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In cooperation with

Carble 

Forest canopy and coffee
covered in low clouds
as seen from the air.
© Carble BV



COFFEE INNOVATION

Proving the Feasibility of Results-Based Carbon Payments for Ethiopian Coffee Agroforestry

Traceability and carbon payments for coffee farms provide access
to European Union markets and disincentivise deforestation

OVERVIEW: CARBLE BV (ETHIOPIA)

CHALLENGE

Carble noticed two main challenges in coffee farming: Low coffee prices and the pressure to increase yield by growing more coffee with additional sun exposure by cutting down trees on existing farms or clearing land for new plantations. Coffee pricing fails to provide a living income and incentivises the expansion of cultivated land through deforestation to support farmer families. This leads to an increase in one of the key sources of carbon emissions in coffee, deforestation from shade grown to full sun cultivation.

INNOVATION

PAYMENTS FOR COFFEE AGROFORESTRY CARBON BANKS THROUGH REMOTE SENSING

Measuring the actual coffee carbon storage capacity to verify emissions reductions that can be quantified and valued in the coffee value chain using remote sensing technology. Then, working with coffee brands to sell carbon offsets to reward farmers for not cutting trees, and collaborating with trading companies with geodata needs for the European Union (EU) Regulation on Deforestation-Free Products (EUDR).

COMPANY DESCRIPTION

Carble was started by experienced coffee professionals to address the realities of pricing pressure on farmers and climate change through creating ways to recognize and pay farmers for carbon stewardship.

KEY COMPANY STATS

NUMBER OF PRODUCER PARTNERS

75 households (approx. 510 people)

NUMBER OF STAFF

Three

COST

COSTS

Monitoring per hectare per month paid by buyers

EFFECTS ON REVENUE

N/A, focus is on compliance and cost savings

PREPARATION

TIMELINE

Less than one month to onboard

MATERIALS AND EQUIPMENT

- Evidence of borders of the farm
- Data about yields and prices (optional, for living income analysis)

STAFFING REQUIREMENTS

Depending on data availability - if GPS data is already collected no other staffing required.

LESSONS LEARNED

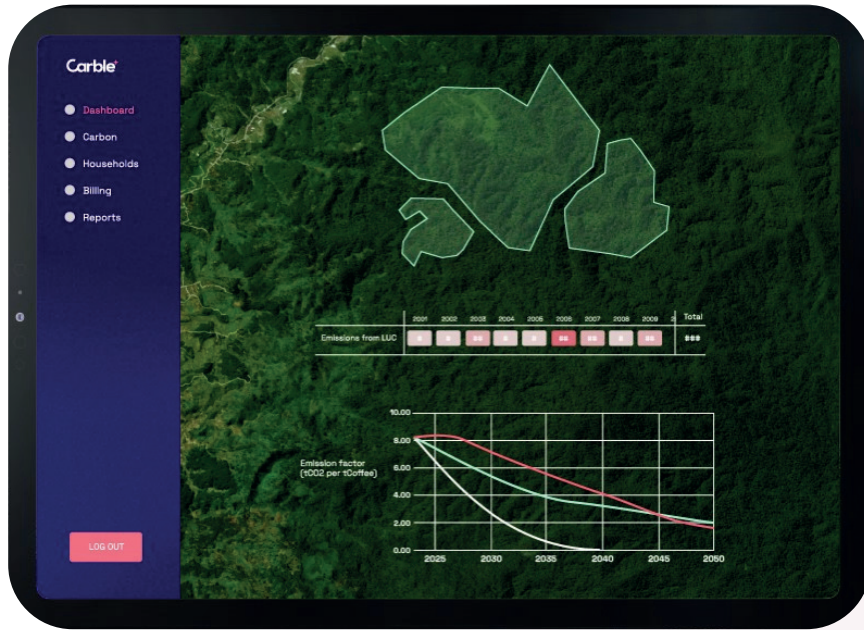
CHALLENGES

- External expertise in satellite and remote sensing and in aligning Carble's methodology with carbon accounting reference methodologies was difficult to procure.
- Challenges in data collection due to conflict situations.
- Advanced progress of deforestation made it difficult to change farmer incentives and prove sufficient carbon stock.
- GPS polygon data was of poor quality and needs to be repeated (shade cover).
- Carbon accounting practices changed during the project to take into account historical data, which required a shift in methodology.
- Payment infrastructure creates difficulties in equitable revenue sharing with women.

TAKEAWAYS

- Invest more time in training data collection team (especially Global Positioning System (GPS) data).
- While remote sensing was a viable approach, it required site visits to each farm and more rigorous measurements than expected.
- Partnerships with technology providers, brands, research centers and importers were sources of successful collaboration.
- Persistent structural inequality remains a continuing problem: Land ownership and a focus on cash crops contributing to men dominating and controlling decision-making, benefitting the most from these efforts.

RESULTS: CARBLE BV (ETHIOPIA)



Mapping farm polygons onto forest density satellite data. © Carble BV

As a result of Carble's pilot in Guji:



75 FARMERS

were trained in data collection, remote sensing and more.



A REMOTE SENSING STACK

was built, which can now be used globally.



A LIVING INCOME BASELINE

was completed for the coffee growing households within the project scope.



Currently working with
3,000 FARMERS.



A COMMERCIAL APPETITE FOR CARBON PAYMENTS

was confirmed and audited.



After the project, a
METHODOLOGY HAS BEEN DEVELOPED
with World Resources Institute's greenhouse gas protocols matched.



337.5 HECTARES

carbon stock data measured, translated to carbon accounting value, and cash value validated.



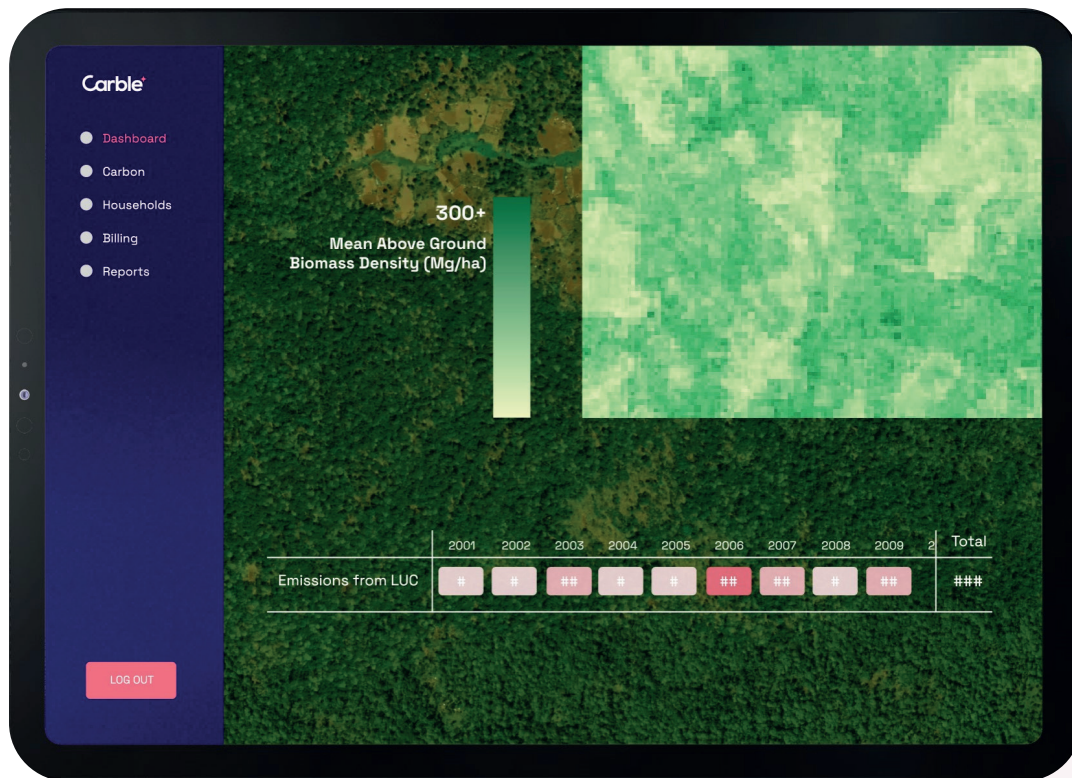
The project has
EXPANDED TO OTHER COUNTRIES
including Peru.

“

Although a lot of deforestation already took place prior to the project, we created awareness of the importance of protecting the last remaining forests.

”

IMPLEMENTATION: CARBLE BV (ETHIOPIA)



Visualizing carbon captured by agroforested areas. © Carble BV

“
Our work has alerted the farmers to the massive problem of deforestation, linked to EU Deforestation Regulation (EUDR)
”

STEP

1

Map (polygons)

STEP

2

Measure
(historic emissions)

STEP

3

Model
(look forward, commitments
and path forward)

STEP

4

Mitigate
(training for farmers,
results-based payments
to farmers)

“
Since the German Federal Ministry for Economic Cooperation and Development (BMZ) through the GIZ Coffee Innovation Fund (CIF) provided our company with it's first funding, it functioned as a catalyst that helped us expand our value proposition and attract new funding.
”

The COFFEE INNOVATION FUND has been developed and funded by the German Federal Ministry for Economic Cooperation and Development (BMZ), and implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

MISSION: The Fund's objective is to increase the profitability of smallholder coffee farmers, and foster greater, more equitable value distribution along the supply chain through promoting innovative farming systems, transparent and inclusive business models, and access to new markets.

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**Federal Ministry
for Economic Cooperation
and Development**