



sustainacraft



Advancing Brazil's NDCs through Scalable Forest Analysis for Sustainable Forest Management

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Who we are

sustainacraft is a Tokyo-based startup that conducts due diligence on nature-based carbon projects and connects project developers with credit buyers

One of our core capabilities is satellite data analysis

Project Developers	
Types	JCM & Voluntary
Activity	NbS REDD+, ARR, ALM, WRC, IFM Hybrid CDR Biochar, TSB, ERW
Geography	Worldwide

sustainacraft	
Founded	October 2021
Size	10+ members
Services	Our services include: ● Due diligence of carbon projects ● Carbon projects origination ● Market intelligence

Require satellite data
analysis capability

Project origination / Offtaking contract

Buyers (Our clients)
Large corporations including:     * The logos shown here represent only a small selection of our clients

Supported by: 
Transformational Start Ups' Business Acceleration for the SDGs Agenda

What we do

sustainacraft is building a model to estimate biomass to monitor restoration activities, together with Conservation International Brazil, supported by IDB Lab



Restoration target

To monitor at least 30,000 hectares of restoration project area in three distinct biomes of forest (Amazonia, Cerrado, Atlantic Forest).

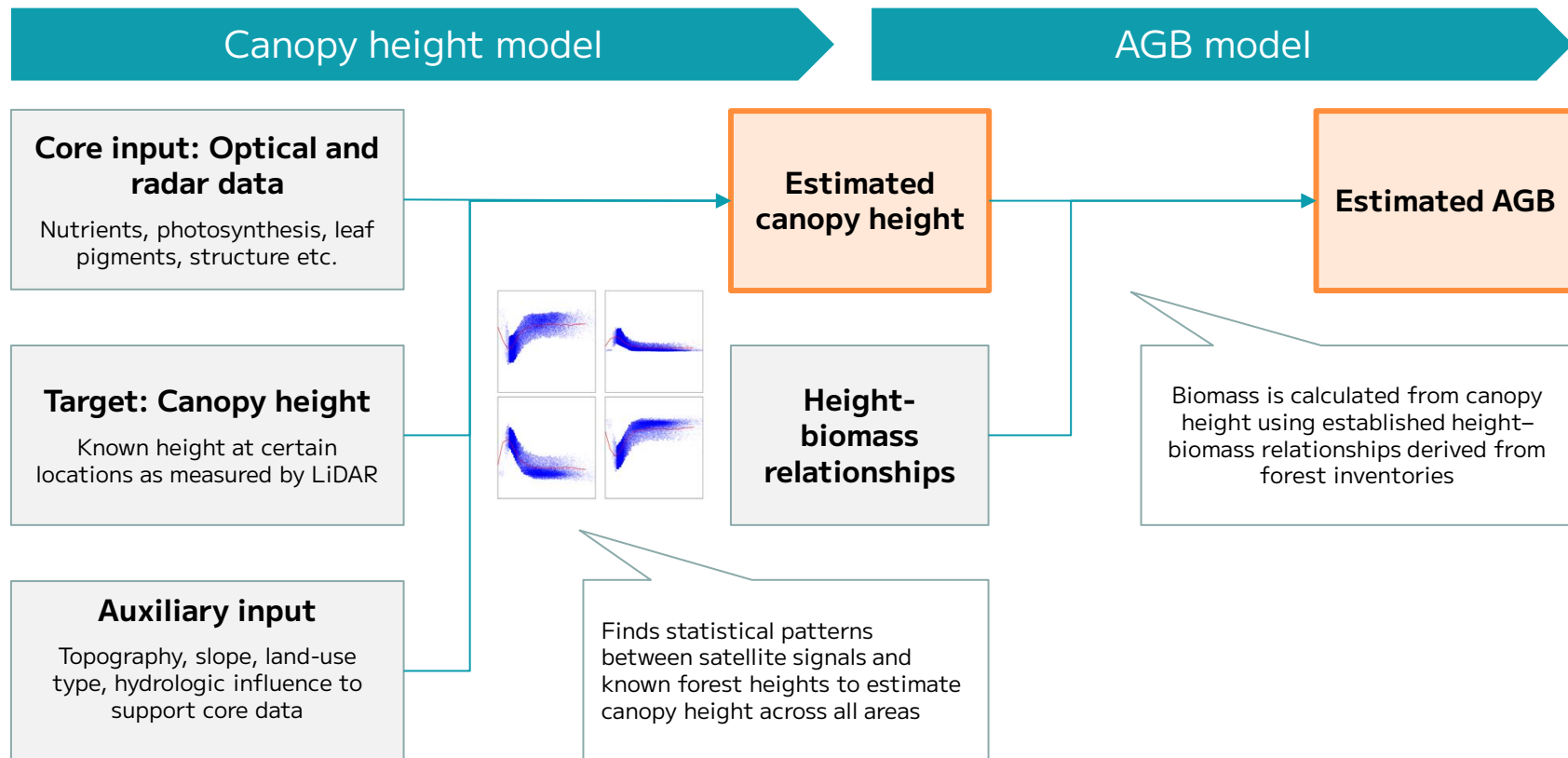
The challenge

For restoration goals of such scale, it is not feasible to constantly obtain field survey measurements due to geographic inaccessibility and high labor costs.

The solution

By combining initial survey data with state-of-the-art **satellite remote sensing data and machine learning methods**, we can efficiently build aboveground biomass models to monitor change in vegetation conditions.

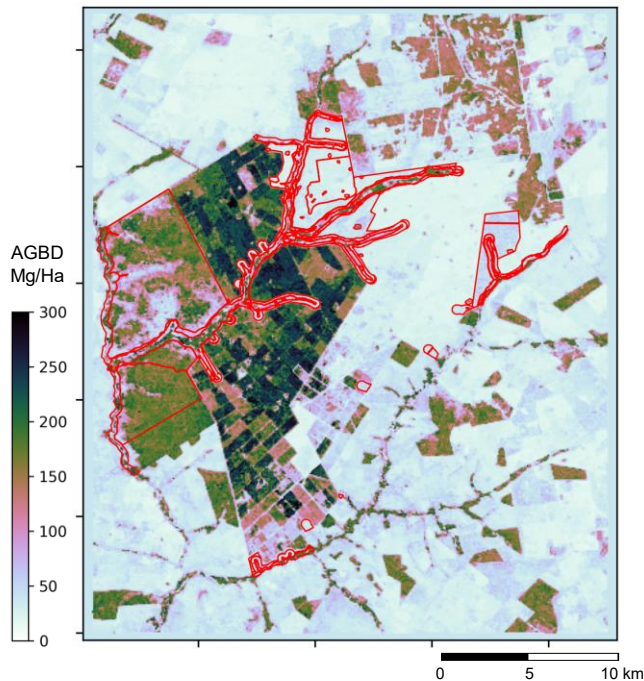
Aboveground Biomass (AGB) is estimated through a scalable workflow



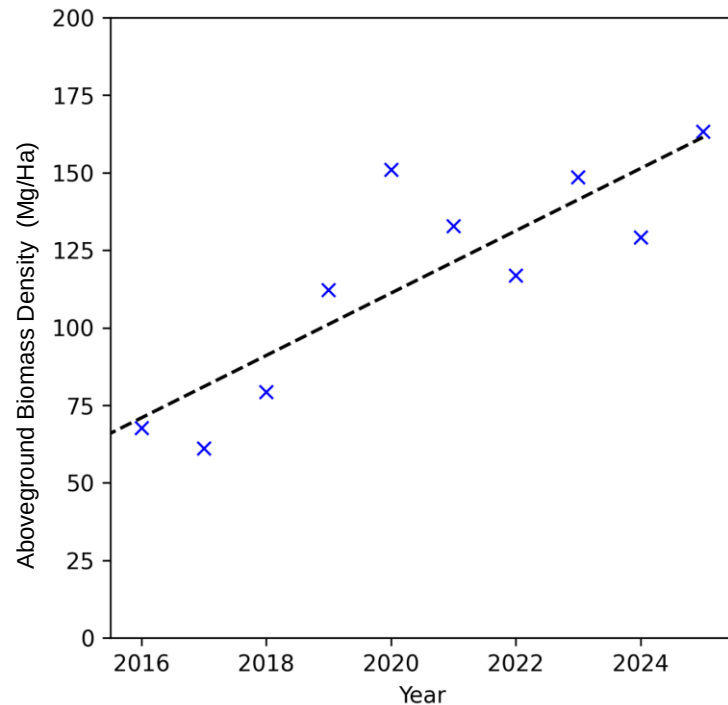
AGB model output shows an increasing trend in biomass within restoration area



Aboveground Biomass estimates for a site in Mato Grosso do Sul (project site in red)



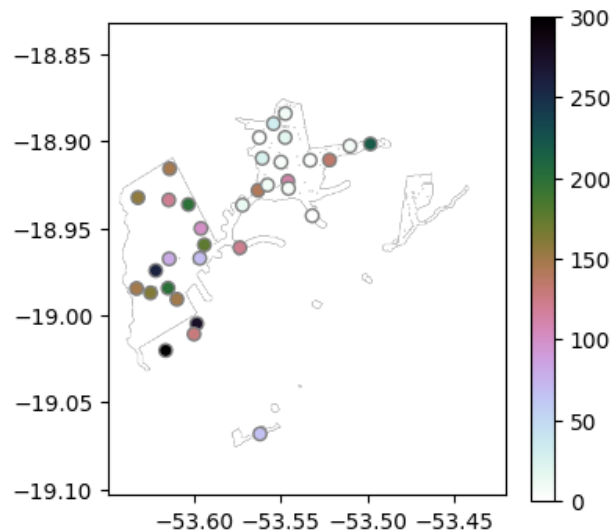
Our model indicates there has been an increasing trend in biomass through the years within restoration area



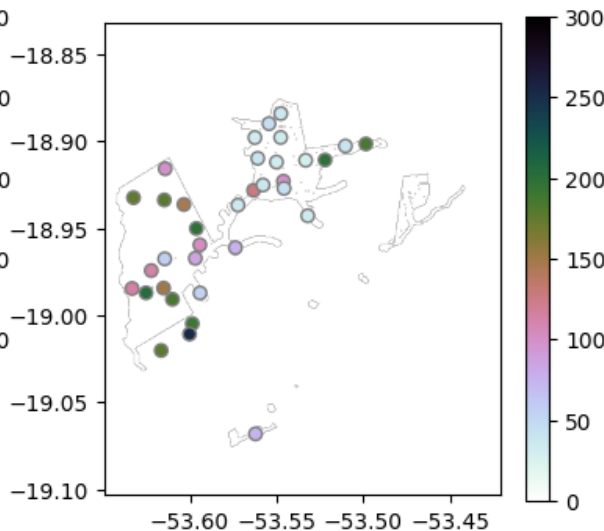
What we do

The accuracy of the model output is validated by field data, indicating that it is reliable

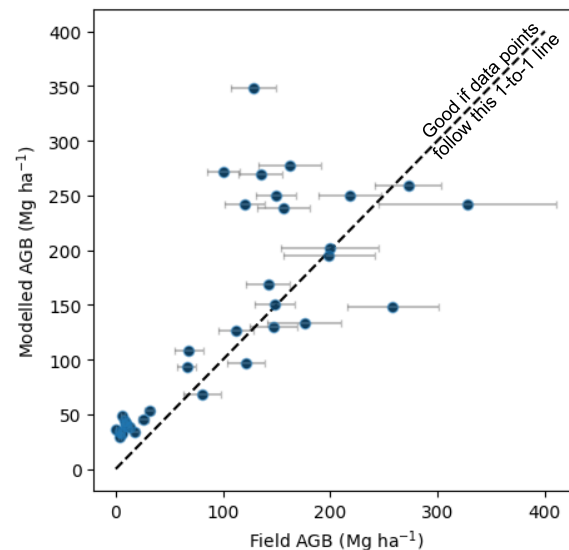
Field AGB measured by CI Brazil



Our modelled AGB estimates



They agree quite well



Supplemental slides

Assessing the impact of different restoration strategies



Full-area planting

Land has little or no capacity to regenerate naturally.

Planting cuttings, seedlings or seeds of native species directly in entire area.



Densification planting

Insufficient density of regenerating individuals.

Plant fast-growing filling group species at dense spacing.



Enrichment planting

Areas with significant natural regen., but limited arrival of seeds from successional species

Seedlings planted in understory of existing forest with preferential treatment.



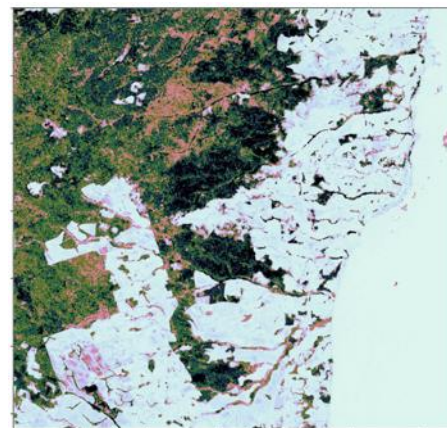
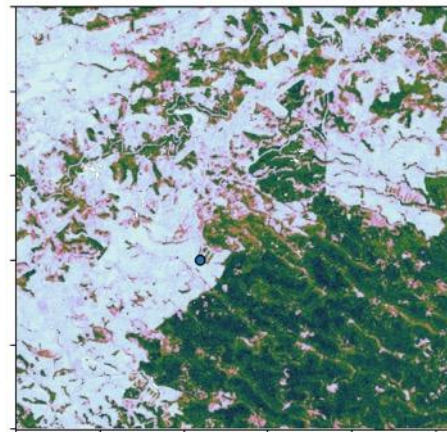
Natural regeneration

Degraded areas that still retain viable seed banks and forest fragments.

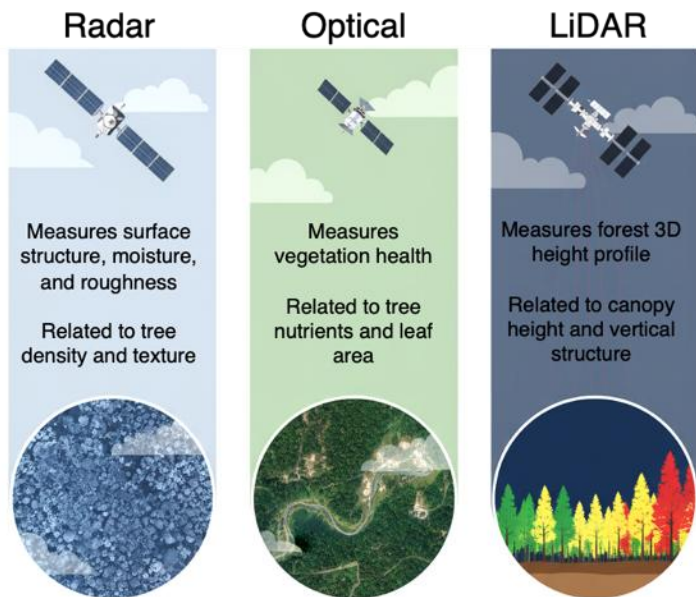
Succession driven by natural seed dispersal and recruitment.



Case study: Model reveals non-uniform biomass distribution within same forest stands



Eyes in the sky — satellites provide different information about vegetation conditions



We utilize satellite data that are free and open to the public: Landsat-8/9 (optical), Sentinel-1 (radar), Sentinel-2 (radar), and GEDI (LiDAR), ensuring future conservation monitoring efforts can access the same dataset.

