

Martine Jansen

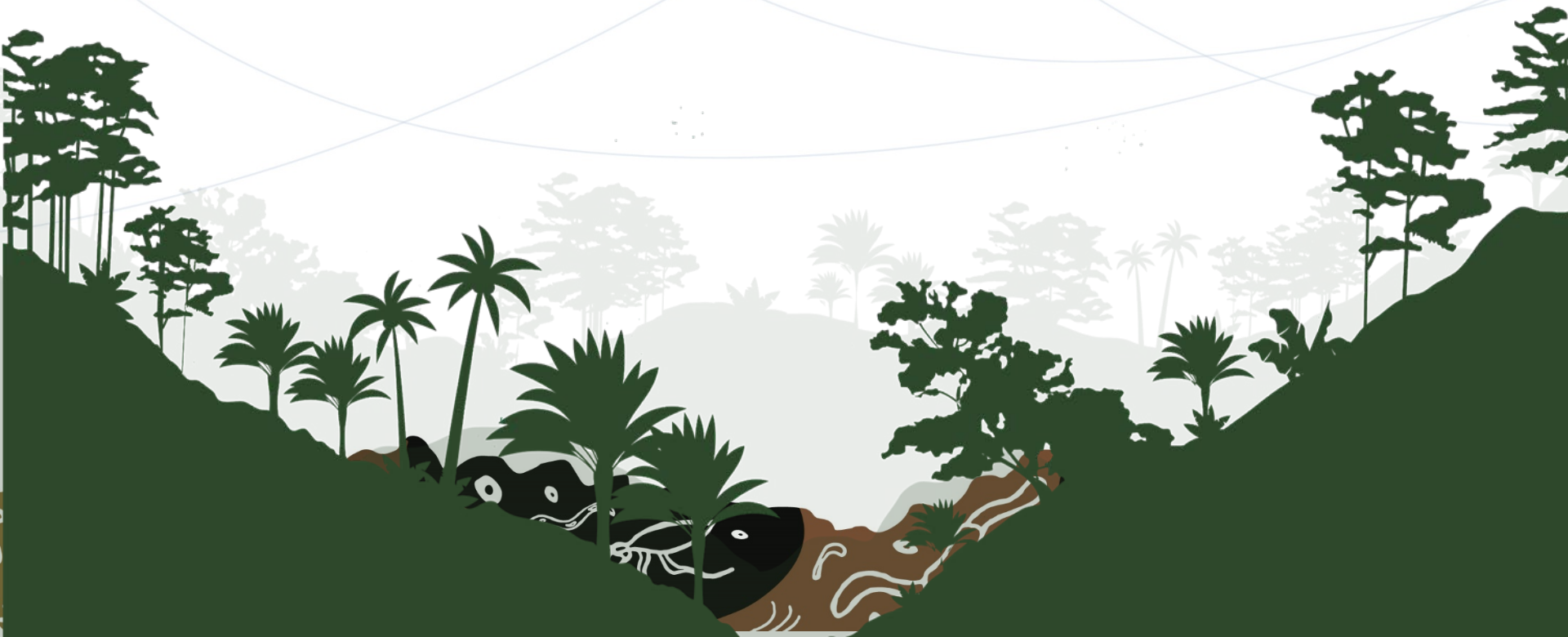
Rabobank



GLOBAL SYMPOSIUM ON SOIL BIODIVERSITY | 19-22 April 2021

Acorn

Agroforestry CRUs Organically Restoring Nature



Our mission is to combat climate change, land degradation and increase food security.





Focus on smallholder farmers because...

500 mil

Amount of
smallholder farmers
worldwide

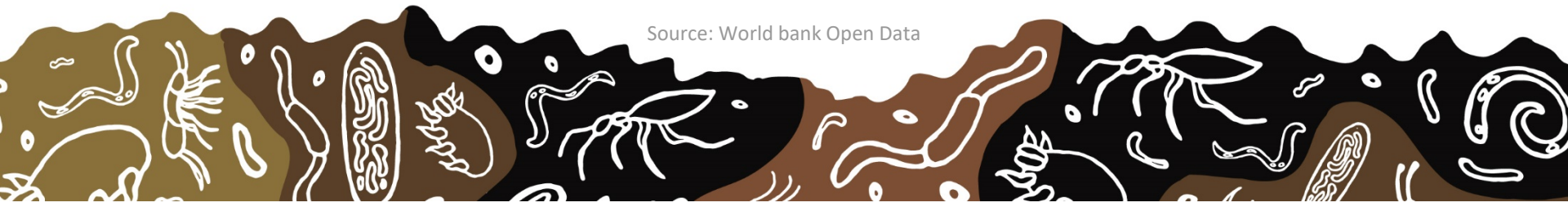
**2
billion**

People in the world
depend on
smallholder farmers
for their livelihoods

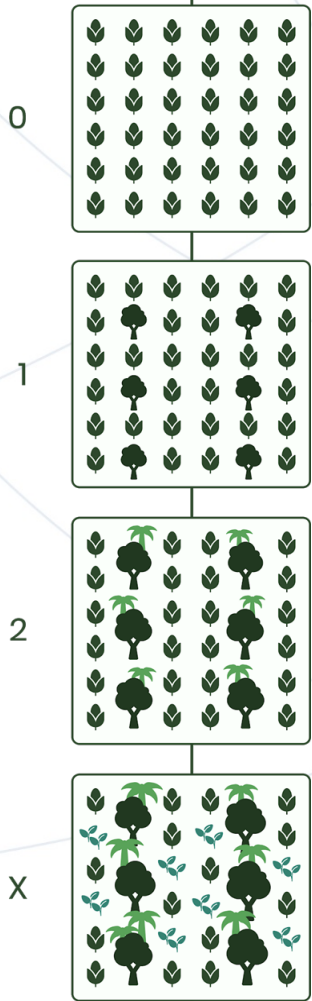
80%

Of all foods
consumed in Asia
and Sub-Saharan
Africa comes from
smallholder farmers

Source: World bank Open Data



Rabobank wants to support smallholder farmers to transition to agroforestry given its versatile benefits.



Monoculture agriculture

Low investment cost

- ⊗ Depleting soil
- ⊗ Sensitive to climate change
- ⊗ Low nutrient diversity
- ⊗ Low yield per ha
- ⊗ Income depends on single crop type
- ⊗ Deforestation

Agroforestry

High investment costs

- ☑ Improving soil health
- ☑ Increasing climate change & weather resilience
- ☑ Diverse nutrients
- ☑ High quality nutrients
- ☑ Improved yield per ha
- ☑ Income depends on different harvest streams
- ☑ Afforestation



FARMER REVENUE STREAMS

Carbon Removal Units provide a payment for ecosystem services

Financing of the transition for farmers

\$ \$

\$ \$

\$

\$

0

0

0

Carbon removal units generated

CO₂ = 0
stored credits

CO₂ = 0
stored credits

CO₂ = \$
stored credits

CO₂ = \$
stored credits

CO₂ = \$\$
stored credits

CO₂ = \$\$
stored credits

CO₂ = \$\$
stored credits

Δ = 0

Δ = 0

Δ

Δ

Δ

Δ

Δ

Year 0

Year 2

Year 4

Year 6

Year 8

Year 10

Year 12

Year 14

Income from Agroforestry yield

\$ = 0

🌱 → \$

🌱 → \$

🍏🌱 → \$\$

🍏🌱 → \$\$

🍏🌱 → \$\$

🍏🌱🌱 → \$\$\$

🍏🌱🌱 → \$



In order to compensate farmers for carbon sequestration, a global, transparent and technology-enabled, trusted marketplace for carbon sequestration is being set up by Rabobank.



Marketplace & Ecosystem

Connecting emitters and off-setters on the marketplace with an ecosystem of partners.



Technology & Trust

Technology-driven monitoring satellite data, AI and ML based on historic and current data.



Transparency & Quality

High-quality, traceable carbon sequestration built on own standards and project selection.



01 Supply - off setters

Farmer registers and has sequestered 1 ton CO₂eq over the last year.



03 Engine

Satellite data calculates sequestered CO₂ and generates 1 CRU token. Market-making mechanism developed by Rabobank



04 Register

Global register of biomass growth and CO₂ captured by agroforestry

02 Demand - emitters

Emitters have a carbon footprint of 1 ton CO₂eq in last year and buys token.



PHASES

This intermediate step is needed, before the credits are credible with remote sensing only, as communicated before

Proof of Concept

Define test area, with on ground validated results and have multiple parties to analyse sequestered carbon

4+ specialised tech companies to be invited

Willingness of WRI to assist in PoC and share experience

1 or 2 parties will be selected afterwards as ecosystem partner

Iterate (satellite + validation)

Further enrich algorithm and validate on-ground data

Digitalized on-ground input from farmer

Minimise non-scalable validation to <10% of cases

Have algorithm outcomes validated by auditor

Remote sensing only

Incorporate new satellite data source (e.g. ESA Biomass Earth Explorer in 2022 and nanosatellites)

Fully based on scalable technologies only

Accuracy and confidence

80%

90%

Source: World bank Open Data





**Thank you for
your attention**