



Better data. Better intelligence. Better decisions.

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Dynamism, Desire and Disclosure

How the "3Ds" will change forestry
forever

Contents

- Dynamism – Forest Products is an American success story
- Desire – it's great to be wanted
- Disclosure – it ain't your business....unless



Data, Analytics, and Strategic Consulting for Commodity Markets

Actionable Insights. Smarter Decisions. Better Results.

CHEMICALS

OrbiChem360™

- Price and Margin Data
- Trade Flow, Import, and Export Data
- Supply and Demand Data
- Price Forecasts
- Plants and Projects
- Market Commentary and Analysis

ChemEdge360

- Price Data
- Plants Database
- Trade Flow, Import, and Export Data
- Market Commentary and Analysis

FOREST PRODUCTS

FisherSolve®

- Water Supply and Treatment
- Carbon Emissions
- Production Data
- Manufacturing Costs and Mass-Balance
- Capacity Trends
- Asset Quality and Viability Index
- Installed Costs
- News and Projects
- Market Optimizer
- Recycled Fiber Pricing
- Virtual Mills

Forestat Global™

- Price Data
- Demand Data
- Market Share Data
- Cost Data
- Trade Flow, Import, and Export Data
- Market News and Commentary

SilvaStat360®

- Delivered Price Benchmarks
- Delivered Price Forecast
- Fright Efficiency Analysis
- PLF Distribution
- Stumpage Price Reports
- Timber and Carbon Supply Analysis
- Precipitation Data
- Global Economic Data
- Recycled Fiber Pricing
- Sawmill TQ

WoodMarket Prices

- Global Sawlog Price Index (GSPI)
- European Sawlog Price Index (ESPI)
- Global Softwood Fiber Index (SFPI)
- Global Hardwood Fiber Index (HFPI)
- Trade Flow, Import, and Export Data
- Market Commentary and Analysis

BIOFUELS & FEEDSTOCKS

Prima CarbonZero™

- Commodity Price Data
- Trade Flow, Import, and Export Data
- Supply and Demand Data
- Global Trade Fundamentals
- Global Plants Database
- Global Biofuel Mandates
- North American Tickets
- Market Commentary and Analysis

STRATEGIC CONSULTING

DECARBONIZATION PATHWAYS

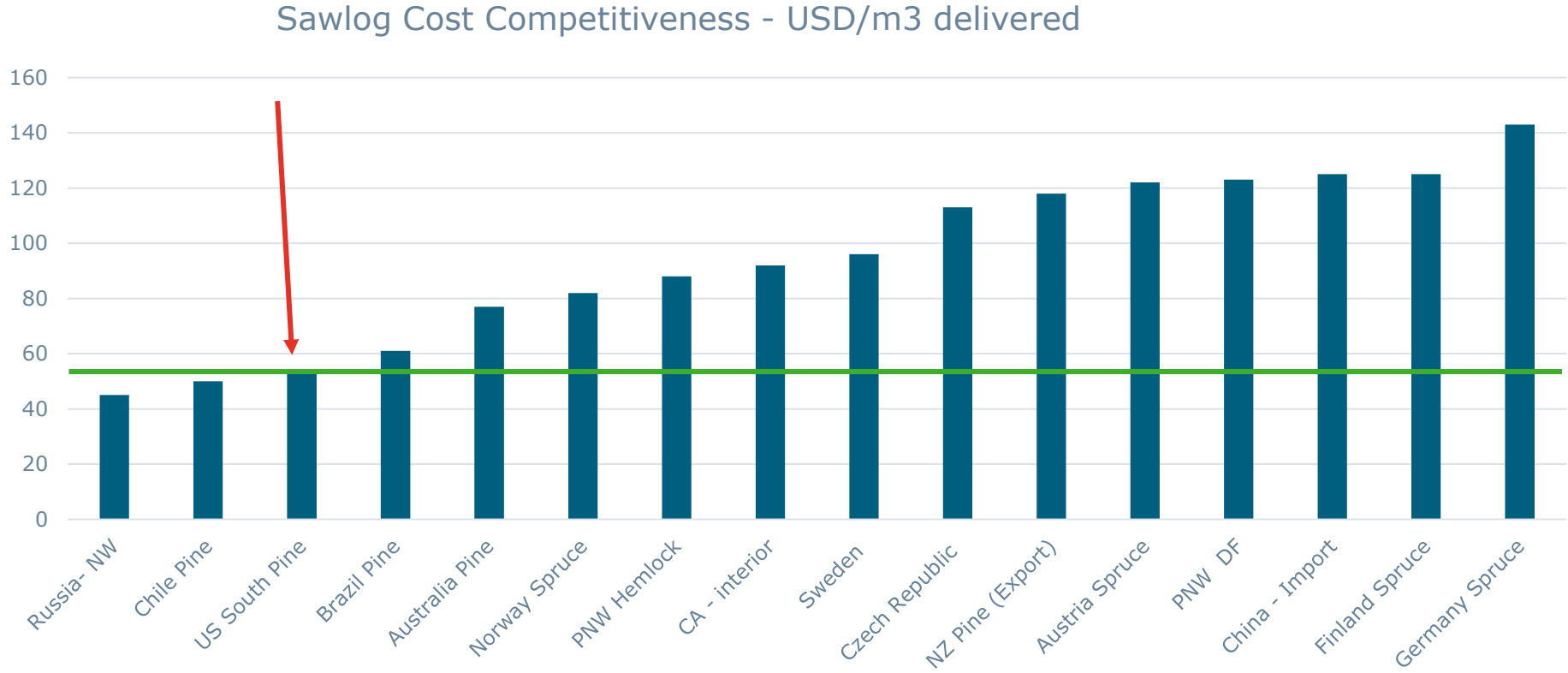


Dynamism
American demand

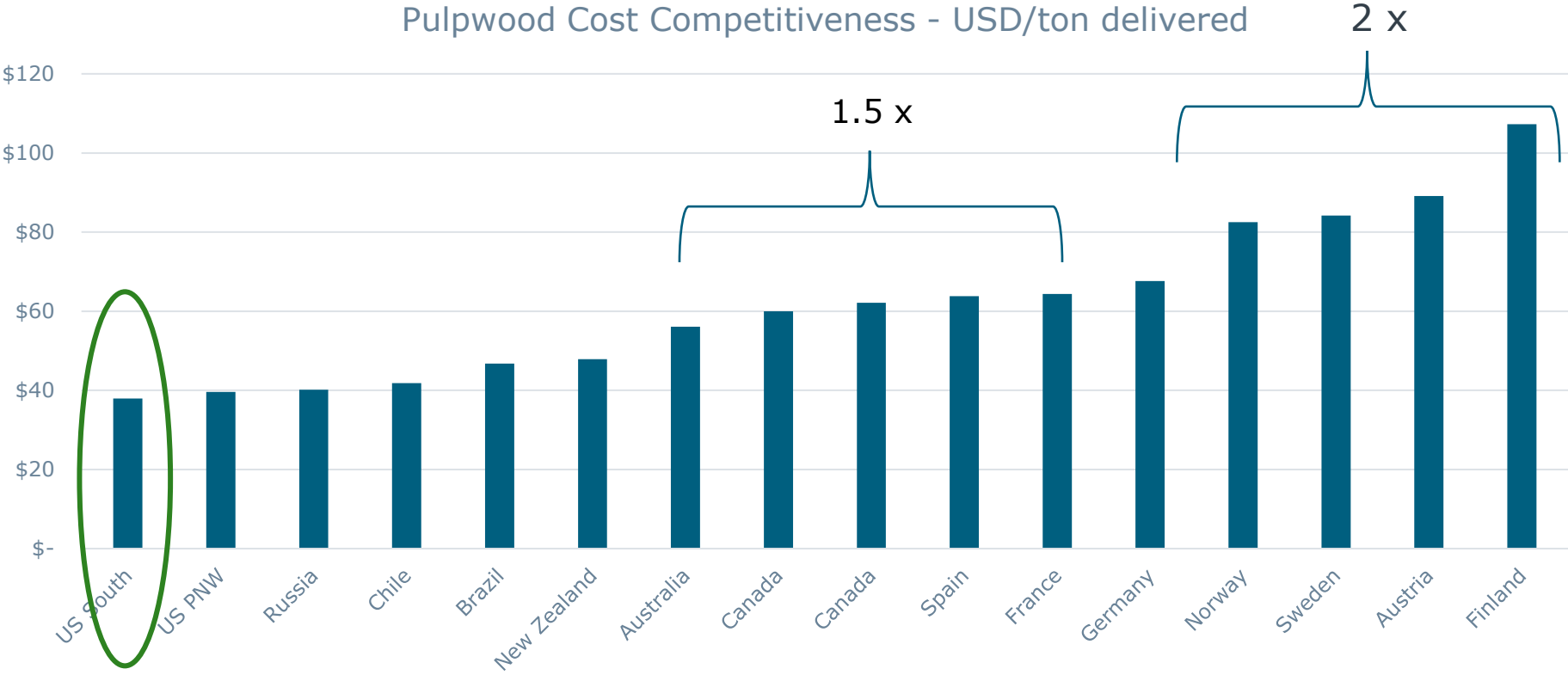
US Forest Products Industry

- Largest economy
- Biggest lumber manufacturer and consumer
- Biggest packaging producer – 1/3 of global containerboard capacity
- 2nd largest wood pellet producer – starting from zero in 2008

US South is lowest cost lumber producer in world



US South pulpwood is dirt cheap v. ROW





Desire
to access US Markets

Lumber and panels



Pulp and Paper



Publicly stated desire to buy assets in US

arauco

cmpc 



eucatex 
MDF | MDP | CHAPA DE FIBRAS



StoraEnso

UPM BIOFORE 
BEYOND FOSSILS

HOLMEN

New Technologies

- Pellets – 20 million tons consumption in South alone
- CLT/Mass timber
- Sustainable aviation fuel
- Renewable diesel/bio oil
- Bunker fuel
- Green hydrogen for steel production
- Bioenergy Carbon Capture and Storage (BECCS)

- Competing with new demands on the forest

Disclosure

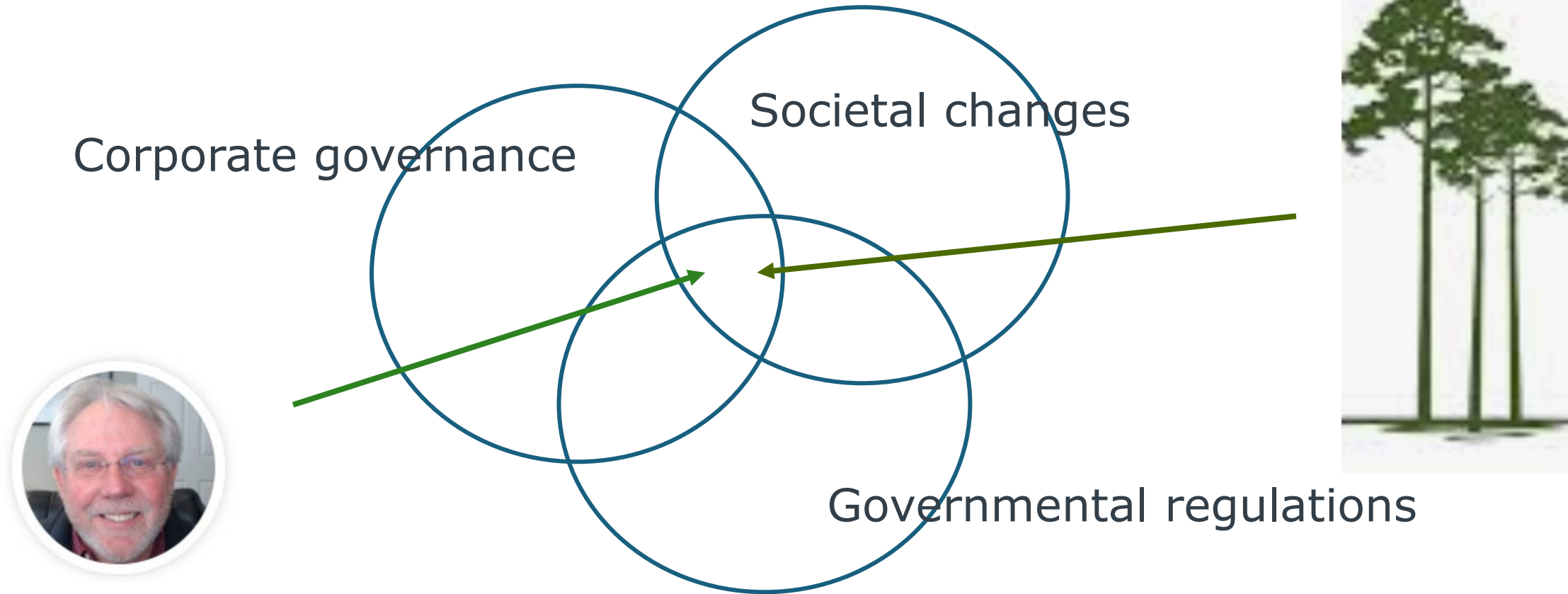
Environmental credentials will be required very soon

Trees are the Answer

How were we to know?



Boy meets girl story



EUDR at a Glance – Key Provisions

Law Passed July 2023, Compliance by Jan 1, 2025

- Applies to nearly all solid wood products and most pulp and paper products¹
- Requires operators to provide customs with due diligence declarations; customs will have the authority to seize goods if compliance is not met or for suspicions of fraud.
 - Penalties for Operators can include fines of at least 4% on total exported turnover to the EU for the most recent year.
- Diligence must include geolocation for all parts of the article derived from wood in whole or in part.
 - Simple geolocation for lots less than 4 hectares
 - Polygons for lots greater than 4 hectares
- System is designed to prevent import of goods that contribute in any way to Deforestation and Degradation of Primary Forests.


EUDR places the onus on operators to provide diligence statements that exports comply with EUDR and specifically including submission of geolocation data for all wood used in the mfg. of the goods.²

Global Markets Are Demanding Wood Supply Chain Transparency

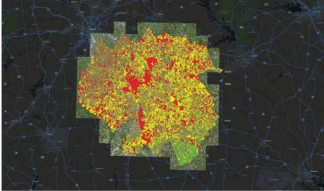
- Population growth, climate change and calls for bans on single use plastics are placing ever increasing pressures on the global wood supply.
- Forests are expected to provide renewable energy products and carbon storage.
- Regulators, reacting to the public concern around deforestation, are enacting far-reaching deforestation legislation.
- Consumer brands that are highly exposed to paper packaging are growing increasingly aware that their purchasing practices may be leading to deforestation.
- New energy products derived from the forest require a high degree of assurance relative to the wood supply chain and the forest (EUDR, RFS and RED3).

Risk Assessment and Remote Capture of Harvest Polygons

1 We start with a base image.



2 We run a proprietary algorithm that pre-qualifies tracts as EUDR compliant.



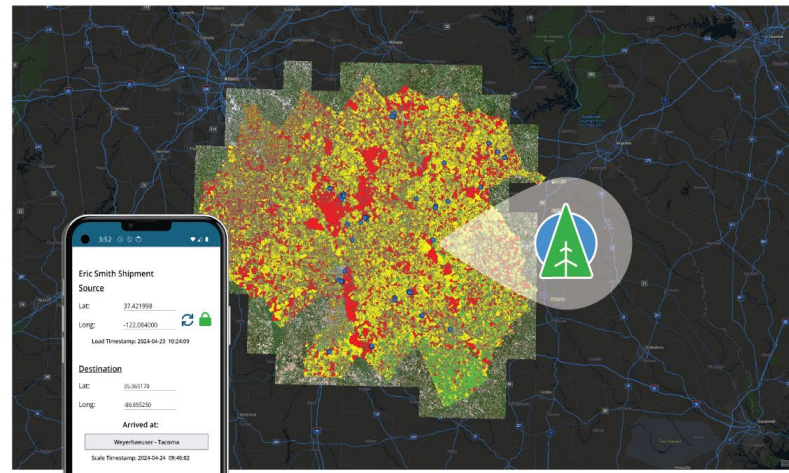
The algorithm accounts for:

- Primary forest (Y/N)
- High conservation value areas
- Indigenous people
- Wetlands
- Endangered or threshold species
- Heritage sites



3 One can zoom in to view EUDR compliance at the forest level more clearly

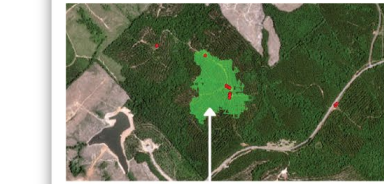
4



As the harvest takes place, truckers use the **ForestLogger app**, connecting harvest locations to the map (blue dots).




5 Example:
1) This is a harvest block that has been pre-qualified.
2) Look at the dark area where the red geo-location coordinates are located.
3) These geo-location dots are from ForestLogger.




6 Initial prediction of harvest area is in light green. The polygon is created in this step.


7 The polygon is updated throughout the change detection process. This is the actual harvest area.



8 This is an example of machine learning picking up a small harvest area. The geo-location coordinates on the map are from ForestLogger.



9 The actual harvest is detected one month later. Final polygons are created.



What does the future hold for the NC's Forest Industry?

- Exciting
- Dynamic
- Transparent.....

And Uncomfortable