
FOREST 93
reseed
Carbon Credits:
The business case

01. Carbon Credits

An Introduction

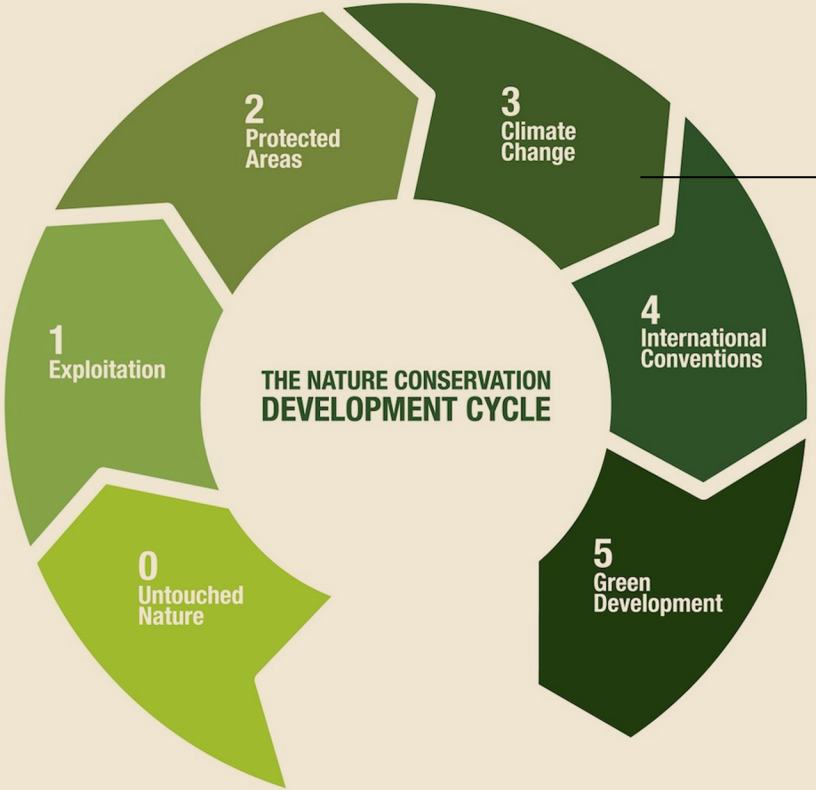
02. The business case

03. Panel Discussion

The Future of Carbon Credits in Suriname

01.
Carbon Credits:
An introduction

Creation of carbon trade



1970

Climate became relatively warmer from 1970 onwards

1992

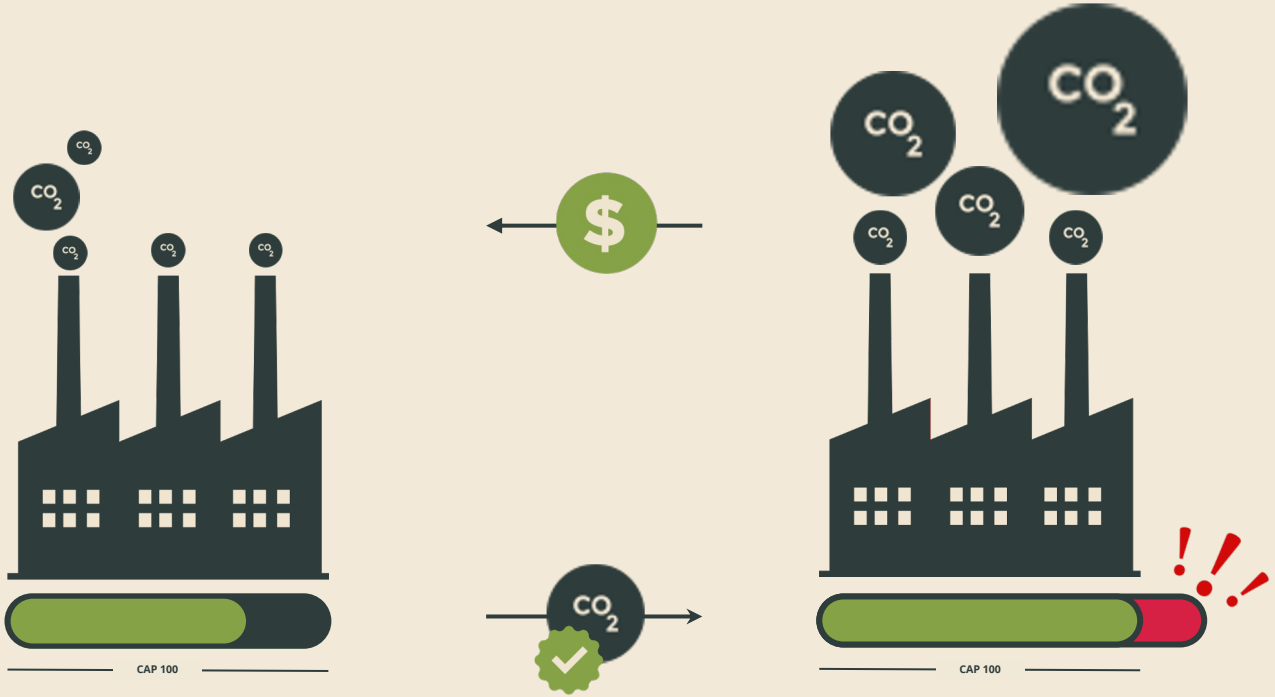
Kyoto Protocol 1992 agreements between countries to reduce carbon dioxide emissions by:

1) More efficient energy use
2) Renewable energy
3) Planting trees

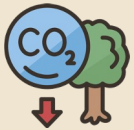
1997

USA proposal for emissions trading in 1997

Cap & Trade



What are carbon credits?



Equivalent to **1 ton** of carbon dioxide removed from the atmosphere

Linked to combating global warming

1.5C: 50% reduction in 2030 and 100% reduction in 2050 (net zero)

Translated into a reduction at national level

Where do carbon credits come from?

01. Removal/absorption

- **REDD+** : Protecting forests, combating deforestation and forest degradation and sustainable forest management
- **Blue Carbon** : Protection of coastal and aquatic plants
- Replanting

02. Prevention/reduction

- Renewable energy, more efficient energy use
- Removal of biomass, e.g. biofuel
- Direct capture of greenhouse gases with technology
- Sustainable management of plants in forestry, agriculture and tourism
- GHG Protocol : Improving business processes

SCOPE 01

BURN

DIRECT

Includes fuels you burn directly and applies to your company if you pay the fuel bill or own the asset.

FOR EXAMPLE:

- Gas in company cars
- Heating oil and gas
- Fuel to power equipment

SCOPE 02

BUY

INDIRECT

Upstream

Considered indirect because your company purchases energy, but does not generate it or its emissions.

INCLUDES:

- Electricity
- Steam
- Heat
- Cooling

SCOPE 03

BEYOND

INDIRECT

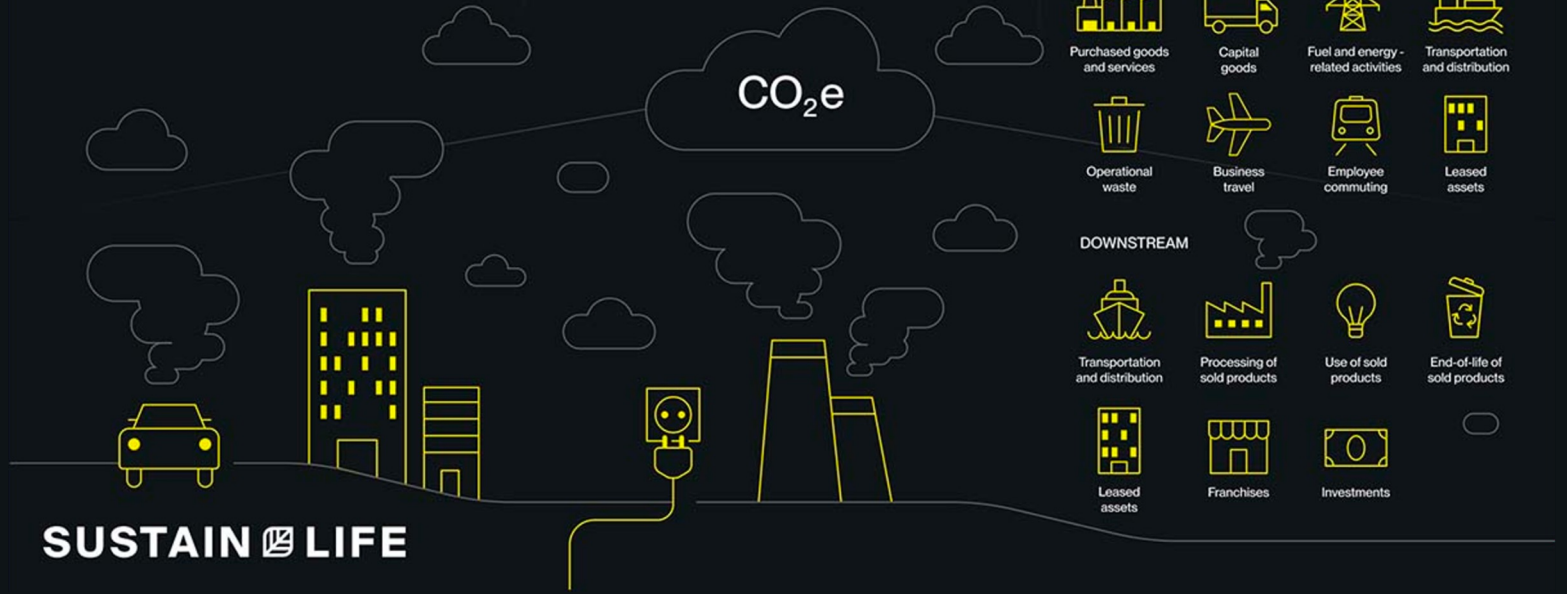
15 categories that represent upstream and downstream activities throughout the value chain. Typically 90% of an emissions footprint.

UPSTREAM:

- Purchased goods and services
- Capital goods
- Fuel and energy - related activities
- Transportation and distribution
- Operational waste
- Business travel
- Employee commuting
- Leased assets

DOWNSTREAM

- Transportation and distribution
- Processing of sold products
- Use of sold products
- End-of-life of sold products
- Leased assets
- Franchises
- Investments



SUSTAIN LIFE

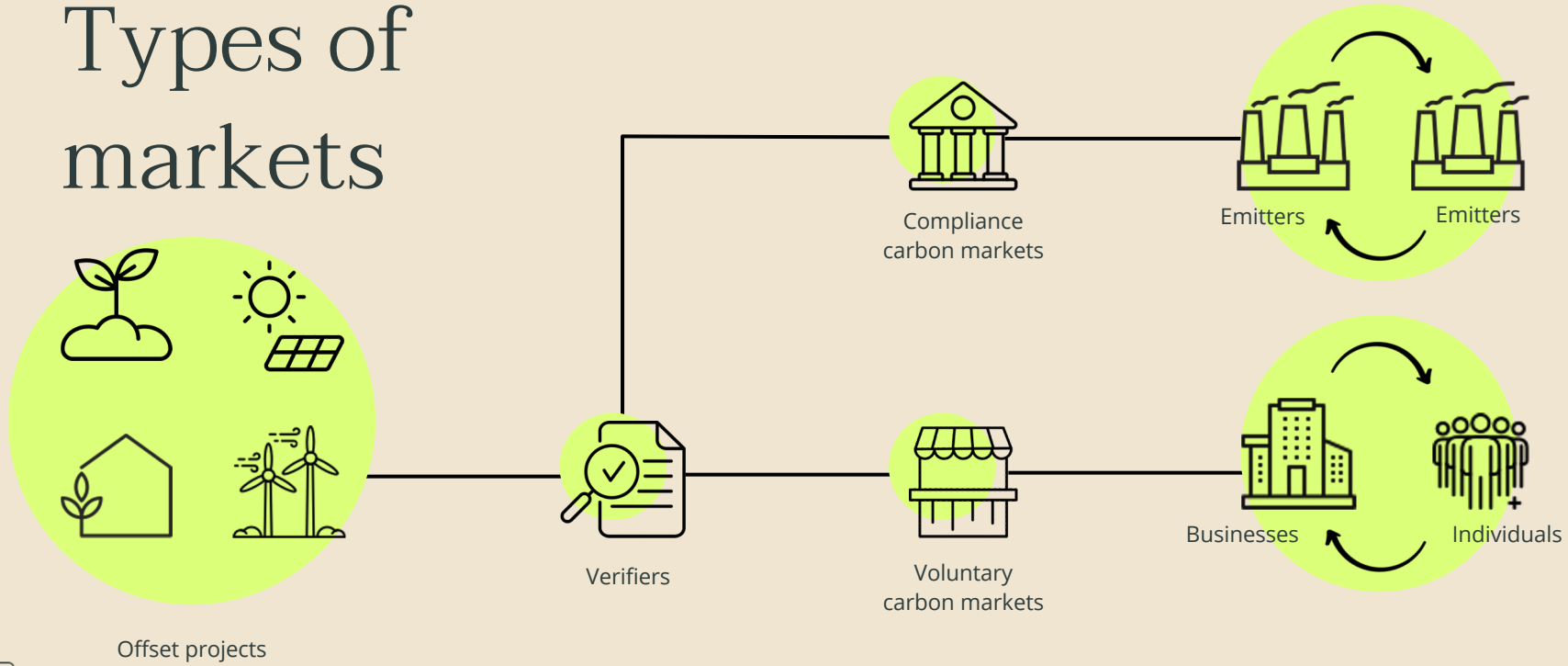

170 TYPES OF CARBON CREDIT
Renewable Energy
Hydropower
Biogas
Solar
Biomass/ Biochar
Other
Wind
Geothermal
Household & Community
Clean Water Distrbn
Lighting Efficiency
Clean Cookstove Distrbn
Biogas - Community
Cookstove & Water Purification
Energy Efficiency
Rural Solar
Chemical / Industrial
N20 Destrn- Adipic/Nitric acid
Carbon Capture & Storage
Other
Refrigerant - HFC
Refrigerant - Ozone Depltg
Fugitive Emissions
Energy Efficiency
Fuel Switching
Other
Energy Efficiency: Industrial
Recycling
Waste Gas Recovery
Unspecified
Waste Gas Avoidance
Waste Incineration
Waste Disposal
Energy Efficiency
Grassland/ rangeland mgmt
Livestock Methane
Sust. Ag.
Nitrogen Management
Agri-culture
Transport
Shipping
Public Transportation
Other
Other
REDD+ All
Blue Carbon
Other
Afforest / Reforest/ Reveg...
Agro-Forestry
Avoided Forest Conversion
Improved Forest Mgmt
Soil Carbon
Urban Forestry
Forestry & Land use

The interest in carbon trade

Government	Alternative source of income
Companies	Business as usual, CSR, aternative source of income
Local communities	Environmental protection, alternative source of income
Civil society organizations / public	Poverty reduction, sustainable development

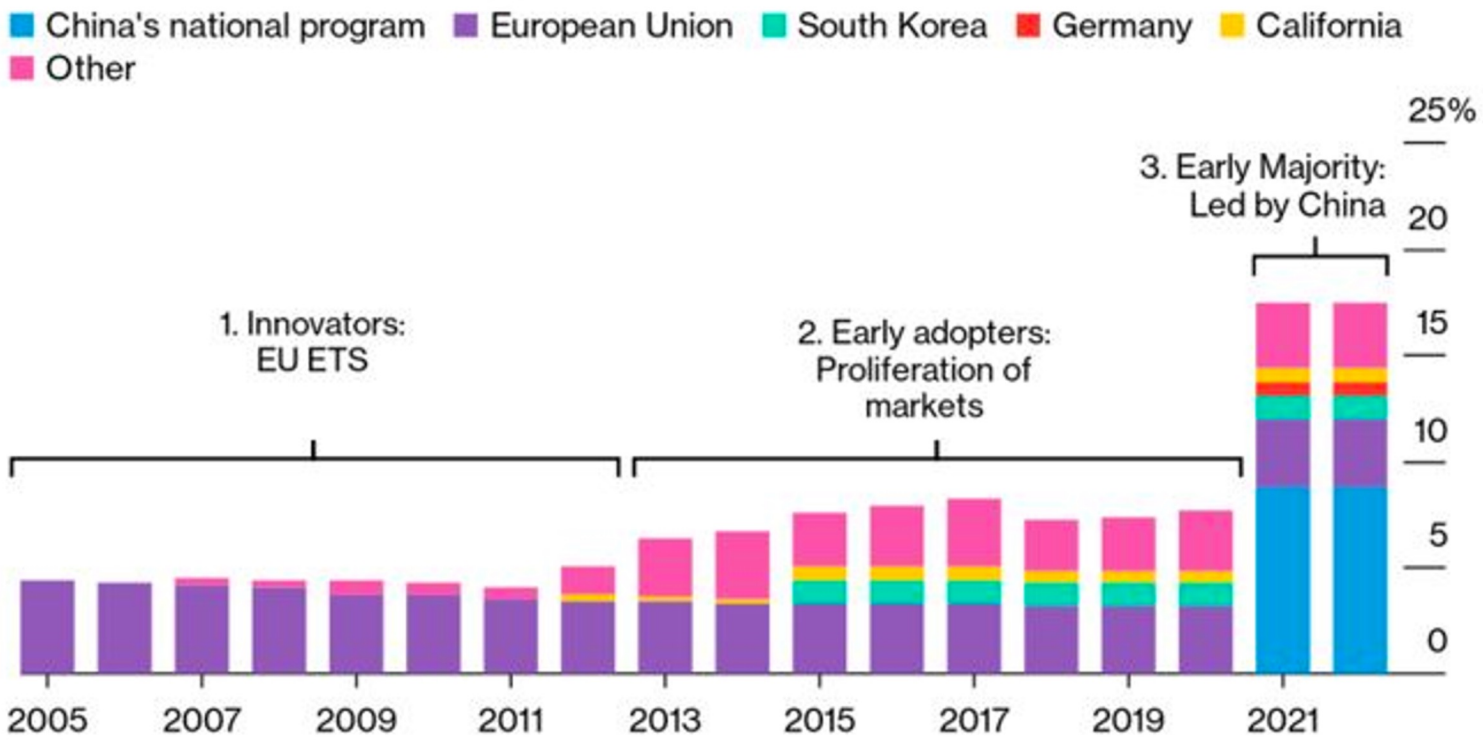
In addition to carbon trading, there is also climate adaptation

Types of markets



Expanded Reach

Almost a fifth of global emissions are now covered by a carbon market



Source: World Bank, BloombergNEF.
Note: 'EU ETS' refers to the EU Emissions Trading System.

BloombergNEF

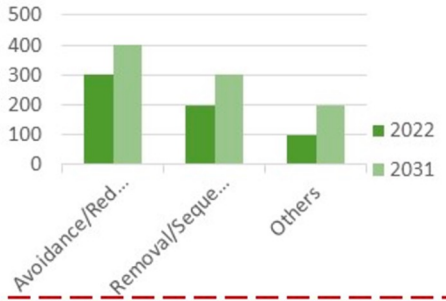
Global Carbon Credit Market Research Report

Asia Pacific

CAGR (2023-2031)

30.72%

By Type of Project :

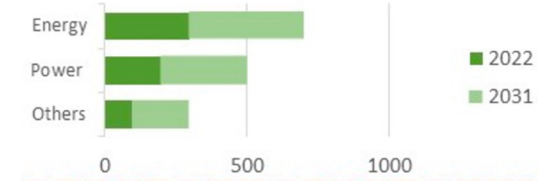


Market Size:

US$ 402.58 Bn (202)

By Type:

By Application:



Kev Plavers:

ClimeTrek

eki
STEERING THE PLANET TO NET ZERO

ClimatePartner

3Degrees

terrapass

CarbonBetter

US: +1 551 226 6109

Email: info@insightaceanalytic.com

INSIGHT ACE ANALYTIC

From project idea to sale

Project development

Validation & Verification

Registration, issuance & retirement

From project idea to sale

Project development

- Demonstration of measurable carbon reduction
- Implementation according to a standard:
  - Standard includes determining the amount of carbon
  - Standard includes safeguards, with add-on programs
- Write a Project Design Document (PDD)

From project idea to sale

Validation & Verification

- Auditing carbon emissions through a third party
- Transparency important
- Carbon monitoring and reporting via ISO
- Authentication for customer protection
- Independent rating agencies

From project idea to sale

Registration, issuance & retirement

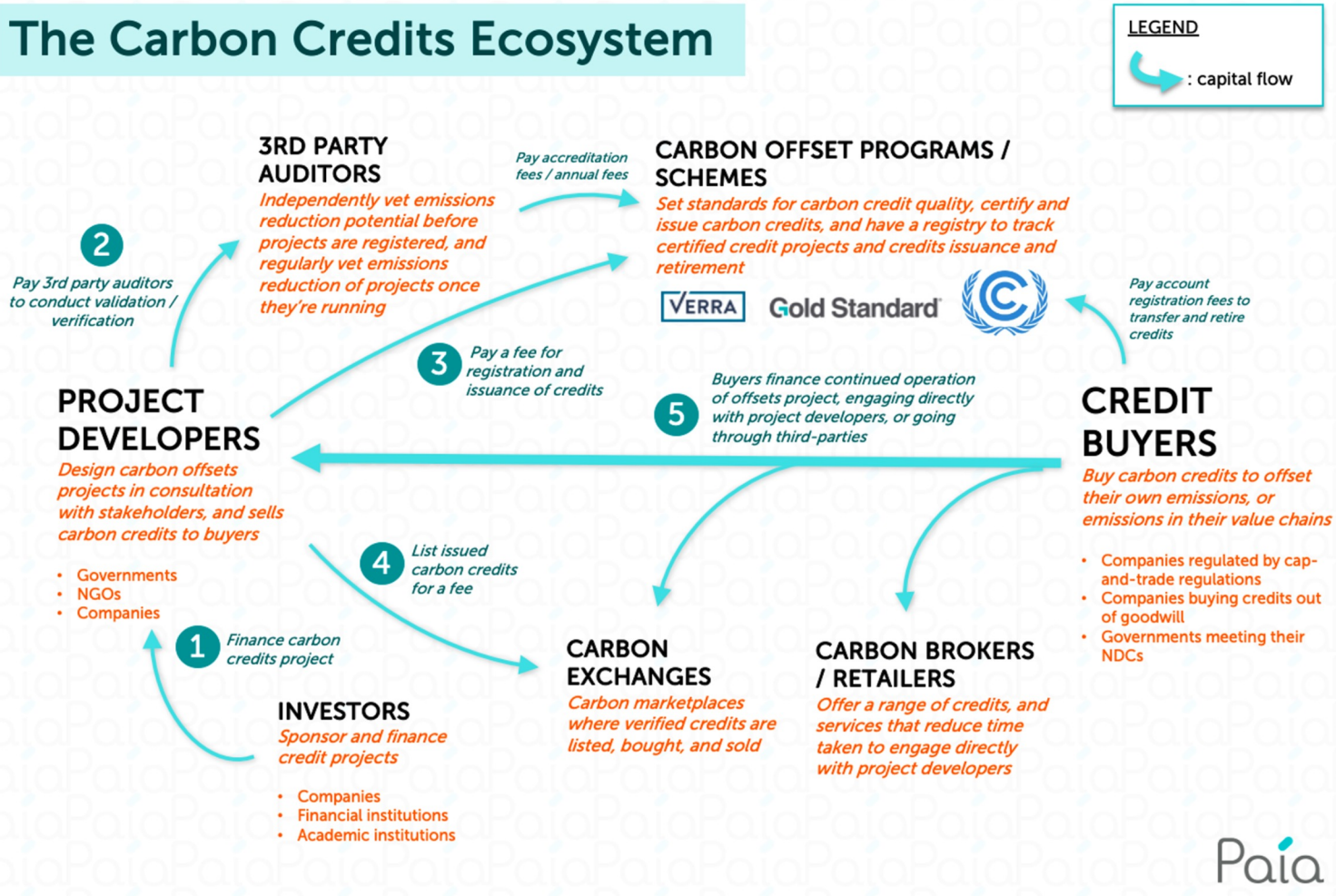
- Various programs to register under
- Owner, buyer and time of termination of credits are noted
- After registration, the credits are withdrawn from the market (booking)

VERRA Standards for a Sustainable Future

UNFCCC

Gold Standard

The Carbon Credits Ecosystem



Paia

A successfactor : ESG framework

Environmental

- Carbon release
- Landscape change
- Biodiversity
- Water
- Pollution

Social

- Human rights
- Stakeholder participation
- Benefit sharing system
- Link with sustainable development

Governmental

- National registration system
- Anti-corruption
- Legislation
- Technical system for monitoring
- Enforcement system

02.
Carbon Credits:
The Business Case

Bringing billions of farmers into Ecosystem Services Markets

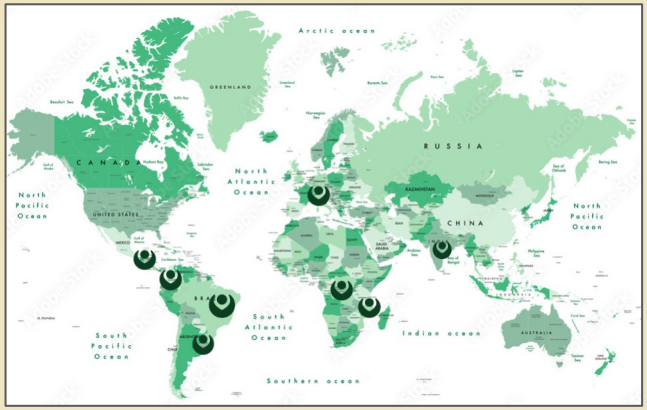
CARBON • BIODIVERSITY • WATER • FOREST MONITORING
SOCIO ECONOMICS • FARMING PRACTICES • INCOME
CROP YIELDS • SOIL HEALTH • SOCIAL IMPACT DATA

ReSeed P.B.C

ReSeed **partners with farmers** and companies around the world to collect verified ecosystem services data of the highest quality, social impact and transparency.

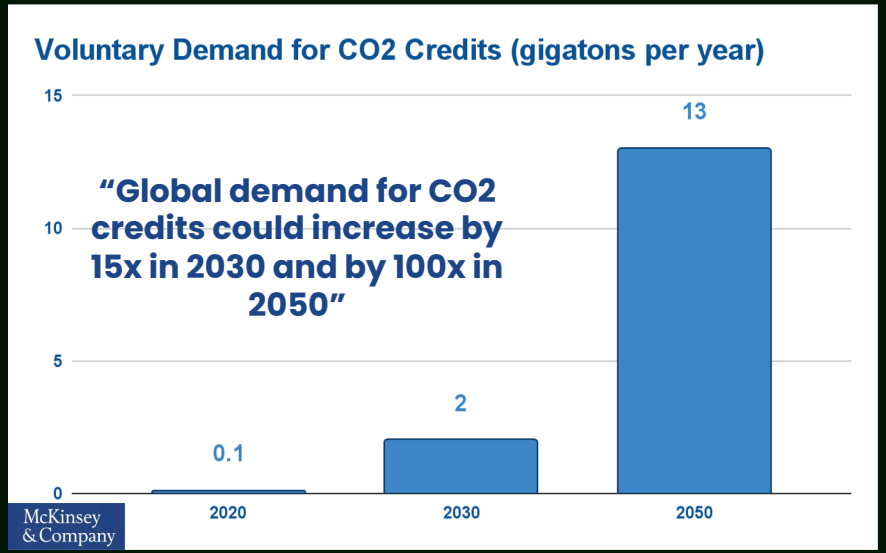
We turn that data into **nature-based, social impact carbon credits**, channeling climate finance for the transition to climate-smart and regenerative agriculture.

Farmers benefit from new revenue streams & improved crop yields.



Countries with ReSeed Projects

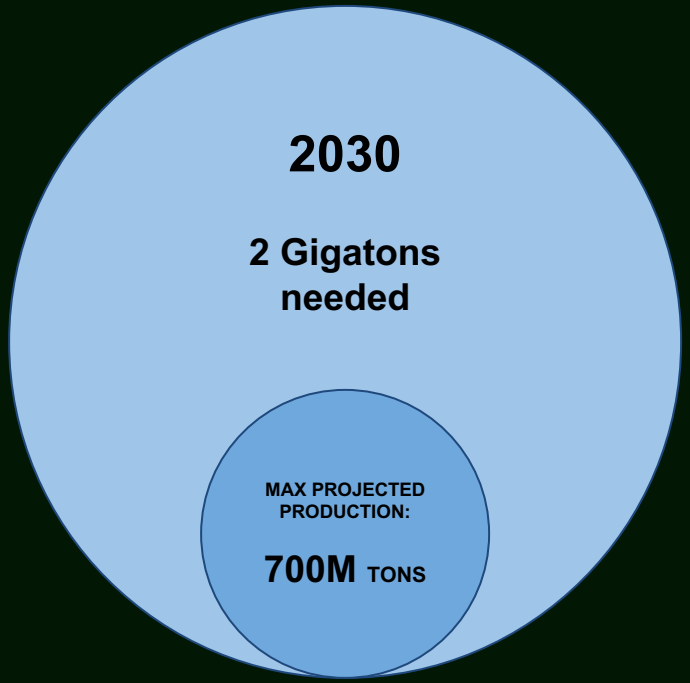
reseed



EXPONENTIALLY GROWING DEMAND

There is an increasing unmet demand from companies for trusted, high-quality carbon credits with associated ESG and supply chain data

reseed™



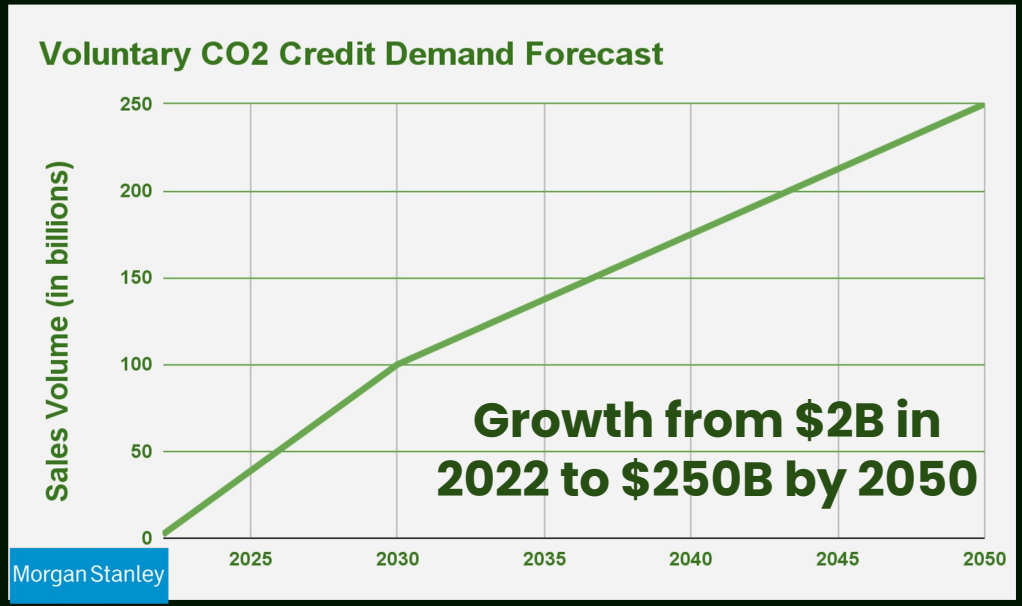
NOT ENOUGH SUPPLY

The Wall Street Journal projects that by 2030 only 35% of the 2 gigaton demand for CO2 credits will have been met.

A new approach is needed.

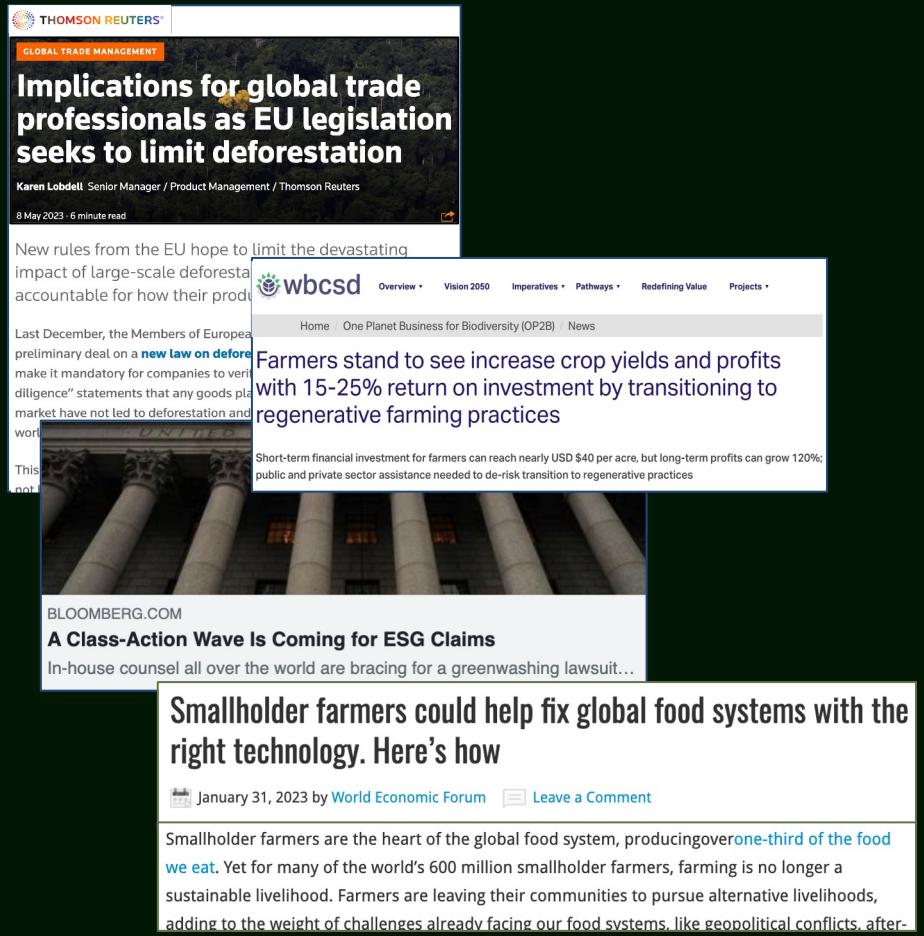
reseed™

Total Addressable Market



- Market size in 2023: $2 billion
- Market size in 2050: $250 billion
- Only 35% of the demand in 2030 can be met by current methods - Wall St. Journal
- We need to create a product that is a traceable, auditable and trustable solution and which scales to meet market demand.

reseed™



Market Demand Beyond Carbon

- Regulatory pressure on company ESG claims
  - EU: Deforestation-free certification
  - US: SEC Disclosure Rules
- Legal liability from public equities ESG claims
  - Class action shareholder lawsuits
  - Public backlash to "greenwashing"
- Farmer supply chain stabilization efforts by food, apparel and personal care products brands such as Cargill, Unilever, Nike & more
- Global trends recognizing the value of incentivizing regenerative farming practices

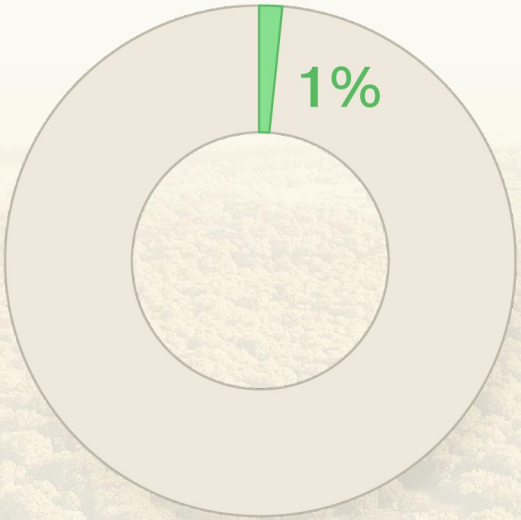
reseed™

Farmers are losing their farms around the world

ReSeed Farmer Partner, Sandra Braga 's farm vs neighboring farm that was lost

- In Brazil alone, 10% of smallholder farms have been lost in last decade
- 2 billion smallholder farmers globally, more than half women, who live at or below poverty line
- 600 million smallholder farms around the world grow 70% of the food consumed
- Payments for ecosystem services can help them improve their livelihoods and help stop climate change

reseed™



Only 1% of carbon credits on the market today are sourced from agricultural sources.

(Source: Berkeley Goldman School of Public Policy)

The barriers to recognizing climate services from smallholder farmers

- Much of the food industry is built on smallholder farmers whose land management and carbon actions are not currently recognized or remunerated.
- Why?
  - Current standards were not designed and focused to attend to the specific needs of smallholders farms.
  - At farmer level they are not economically viable due to the high transaction costs to access → no technical service associated, high certification cost, low applicability, non-recognition of the conservation service provided.
  - Payoff to farmers takes too long.
- The solution is the creation of a certified asset class of carbon reduction services - designed to be originated by smallholder farmers - which can be sold to customers to help meet internal ESG targets.

The market needs a Carbon Offset Program which is built around smallholder farmers.

There are three core components of a carbon offset program:

1. **Eligibility definitions and rules** for the design and early implementation phase of a project. They can include additionality and baseline methodologies, definitions of accepted project types, and procedures for validating project activities.
2. **Monitoring, reporting, verification, and certification rules** ensure that offset projects perform as they were predicted to during project design. Certification rules are used to confirm the actual GHG reductions that can enter the market once the project is implemented.
3. **Registration and enforcement systems** clarify ownership, enable trading of credits, track credit retirement, and ensure that credits are not double counted through sale to multiple buyers. These systems must include a registry with publicly available information to uniquely identify offset projects and a system to transparently track ownership and ownership transfers of credits.

What are Carbon Protocols & Standards?

The distinction between protocols, programs, standards, and registries can be confusing since the terms are loosely defined. For example, several offset programs call themselves “standards” (e.g., **Verified Carbon Standard**, **Gold Standard**) and “registries” (e.g., **American Carbon Registry**) though these are offset programs that have the same basic functions and components.

What is an Offset Project Protocol / Methodology?

Project Protocols / Methodologies cover GHG **accounting rules** and program requirements for **monitoring, reporting, verification, and certification**. In other words, they outline the rules and procedures to determine project eligibility, additionality, and baseline and project emissions for a particular project type. The terms “protocol” and “methodology” are often used interchangeably.

How does the SFSC fit in?

- ReSeed co-developed and uses the Small Farmer Social Carbon (SFSC) Protocol.
- The SFSC uses only carbon methodologies developed under the existing standards like VCS/Verra, Gold Standard and others recognized by ICROA.

What is necessary to become a recognized Standard?

Standards can include protocols/methodologies and guidance documents. These standards provide guidance and/or specifications on GHG quantification, monitoring, reporting. Stand-alone standards typically do not have an associated regulatory body that registers projects and also do not typically have registration and enforcement systems to track and ensure legal ownership of offset credits (e.g., ISO 14064-2). **The use of a standard alone is therefore not sufficient to guarantee the quality of offset credits.**

The Smallholder Farmers Social Carbon protocol is designed to be adopted as an **ICROA*** certified standard. There are four key criteria:

- a public consultation process
- a governing system
- an independent body to host the standard
- Pilot Projects and credit issuance.

*The International Carbon Reduction and Offsetting Accreditation (ICROA) is a leading industry Accreditation Programme committed to enhancing integrity in the voluntary carbon market in support of the Paris Agreement Goals.

The Smallholder Farmer Social Carbon (SFSC) Protocol:

A carbon protocol made for smallholder supply chains which builds on the LESSONS of the CARBON MARKET

1. RECOGNIZE the existing environmental services provided by producers as the starting point for onboarding farmers within supply chains.

2. PROVIDE the associated services and technologies tailored for the needs of smallholder farmers.
   (Make it easier and cheaper for the farmers to manage)

3. DECREASE transactional costs.
   (Through efficiency and scale gains)

4. INCREASE farmer engagement from the start & CREATE economic viability for farmer carbon projects.

Small Farmer Social Carbon (SFSC) Protocol

1) Farmer first - Farmers are the project proponents

2) ReSeed validates using the following methodologies:

AVOIDANCE CREDITS	REMOVAL CREDITS
Oriented towards measuring emissions by good management practices and continued carbon sink protection. Verra, Gold Standard, FAO and CDM certified methodologies.	Oriented towards measuring the removal of GHG by vegetation, crops and soils. Verra, Gold Standard, FAO and CDM certified methodologies.

3) Each project is independently verified by a verifier member of the International Accreditation Forum (IAF) including for ISO 14065.

SFSC Protocol Tools

- **Additionality Proof: Vulnerability Assessment Index:**
  - Modeled on the Sustainable Livelihood Approach (SLA) and Livelihood Vulnerability Index (LVI) by the IPCC and using data collection methods developed by the New Technologies and Traditional Communities Initiative;
- **Non-Permanence Risk Assessment Tool and Technical Reserve Fund - adapted for Smallholders Farmers**
- **Blockchain Technology for Transparency**
  - Blockchain technology operates as the Project Design Document (PDD) and contains primary verified data on the proposed project, the carbon data and management practices as well as the MRV data methods for quantifying the project baseline and verification and shall include all appropriate, relevant and required documentation and materials necessary for the validation of the proposed project.
  - Key to reduce barriers to entry, lower costs while increasing accuracy and precision and scale.
- **Performance-based accounting methodology with EXTERNAL annual verifications**
- **Marketplace solution to support the ReSeed carbon credits sales.**

The SFSC Protocol brings together the best tools of Verra, CDM and Gold Standard...

	ReSeed	Verra	Gold Standard
Carbon Pool	Aboveground biomass, belowground biomass, litter deadwood and SOIL	Aboveground biomass, belowground biomass, litter deadwood and SOIL	Aboveground biomass, belowground biomass, litter deadwood and SOIL
Methodologies	High Rigor- Conservatism and Performance based - Builds on Verra Carbon Quantification Methodologies. GS also recognized. but improved with continuous ground data	High Rigor	High Rigor
3rd Party Verification	Yes	Yes	Yes
Safeguards	Cancun Safeguards & FAO Concept of decent rural employment	Yes	Yes
Additionality	IPCC Vulnerability Assessment index (adapted to smallholder farm reality) as well as CDM Tool	High - based on CDM Tools	High - Based on CDM Tools
Non Permanence Risk Tool and technical reserve fund	Adapted from GD tool focus on smallholder farm main issue - assess the probability of the risk and the consequence of the risk → natural, internal, external risk.	Yes	Yes

The SFSC Protocol brings together the best tools of Verra, CDM and Gold Standard and applies them to the reality of smallholder farmers.

	ReSeed	Verra	Gold Standard
Farmer Payments System	**Included in Business Model**	There is no associated service or tool offered	There is no associated service or tool offered
Transaction costs per farmer	**Low**	High	High
Applicability for Smallholder farmers globally	**Protocol is designed to be used globally**	The standard can be applied globally, but the transition costs involved become a barrier to be implemented and scalability.	The standard can be applied globally, but the transition costs involved become a barrier to be implemented and scalability.
On-the-ground technical Support	**Included in Business Model**	There is no associated service or tool offered	There is no associated service or tool offered
Ease of Scalability	**Continuous aggregation of farmers through the year in qualified regions**	Limited scalability	Limited scalability

The Solution:

Implement the Smallholder Farmer Social Carbon (SFSC) Protocol to meet climate and other ESG goals while providing farmers with needed income

The SFSC combines two critical *interdependent* goals for stopping climate change:

1. **STOP NEW EMISSIONS** by rewarding the stewards of the world's land. Assist them in protecting the carbon sinks they manage (and for enhancing global food security, biodiversity, access to clean water, and the mitigation of global inequality).
2. **REMOVE OUR OLD EMISSIONS** by continually quantifying the improvements farmers make to their soil by measuring the additional carbon and providing commensurate addition payments for Removal credits. This will incentivize farmers to work to drawdown additional carbon, leading to increasing payments and farmer loyalty.

Paying farmers in a timely manner to actively partner in achieving these goals ensures ongoing performance and positive socio-economic outcomes.

Removal credits
ARR and VM 042 Reforestation and crop practices - soil and new vegetation carbon pools

Avoidance Credits - VM 007 Existing carbon stocks from vegetation carbon pools

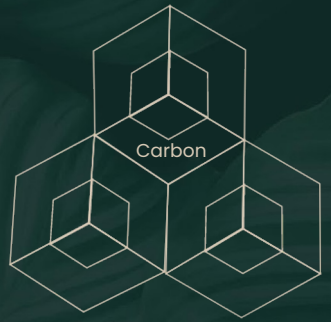
reseed

How ReSeed Works

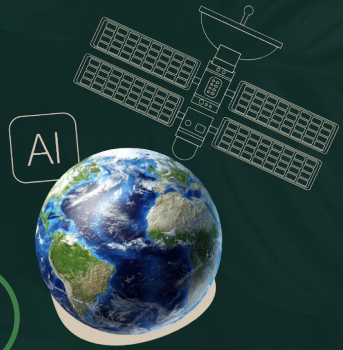
Blockchain-based social impact carbon credits that provide transparency, immutable data and geographic validation

1

Farmer enters data through mobile app



SOCIAL AND ENVIRONMENTAL BENEFITS



2

AI Verification of carbon & calculation via satellite imagery

3

Carbon Credits are sold through existing marketplaces

4

Farmers get paid when credits are sold

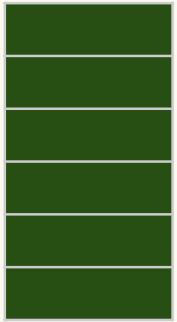
Required Associated Services

- **Technical Team and Local Partner** —> support the project proponent to obtain necessary information and apply the tools associated to the ReSEED Carbon Project Lifetime.
- **Legal Advice:** —> support the project proponent with the documents necessary to proof ownership , due diligence, carbon credits selling agreements.
- **On-the-Ground Technical Support to Farmers** —> financed through carbon credits sales as part of the revenue sharing model.
- **Continuous Monitoring** —> data collection on farmer land use as part of the ReSeed package.
- **Continuous Measurement** —> Insights on Social impacts against SDGs and company ESG targets.
- **Risk Analytics** —> the incorporated Vulnerability Assessment Index allows the company to analyze where are the vulnerabilities in its supply chains as well as make comparison between regions, anticipate risks and make strategic decisions on where investment is needed.

Farmer Blended income model:
Example: Carbon income from Cacau model

Carbon income increases farmer revenue by 20-60% per year and funds investment pools for increased farmer yields. The result: higher quality cacau, farmer loyalty and resilience.

1) Immediate payment upfront that is larger than other programs.
2) As their carbon increases from investment in carbon removal actions, they get additional funds from removal credits.
3) As they improve their land their product yield and quality go up.



Average Annual Carbon income per hectare of Shaded Cacau

03.
Panel discussion:
The Future of Carbon Credits in Suriname

Thank you.

gwen@greengrowthsuriname.org

vasco@reseed.farm

www.reseed.farm