No Mitigation Without Adaptation: Aligning Climate Action with Farmer Realities

Wednesday 18 June: 16:25-17:10

With Speakers:

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Farmer, India

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Sales & New Business Officer, SLC Agricola

Freddie Catlow
CEO & Co-founder, Planboo

Moderator:

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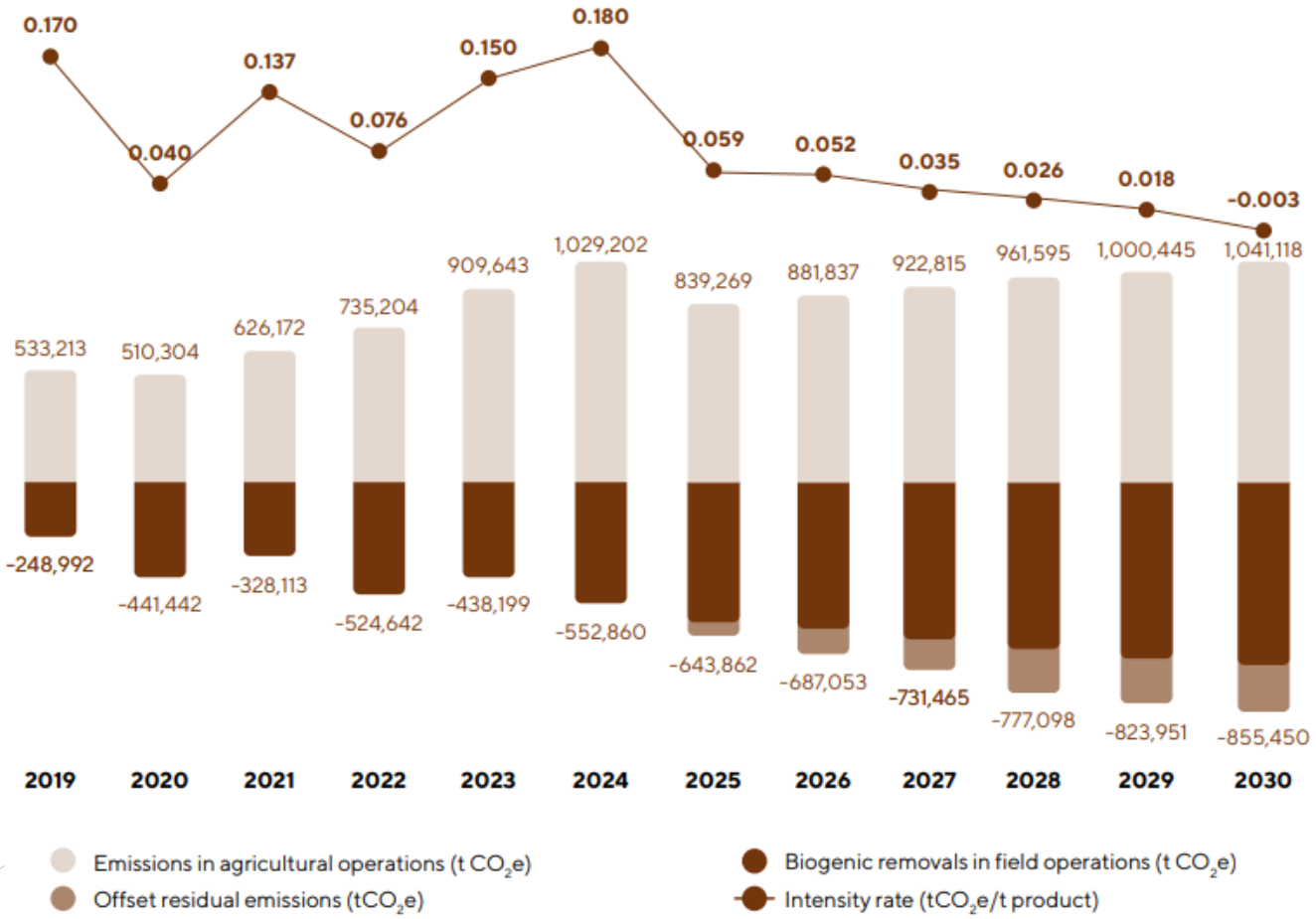
Cotton & Crops Lead, Textile Exchange

Regenerative Agriculture

- **Roberto Acauan**
- Chief Sales Officer

CLIMATE RISKS – Mitigation & Adaptation

CLIMATE RISKS – Mitigation
SLC Agrícola's decarbonization plan



Our commitment

Achieve net-zero carbon emissions (emission – removal) across our operations by 2030, covering scopes 1 and 2.

1

Emissions reduction initiatives:

We implement actions to reduce greenhouse gas (GHG) emissions across our operations.

2

Carbon capture:

We focus on soil carbon sequestration through regenerative agriculture practices.

3

Carbon Offsetting initiatives:

We prioritize the conservation of existing vegetation areas and develop forest enrichment projects.

CLIMATE RISKS Mitigation

COVER CROPS + NO-TILL FARMING

In 2024, the company's own agricultural production offset **54% of its total emissions** through CO_2 sequestration by plants, with part of this carbon being stored in the soil as organic matter.

COVER CROPS

BIOGENIC CARBON REMOVAL

→ **552** THOUSAND TONS IN 2024

SLC Agrícola

CLIMATE RISKS - Mitigation

CARBON EMISSIONS REDUCTION:

→ ZERO DEFORESTATION + FOSSIL FUEL REDUCTION + RENEWABLE ENERGY

111.7 thousand hectares of **preserved native vegetation**

446 MWh photovoltaic solar energy

CLIMATE RISKS - Adaptation

- **Geographic diversification**
- **Mechanized irrigation** in areas with more irregular rainfall patterns (3.7% of total area)
- **Regenerative agriculture practices** – Advantages in the face of extreme weather events, such as droughts: increased resilience, including to pests and diseases.
- **Soil Health**
- **Biodiversity**
- **Governance**

Soil Health

1.1 Soil management
1.2 Crop rotation
1.3 Cover crops
1.4 Fertility management
1.5 Nutrient optimization
1.6 Plant Growth Promoter Bacteria

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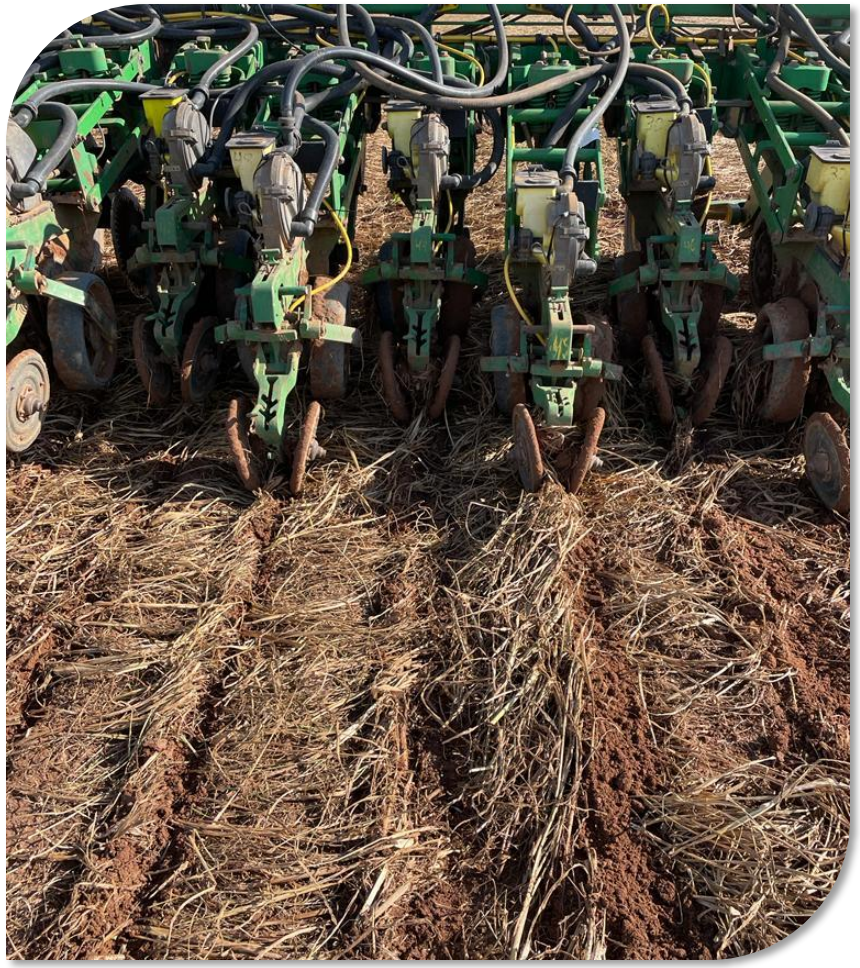
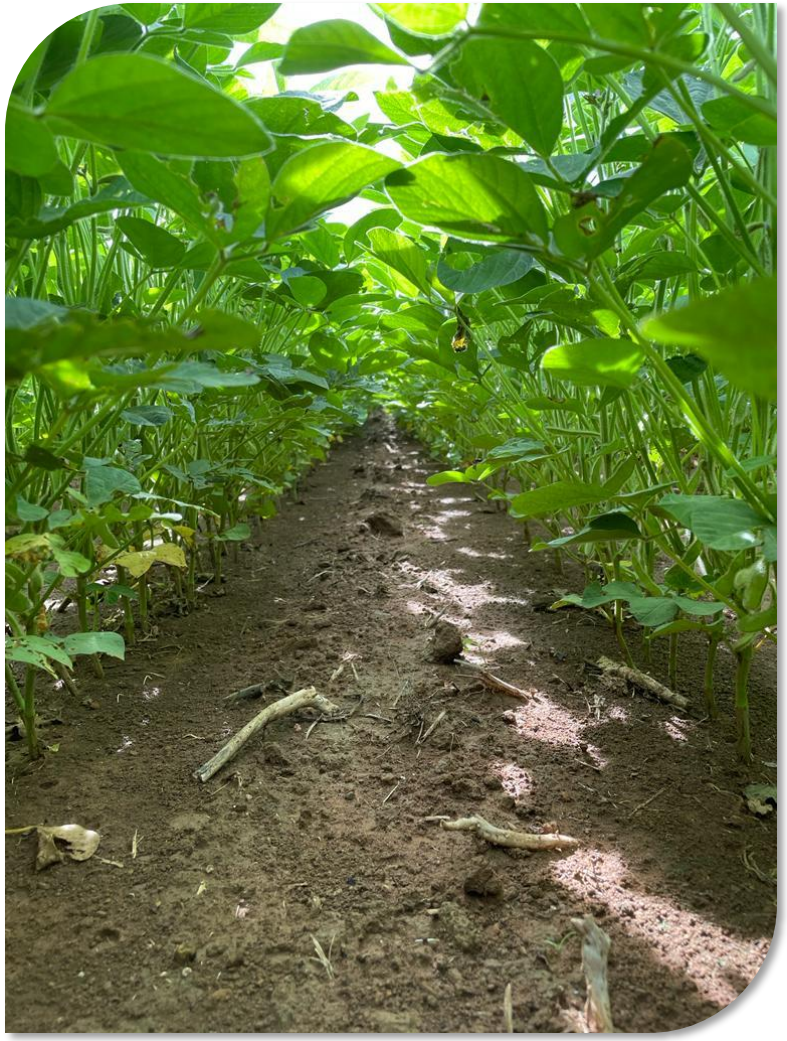
1.1 Soil Management



No-till and strip-till

Minimizing Soil Disturbance

1.1 Soil Management



No-till and strip-till

1.2 Crop Rotation

Year Season - 1

1st crop

First Season Cotton

Cover Crop

Year Season - 2

1st crop

First Season Soybean

2nd crop and 2 crops

Inter cropping Corn as a Second Crop and Ruzi Grass

1.2 Crop Rotation

2022/23

2023/24

Panorama Farm

1.3 Cover Crop

Millet

1.3 Cover Crop

Ruzi Grass

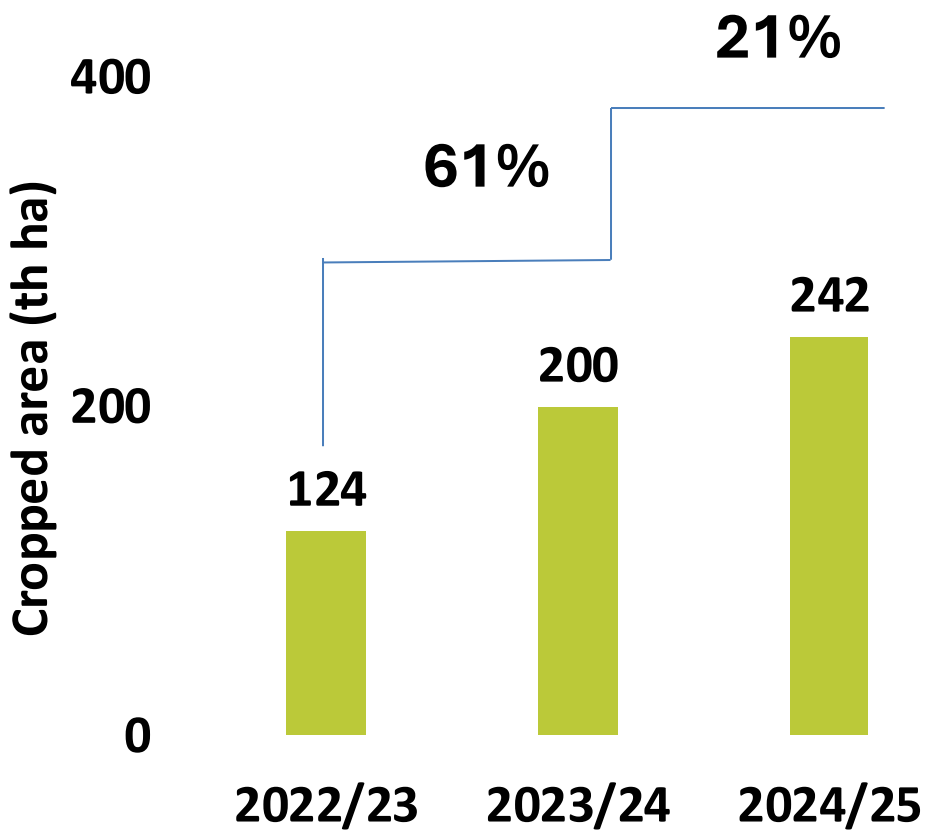
1.3 Cover Crop

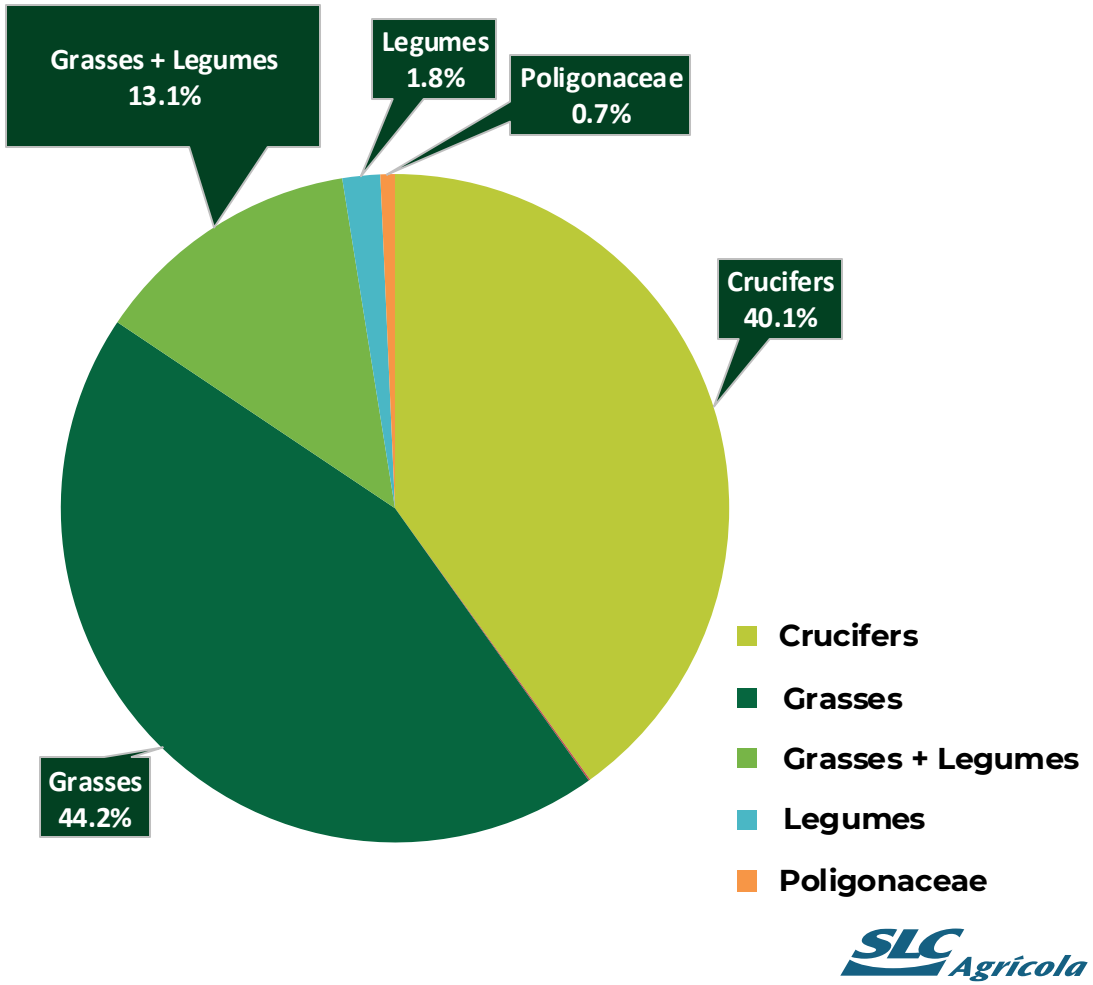
Inter cropping – Corn as a Second Crop and Ruzi Grass

1.3 Cover Crop

Raphanus

1.3 Cover crops

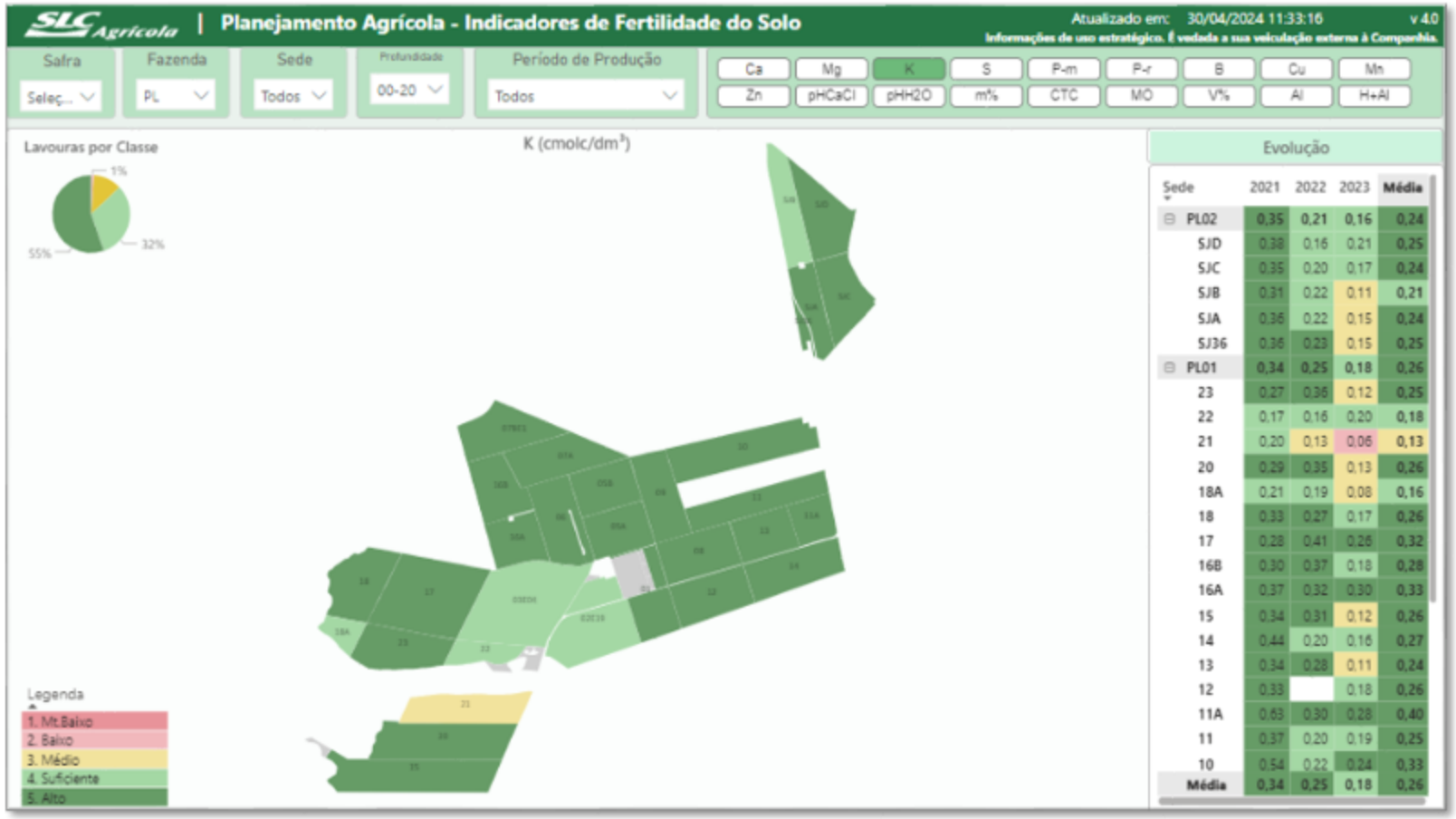




1.4 Fertility Management

Soil Sampling

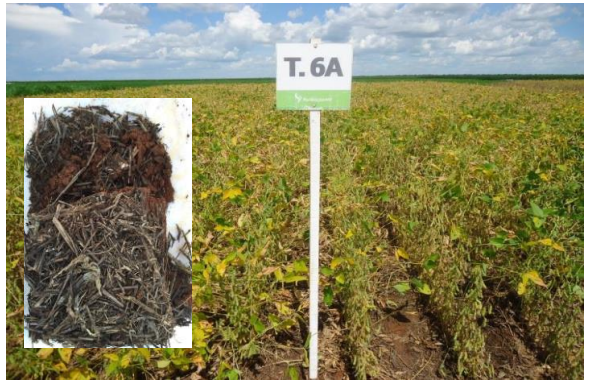
Every year!

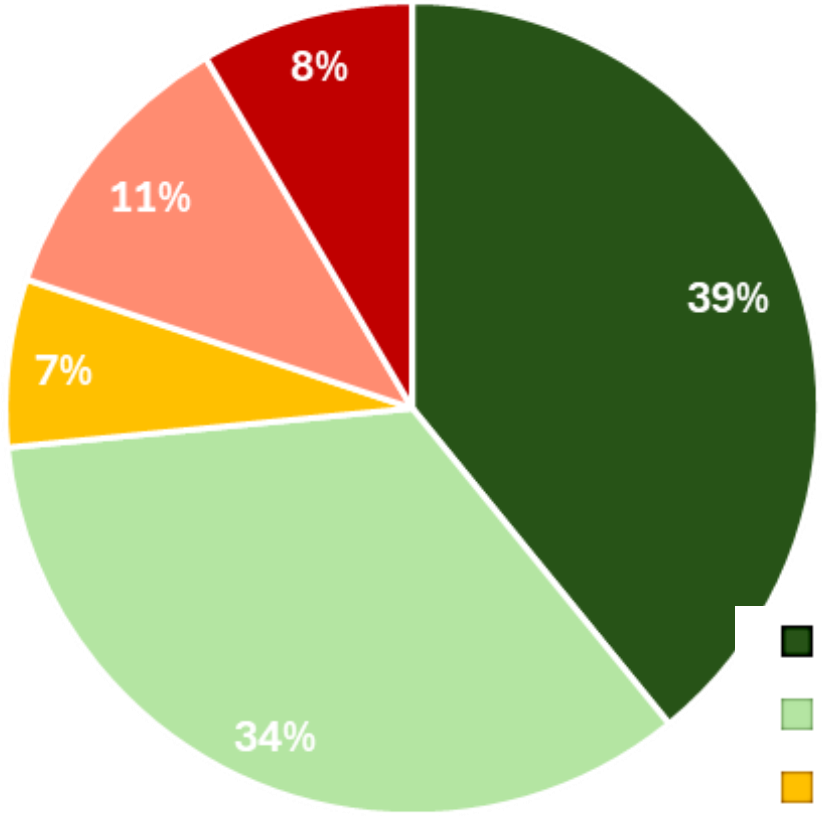


Sede	2021	2022	2023	Média
PL02	0,35	0,21	0,16	0,24
SJD	0,38	0,16	0,21	0,25
SJC	0,35	0,20	0,17	0,24
SJB	0,31	0,22	0,11	0,21
SJA	0,36	0,22	0,15	0,24
SJ36	0,36	0,23	0,15	0,25
PL01	0,34	0,25	0,18	0,26
23	0,27	0,36	0,12	0,25
22	0,17	0,16	0,20	0,18
21	0,20	0,13	0,06	0,13
20	0,29	0,35	0,13	0,26
18A	0,21	0,19	0,08	0,16
18	0,33	0,27	0,17	0,26
17	0,28	0,41	0,26	0,32
16B	0,30	0,37	0,18	0,28
16A	0,37	0,32	0,30	0,33
15	0,34	0,31	0,12	0,26
14	0,44	0,20	0,16	0,27
13	0,34	0,28	0,11	0,24
12	0,33		0,18	0,26
11A	0,63	0,30	0,28	0,40
11	0,37	0,20	0,19	0,25
10	0,54	0,22	0,24	0,33
Média	0,34	0,25	0,18	0,26

1.4 Fertility Management

Soil health status





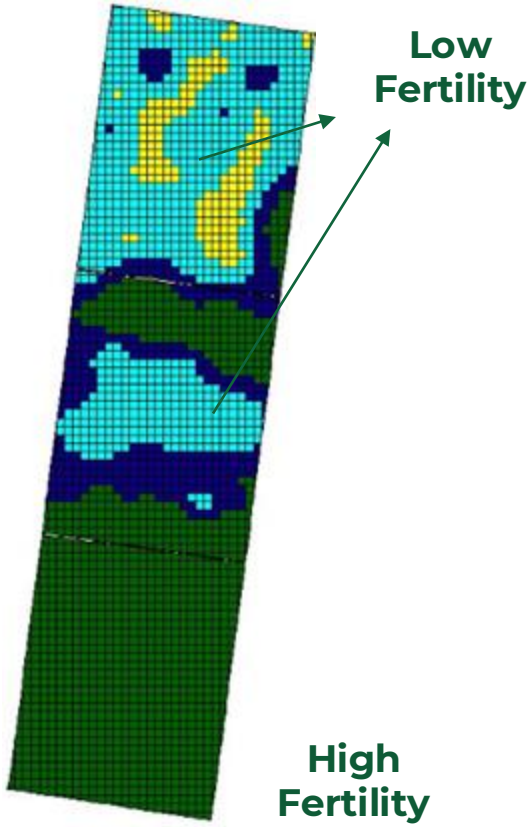
Monitoring Soil Health in comercial fields

- Healthy
- Recovering
- Intermediate
- Getting sick
- Sick

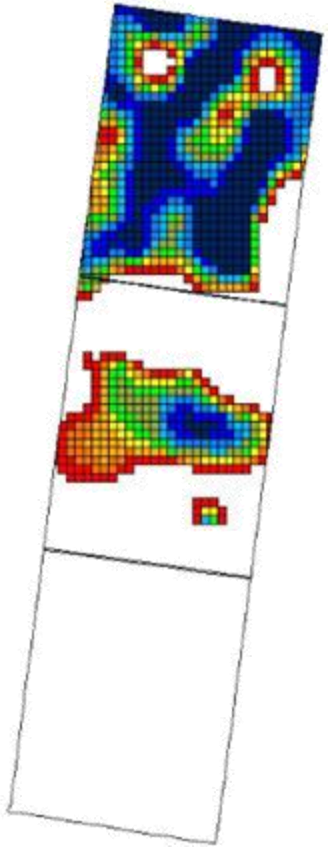
Source: Fundação MT (2014/15, 2016)

1.5 Nutrient optimization

Soil Level Status



Variable Rate Prescription



Precision Ag

- Site-specific Nutrient Application with Variable Rate Application
- Yield Improvement
- Costs Reduction

About 90% of the fields sampled in grid.

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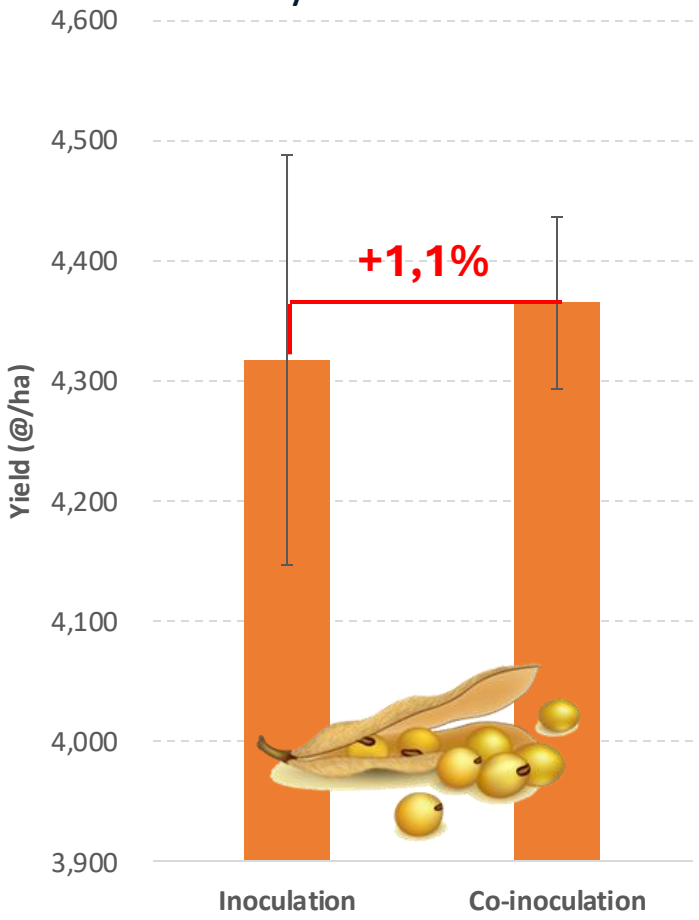
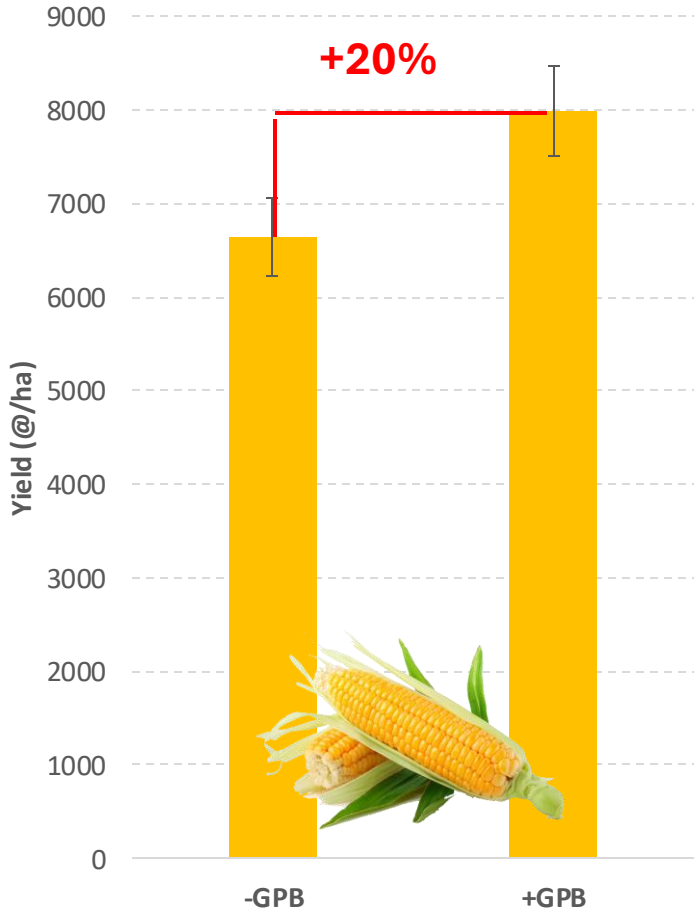
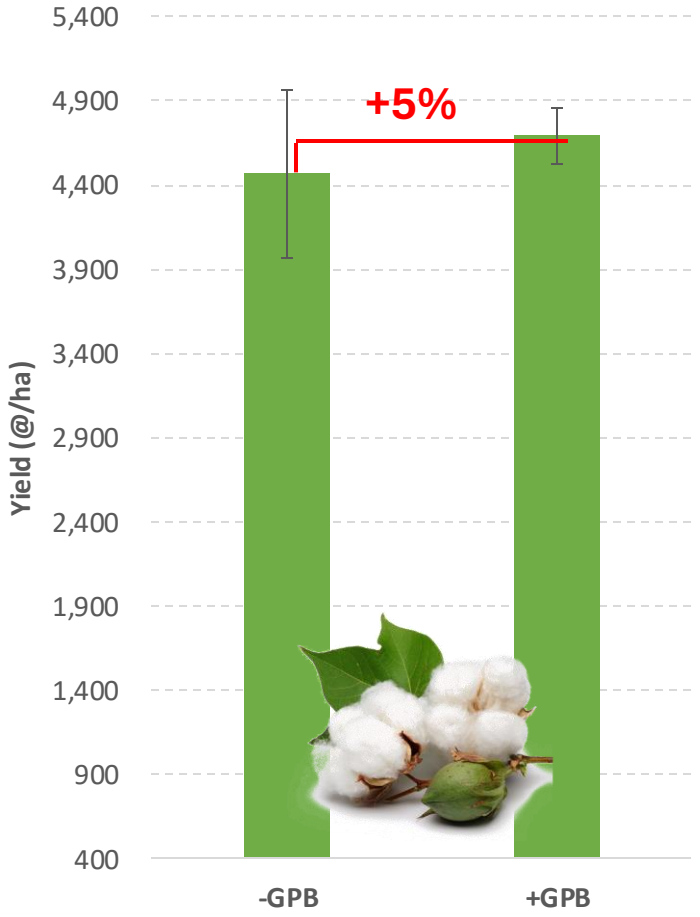
1.6 Plant Growth Promoter Bacteria (PGPB) enhancing crop yields

Expected benefits: Increased nutrient availability, enhanced growth, and protection against diseases and abiotic stresses → may reduce the need for mineral fertilizers







*data obtained from intern experimental fields of SLC Agricola – average of several trials from diferente farms

Biodiversity

2.1 Management of Chemical Pesticides

2.2 Bioinputs

2.3 Localized Application

2.1 Management of Chemical Pesticides

Diversify/integrate management tools

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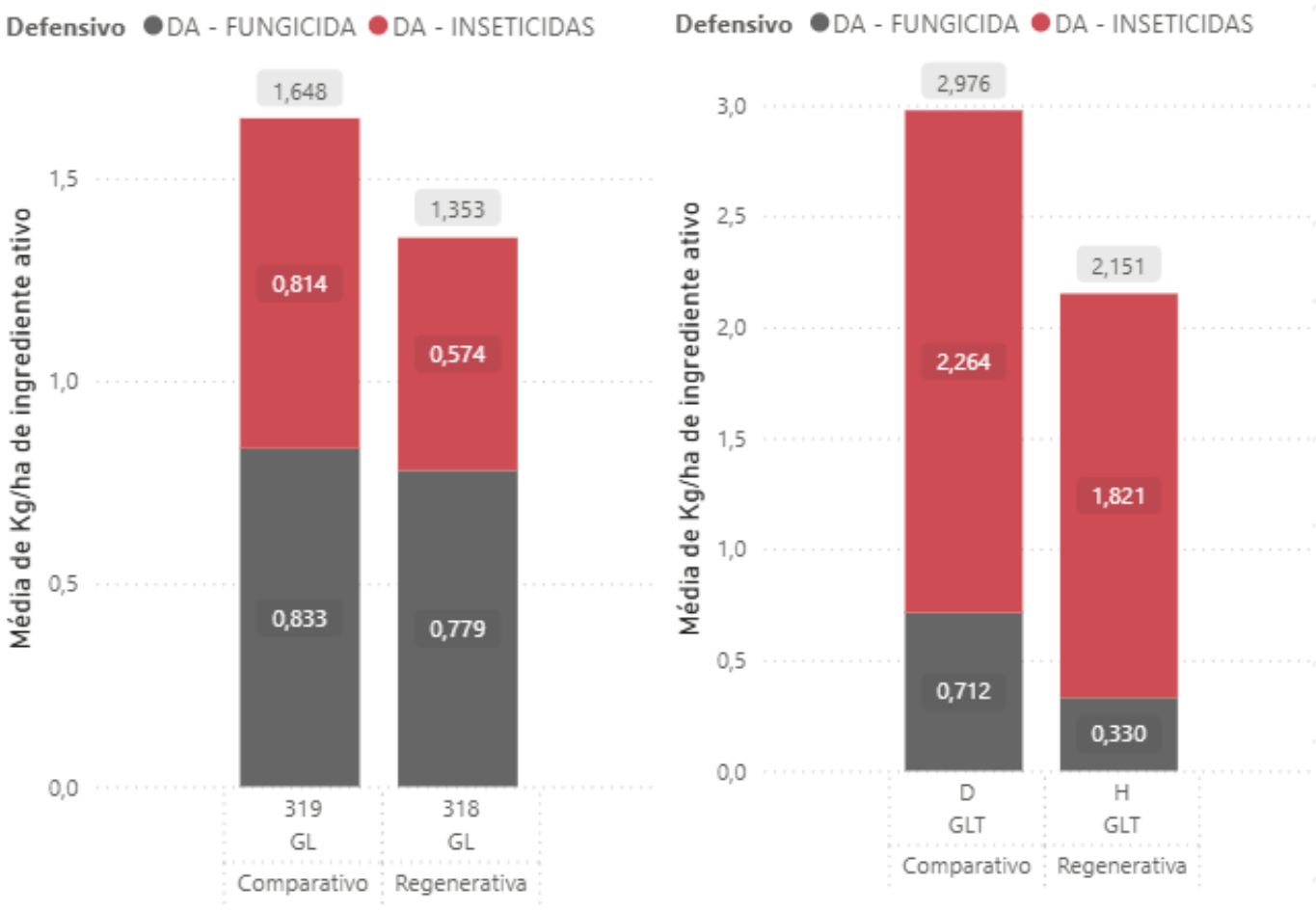
2.1 Management of Chemical Pesticides

Exploration areas for Regenerative programs

- Reduction and conscious use of synthetic pesticides in crop management;



Pamplona Farm – Cotton – 2023/24

2.2 Bioinputs

Coinoculation: Bradyrhizobium **and Azospirillum**

Biological Control

- **Insect control**

Bacillus thuringiensis

Beauveria bassiana

Cromobacteriun subtisugae

Metarhizium anisopliae

Cordyceps fumosorosea

Baculovírus

- **Soil Diseases and Nematodes**

Bacillus subtilis

Trichoderma sp.

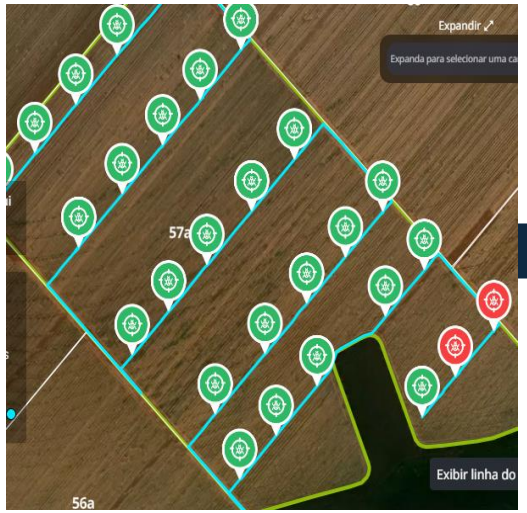
Pochonia chamydosporia

Bacillus amyloliquefaciens

2.3 Localized Application

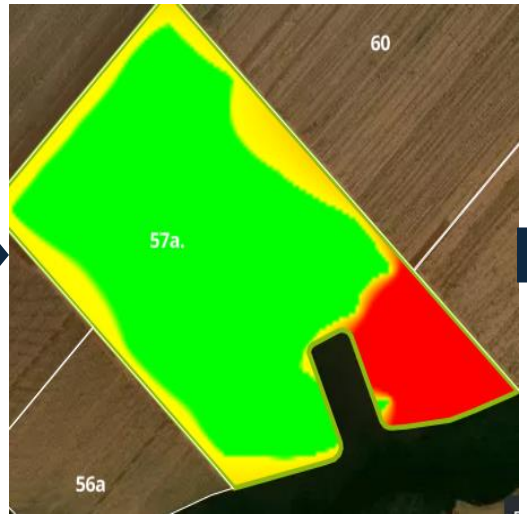
Localized Pest Management

DATA COLLECT



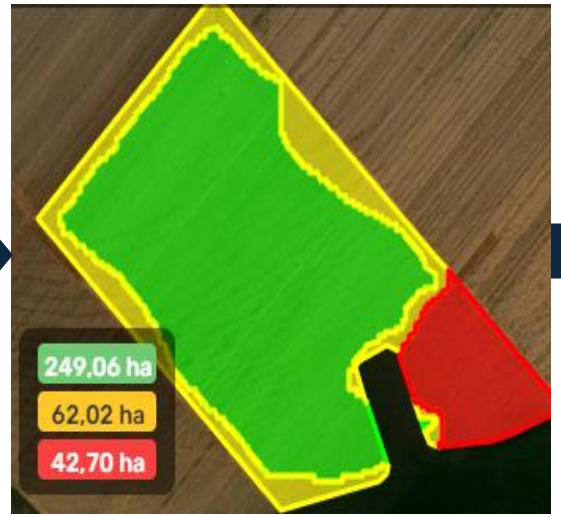
1 sample / 3-20 ha

DIAGNOSIS



HEAT MAP

PRESCRIPTION



SPRAYING MAP

ACTION

SPRAYING > 3 ha

Governance

3.1 Community Actions

3.2 People Training

3.3 Circular Economy

3.4 Protection and Preservation of Native Vegetation Areas

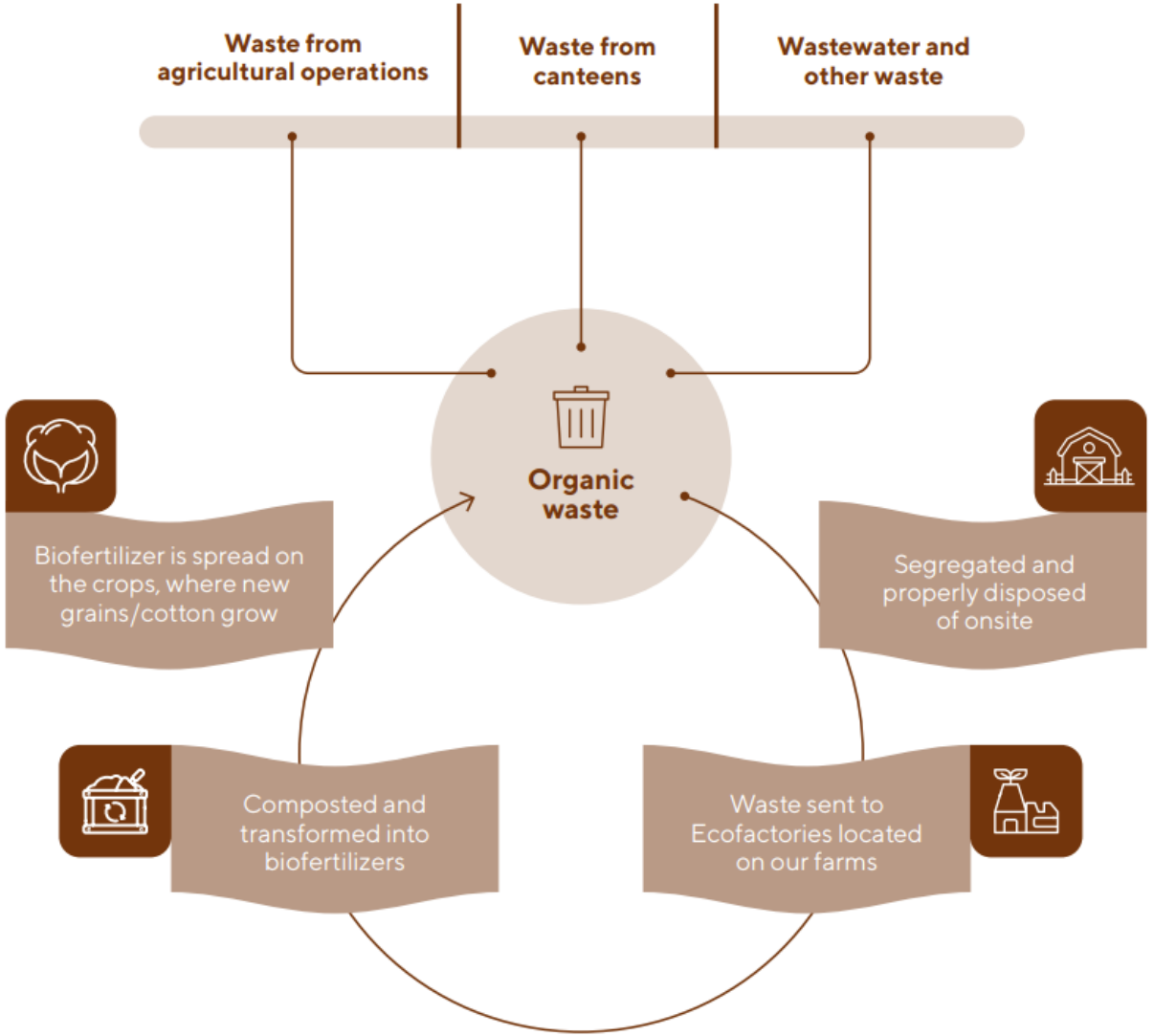
3.5 ICL / ICLF

3.6 Water Consumption Management

3.1 Community Actions & 3.2 People Training

- **R$ 3.01 million** allocated to social projects through Instituto SLC
- **532 employee volunteers** and recorded **4,654 hours** of volunteer work.
- Average of **50.8 training hours** per employee
- **R$ 7.65 million** invested in training throughout the year

3.3 Circular Economy



- **13,300** tons of organic waste have been composted and transformed into **biofertilizers**
- **7 farms** have already implemented the **circular economy** program
- **Goal: 23 farms until 2029**

3.4 Protection and Preservation of Native Vegetation Areas

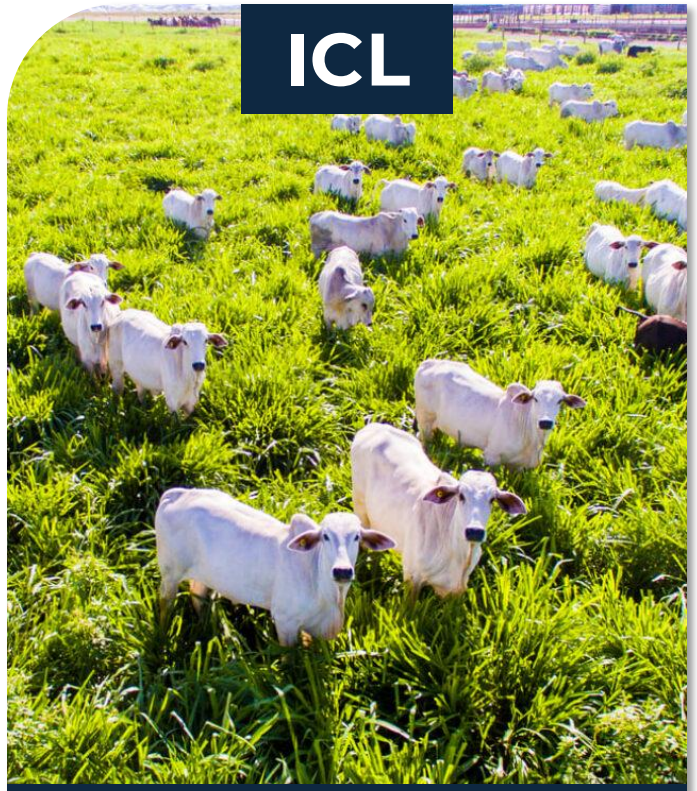
ZERO DEFORESTATION POLICY

In place since 2021 for preserved areas, new acquisitions, and leases

111.7 THOUNSAND HECTARES OF **PRESERVED NATIVE VEGETATION**

Volunteer preservation (ha): 12,531 ha

3.5 ICL / ICLF & 3.6 Water Management



Integrated Crop-Livestock (ICL): **4,473 ha**
Increase of **12.9%** on the previous year

Water

96.3% of our crops are grown under rainfed conditions

According to Embrapa, the volume of water needed to grow one ton of soy, corn and cotton in the Cerrado is 2,000 m^3; 1,200 m^3; and 5,333 m^3; respectively.

But **SLC Agrícola** water footprint was much **lower** due to rainfed conditions:

- **17.54 m^3 for soy (0.88% of total demand)**
- **9.02 m^3 for corn (0.75%)**
- **17.18 m^3 for cotton (0.32%)**

Thank You

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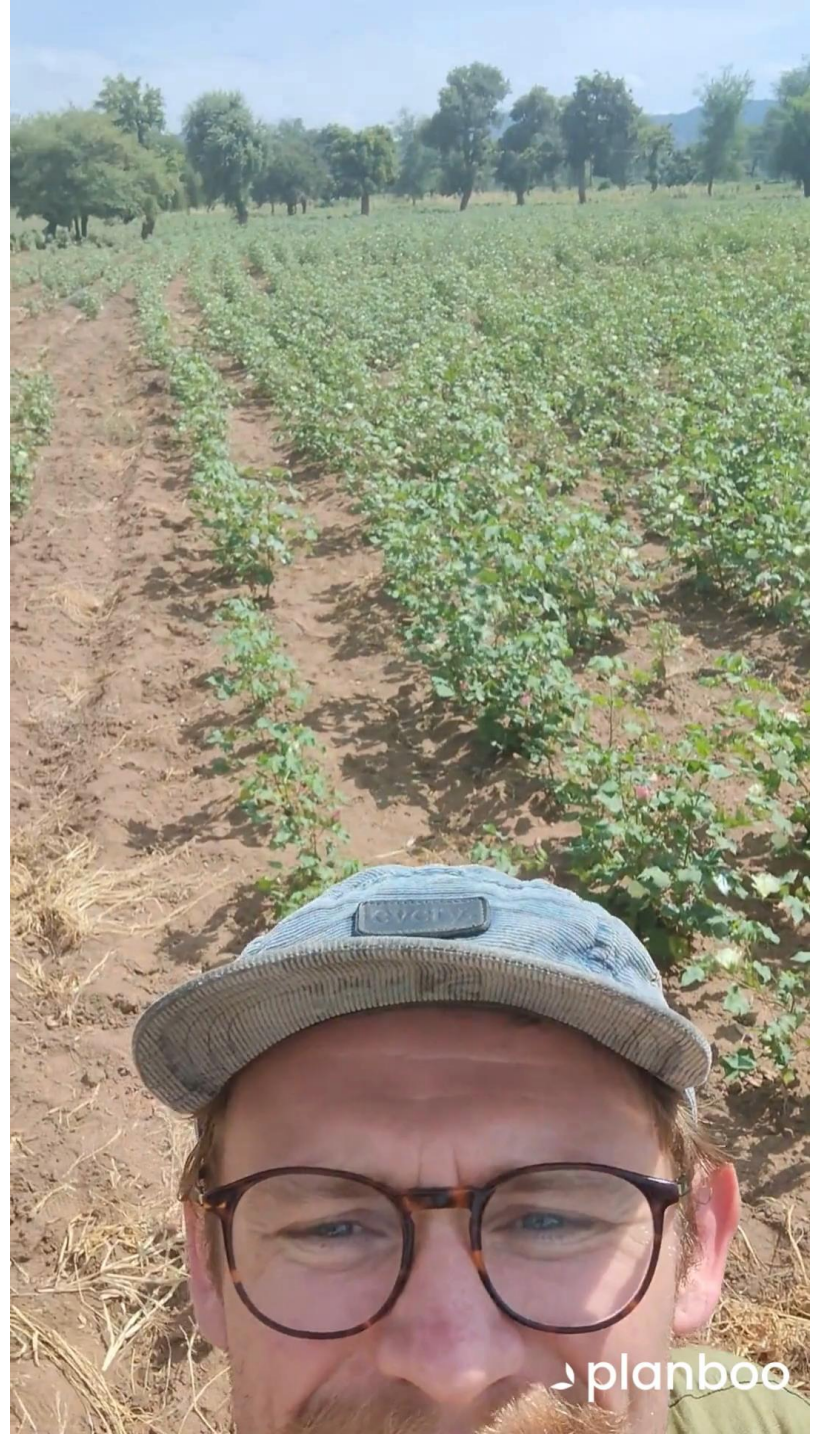
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Pioneering Insetting with Biochar

Why we are here

The Problem

#1 We need to remove 10 billion tCO_2 / year from the atmosphere to avoid runaway climate change

#2 Climate Change disproportionately impacts low income, tropical regions

Our Mission

Develop the Biochar carbon removal value chain to increase **wealth creation** in the tropics and improve climate **resilience of agricultural systems**

Our Vision

A world where Biochar carbon removal is integrated within **consumer value chains** to benefit both the planet and its people

planboo

Half a *decade* of learning & improving

Timeline of Traction

2020.
Planboo founded, Stockholm

2021.
Biochar Pilot, Sri Lanka

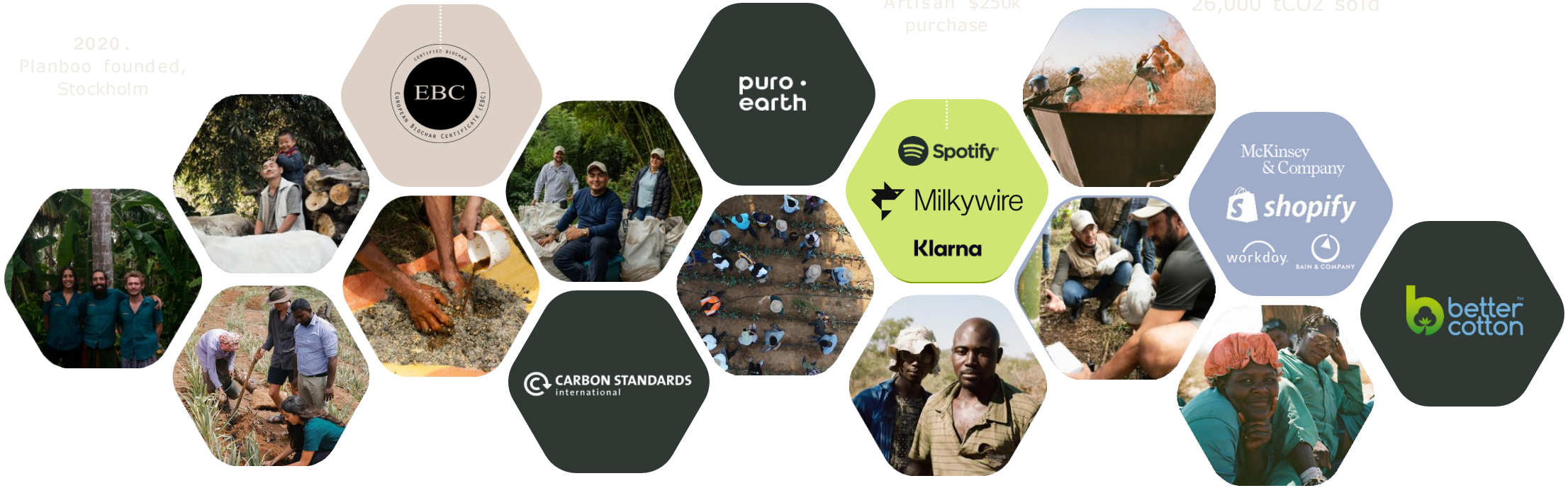
2022.
Artisan methodology approved

2023.
dMRV Technology accredited

2024.
Artisan $250k purchase

2024.
26,000 tCO2 sold

2025.
Cotton Pilot India



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The journey from Waste to Wealth

BIOMASS

Removes CO_2 through photosynthesis

PYROLYSIS

MIXING

APPLICATION

Stores carbon for thousands of years

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Biochar Properties & Impacts

> Biochar is carbon removal's jack of all trades.
>
> World Economic Forum, 2023

Improved soil properties

Increased Water Holding Capacity

Improved Nutrient retention

Enhance agriculture resilience

Reduction crop waste burning

Reduced fertiliser use

Insetting with Biochar

H&M Insetting Presentation | 15th Jan 2025

planboo

Carbon

Offsetting

Purchasing reduction and removal credits from projects **outside** your value chain.

Carbon

Insetting

Reducing and removing emissions **inside** your value chain.

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Net zero - Reduction & Removals

SBTi-aligned Net-Zero

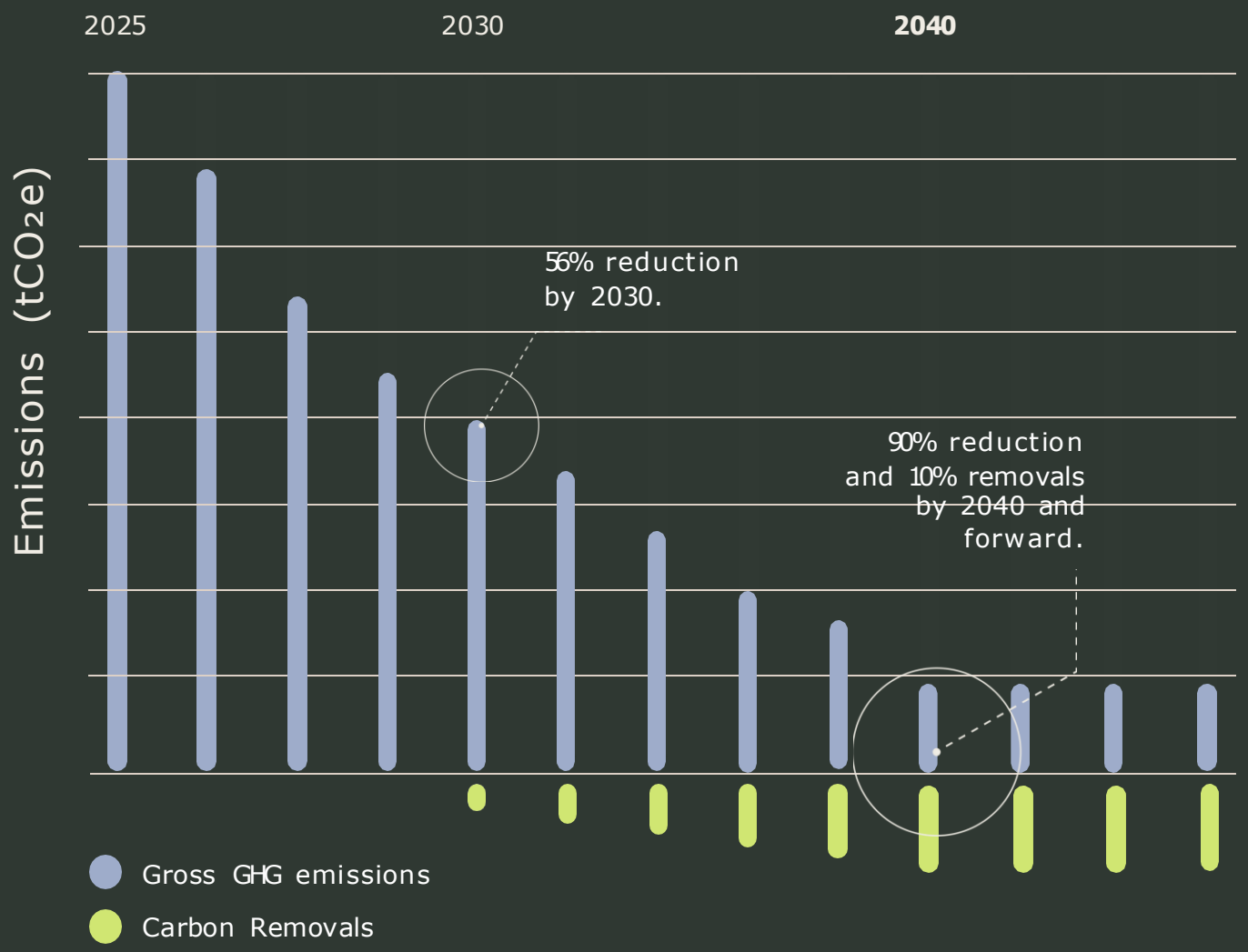

Table 1. H&M Net Zero strategy - 2040.

Biochar combines emission Removals & Reductions

- 1tCO2e **Removal** generate 1.7t CO2e of **Reductions**
- Emission **Reductions** include: Reduced fertilizer =0.1

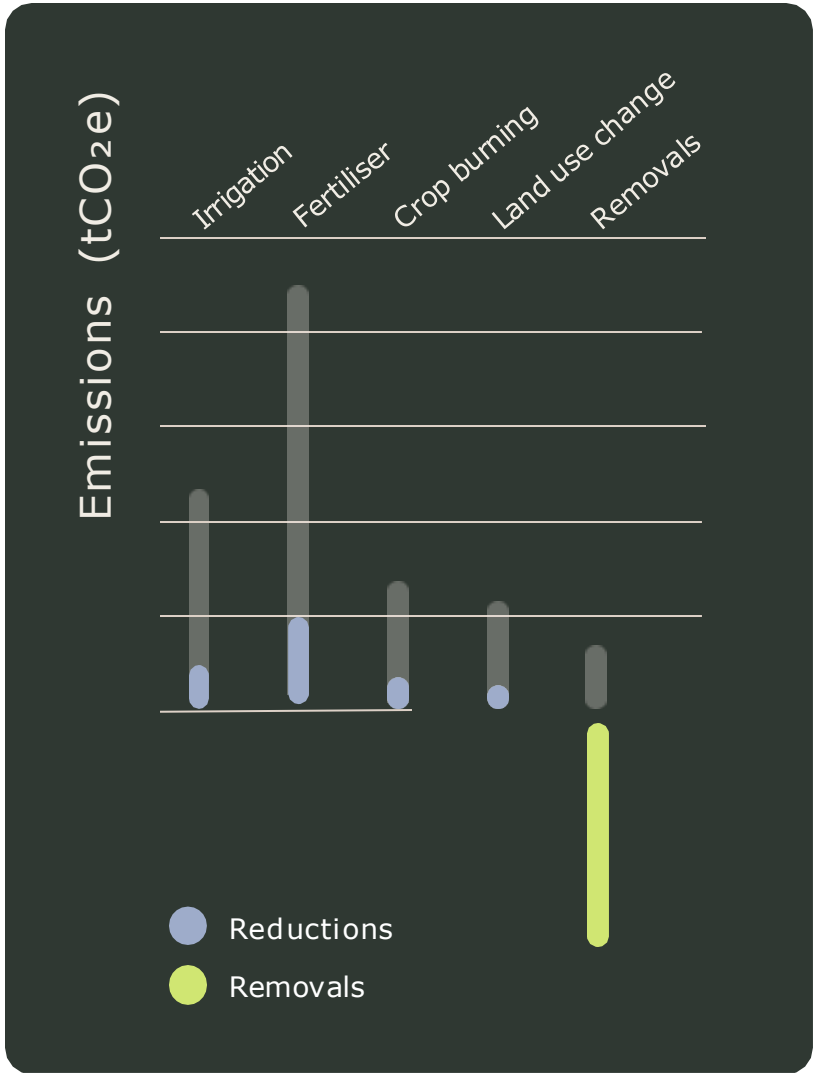

Table 2. Scope 3 Emissions & Biochar

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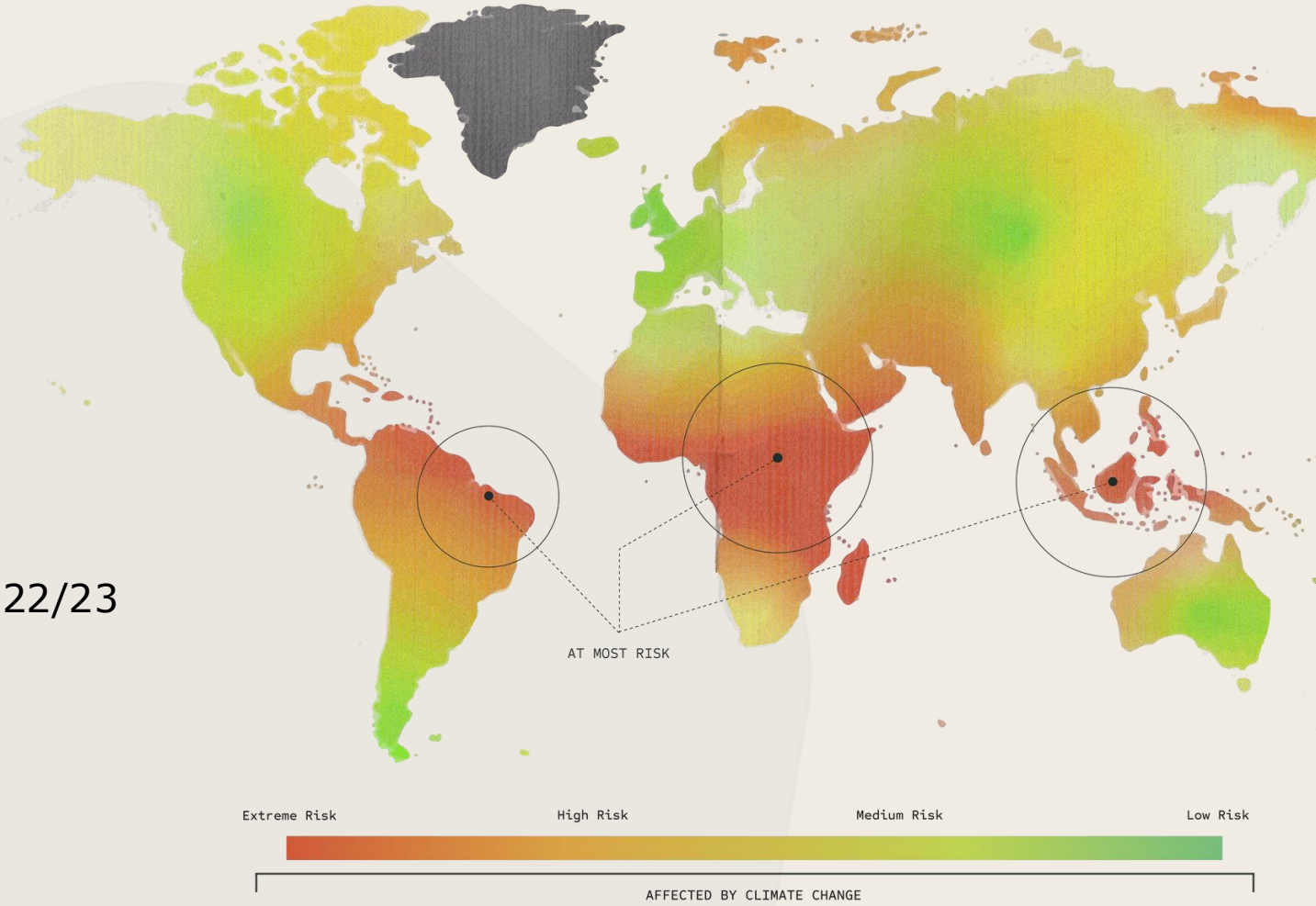
Planboo X BCI Global potential

5.47 million tonnes of Better Cotton in 2022/23

7.2 million tonnes of Carbon Removal

Additional 12.8 million tonnes of Carbon Reductions



The impact of a 10,000 credit offtake in 2025

10,000 tCO_2e
Removed

17,750 tCO_2e
Reduced

7,575 ha
land applied

5,000 t
Biochar produced

5,050
farmers benefit

No biochar applied.


planboo
Simple, honest carbon removal
Freddie Catlow
Founder & CEO