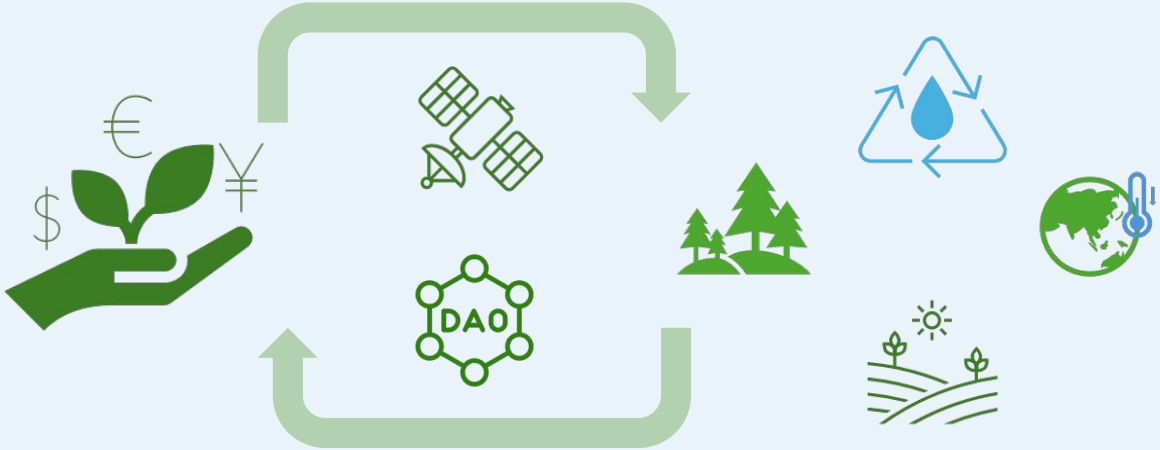
Proof of Change

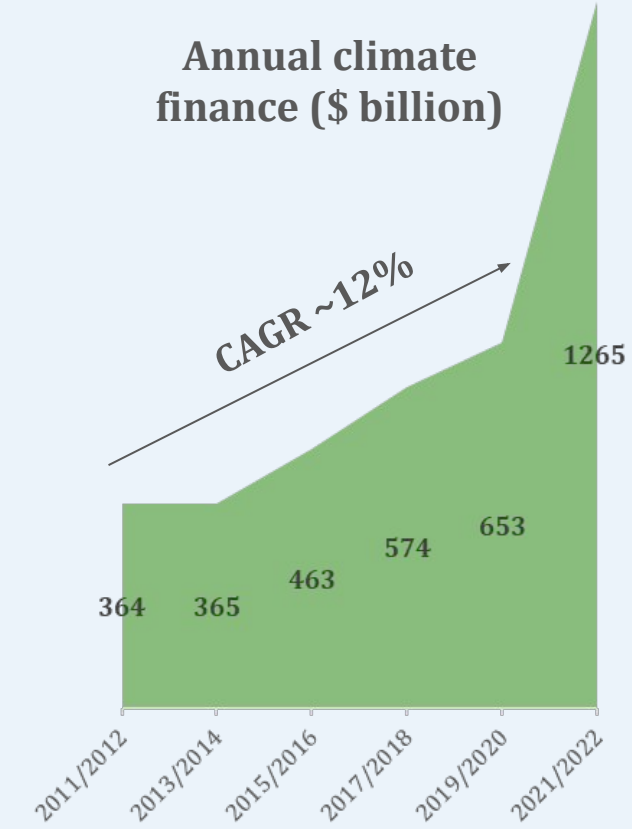
Proof of Change links climate financing to environmental impact



Transforming the linkage between climate funding and environmental impact

Proof of change is a onchain GIS infrastructure that cryptographically verifies environmental impact claims through a combination of satellite imagery analysis, trusted execution environments, and blockchain attestations, enabling transparent and reliable measurement of real-world ecological improvements.

Disconnect between climate funding and environmental impact



Disparity between financing flows for climate change and environmental reality

2023 was the warmest recorded year (1.45 ± 0.12 °C above pre-industrial avg.)

Greenhouse gas concentration reached record highs in 2022

Average sea level rise reached record high, doubling since 1993-2002

Extreme weather (extreme heat, flooding, wildfires) continues to lead to severe impacts

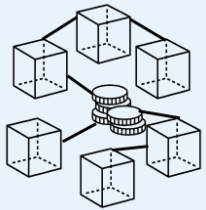
Sources: (1) State of the Global Climate 2023 - World Meteorological Organization; (2) Global Landscape of Climate Finance 2023 - Climate Policy Initiative

Proof of Change scales climate funding by establishing a transparent verifiable link to environmental outcomes

Traditional public funding is bottlenecked by slow and manual processes; our TEE + MPC powered platform transforms this through automated, cryptographically secure project funding, tracking, and validation

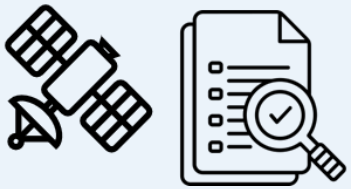
Multi-layer Security & Validation

Hybrid TEE + MPC validation system for trustless verification through multi-party consensus, storing blockchain attestations results & transparent IPFS data



Automated Impact-to-Reward Pipeline

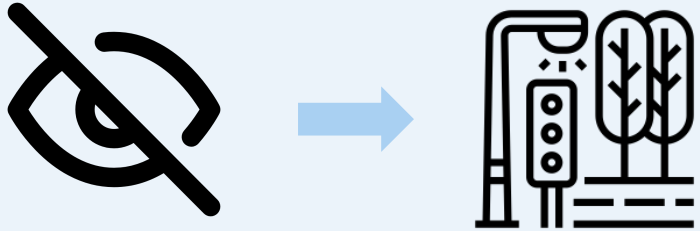
SUAVE TEE to analyze satellite imagery with ML change detection, generating cryptographic proofs of environmental impact triggering automated rewards from verified outcomes



Monitoring, Reporting, and Verification

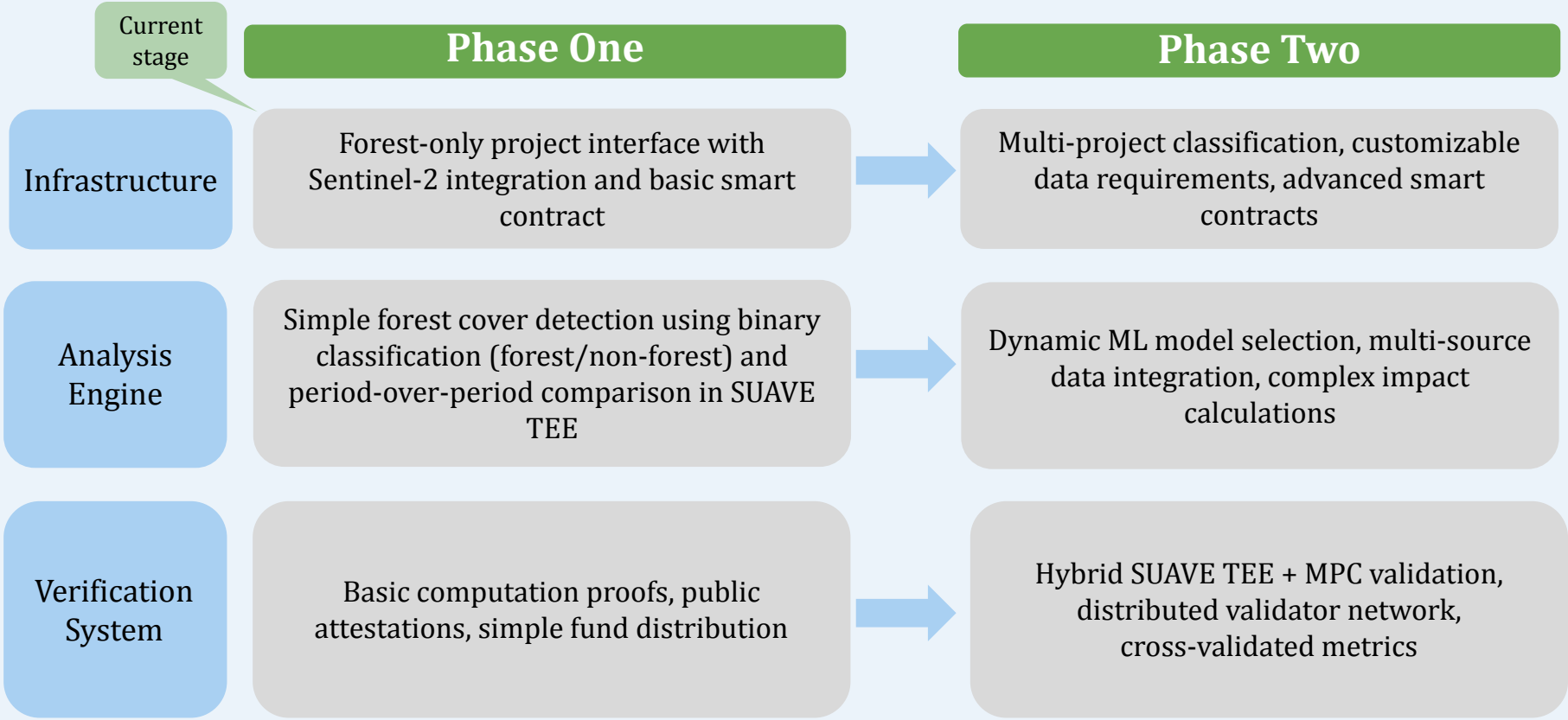
Real-time satellite monitoring and verified impact tracking provides an immutable audit trail of environmental progress, enabling data-driven climate finance decisions and investment optimization

Proof of Change makes environmental data a public good



Challenges	Why it Matters	Our Vision	Impact
Data: Often siloed, expensive, and inaccessible	**Accountability**: Verifies environmental commitments	**Accessibility**: Geospatial data freely accessible globally	**Evidence-based Action**: Foundations for concrete environmental actions
Opaque Processes: Internal environmental processes are not transparent	**Urgency**: Quickens response to environmental challenges	**Verifiability**: Transparently verified via cryptographic proofs	**Equal Access**: Verification tools available to all
Transparency: Lack of it hinders effective climate action	**Credibility**: Fosters trust through transparency	**Standardization**: Ready for global adoption	**Global Collaboration**: Enhances worldwide climate solutions
Access Barriers: Significant barriers in developing regions	**Demystification**: Clarifies and quantifies environmental impact	**Democracy**: Democratically governed	**Accelerated Progress**: Speeds up environmental improvements

Proof of Change's Roadmap



Proof Of Change's current MVP workflow is simple and focused

Project Registration

A user draws a polygon around their forest area on a satellite map via Astral's Logbook, enters basic project details (name and dates), and receives a unique project ID and attestation UID that confirms their registration

Data Processing & Analysis

The system analyzes forest cover changes by comparing the baseline satellite imagery from registration with current imagery of the same area, calculating metrics like total area and forest coverage while showing the user real-time processing status.

Verification

The system generates and verifies a proof of the forest analysis, then shows users a simple dashboard with their verification status and before/after comparison of forest cover changes.

Impact Rewards

Upon verification, a public attestation is created that records the project's location, forest area, cover change percentage, and verification date, triggering the automatic distribution of funds to the project's wallet address.

Phase two of Proof Of Change's workflow will be optimized with

Project Registration

A user selects their environmental impact project type (reforestation, wetland restoration, coral reef protection, etc.), draws the project boundary on a map, inputs project-specific metrics and documentation, and receives a unique project ID and attestation that confirms their registration.

Data Processing & Analysis

The system automatically selects and runs appropriate ML models based on the project type, analyzing changes by comparing historical and current data from multiple satellite sources while processing project-specific environmental indicators, with users monitoring real-time analysis status

Verification

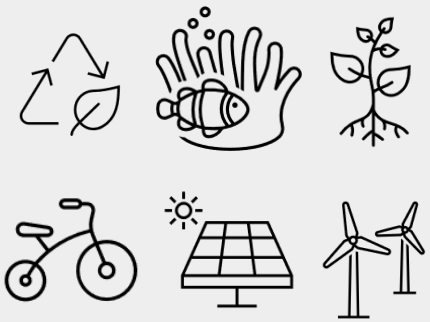
The hybrid system processes environmental impact data through SUAVE TEE, distributes the computation proof to multiple validators for MPC consensus, and displays a comprehensive dashboard showing impact metrics specific to the project type with detailed before/after comparisons.

Impact Rewards

Upon verification through both TEE and MPC consensus, a public attestation is created documenting project-specific impact metrics and verification data, triggering the automatic distribution of funds based on the type and scale of environmental impact achieved.

Proof of Change has use cases for the public sector with potential expansion to the private sector

Types of Projects



Environmental projects as such as reforestation, ocean restoration, biodiversity restoration, soil regeneration, renewable energy, low carbon transportation etc.

Product Users

Public sector

Government bodies (international, national, local) and public finance institutions (development finance institutions) with climate goals & budgets

Environmental project developers

Organizations (Nonprofits, social enterprises, local communities initiatives) implementing environmental projects

Private sector companies

Companies with regulatory mandate to decarbonize their businesses and supply chains

For example Proof of Change can offer solutions to the Green Climate Fund's challenges

GCF Overview

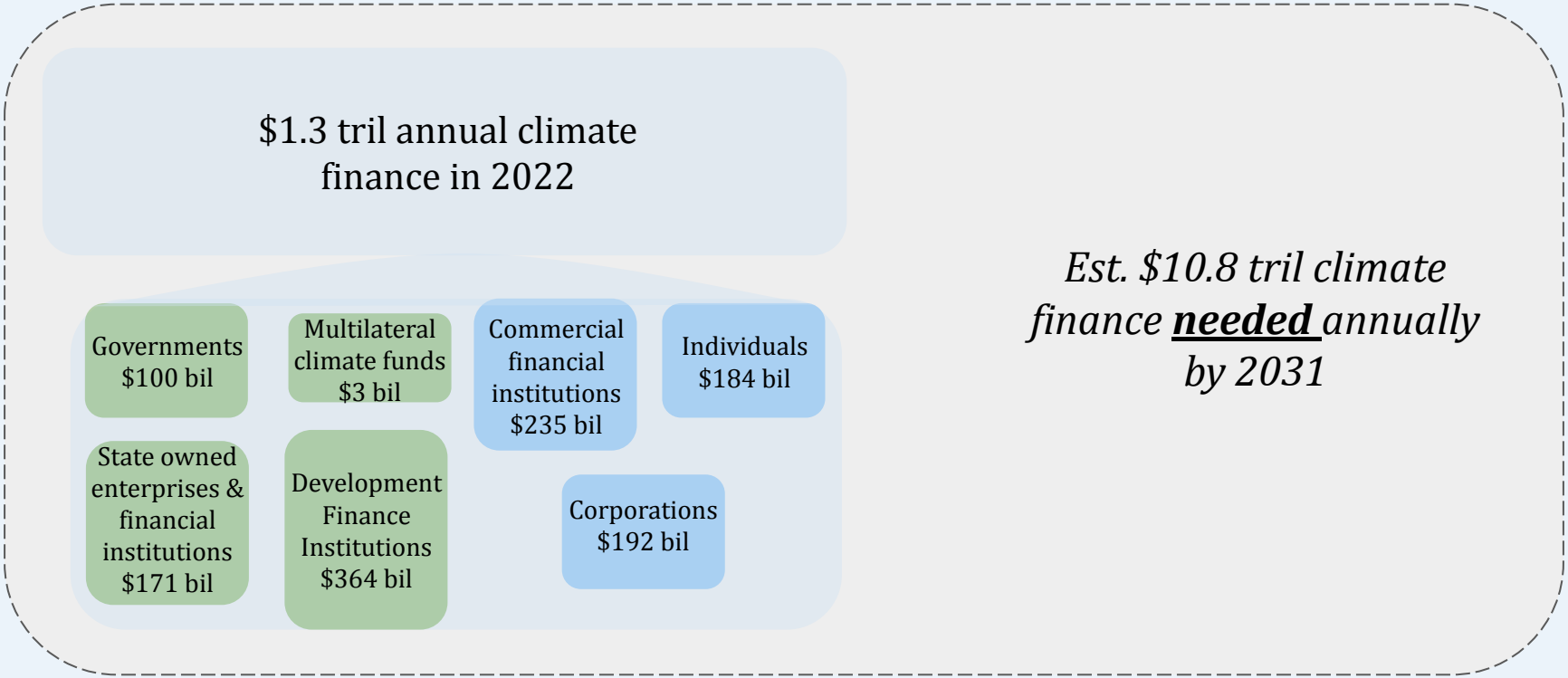
Green Climate Fund was developed by United Nations to accelerate transformative climate action in developing countries to reach low emissions and climate resiliency

- $16 billion committed to projects
- 286 projects

	Verification Cost & Efficiency	Data Transparency	Project Monitoring	Fund Distribution Efficiency
Green Climate Fund Challenges	Traditional MRV (Monitoring, Reporting, Verification) processes are expensive and time-consuming	Lack of transparent, verifiable data about project outcomes and impact	Difficulty in continuously monitoring project progress and maintaining long-term accountability	Complex and slow processes for distributing funds based on project outcomes
Proof of Change Solutions	Automated verification of satellite imagery analysis through SUAVE TEE significantly reduces costs and speeds up verification timelines	Cryptographic proofs and EAS attestations create immutable records of environmental impact that all stakeholders can trust	Real-time satellite monitoring and automated analysis provides ongoing verification of project status and impact	Smart contracts enable automated, results-based funding distribution when verification criteria are met

Source: (1) Second Performance Review of the Green Climate Fund - Green Climate Fund

Climate finance levels will only be increasing over time



As climate financing needs grow, the link to environmental impact is essential

Sources: (1) Global Landscape of Climate Finance 2023 - Climate Policy Initiative

Team - Fully Women Founded Project

Jess

Solidity developer focused on using blockchain to tackle economic inequalities and coordination challenges, with expertise in crypto-economics, game theory, and geospatial analysis. Former Apple Maps engineer with a background in GIS and spatial data analysis.

Vivian

Finance professional with 7+ years in banking, investment, and consulting in traditional and sustainable finance. Experience includes investment banking at JPMorgan, debt investing at PennantPark, and sustainable finance consulting at ISF Advisors

Founding team established after participating in SheFi Web3 bootcamp together in summer 2024 driven by shared vision for real world impact through blockchain innovation