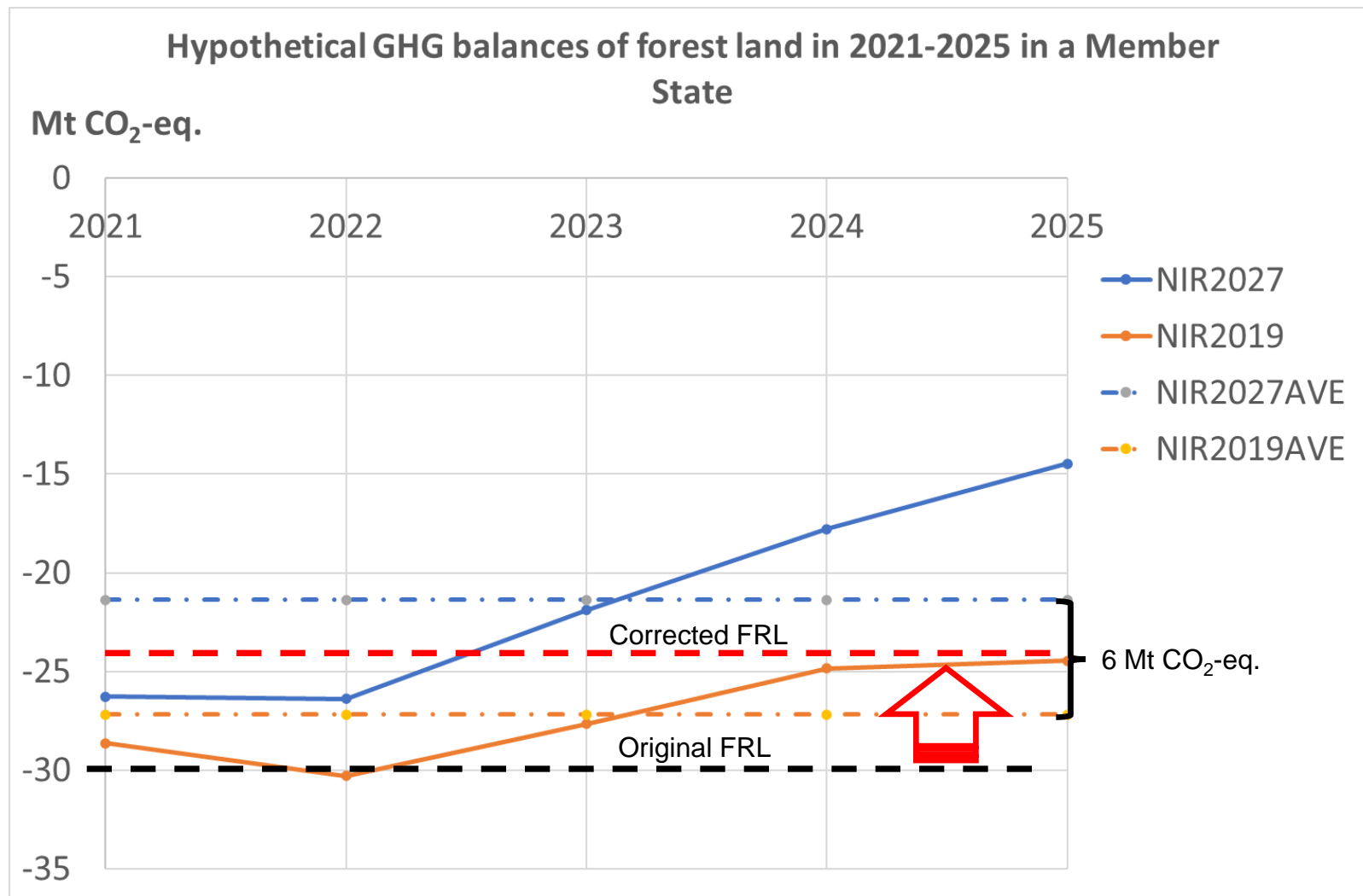
Technical corrections may and likely will change the results of GHGi, calibration factor and FRL modelling

Example of differences in forest land GHG balances between two GHGi reports



Sources: Statistics Finland 2020, 2024

Adjusting forest reference level based on actual differences in GHG inventories?



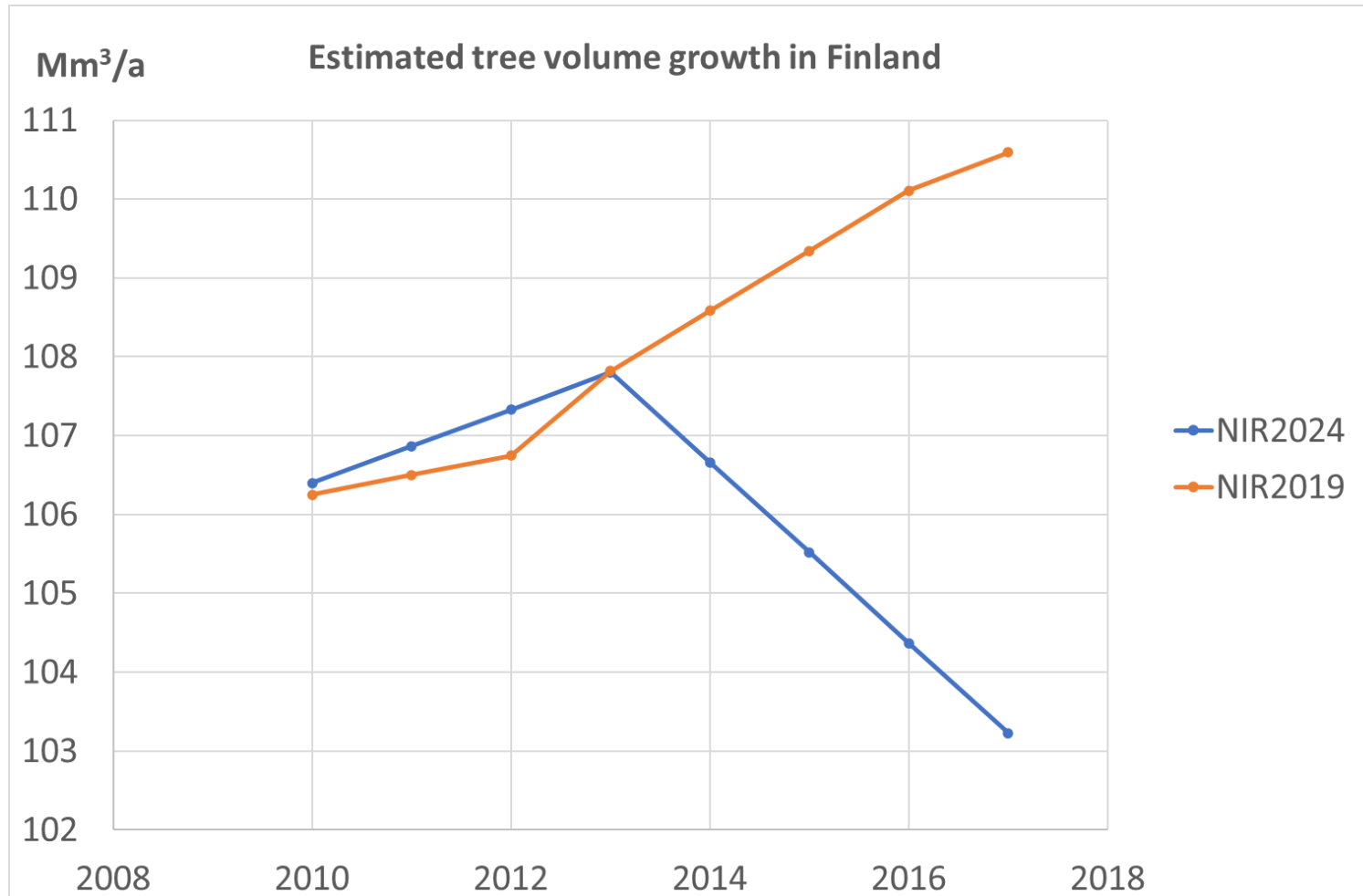
Simple solution:

- calculate GHG inventory with the original (2019) and final (2027) methods
- use the actual difference to adjust FRL
- should work if all the methodological changes made are acceptable as technical corrections

Assumptions that cannot be considered as technical corrections?

- The purpose of technical corrections is to ensure technical coherency between FRL and GHGi
- Changes in tree demand or production or increment of growing stock assumptions cannot be considered as technical corrections (Luke 2022)
 - Assumptions on annual increment applied in FRL modelling were based on the situation in 2000s

Significant differences in assumptions that cannot be considered as technical corrections may exist



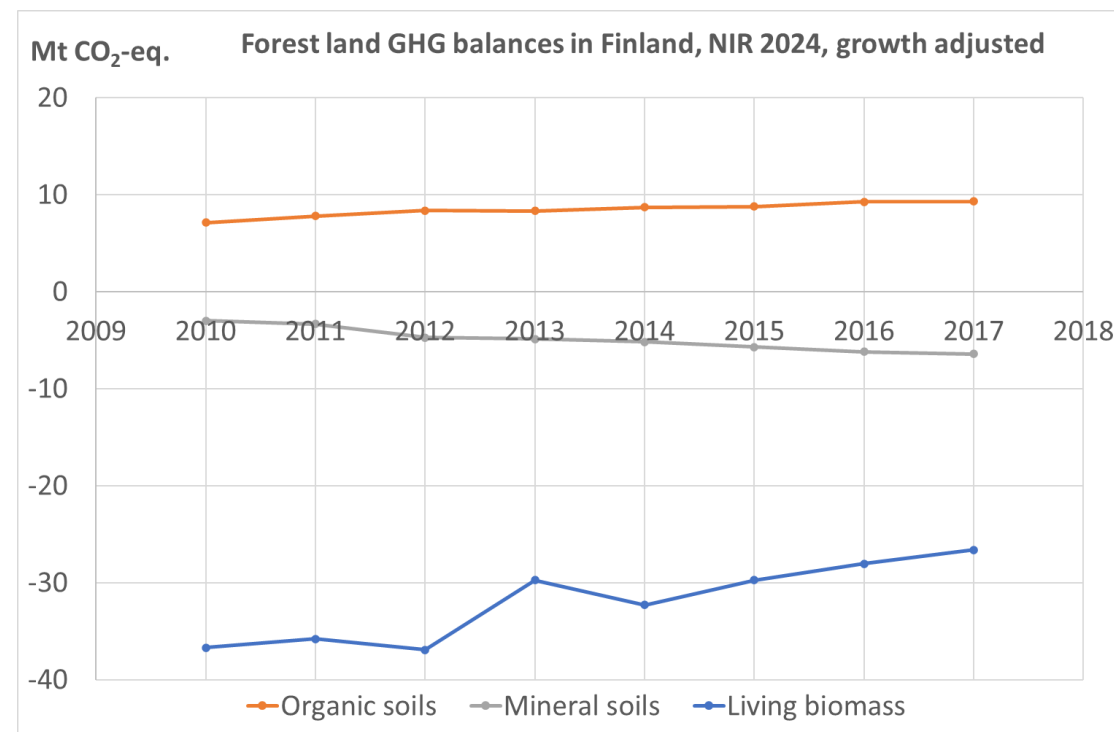
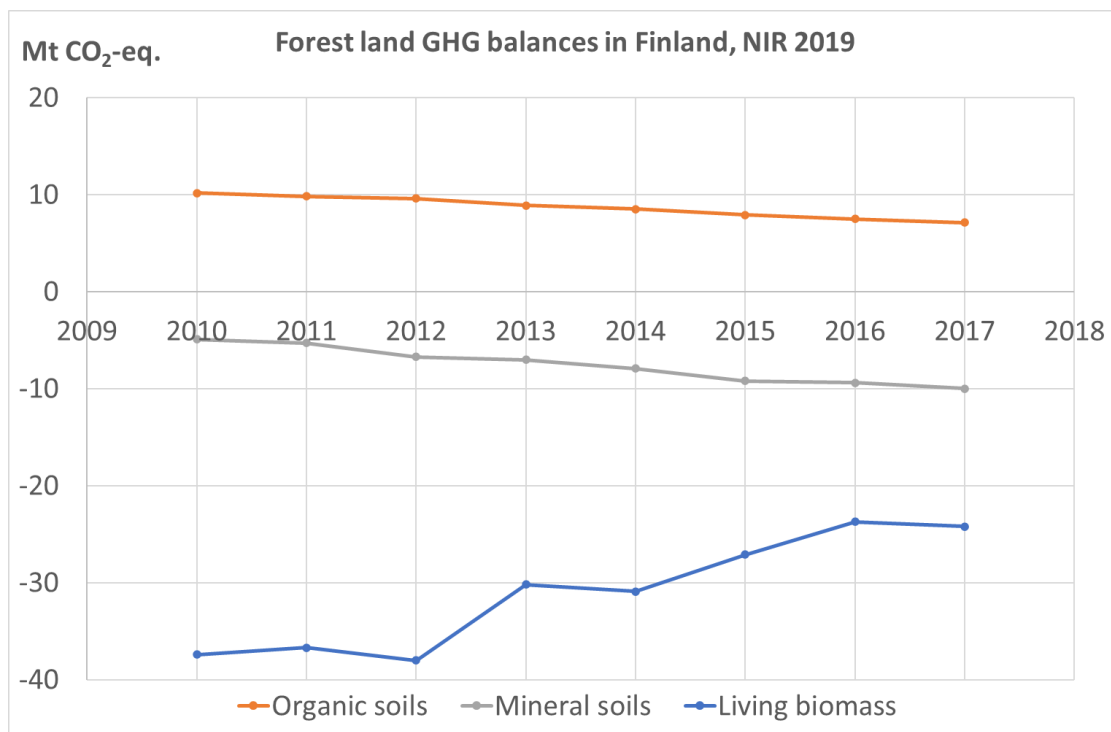
GHG balances of forest land in Finland

average 2013-2017, Mt CO ₂ -eq.	NIR2019	NIR2024	NIR2024 adjusted ^{*)}
organic soils	8	9	9
mineral soils	-9	-6	-6
living biomass, gains	-137	-131	-136
living biomass, losses	109	107	107
Forest land, total	-28	-21	-26

*) living biomass gains calculated using NIR2019 tree volume growth and NIR2024 gains/growth ratio

→ Assuming that the figures would represent the differences in GHG balances in forest land remaining forest land in 2021-2025, the FRL would be adjusted by 2 Mt CO₂-eq.

GHG balances in forest land in Finland



→ Difference in living biomass sink (when tree growth is adjusted) is little but significant in trends and levels of soil GHG balances between NIR2019 and NIR2024

Impact of technical correction on FRL of Finland -> a guess

Assumptions:

- Annual increment: 109.8 Mm³ (corrected NFAP of Finland)
- Harvest rate: 74.8 Mm³ (2021-2023 average)
- Total drain: 1.19 * harvest rate (1990-2022 average)
- Adjustment between NIR2019 and NIR2024

Results:

- If linear trend (2010-2017) in mineral and organic soil GHGs assumed:
adjustment to FRL **+9.9 Mt CO₂-ekv./a**
- If average (2010-2017) in mineral and organic soil GHGs assumed:
adjustment to FRL **+1.2 Mt CO₂-ekv./a**

Conclusions

- FRL is politically accepted accounting basis for the GHG balances of forest land remaining forest land and harvested wood products
- If no changes to GHGi applied in FRL modelling is made, no technical corrections
- Technical corrections should only reflect the difference in actual GHG balances due to methodological changes
- Revision of FRL modelling and ex-post calibration factor may make achievement of FRL more or less easy, which should not be the purpose of technical corrections
- Possible process for technical corrections?
 - Ensure consistency of assumptions (e.g. annual increment)
 - Calculate actual GHG balances in 2021-2025 using both original GHGi methods applied in FRL modelling and NIR2027 methods
 - Adjust FRL by the actual difference
 - Or to use the particular information for checking consistency of technical corrections carried out by revising FRL modelling and calibration

References

EC 2018. Guidance on developing and reporting the Forest Reference Levels in accordance with Regulation (EU) 2018/841. Version 25 June 2018.

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Statistics Finland 2019. Greenhouse gas emissions in Finland 1990 to 2017. National Inventory Report under the UNFCCC and the Kyoto Protocol. 15 April 2019.

Statistics Finland 2024. Greenhouse gas emissions in Finland 1990 to 2022. National Inventory Report to the EU. 15 March 2022.

Thank you!

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