



**End-to-end digital platform for
sustainable forest management**

**Anna-Greta Tsahkna
Founder, CEO**

Precision forestry platform: For solving complex problems

End-to-end value chain from forest to production/shipping, precise, objective digital data.

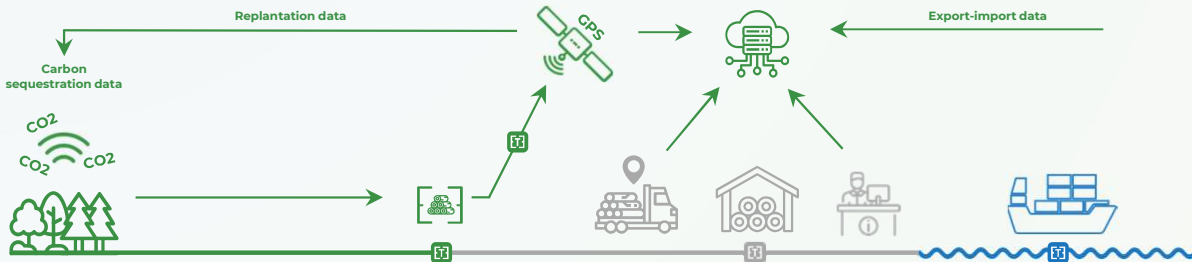


Forestry data

Measure

Timber data

Export import stats



Timbeter for growing trees
(In development)

Digitalised ground-based measurement linked with remote sensing that ensures accountable and transparent forest value and carbon sequestration assessments



Timbeter

Most efficient AI tools:
- for measuring log diameters, pile and truck volumes, in less than 3 minutes.
- to detect timber pieces on a mobile device captured image.
Standalone hardware device.



Timbeter Dashboard

Web platform
- Post-process timber data
- Users
- Companies
- Devices related to a company
- Exchanging information in real time and keeping control of the sales.



Timbeter Container

Tool to measure timber in containers and organize Bill of Ladings.

Timber resource management
Traceability of the supply chain
Optimization of logistics, production and sales

Building the digital bridge between **private** and **public** sector competency results in accurate forestry data for data driven policy making

Best-in-class combination of hardware and AI software technology

Most efficient AI measuring tools in the industry

Policy and governmental competency



End-to-end easy to use web platform

Standalone hardware device

Holistic data analytics



Product passport (Veriff for forestry)

MEASUREMENT WITH PICTURE AND DATA

Statistics <
Tax Administration <
Road Administration <

> Police
> Ministry of environment
> Ministry of forestry

- Origin - Weight
- Volume/ - Route
assortment - CO2

Functionalities

Diameter measurement

Obtain the volume, log count and diameters of each and every log.



- Number of logs in a pile
- The average diameter
- Diameter of each log
- Calculation according to the formula selected
- Diameter distribution
- Range of diameters

Contour measurement

Calculates the pile volume using pile density coefficient.



- Automatic or manual pile contour
- Volume calculation with fixed air filling factor/ pile density coefficient
- Heights of the pile according to the selected distance
- Pile density/ air filling factor/ conversion factor

Pile density measurement

Determine the pile density coefficient and obtain the volume, log count and diameters of each and every log.



- Pile density coefficient/ratio from the selected area of the pile/whole pile/conversion factor
- Volume calculation
- Number of logs
- Diameter of the logs
- View diameter distribution

Truck measurement

Determine the cubature of packs



- Measure the volume of pack/packages using the pile density coefficient.
- The height of every package.



Timbeter Dashboard: All measurements stored in the cloud



- TIMBETER
- Timber dashboard
- Exports
- Devices
- Timber management
- Users
- Custom fields
- Reports
- Inventories
- Duplicates detection
- Settings
- Billing
- Timbeter Demo Organization

3 storages 715.74 m³ volume

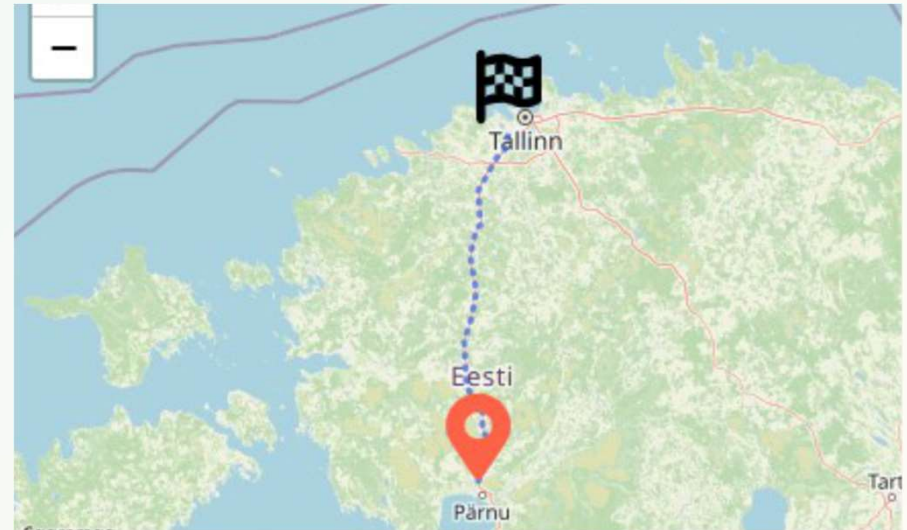
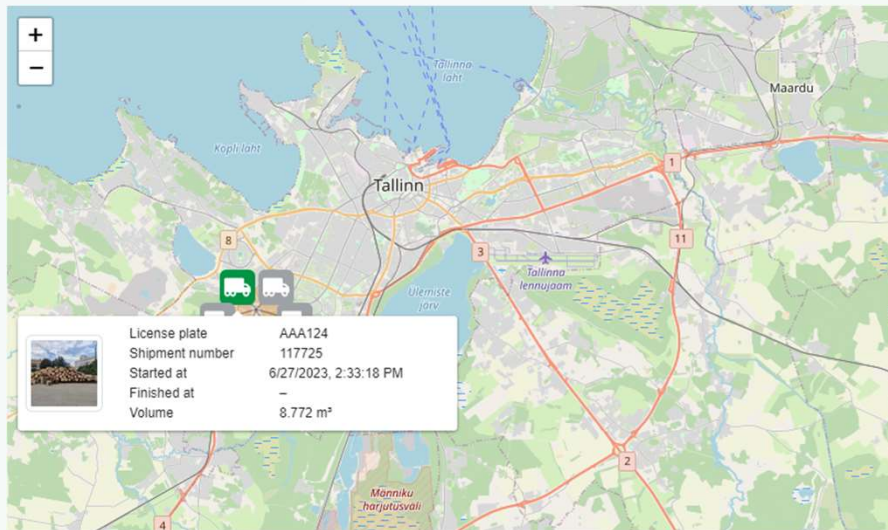
Storage	Location	Updated	Status	Logs	Volume
Demo Storage 3		29 Aug 2023	In progress	676	310.49 m ³
Demo Storage 2		29 Aug 2023	In progress	3982	264.57 m ³

ID / MEASURED ON	TYPE	COORDINATES	WOOD	LENGTH	LOG COUNT	VOLUME
May 2022						
Automatic_Density_Sample_2022-05-11_23-28-54_-_2 1374599 2022-05-11	Uncategorized		Birch	3 m	437	16.40 m ³
Diameter_Sample_2022-05-11_23-27-06_-_5 1374598 2022-05-11	Incoming		Birch Sawlog	2.7 m	60	8.19 m ³
Manual_Density_Sample_2022-05-11_23-28-13 1374596 2022-05-11	Uncategorized		Birch	0 m	377	0.00 m ³ 0.5991
Automatic_Density_Sample_2022-05-11_23-28-54 1374595 2022-05-11	Uncategorized		Birch	3 m	441	16.41 m ³ 0.6676
Diameter_Sample_2022-05-11_23-27-06_-_4 1373628 2022-05-11	Incoming		Assortment 3	3 m	66	9.50 m ³

3/4

Additional features: Logistics overview

Have a complete overview of your logistics



Timbeter forestry management smart solution

Supply chain:

- Forest
- Transportation
- Storages/inventories
- Production
- Transportation / transactions

TIMBETER



Mobile apps for making and processing measurements



Cloud storage with online inventory, reporting and measurement editing features

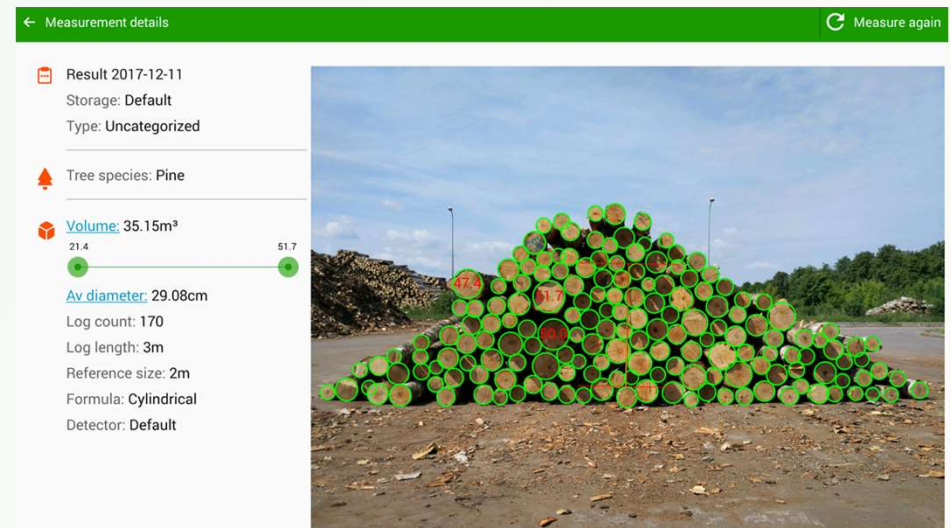


Control over:

- 1. Timber origin
- 2. Transactions
- 3. Internal & external reporting
- 4. Logistics and transportation
- 5. Illegal activities
- 6. Sustainable forest management
- 7. Safety and working environment

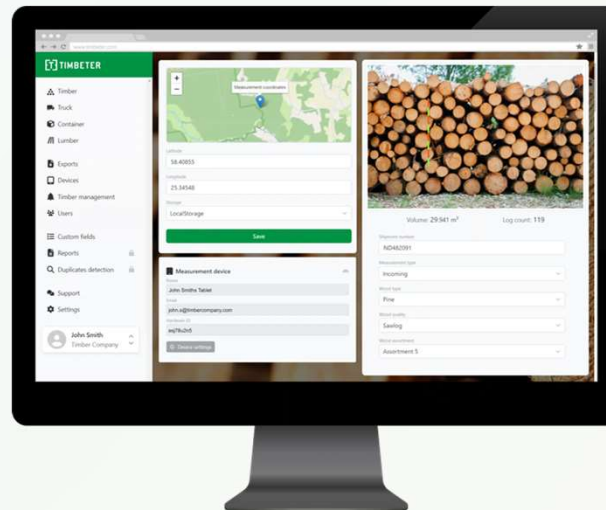
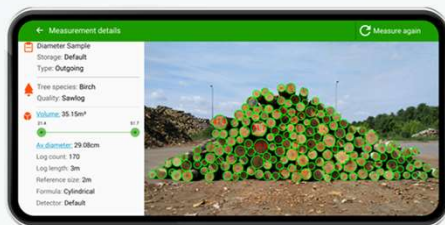
Process benefits

- **Fighting deforestation**
Digital proof and easily accessible data helps reduce illegal logging and provides control
- **Bridge between private and public sector**
Providing competent results in accurate forestry data for data driven policy making
- **Control over chain of custody**
Trackable data can provide real-time overview of timber movement from the forest to the end consumer



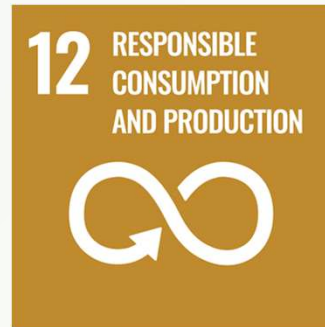
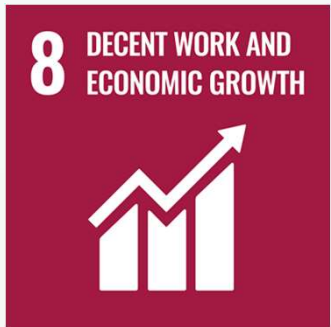
Timbeter Dashboard: Easy integration via API

Timbeter can be easily integrated via public API with different accounting/ERP systems

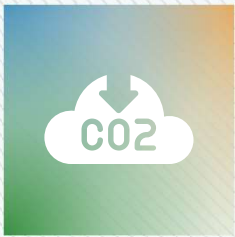


Sustainability

Supporting companies accomplish the SDG goals



Climate and biodiversity benefits



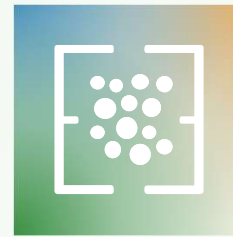
Reduced emissions:

Timbeter solution is 100% paperless and do not need specific hardware



Reduced carbon footprint in transportation:

Optimized planning for timber transportation saves time and avoids half-empty rides with unnecessary extra CO2 emissions.



Accountable carbon sequestration calculations:

Timbeter provides precise and reproducible primary data for accountable automated carbon sequestration calculations in harvested timber and growing forests, and for quantifying the climate benefits of wood construction



Zero chemical pollution:

Timbeter avoids the use of considerable amounts of paints and sprays

Clients: Global leaders in portfolio












Brazilian clients

Suzano S.A.



- Largest pulp and paper company in Latin America
- Present in over 80 countries
- Employees: 37 000+
- Started using Timbeter: 2021
- Using Timbeter for truck measurement of pulpwood

Since using Timbeter

- 
 Increased accuracy and measurement speed
- 
 Real-time overview on volumes
- 
 Constancy and control of truck measurements
- 
 Use of reports for better understanding of real volumes
- 
 Safety of employees
- 
 Decrease of the human factor and the related errors
- 
 Optimization of the supply chain



Brazilian clients








Arcelormittal



ArcelorMittal

- World's leading steel and mining company
- Operating in 18 countries
- Employees: 190 000+
- Started using Timbeter: 2018
- Using Timbeter for incoming fuelwood measurement

Since using Timbeter

-  Increased accuracy and measurement speed
-  Preventing fraud/theft through **digital proof**
-  Visual and digital proof of incoming timber
-  Digital reporting, fast and easy access to the data.
-  Safety of employees
-  Decrease of the human factor and the related errors
-  Less fuelwood spent

Academic partnership

Timbeter is collaborating with academic organizations around the world to create educational opportunities for future foresters.



Luuu Forestry
School, Estonia



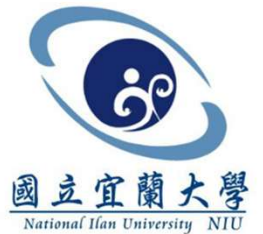
Federal Rural
University of Rio de
Janeiro, Brazil



University of São
Paulo, Brazil



Poznań University of
Life Sciences,
Poland



National Ilan
University, Taiwan

Timbeter in Brazil



First Brazilian **small corporation**

Hiring Customer Support

First **governmental** project

Second **governmental** corporation

Opening office in Brazil

Stay tuned!

Pernambuco state

Rio Grande du Norte state

2016

2017

2021

2022

2022

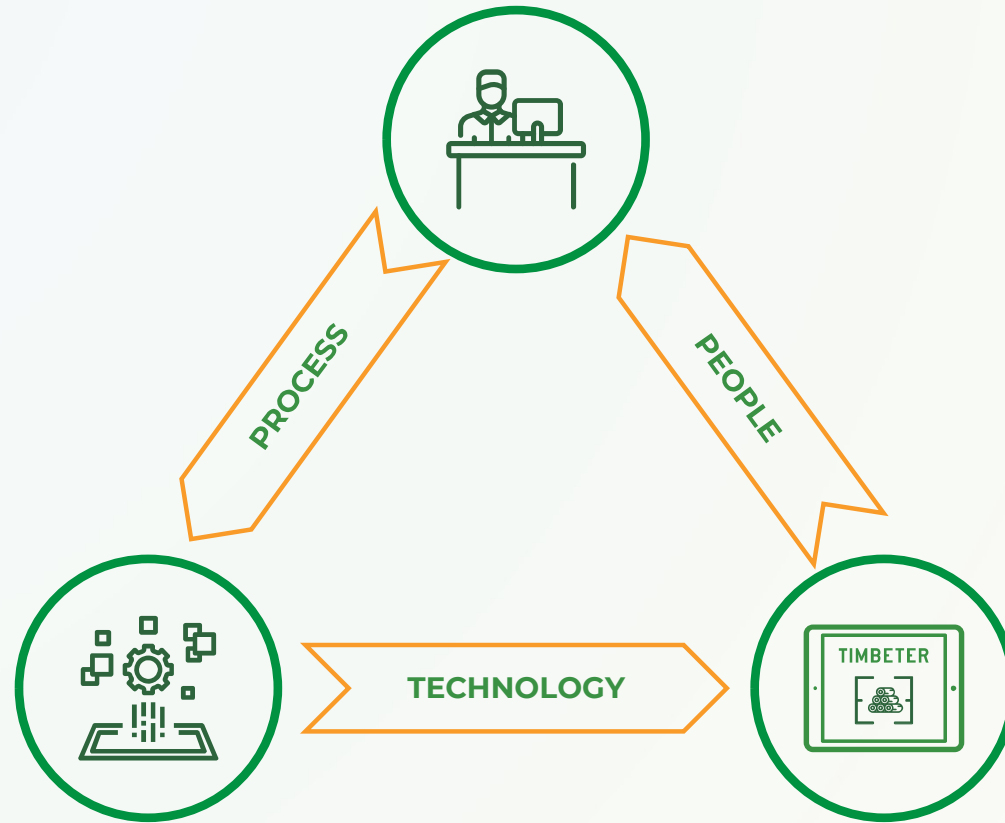
2023



Things to keep in mind

- **Open to digitalization and innovation, quick adaptation**
- **Business can be done from the distance**
- **Local references work the best**
- **Portuguese is important**
- **Patience required - bureaucracy takes time**
- **Payments in the local currency**

Change management



Our mission



Global solution for efficient, transparent and data-driven timber supply chain management.

Our mission is to save essential and limited resources in the forestry: trees, labour force and driven miles.



[T] TIMBETER

Teaduspargi 6/1
12618, Tallinn
Estonia
+372 5193 9593
info@timbeter.com

WWW.TIMBETER.COM

