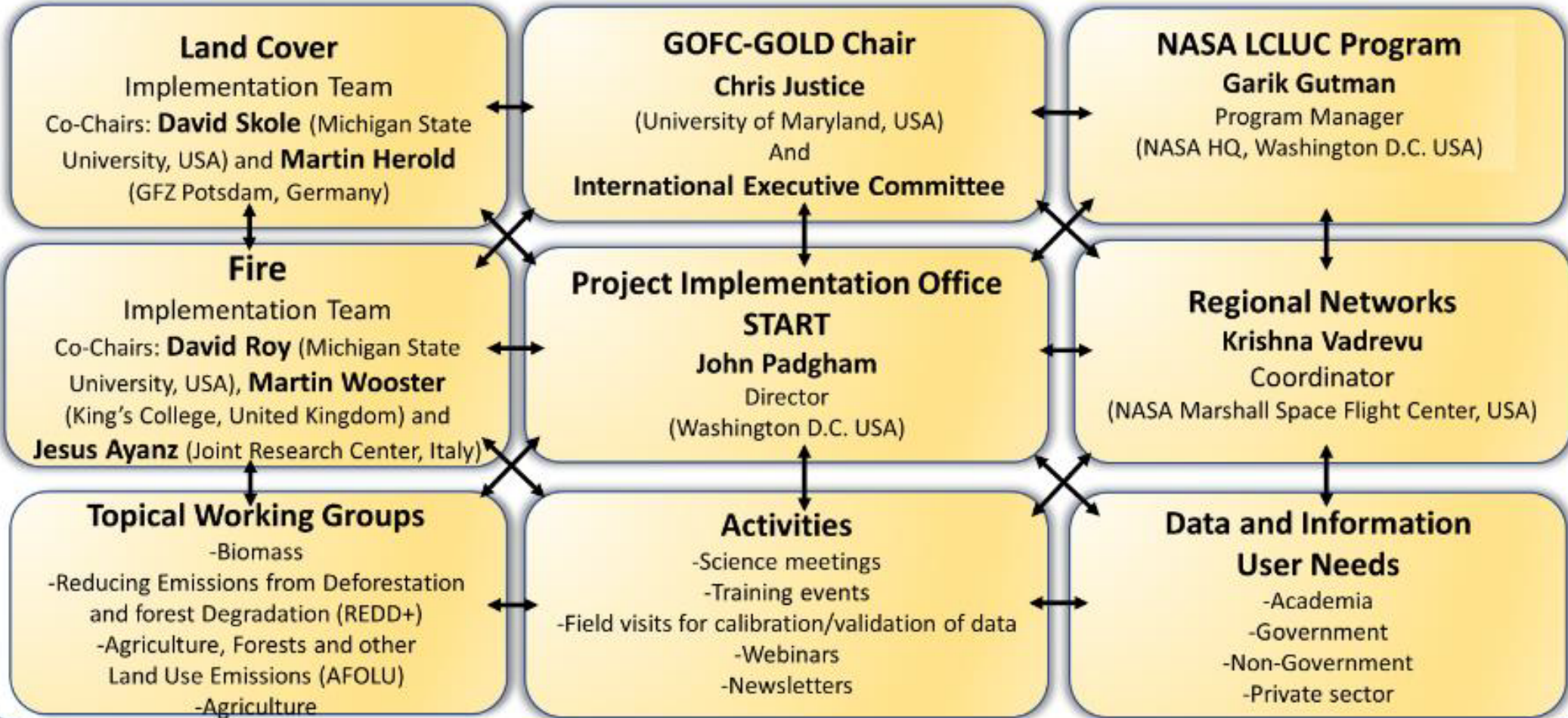


GOFC GOLD
Land Implementation Team

Role of the LT

- The primary function of the Land Cover Implementation Team (LC-IT) is to develop and evaluate methods, tools and products for land cover measurements and monitoring using space-borne and in-situ observations.
- The LC-IT assesses current needs and deficiencies for global and regional monitoring to support Global Change research, national and regional forest inventories and international policy (i.e. through working with the UN Conventions).
- The LC-IT cooperates closely with other GOF-C-GOLD implementation teams and regional networks worldwide.

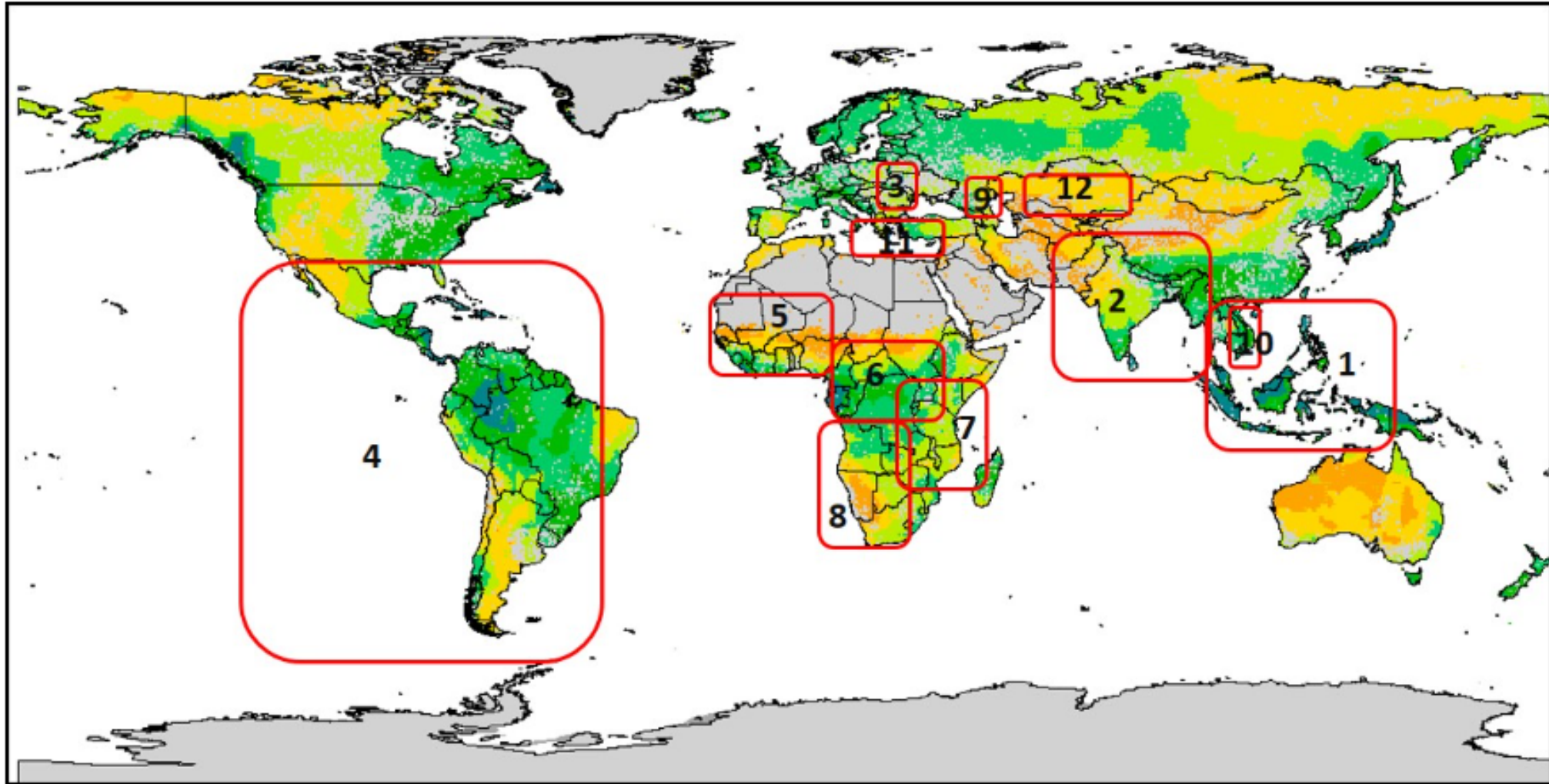
Global Observations of Forest Cover and Land Use Dynamics (GOFC-GOLD)



Regional Networks

- GFC GOLD has two principal components: 1) a platform for providing scientific input, requirements setting, consultation and vetting of EO products and 2) capacity building around the world for use of EO data products and their validation.
- Especially the last involves regional research and application networks as a coordinating mechanism for national and regional EO applications.
- To achieve its goals GOFC/GOLD has developed a number of regional networks of data providers, data brokers and data users. These networks of resource managers and scientists provide the key to sustained capability for improving the observing systems and ensuring that the data are being used effectively.
- GOFC/GOLD regional networks are strengthened through a series of regional workshops. These regional network workshops engage the user community to address regional concerns and issues, provide a strong voice for regional needs and foster lateral transfer of technology and methods within and between regions.

GOFC Regional Networks



International Meeting on Air Pollution in Asia – Inventories, Monitoring and Mitigation



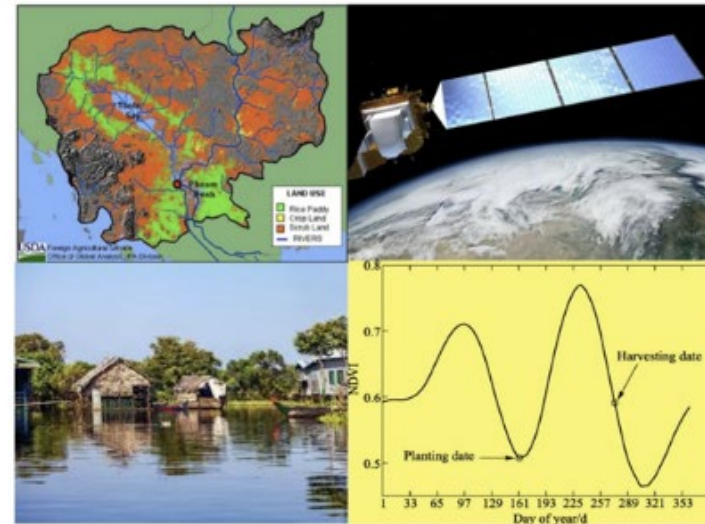
Hanoi, Vietnam

Meeting Date:
02/01/2023 to 02/03/2023

Meeting Report:

[Air_Pollution_meeting_publication_](#)

International Workshop On Land Cover/Land Use Changes, Forestry, and Agriculture in South/Southeast Asia



Phnom Penh, Cambodia

Meeting Date:
08/08/2022 to 08/10/2022

Venue:
Royal University of Agriculture,
Auditorium hall, Dongkor
District, Phnom Penh, Cambodia

Agenda Title:
Meeting Agenda

Agenda File:
[Cambodia_meeting_Agenda.pdf](#)

Meeting Photos Link:
Meeting Photos



Report of the GOF-C-GOLD West African Regional Network (WARN) Virtual Workshop on Remote Sensing Based Monitoring of Land Surface Dynamics in West Africa

Online
24-25 March 2021

An International, Regional Meeting on Land-Cover/Land-Use Changes, Water-Energy-Food Security, and Sustainability in Central Asia and Caucasus

16-18th September 2019, Nur Sultan, Kazakhstan

Krishna Vadrevu^{*}, Chris Justice[§] and Garik Gutman[^]

^{*}NASA Marshall Space Flight Center, USA

[§]University of Maryland College Park, USA

[^]NASA Head Quarters, USA

Meeting Summary

Several countries in Central Asia are undergoing rapid land use/cover changes due to industrial development. In addition, agriculture and water resources are highly impacted due to land degradation and climate change in the region. Agriculture in these countries is highly dependent on the irrigated water. There are two defining characteristics of water in Central Asia; one is the endorheic nature of the region - Central Asia's rivers either enter terminal lakes that lack outlets or they simply disappear before reaching any larger water body. Evaporation and infiltration

exceed precipitation in the arid plains. This leads to the second defining characteristic: the region's unusual dependence on precipitation that falls at high elevations. Some of this water is retained in glaciers, but much



of it flows down to the arid, more heavily populated lower elevations. Climate change, glacial retreat, dam construction, water use for irrigation, and infrastructure development have significantly altered hydrological processes in the region, imposing a major threat to water-energy-food (WEF) security. The additional character was the dissolution of the Soviet Union in

Research Coordination with GOFI

- Works to address methodological and technical issues that are obstacles to progress in developing countries' forest monitoring and GHG accounting efforts.
- Provides a forum for efficient and effective coordination of existing and planned science and research activities in the forest monitoring sector.



Research and Development Coordination



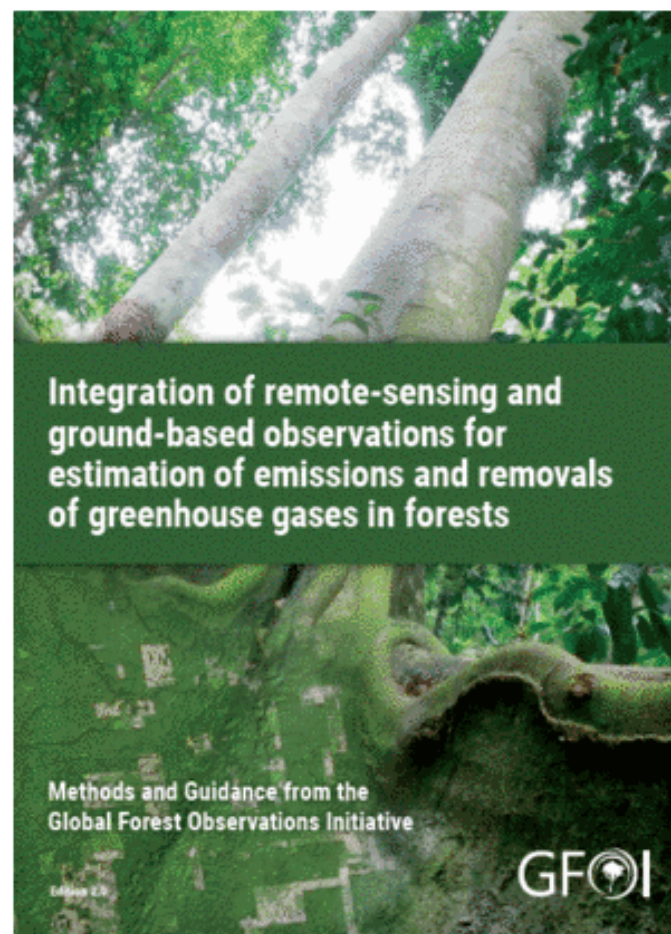
Methods and Guidance Documentation

The GFOI's Methods and Guidance Documentation (MGD) component develops and disseminates IPCC-compliant methods and guidance materials for REDD+ Measurement, Reporting, and Verification (MRV). The materials provide a user-friendly approach to guide countries through the complex process of needs assessment, system design and implementation. It complements GFOI partners' own guidance materials and presents these within the context of a complete national MRV framework for REDD+.

The MGD materials are presented in the online platform REDDcompass which provides a structured approach for developing countries to follow in designing and developing complete national forest monitoring systems and associated MRV procedures. The specific activities of the component include:

- Support the MGD Advisory Group in delivering its roles and responsibilities aimed at ensuring the MGD continues to align with the priorities of developing countries and provides guidance on operational methods and approaches in support of GFOI activities;
- Ensure that MGD remains consistent with the IPCC guidance and guidelines and any decisions related to REDD+ taken by the UNFCCC. Co-ordinate the revision and publication of new editions to the MGD and interim guidance published as 'Rapid Response Modules';
- Maintain the REDDcompass platform as a neutral framework to support countries in systematically designing and developing complete NFMS for REDD+ MRV that meet their own needs.
- Support GFOI components and partners in the communication and use of MGD guidance through the REDDcompass platform; and
- Communicate MGD activities to the GFOI Leads, Components and the broader network.

The work of the MGD Component is conducted through the collaborative efforts of authors provided by GFOI partners and is guided by the MGD Advisory Group. It is led by [Australia](#) who provide the component management functions, in close collaboration with other GFOI partners.



Search

SOURCEBOOK

COP 22 version 1



A sourcebook of methods and procedures for monitoring and reporting anthropogenic greenhouse gas emissions and removals associated with deforestation, gains and losses of carbon stocks in forests remaining forests, and forestation

GOFC-GOLD 
Global Observation of Forest and Land Cover Dynamics

A Look Around the Corner

- Society's engagement with the science and technical community about climate change measurement and monitoring has been changing.
- With that, how the Earth Observation science community interacts with stakeholders is changing.
- Old way: EO supports basic policy needs of governments and “policy makers who need EO to make decisions”
- New way: key engagement with new communities and institutions who need EO to content with demands for sustainability and climate change:
 - Climate finance and financial institutions
 - Climate and sustainability investment banks and organizations
 - Climate risk assessment by firms and investors
 - Climate disclosure, voluntary and regulatory (cf. SEC rules)
 - Supply chains assurance and insetting management operations (EUDR)
 - Philanthropic donor communities
 - Carbon financial markets



“From Carbon Literacy to Carbon
Intelligence on Nature Based Solutions:

Unlocking NBS finance with new data,
measurements, and technology”

A workshop with HSBC, Lloyds, Bank of
America, JP Morgan, Goldman Sachs, BNP
Paribas, Rabobank, Barclays...



BeZero

Unlocking NBS finance with new data, measurements, and technology

March 2024

Ronan Carr
Lead Analytical Officer
BeZero Carbon





The BeZero Carbon Rating assesses carbon efficacy across three key factors

Additionality

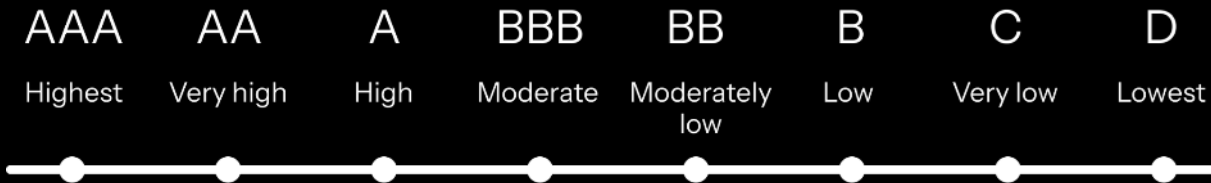
This includes financial feasibility, barriers to implementation, commonality of activities and the role of the policy environment.

Carbon accounting

This includes: the project's GHG emission flows, the baseline scenario and any leakage considerations.

Non-permanence

This includes adjustments for non-permanence such as allocations to a risk buffer pool.

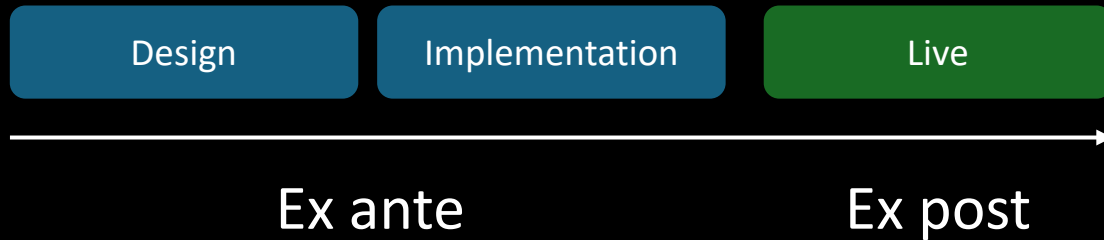


What is the likelihood a credit achieves 1 tonne of CO₂e?
Risk-based approach to quality

■ Why ratings?

400 projects
60 countries
35 sub-sectors

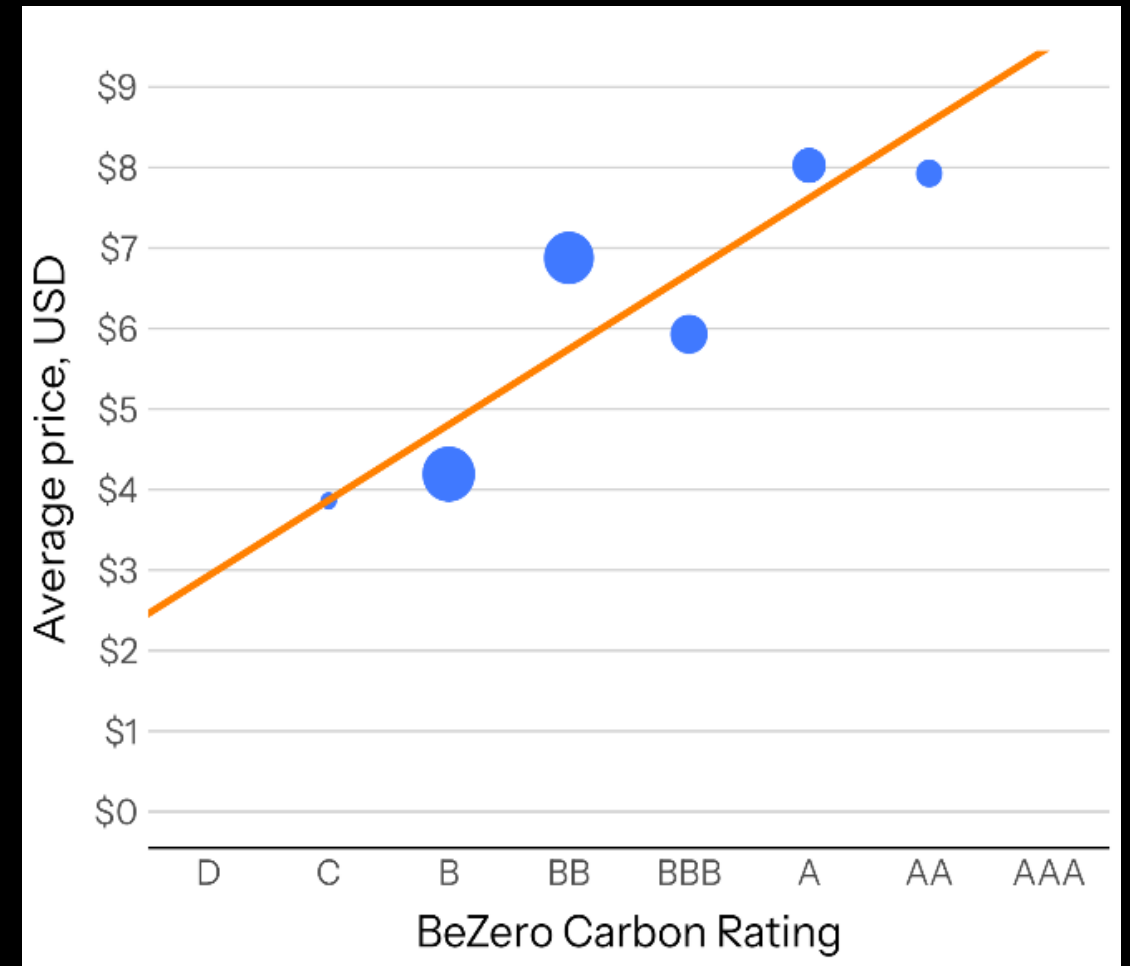
Ratings at any project stage



Carbon markets #1 risk metric

- 25 marketplaces & exchanges
- >500 platform users
- >4,000 subscribers to our publicly available headline ratings

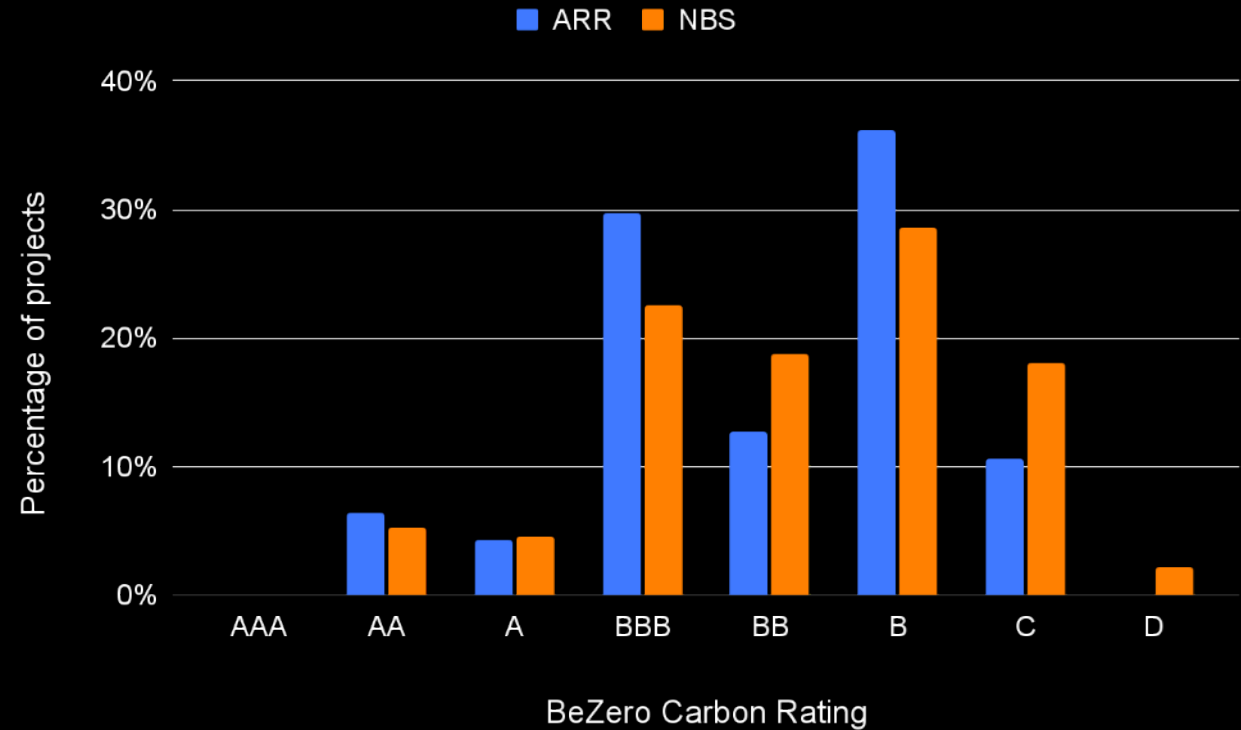
Market impact



Ratings in NbS range widely

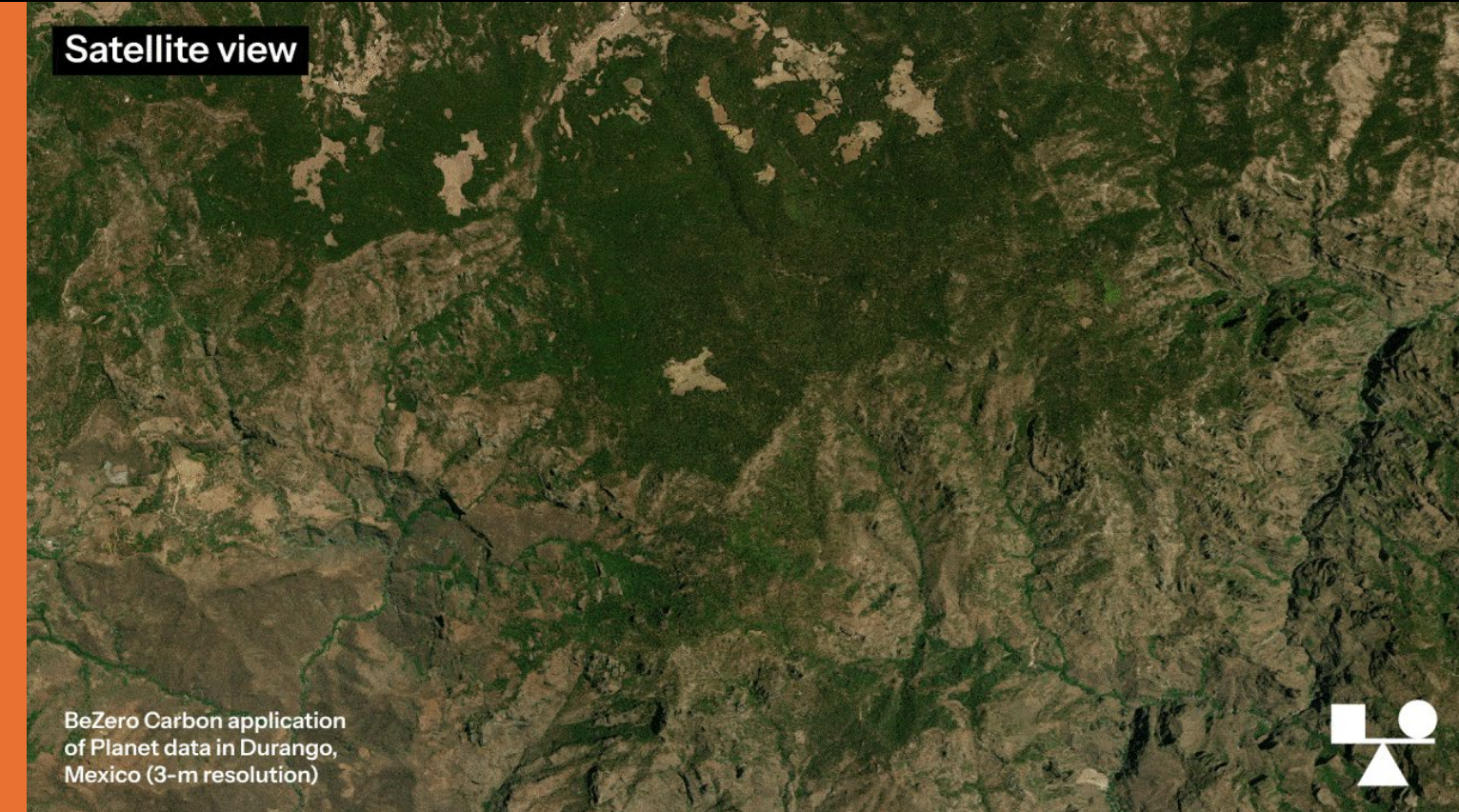
- NBS ratings span the full breadth of the BeZero rating scale
- Nature based removals are not necessarily higher quality - wide range of ARR ratings
- Project specific risk matters
- Average ratings in Peatlands and Mangroves are higher

Distribution of BeZero Carbon ratings in NBS vs Afforestation





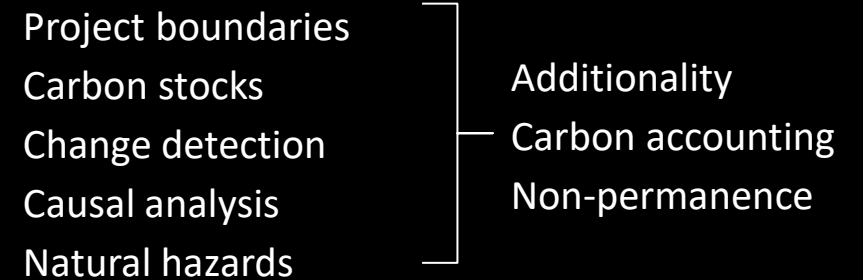
Ratings powered by in-house proprietary geospatial capabilities



>30

experts in remote sensing, forest ecology, peatlands and blue carbon, ecosystem disturbance, statistics, machine learning and artificial intelligence.

Best in class, near real time data and analysis for nature based projects



Challenges and opportunities

- There is no perfect carbon map
 - Global collaborations providing >5,000 carbon inventory plots
 - Understand uncertainties in satellite-derived biomass, project carbon stocks, and biodiversity
- Data & models complement not replace expert judgement
 - Climate and Earth sciences
 - On the ground experience
 - Financial markets research
 - Environmental policy
- Project performance monitoring
 - Partnership with Planet using high resolution, near real-time monitoring
 - High resolution, near real-time monitoring of tree height, canopy cover, aboveground carbon stocks



Ratings powered by unique datasets & research partnerships

Space agencies

- Spaceborne LiDAR, radar and multispectral measurements
- Medium to coarse resolution with repeat global coverage
- Supports large scale monitoring and longer time periods



Commercial providers

- Multispectral measurements at higher spatial resolution
- Enables tree crown segmentation for monitoring of low canopy density, planting and degradation



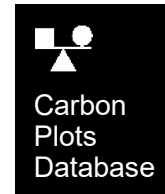
Airborne LiDAR

- Dense point clouds for structural canopy measurement
- Calibration and validation of canopy height, cover and biomass



In situ measurement

- Vegetation composition and structure, physical and chemical soil properties, eDNA
- For understanding uncertainties in satellite-derived biomass, project carbon stocks, and biodiversity



Which is Correct? Need for High Integrity Ratings and Evaluation

Corrected 31 January 2024. See full text.

RESEARCH

CARBON OFFSETS

Action needed to make carbon offsets from forest conservation work for climate change mitigation

Thales A. P. West^{1,2*}, Sven Wunder^{3,4}, Erin O. Sills⁵, Jan Börner^{6,7}, Sami W. Rifai⁸, Alexandra N. Neidermeier¹, Gabriel P. Frey⁶, Andreas Kontoleon^{2,9}

Carbon offsets from voluntary avoided-deforestation projects are generated on the basis of performance in relation to ex ante deforestation baselines. We examined the effects of 26 such project sites in six countries on three continents using synthetic control methods for causal inference. We found that most projects have not significantly reduced deforestation. For projects that did, reductions were substantially lower than claimed. This reflects differences between the project ex ante baselines and ex post counterfactuals according to observed deforestation in control areas. Methodologies used to construct deforestation baselines for carbon offset interventions need urgent revisions to correctly attribute reduced deforestation to the projects, thus maintaining both incentives for forest conservation and the integrity of global carbon accounting.

For nearly two decades, the performance-based payment mechanism for reduced carbon emissions from deforestation and forest degradation known as REDD+ has been under intense debate (1). Although regulations and capacity for national REDD+ programs are still under development (2, 3), many standalone, voluntary REDD+ projects are operational worldwide (4). These projects intend to conserve forests through many activities, such as improved monitoring and enforcement, promotion of sustainable practices, and local stakeholder engagement, often funded by the commercialization of carbon offsets [each corresponding to 1 Mg of carbon dioxide (CO₂) either removed from or not emitted into the atmosphere]. In 2021, two-thirds of the 227.7 million offsets from the land-use sector (excluding agriculture) traded

Numerous policy discussions and initiatives focus on how to scale and integrate the carbon-emission reductions claimed by voluntary carbon-offset projects, particularly from REDD+ activities, into climate policies and Nationally Determined Contributions (NDCs) reported to the United Nations Framework Convention on Climate Change (3, 6–8). However, there is little rigorous evidence on the contributions of these projects (9, 10), with some studies suggesting that many are associated with little or no actual emission reductions (11–17).

Carbon offsets from REDD+ projects are issued on the basis of comparison between the observed forest cover in the project areas and deforestation baseline scenarios expected to have been realized in the absence of REDD+, which are de facto unobservable (3, 17). Many



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Space Intelligence Chief Scientist Leads Review Of West Et Al Paper, Identifies Serious Flaws

Posted by
COLEEN CAINA

Categories
BLOG

Date
12TH DECEMBER 2023

Our Chief Scientist, Professor Ed Mitchard, is lead author on a new paper “*Serious errors impair an assessment of forest carbon projects: A rebuttal of West et al. (2023)*”

Professor Ed Mitchard, alongside Riccardo Cosenza, Professor Sassan Saatchi, and others have published a paper stating that the methodology used to discredit carbon credits generated by preventing deforestation contains serious errors.

They are calling for the West paper to be retracted or heavily revised, as its conclusions are highly uncertain and based on data with serious flaws.

Key Links

– Read the [press release here](#)



Unlocking High Integrity Finance for Nature-based Solutions

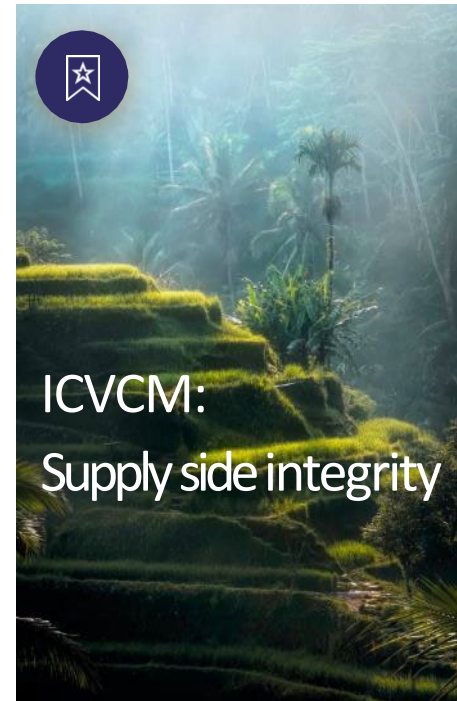
Daniel V. Ortega Pacheco, PhD



Forest Carbon and Climate Program
Department of Forestry
MICHIGAN STATE UNIVERSITY



net zero ecosystem, high integrity net zero transition



"Our theory of change is simple: build integrity and scale will follow"

Acorn

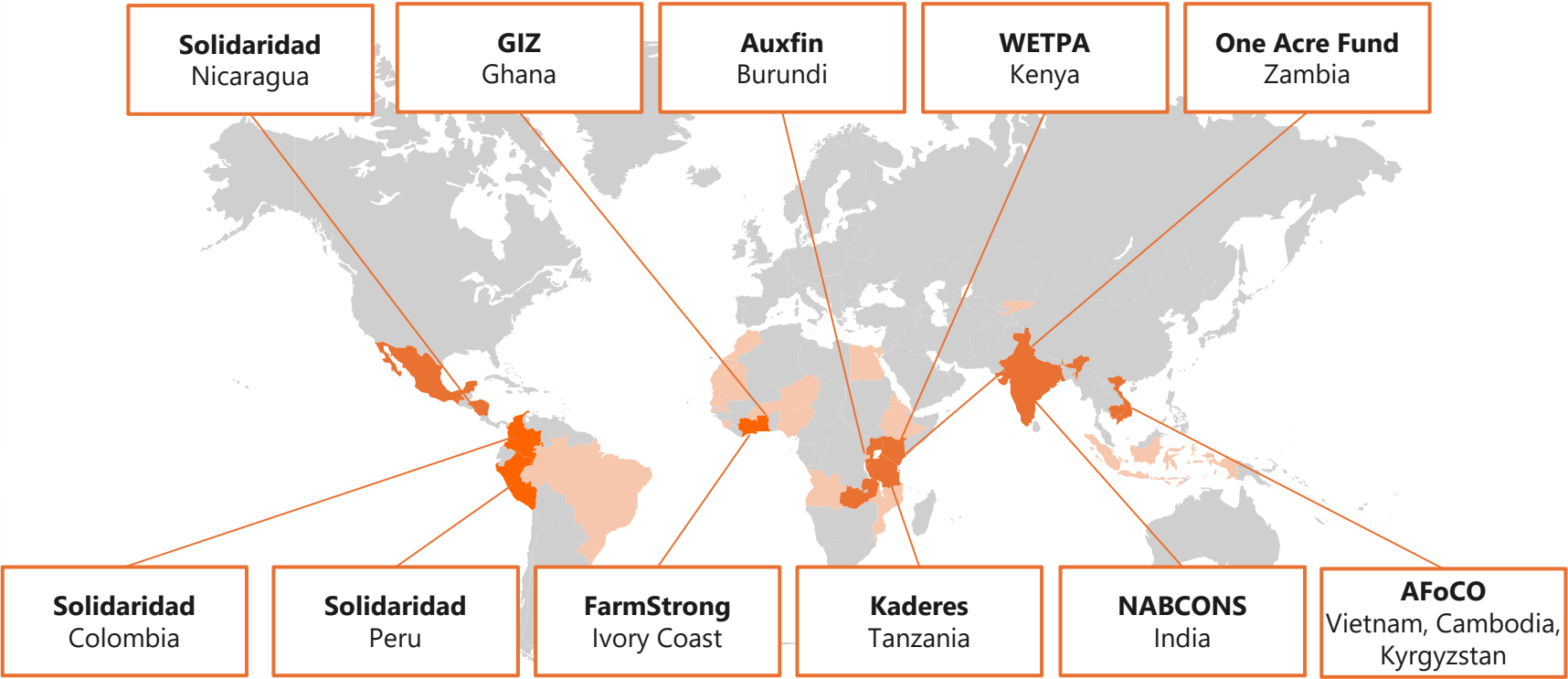
Agroforestry Carbon Removal Units (CRUs)
for the Organic Restoration of Nature

Acorn is growing rapidly with huge potential, because of the strong national agenda on improving the livelihood of farmers

272,714
Farmers supported

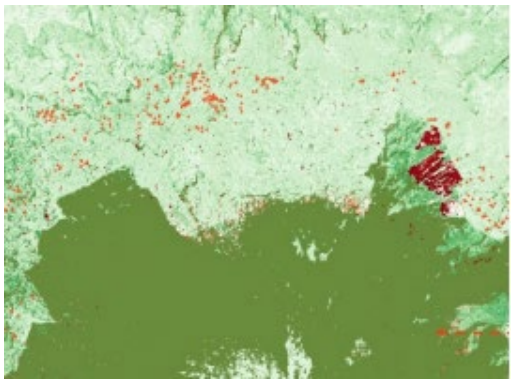
314,491
CRUs issued

Standard Chartered   Microsoft
 DL financial solutions partner
Anchor offtakers

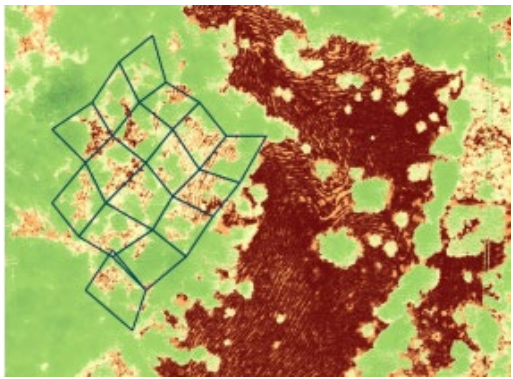


Satellite images are used to check for deforestation and our model interprets satellite pixel pictures to annually measure biomass growth

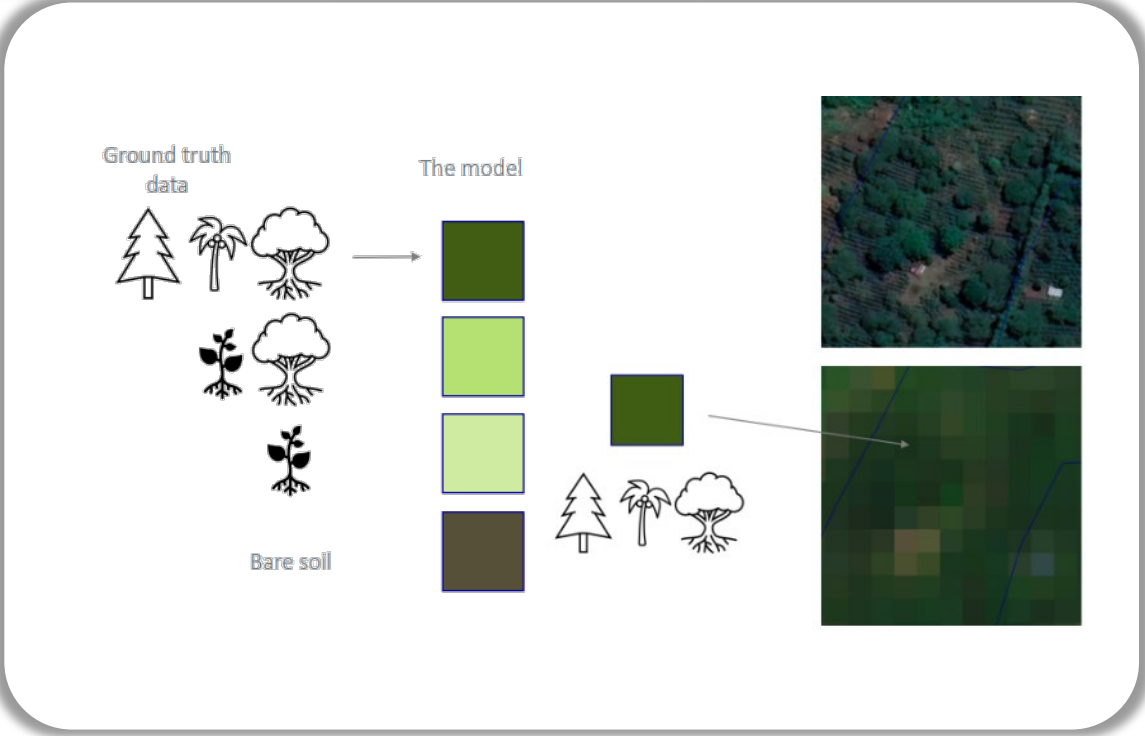
End-to-end [4/6]



Checking for deforestation (t-5) check, with red being tree removal, red dots are plots



Training model based on ground truth data of the sample plot with satellite





AXA IM Alts > Media centre > AXA IM Alts' Natural Capital & Impact investments strategy drives reforestation and impact projects with milestone investments

PRESS RELEASE

AXA IM Alts' Natural Capital & Impact investments strategy drives reforestation and impact projects with milestone investments

01 March 2023

AXA IM Alts, a global leader in alternative investments with over €186 billion of assets

PRESS CONTACTS

Bring more quality, efficiency, and transparency to forest carbon projects



Due Diligence

Ensure confident investments in high-quality forest carbon projects.



Real-time Monitoring

Get annual (and even sub-annual) updates on dynamics within projects areas, leakage belts, and reference areas, no matter how large your portfolio is.



Derivative Products

Use our biomass and forest data to build your own VCM insight products.