Mikko Strahlendorff,
Finnish Meteorological Institute

Harvester Seasons – forestry planning service
Forestry conditions – climate service

The challenge:
- Forestry machines are heavy, but compact soil is bad for forest growth
- Some conditions allow environmentally sustainable trafficability of forest land

The solution:
- a service to predict frozen soil depth, snow and soil moisture from Copernicus C3S seasonal predictions to plan longer ahead good forest trafficability conditions
- estimate carbon emission impacts of harvesting with several different management options gaining efficiency and limiting potential production shortfalls.

The partners:
- FMI, Finnish Meteorological Institute
- UHEL, University of Helsinki

Key Users:
- Forestry operators, forest owners, timber procurement, consultants, regulators
HarvesterSeasons.com is online

- Service went online in May 2020
- Runs from WEkEO DIAS cloud platform
- 6+ months foresight on forest trafficability for harvesters is based on 90% of 51 seasonal forecast ensemble members agreeing on conditions good or bad, rest uncertain.
- Monthly update on the 14th then [Copernicus Climate Change service](#) published new forecasts
- Data available for Europe, but high resolution trafficability maps, parcels only in Finland
- Forecasts are bias adjusted for 2000-2019 climate
Getting close to the parcel, map details
Improvements since launch

Control Soil Temp 24.12.2020 (from Oct run)

**Improvements**

- FMI forest fire warning map layer
- Service availability increased to whole Europe
- Improved bias correction
  - Correcting with mean and variance
  - Correcting sea areas with ERA5, land with ERA5-Land
- Updated trafficability map with better coverage of Finland
- Improved snow depth data linking observed depth as starting point for forecasts
- Synchronized zooming in time series
- Co-designers can view service based on weather forecasts, different bias adjustment or raw
- Added tree cover density layer
Thank you for your attention