Predicting forest loss risk for deforestation regulation using Convolutional Neural Networks

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1 Background: *The EU deforestation regulation (EUDR) & forest loss predictions*

The motivation: *Reduce embedded deforestation*

- **The EUDR aims to reduce deforestation** associated with products imported into the EU. Companies need to prove their products were not produced on recently deforested land[1].
- **Risk benchmarking**: The EU Commission has assigned a basic risk score to each country[2]. Required levels of due diligence are based on this.

The problem: *How do we evaluate deforestation risk?*

- The Commission's risk benchmarking has been criticized for being **politically convenient** rather than environmentally meaningful[3].
- Environmental groups call for **spatially- and commodity-explicit risk levels based on the most recent data[4].**

The goal: *Develop a global driver-specific model to predict forest loss risk.*

1. What are the **spatially explicit risks of loss** of natural forests as a function of different drivers for the next year?
2. How do these risks **compare to the EUDR benchmarks**?

2 Methods: The modelling pipeline

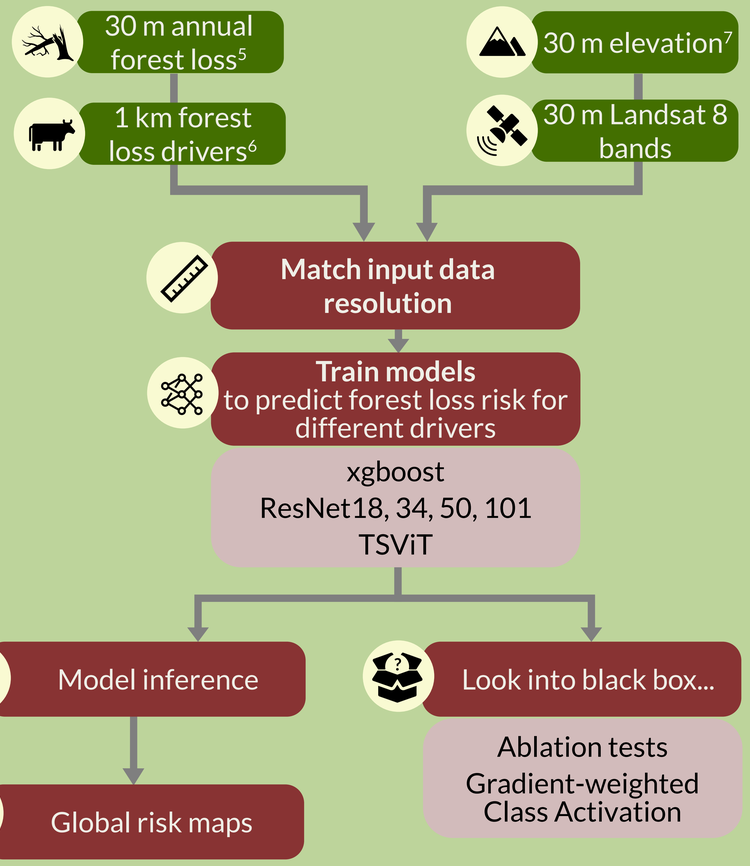

Fig. 1: *Methodological flowchart*

3 Preliminary results

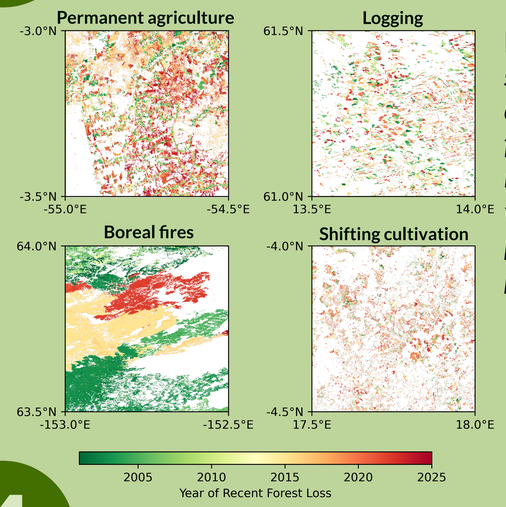

Fig. 2: *Examples of spatiotemporally distinct patterns in forest loss. The models are trained to learn these patterns and predict risks.*

4 Conclusions & next steps

Conclusions so far

- **Different models** perform best to predict forest loss for different regions of the globe
- Prediction of **catastrophic loss drivers** such as fires is tricky

Next steps

- Train most adequate models for different regions
- Create risk inference maps

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Let's connect!

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