

GreenLane

– fast tracking value and resilience in industrial wood supply

Dag Fjeld & team GreenLane



NIBIO

NORSK INSTITUTT FOR
BIOØKONOMI



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Project GreenLane is supported under the umbrella of ERA-NET Cofund ForestValue. ForestValue has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773324.

Background

Forest industries depend on a stable year-round supply of even log quality. GreenLane focuses on value-tracking to develop managerial responses for improved mill customer value in the face of challenging climate scenarios.



GreenLane/MultiStrat group

Oceanic

- NIBIO (L.R.Gobakken, D.Fjeld)
- AllSkog Forest Owners Assoc.

Sub-Artic

- Skogforsk (K.Westlund, L.Wilhelmsson, P.Jönsson, L.Eliasson)
- Norra Forest Owners Assoc.

Continental

- BOKU (P.Rauch, C.Kanzian, T.Kirisits)
- Austrian Federal forests (ÖBf)



GreenLane

Goal - Develop a *virtual supply chain laboratory environment* enabling value-tracking and interactive testing of harvesting and transport responses to challenging climate scenarios.

Focus - on implementing weather-driven models for wood quality and availability.



Output – Best-practice guidelines for managerial response that improve the resilience of wood supply systems

Putting it together

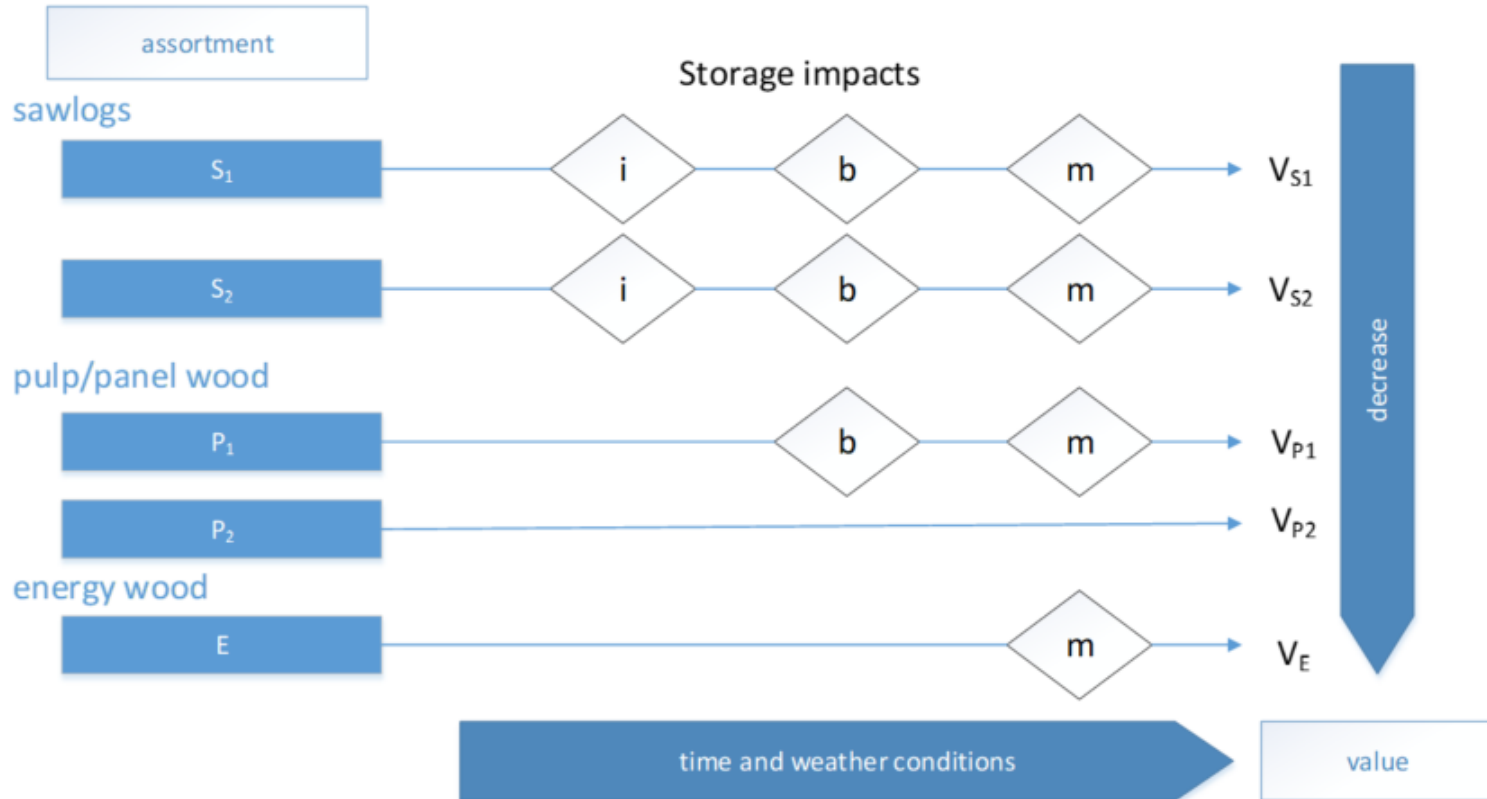
WP	2019			2020				2021		
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
WP 1 - Basic architecture	█									
WP 2 - Value tracking		█								
WP 3 - Managerial response		█								
WP 4 - Regional test cases						█				
WP 5 - Exploitation, dissemination, communication									█	
WP 6 - Project management	█									

Common frameworks

Company tests



GreenLane value-tracking (IBM)



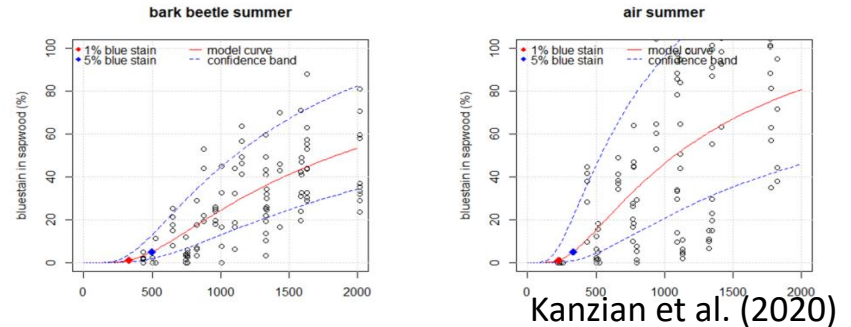
Updated **value-tracking module** with functionalities for managerial response (AUT-SE-NO; Kanzian et al. 2020).

Key is lead-time (LT) tracking of logs from harvesting to mill delivery, wood quality deterioration according to storage conditions (weather) and duration, at each position in the supply chain.

WP2 - Value-tracking (IBM)

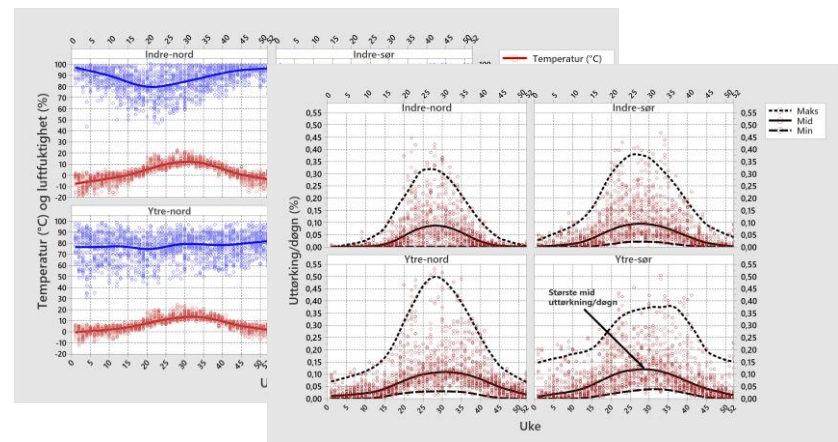
IB – Insect:blue stain development

The simulation architecture provides the time line for value-tracking of entities.



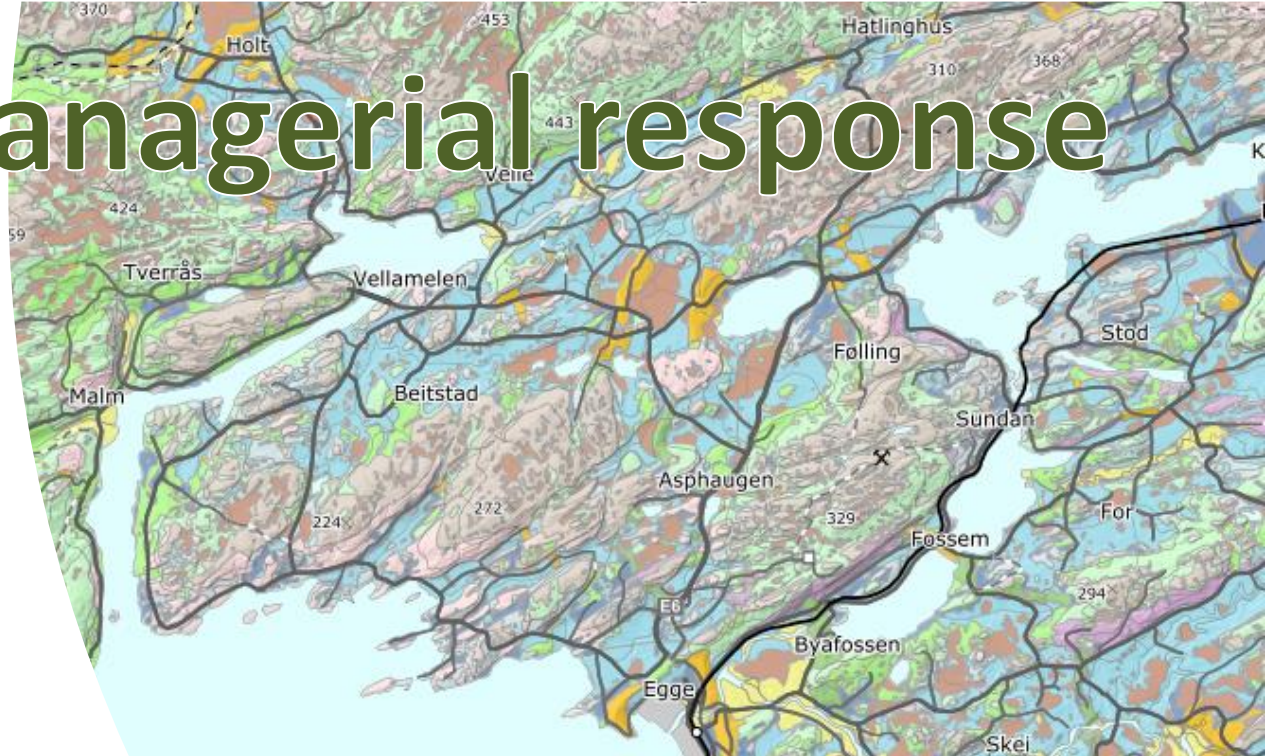
Interactive effects between temperature, humidity and storage conditions on wood deterioration.

M - Weekly drying rates



WP3 - Managerial response

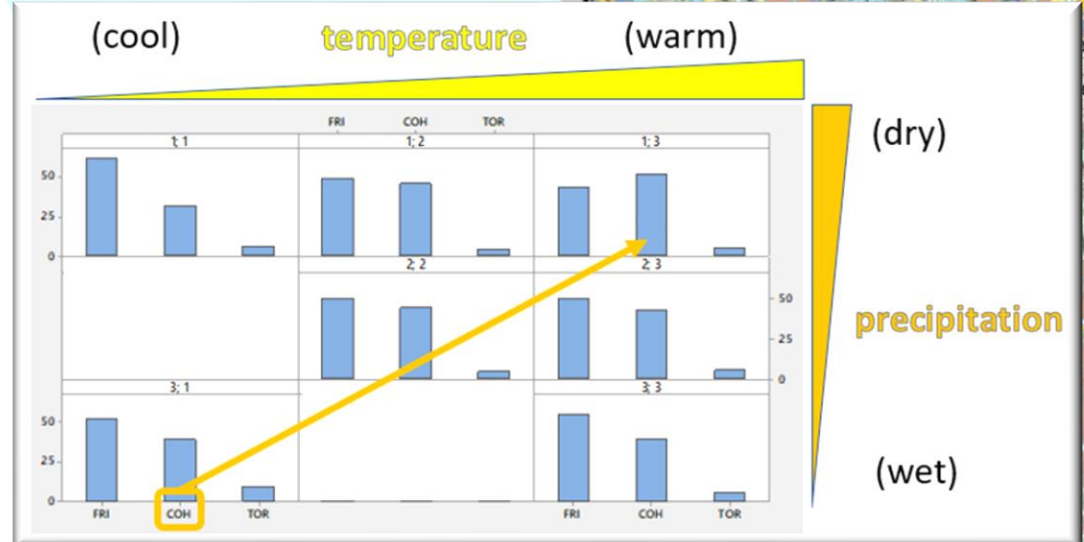
Operational options limited by seasonal/weekly trafficability



Which road class/deposit type were used during specific weather combinations?

Spatial join with road data, DTM, surface deposit

Load message dates/coordinates



Stepping up: *the virtual supply chain laboratory*



So.... still aiming for company tests, summer 2021

External dissemination so far

Fjeld, Bjerketvedt, Braathen (2020) *Forest road availability – inferences from logging truck delivery messages*. Proceedings NB Nord Forest operations for the future. Copenhagen Sept 2020.

Kanzian, Holzfeind, Gobakken, Westund, Fjeld (2020). *GreenLane IBM – integrating insect, blue stain and moisture prediction models for value tracking in supply chain simulation*. Proceedings NB Nord Forest operations for the future. Copenhagen Sept 2020.

Tofte, Gobakken, Fjeld (2020) *Seasonal variation in transport lead times and pulpwood freshness in a coastal geography*. Proceedings NB Nord Forest operations for the future. Copenhagen Sept 2020.



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