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EU SPACE WEEK 2023

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Josh Gilbert, CEO Sust Global



Solving the Carbon Credit Conundrum: Geospatial AI for Project Permanence in Nature Finance

Josh Gilbert, Founder and CEO of Sust Global



An Introduction to Sust Global



Understand climate risk

Risk indicators from wildfires, flooding, sea-level rise, water scarcity, drought and tropical cyclones.



Distill climate complexity

Easy-to-understand metrics and data visualizations suited to the unique needs of forest and blue carbon.



Meet emerging standards

Non-permanence and carbon risk identification scoring for multiple frameworks, including Verra and CRISP.



Build scalable risk processes

Work across multiple carbon projects and customers at volume for swift analysis of any site, anywhere on earth.

Climate Informed Decision Making at Planetary Scale



Global heatmap of 100K+ customer assets and properties processed by the Sust Global platform over the past 18 months (Jan 2022 - Jun 2023)

Customers and Partners





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Solving the Carbon Credit Conundrum...



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Problems facing Nature Finance

- **Lack of trust** ([The Guardian](#))
Revealed: more than 90% of rainforest carbon offsets by biggest certifier are worthless, analysis shows
- **Wildfire** can jeopardize the quality and credibility of forest carbon projects
- **Climate change** will increase wildfire risks to forest carbon projects
- **Risk modeling** implementation is limited

The Solution

Climate Impact and Credit Risk Projections via Geospatial AI

- **Assess** future wildfire risk to forest carbon projects using geospatial AI
- **Visualize** the sequestration potential impact from these events
- **Quantify** and score carbon risks attributed to climate-related events
- **Act** and implement forest protection using forest adaptation measures



Projects

Layers



The Solution

Climate Impact and Credit Risk Projections via Geospatial AI

Projects

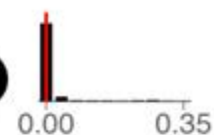
Layers



Future Wildfire

(project level probability of wildfire in project perimeter)

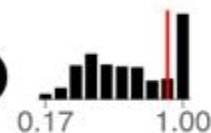
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Carbon Loss From Wildfire

(projected carbon loss from wildfire as a percentage of above ground biomass)

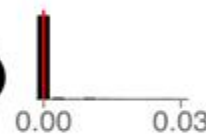
1.0



Historic Fire

(average annual burned since 2001 as % of total project area)

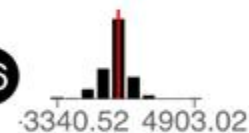
0.0



Future Water Availability

(average net water balance over 2022-2072 in mm/yr)

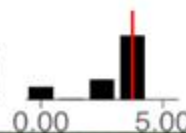
1136



Pest and Disease

(score based on the likelihood of invasive species and impactful)

4



Outcomes

- **Planning, implementation and monitoring** forest adaptation workflows for improved forest protection.
- **Identifying and scoring carbon risk** attributed to climate catastrophes at project initiation and on repeat assessment.
- **Quantifying financial risk** to carbon projects for project pre-financing, site selection and project rating workflows.
- **Assessing carbon sequestration potential** across major regenerative practice zones over multi-decadal time horizons.



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How We Utilise EU Space Assets

- **Climate risk modelling:**
 - *Multispectral L2-processed imagery (visible, near infrared, SWIR)*
 - *Fire CCI51 burnt area dataset – MODIS MOD64AI (NASA)*
- **Emissions monitoring:**
 - *Atmospheric sensing (SO₂, NO₂, CO, CH₄) Sentinel-5P TROPOMI*
- **Carbon monitoring:**
 - *Sentinel 2 multispectral observations*
 - *ESA CCI Land Cover mask*
 - *Global Fire Emissions Database (GFED), funded by NASA*
 - *Global Fire Assimilation System (GFAS), created by the European Centre for Medium-Range Weather Forecasts (ECMWF)*
- **Sust Global's proprietary data fusion:**
 - *geometric normalization, spatiotemporal analysis (L3 processing), statistical learning, and predictive time series algorithms.*



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Future Evolutions of the Product - What Next?



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