



Monitoring Report

Tokenize Amazon Project

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1. Description of Project Activity

1.1. Objective of the Monitoring

The objectives of monitoring this project are stated below.

- 1. Quantifying carbon sequestration- The primary objective of monitoring a rainforest conservation project is to quantify the amount of carbon that is being sequestered by the forest. This involves measuring the biomass of the trees and calculating the amount of carbon stored in the forest.*
- 2. Verifying carbon credits - Another objective is to verify that the carbon credits being claimed by the project are accurate and verifiable. This involves ensuring that the project is following established methodologies for calculating carbon sequestration and that the monitoring data is reliable and accurate.*
- 3. Identifying potential risks - Monitoring can also help identify potential risks to the forest and the carbon sequestration project, such as deforestation, fires, or other disturbances. Early detection of these risks can help prevent or mitigate their impacts.*
- 4. Improving project management - Regular monitoring can also help improve project management by providing feedback on the effectiveness of conservation strategies and identifying areas for improvement.*
- 5. Ensuring compliance with standards - Monitoring can also help ensure that the project is in compliance with the standards set by the carbon crediting scheme as well as the Planetary Carbon Standard (PCS).*
- 6. Monitoring is critical for ensuring the long-term success of rainforest conservation projects for a carbon crediting program. By providing accurate and reliable data, monitoring helps to build trust in the project and ensures that the carbon credits being sold are legitimate and contributing to global climate mitigation efforts.*

1.2. Summary Description of the Implementation of this Project

Project Description -

The "Tokenize Amazon" initiative is a pioneering conservation project focused on the preservation of the Amazon Rainforest, a vital component of the global ecosystem instrumental in climate change mitigation. The primary objective of this venture is to thwart both planned and spontaneous deforestation. This is achieved by procuring parcels of land within the rainforest and subsequently transferring them to a trust, ensuring their protection against degradation and deforestation. Furthermore, the project is committed to combating the prevalent issue of illegal logging, a major contributor to environmental devastation in the region.

A significant aspect of the initiative is its dedication to the protection of the indigenous communities residing within the Amazon Rainforest. By fostering close ties with these local communities, the project ensures their active participation and ensures they reap the benefits of the conservation endeavors.

Monitoring and Verification -

To guarantee the project's efficacy, a rigorous monitoring and verification system is instituted. This involves consistent monitoring of the forest's condition to confirm the absence of degradation or destruction. Periodic audits will also be conducted to ensure that the proceeds from carbon credit sales are channeled appropriately towards rainforest preservation.

Implementation Status -

At the heart of the project's mission is the unwavering commitment to the Amazon Rainforest's protection and preservation, with a concentrated effort to counter illegal deforestation and the ensuing climate change repercussions.

Situated in Presidente Figueiredo, State of Amazonas, Brazil, the project is strategically located in the "deforestation belt" of the Amazon Rainforest. The conservation effort currently encompasses 1001.4 ha, categorizing it as a small-scale initiative as per the PCS definitions.

The project aligns with the REDD+ sectoral scope and does not encompass reforestation or afforestation activities. Instead, it seeks registration as a conservation initiative under the REDD+ Category, with the sole aim of safeguarding 1001.4337 ha of land in

Brazil's Amazon region from potential deforestation and degradation threats. This land is a biodiversity hotspot, teeming with endemic species.

The Amazon Rainforest, primarily located in Brazil (60%), followed by Peru (13%) and Colombia (10%), is the planet's largest tropical rainforest, boasting an estimated 390 billion trees spanning 16,000 species. Recent data indicates that deforestation in Brazil's Amazon Rainforest has surged to its highest in over a decade. Yet, effective countermeasures by governments remain elusive.

Registered under SLCCS, the project's objective is to generate long-term and credible Sri Lankan Certified Emission Reduction (SCER) from avoided deforestation. The resulting credits are intended for trade in both local and international voluntary carbon markets. Profits from these trades will be reinvested in acquiring more forest assets at high deforestation risk.

Sanzio C Maciel, the project's proprietor, is deeply perturbed by the escalating annual loss of forest resources, biodiversity, and soil quality in the Amazon Region. This project represents a tangible effort to reverse the ongoing deforestation trends. Recognizing the

integral role of forest-dwelling communities in conservation, mechanisms have been established to incentivize and involve local communities in the project's conservation efforts.

Conclusion -

The rainforest conservation initiative is resolutely committed to the conservation of the Amazon Rainforest. This is achieved by preventing deforestation, tackling illegal logging, and safeguarding the indigenous communities. Through the innovative approach of raising funds through carbon credit sales, the conserved land will be monitored and protected. The project aims to generate funds to acquire more endangered lands, thereby amplifying conservation efforts. This endeavor is pivotal in climate change mitigation and the preservation of one of Earth's most crucial ecosystems.

- **A summary description of the implementation status of the technologies/measures**

Year of inventory: 2022 (December)

Number of sample plots: 10 samples of 961 m² each

Inventory details:

Angelim Ferro (Dinizia spp.)

Angelim Pedra (Dinizia spp.)

Ipê (Tabebuia spp.)

Loro gamela (Nectandra rubra)

Sapucaia (Lecythis pisonis)

Jarana (Lecythis lúrida)

Approximately 7,000 trees per hectare were counted where *Angelim Ferro (Dinizia spp.)* and *Angelim Pedra (Dinizia spp.)* counted for more than 50% of all trees with more than 50 cm in diameter. (Detailed sheet was provided with all required parameters for the assessment of the carbon stock)

Inventory description –

Trees with less than 20 cm diameter: approximately 1,080

Trees between 20 cm and 50 cm in diameter: 2,332

Trees with more than 50 cm in diameter: 3,588

Despite the difference in diameter, most of the trees have very similar Height at around 20 meters from the ground.

In addition to physical verification, advanced technological tools were used to measure carbon storage of the sample plots using Satellite imagery and artificial intelligence.

- **Whether project is a bundled project activity leading to an aggregated emission reduction - No**

- **Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.).**
 - Project Start Date: 28th October 2021
 - Operational lifetime of the project: 30 years
 - Project Crediting period: 28th October 2021 – 12th October 2023

- **Total GHG emission reductions or removals generated in this monitoring period.**
 - The project is a carbon sink that stores 1,720,672 tons of carbon dioxide.

Year	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)
Year 01- 28/10/2021 - 13/10/2022	860,336	-	-	860,336
Year 02- 14/10/2022 - 13/10/2023	860,336	-	-	860,336

1.3. Sectoral Scope and Project Type

AFOLU Category:

Reduced Emissions from Deforestation and Degradation (REDD+)

In respect to AFOLU, TMZN project is designed to reduce greenhouse gas emissions by implementing sustainable practices in forestry, and other land uses. The project activities are mainly on avoiding deforestation.

The Amazon Rainforest conservation project falls under the sectoral scope of land use, land-use change, and forestry (LULUCF). LULUCF activities are defined by the United Nations Framework Convention on Climate Change (UNFCCC) as "human activities which change the conditions of land, vegetation or soils, and which alter the flows of greenhouse gases between the biosphere and the atmosphere."

Tokenize Amazon Rainforest conservation project aims to reduce emissions from deforestation and forest degradation (REDD+) by protecting and conserving forested

areas. The project also involves activities such as reforestation, afforestation, and sustainable forest management.

The project is implemented in Brazil, where deforestation rates are often high due to pressures from agriculture, logging, and other land uses. The project can provide important co-benefits such as biodiversity conservation, watershed protection, and support for local communities.

The Tokenize Amazon Project is a community-driven initiative aimed at saving the Amazon Rainforest and the people living in it. This project is focused on assisting native tribes, small farmers, and poor communities living in the Amazon by providing them with resources and tools to combat illegal logging and mining and promote sustainable living practices without deforestation.

Introduction -

The Amazon Rainforest is one of the most important ecosystems in the world, covering over half of the planet's remaining rainforests and harboring an estimated 390 billion individual trees and 16,000 species. Despite its ecological and cultural significance, the Amazon is being destroyed at an alarming rate due to various human activities, such as illegal logging, mining, and deforestation.

Objective -

The primary objective of the Tokenize Amazon Project is to protect the Amazon Rainforest and its inhabitants by empowering them to combat deforestation and promote sustainable living practices. This project aims to support native tribes, small farmers, and poor communities living in the Amazon by providing them with essential resources and tools to protect their lands and livelihoods.

Methodology -

The Tokenize Amazon Project will provide support to these communities by providing them with food, medicine, and resources to enforce their ownership over the area. The project will also help small farmers find sustainable living practices without deforesting the land and assist native tribes in fighting illegal logging and mining in their lands.

Results -

The Tokenize Amazon Project is located in one of the fastest deforestation regions in the Amazon, known as "The Deforestation Belt". Despite the alarming rates of deforestation, governments have failed to stop this activity effectively. The project's results will be measured by the extent to which the communities in the Amazon are empowered to combat deforestation and sustainably manage their lands.

Conclusion -

The Tokenize Amazon Project is a community-driven initiative aimed at protecting the Amazon Rainforest and its inhabitants. By providing support to native tribes, small farmers, and poor communities living in the Amazon, this project seeks to promote sustainable living practices and combat deforestation effectively. The success of this project will contribute to the long-term protection of the Amazon Rainforest and the well-being of the communities living in it.

1.4. Project Proponent

Provide contact information for the project proponent/s

Organization Name	<i>Tokenized Amazon project</i>
Contact Person	<i>Sanzio Maciel</i>
Title	<i>CEO- Founder</i>
Address	<i>RUA DAS MANJERONAS, 364 district of JARDIM MARINGA, municipality of SINOP MT, Zip Code 78556-210</i>
Telephone	<i>+55 (63) 9203 2164</i>
Telegram	<i>@San_tmzn</i>
E-mail	<i>info@tmzn.io</i>

1.5. Other Entities Involved in the Project

Not Applicable

1.6. Project Start Date

- *Project Start Date: 28th October 2021*

1.7. Project Crediting Period

- *Project Crediting period: 28th October 2021 until 12th October 2023 (2 years)*

1.8. Registration date of the project activity

28th October 2021

1.9. Project track and credit use

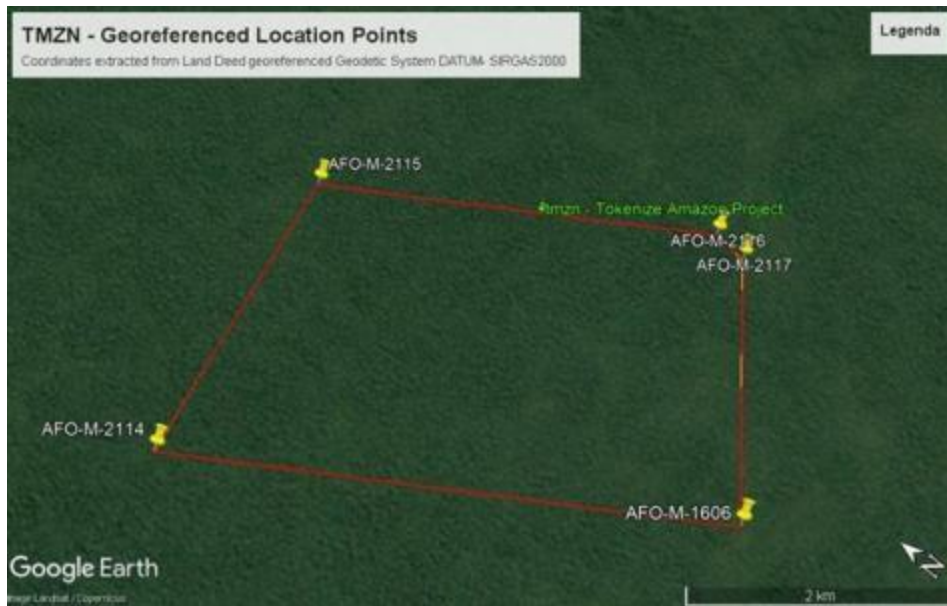
SLCCS offers two distinct tracks for project developers seeking to register their emission reduction projects. TRACK I is designed to incorporate a precise quality framework that streamlines the trading of carbon credits. TRACK II, on the other hand, is specifically tailored to facilitate industries in offsetting their emissions through emission reduction

project activities within their value chain. Presently, the Tokenize Amazon Project, developed by Tokenize, aims to engage in carbon credit trading with external parties. Therefore, the project is intended to be registered under TRACK I of SLCCS

The Tokenize Amazon Rainforest project aims to use funds from the sale of carbon credits, generated by the Tokenize Amazon carbon credit initiative, to purchase additional lands. These lands will be protected against deforestation and degradation. A portion of the funds will also be allocated to community and environmental activities, encompassing all 17 UNSDGs.

1.10. Project Location

Location of Project Activity	<i>KM 14, of BR- 174, district of Presidente Figueiredo, State of Amazonas, Brazil project is located 18 km from Presidente Figueiredo City, State of Amazona. An area often called THE DEFORESTATION BELT.</i>
Province	<i>State of Amazonas, Brazil</i>
District	<i>Presidente Figueiredo</i>
DS Division	<i>N/A</i>
City/Town	<i>Presidente Figueiredo</i>
Community	<i>Estrada da Nona - The local community and the indigenous community of the Amazon rainforest.</i>
Coordinates	<i>- 1.520719° -60.449124°</i>



The figure above shows the location Points registered in the LAND DEED and georeferenced by the Brazilian Government, as described below:

“Registered with the Notary and Public Registry Office of Presidente Figueiredo under #2,435, on page 255 of Book #2-K, Presidente Figueiredo/AM, with an area of 1,001.4337 hectares and a perimeter of 13,153.54 m. PERIMETER DESCRIPTION: The description of this perimeter starts at point AFO-M-2115, georeferenced in the Brazilian Geodetic

System DATUM - SIRGAS2000, MC-63°W, coordinates N 9,833,203.196 m and E 784,080.750 m, from which it borders Lote 1268, with azimuth of 149°00’32’ for a distance of 3,463.97 m to point AFO-M-2116, coordinates N 9,830,233.714 m and E 785,864.358 m; from which it borders Ramal da Nona, with azimuth of 188°35’52’ for a distance of 300.07 m to point AFO-M-2117, coordinates N 9,829,937.021 m and E 785,819,500 m; from which it borders 785.8 Lote 124, with azimuth of 237°22’20’ for a distance of 2,204.19 m to point AFOM- 1606, coordinates N 9,828,748.569 m and E 783,963.151 m; from which it borders state government lands, with azimuth of 328°10’12’ for a distance of 4,587.75 m to point AFO-M-2114, coordinates N 9,832,646.396 m and E 781,543.572 m; from which it borders Lote 126A, with azimuth of 77°37’20’ for a distance of 2,597.56 m to point AFO- M-2115, which is the starting point of this perimeter of 13,153.54 m. All coordinates described herein are georeferenced to the Brazilian Geodetic System and are represented in the UTM System, referenced to Central Meridian #63 WGr, using SIRGAS2000 as Datum. The azimuths, distances, area, and perimeter were calculated in the UTM projection plan. PROPERTY RURAL CODE #951.137.170.020-7. NIRF [Rural Property Number in the Brazilian Internal Revenue Service] 9.533.646-0. CCIR [Rural Property Registration Certificate] #42719749218.”

1.11. Title and Reference of Methodology

Quantification of GHG emissions Reductions REDD+ Projects Planetary Carbon Standard

Version 1, 2022

Approved VCS Module VMD0007 Version 1.0 As a comparative methodology.

REDD Methodological Module:

Estimation of baseline carbon stock changes and greenhouse gas emissions from unplanned deforestation (BL-UP)

As per Planetary carbon standard

Participation under other GHG Programs

Not registered under any other GHG program.

1.12. Other Forms of Credits

Include the following information, as applicable:

- *Emission Trading Programs and Other Binding Limits: Not Applicable*
- *Other Forms of Environmental Credit: Not Applicable*

1.13. Sustainable Development

Tokenize Amazon Project is part of a Brazilian initiative to combat illegal deforestation in the Amazon Rainforest.

Brazilian government has signed the Paris Accord and pledge to end deforestation in the Amazon Rainforest by 2030.

Tokenize Amazon Project is in compliance with all the best ESG practices for a sustainable environment.

UNSDGs Covered by Tokenize Amazon Project

The Tokenize Amazon Project is a beacon of hope and innovation, committed to safeguarding the Amazon Rainforest and addressing deforestation and climate change through a comprehensive approach aligned with 17 UNSDGs. It empowers indigenous tribes, local communities, and impoverished groups while promoting sustainable livelihoods. The project's impact goes beyond the rainforest, exemplifying holistic sustainable development. This publication explores its strategies, achievements, and the vision for a future where environmental care and human progress unite.

Goal 1 - No Poverty



Figure 1 Collaborative Efforts: Local community members partnering with the Tokenize Amazon project for sustainable initiatives.

The Tokenize Amazon Project addresses poverty and environmental degradation within the Amazon Rainforest, aligning with SDG 1 - No Poverty, through educational empowerment, participatory engagement, livelihood skills, and sustainable agriculture.

Educational Empowerment and Cultural Sensitivity: *The project integrates indigenous perspectives into education, respecting local cultures and fostering engagement. Collaborative efforts with community leaders ensure alignment with cultural values.*

Participatory Approach: Involving local communities in planning and execution empowers them for self-directed development. Community meetings and workshops facilitate dialogue and integration of local insights.

Visual and Interactive Methods: Tokenize Amazon employs visual tools and immersive experiences to educate about ecosystem services and biodiversity. Posters and videos connect communities to their environment.

Livelihood Skills and Capacity Building: *The project offers training in sustainable land management and agroforestry techniques, providing alternative income streams while conserving the rainforest.*

Hydroponics and Sustainable Agriculture: *Hydroponics reduce deforestation by shortening supply chains, aligning with SDG 1. It enhances food security, reduces emissions, and supports local economies.*

Community Empowerment: The project generates employment through sustainable forest resource use, empowering communities. Ownership over the environment fosters prosperity and stewardship.

Goal 2 - Zero Hunger



Figure 2 Ensuring Local Childhood Nutrition: The Tokenize Amazon project strives to provide nourishment for every child in the community

The Tokenize Amazon Project aligns with SDG 2 - Zero Hunger, addressing food security and environmental preservation through sustainable agriculture, community empowerment, and education.

Sustainable Agricultural Transition: The project shifts from deforestation-linked practices like cattle farming to sustainable hydroponic farming, boosting food security and combating environmental degradation.

Local Food Production and Shorter Supply Chains: *Hydroponics enable local food production, shortening supply chains, reducing emissions, and supporting local economies, in line with SDG 2's equality emphasis.*

Community Empowerment and Food Security: *Tokenize Amazon empowers communities for self-sufficiency, curbing undernourishment. Sustainable agriculture and forest preservation go hand in hand.*

Education and Collaboration: Through workshops and awareness campaigns, the project educates on sustainable practices, aligning with SDG 4 - Quality Education.

Community Nutrition Initiatives: Community kitchens offer locally sourced, nutritious meals, partnering with organizations, volunteers, and culinary professionals to ensure food security, aligning with SDG 2.

Goal 3 - Good Health and Well-being



Figure 3 Empowering Remote Healthcare: Tokenize Amazon enables remote consultation for enhanced medical care

The Tokenize Amazon Project aligns with SDG 3 - Good Health and Well-Being, leveraging technology and healthcare to bridge gaps in the Amazon rainforest. These initiatives exemplify SDG 3's vision of accessible healthcare, coupling technology with sustainable practices for a healthier Amazon rainforest.

Telemedicine for Remote Communities: Telemedicine centers with Satellite Internet connectivity bring healthcare to remote areas, using technology to connect doctors and communities.

Enhanced Healthcare Access: Collaboration with governments and organizations ensures universal health coverage, overcoming geographical barriers via high-speed internet.

Multisectoral Impact and Well-Being: The project's environmental preservation aids in carbon absorption, promoting local and global well-being.

Community Outreach and Medical Camps: A medical boat service and camps extend healthcare to underserved areas, educating and empowering communities.

Goal 4 - Quality Education



Figure 4 - Facilitating Education: Children commuting to schools via boat transportation, showcasing Tokenize Amazon's commitment to supporting education.

The Tokenize Amazon Project, resonating with the principles of SDG 4, revolutionizes education within the Amazon rainforest, emphasizing access, cultural relevance, educator empowerment, holistic support, and technology integration. These initiatives exemplify SDG 4's essence, nurturing a generation equipped for a promising future while preserving cultural heritage and ecological balance.

Enhancing Access and Infrastructure: Strategies ensure physical access and resources in schools. Transportation and boarding schools combat geographical barriers, boosting regular attendance and engagement.

Culturally Relevant Education: Indigenous knowledge and culture are woven into the curriculum, fostering a sense of belonging and ecological awareness. Collaborations with local communities strengthen sustainable practices.

Empowering Educators: Teacher training, incentives, and collaboration platforms nurture a conducive learning environment, reflecting the importance of educators in student success.

Holistic Support Ecosystem: A comprehensive support system embraces counselling, mentoring, healthcare partnerships, and after-school programs, catering to individual needs.

Harnessing Technology for Inclusion: Leveraging technology, the project provides distance learning through satellite internet services, bridging remote areas for quality education.

Addressing Socioeconomic Challenges: Efforts align with UNSDG 4 by addressing socioeconomic hurdles that hinder education access. This mirrors the overarching vision of United Nations Sustainable Development Goal (UNSDG) 4.

Implementing Comprehensive Programs: Multidimensional initiatives span domains to counter barriers. Initiatives providing school essentials, meals, and uniforms resonate with UNSDG 2's Zero Hunger, fostering an environment for learning.

Supporting Scholarships and Sponsorships: Scholarship programs alleviate economic hardships, empowering underprivileged students. These actions reflect UNSDG 4's focus on inclusive quality education, ensuring equitable opportunities.

Goal 5 - Gender Equality



Figure 5 Empowering women by supporting their home-based sustainable craft production

Comprehensive Educational Equality: Tokenize Amazon ensures equal access to quality education for girls and boys in remote areas. Schools, resources, and campaigns counter gender stereotypes.

Empowering Women's Leadership: Project promotes women's participation in decision-making, offering leadership training, fostering economic independence, and creating women's networks.

Economic Empowerment: Initiatives like sustainable agriculture and crafts empower women economically through training, finance access, and market linkages.

Healthcare and Reproductive Rights: *The project improves healthcare access and reproductive knowledge, addressing barriers in remote regions through partnerships and education.*

Mitigating Violence and Discrimination: *Tokenize Amazon tackles gender-based violence, establishing safe spaces and involving men as allies to promote non-violence.*

Land and Property Rights: Advocating for women's land ownership, the project raises awareness, offers legal support, and collaborates with communities for equitable access.

Digital Inclusion and Connectivity: *By providing technology and internet access, Tokenize Amazon bridges the digital gender gap, enhancing women's digital literacy and prospects.*

Sustainable Change through Collaboration: *Collaborations with communities, indigenous leaders, and stakeholders ensure culturally sensitive strategies, addressing systemic factors for sustainable development.*

Goal 6 - Clean Water and Sanitation



Figure 6 Type of Water Filters distributed by the Project

Advocating for Clean Water: *Tokenize Amazon aligns with UNSDG 6, promoting forest preservation, sustainable livelihoods, and community empowerment for enhanced water access in the Amazon rainforest.*

Empowering Livelihoods and Skills: Project equips communities with sustainable land management skills, including agroforestry, promoting responsible environmental stewardship and economic growth.

Educational Integration and Awareness: Environmental education is integrated into local schools, fostering environmental responsibility through student engagement and teacher training.

Hydroponic Farming for Water Conservation: Hydroponic farming conserves water through recirculation and precise irrigation, addressing water scarcity while aligning with SDG 6's goals.

Community-Focused Water Well Initiatives: Tokenize Amazon funds water wells and filtration systems, enhancing water quality, accessibility, hygiene, and health in communities, directly impacting SDG 6.

Goal 7- Affordable and Clean Energy

Trailblazing Sustainable Energy: Tokenize Amazon aligns with SDG 7 by integrating clean energy principles, enhancing global access to sustainable energy for development.

Solar-Powered Solutions: Project deploys solar panels for telemedicine and community centers, ensuring reliability and self-sufficiency while promoting clean energy.

Hydroponic Innovations and Infrastructure: Investment in hydroponics integrates sustainable agriculture with clean energy, creating hands-on learning experiences through solar-powered setups.

Community Education on Clean Energy: Project empowers communities by educating them about the significance of clean energy, nurturing a generation that values and adopts sustainable energy solutions.

Partnerships and Technological Advancement: Collaborations with private entities and tech innovators lead to large-scale hydroponic farms, advancing infrastructure and clean energy technologies.

Goal 8 - Decent Work and Economic Growth



Figure 7 Empowering Skills: A local community member receives drone operation training, showcasing Tokenize Amazon's contribution to creating meaningful employment opportunities.

Holistic Economic Growth: Tokenize Amazon aligns with SDG 8, focusing on eco-tourism, agroforestry, and products for alternative income, fostering prosperity while conserving the Amazon.

Entrepreneurial Empowerment: Vocational training promotes skills for sustainable land management, fostering entrepreneurship in eco-friendly sectors for economic resilience.

Inclusive Education and Cultural Sensitivity: Project integrates local traditions and values into educational materials, promoting community pride and ownership while addressing SDG 8's aspects.

Reducing Inequalities and Upholding Rights: Tokenize Amazon combats forced labor, illegal logging, and corruption, promoting equality, indigenous rights, and sustainable growth.

Sustainable Infrastructure and Collaboration: Partnerships with private entities build sustainable infrastructure, like hydroponic farms, fostering innovation, water access, and economic growth.

Empowering through Telemedicine and Training: Telemedicine enhances healthcare access and job opportunities, aligning with SDG 8 while advancing health and well-being.

Empowering Social Workers and Gender Equality: Recruiting social workers promotes gender equality, empowering communities through counselling, advocacy, and inclusive growth initiatives.

Leveraging Satellite Internet: Satellite internet supports eco-tourism, research, and global awareness, creating jobs while conserving Amazon resources, contributing to SDG 8.

Goal 9 - Industry, Innovation and Infrastructure



Figure 8 An indigenous Kubeua tribe member harnesses drone technology, epitomizing industry innovation and infrastructure advancements with Tokenize Amazon's initiatives.



Figure 9 Satellite data for real-time monitoring and updates from the site

Drone-based Forest Monitoring: Tokenize Amazon utilizes advanced drones with LiDAR technology to map and monitor forest cover, aiding proactive conservation and combating deforestation.

Early Warning Systems for Fires: Thermal cameras and air quality sensors on drones create a swift response to forest fires, protecting ecosystems and aligning with SDG 9's focus on innovation.

Enforcement and Reforestation: Drones aid law enforcement against illegal activities, while also supporting reforestation through aerial seeding and monitoring efforts.

Community Engagement through Workshops: Drones workshops engage communities and the public, raising awareness about rainforest value and involving them in conservation.

Satellite Connectivity for Collaboration: Satellite internet enriches impact, enabling real-time data transmission, collaboration, and actionable insights among stakeholders.

Telemedicine Centers for Healthcare: Telemedicine centers using Satellite transform healthcare access, breaking barriers for remote communities in alignment with SDG 9.

Hydroponic Farming and Infrastructure: Tokenize Amazon fosters hydroponic farming with training and infrastructure, promoting sustainability and reducing deforestation-related practices.

Goal 10 - Reducing Inequalities



Figure 10 Inclusive engagement: Tribal community families integrated into the project, promoting reduced inequalities.

Nutrition Education and Workshops: Project integrates nutrition education into schools and outreach, reducing income-based nutritional disparities in line with SDG 10.

Localized Food Sourcing Networks: Equitable economic growth through local sourcing networks, reducing disparities in income and transparent pricing.

Community Food Storage and Processing: Facilities minimize post-harvest losses, generate income, and enhance financial security, bridging inequalities.

Community Kitchen and Meals: Nutritionally rich meals via community kitchen partnerships address hunger and socioeconomic disparity, adhering to SDG 10.

Sustainable Funding and Partnerships: The project seeks equitable opportunities and partnerships, mitigating economic disparities and promoting inclusivity aligned with SDG 10.

Gender Equality and Women's Empowerment: Focus on women's empowerment confronts gender disparities, creating gender-blind opportunities, resonating with SDG 10.

Education and Awareness: Educational campaigns promote gender equality, women's rights, and inclusive education, bridging knowledge gaps aligned with SDG 10.

Goal 11 - Sustainable Cities and Communities



Figure 11 Strategic Conservation Efforts: Tokenize Amazon's Commitment to Combat Unplanned Deforestation for Infrastructure.

Combatting Illegal Logging for Urban Resilience: Project fights illegal logging, ensuring safe housing, resilient economies, and urban well-being, aligned with SDG 11.

Mitigating Organized Crime and Corruption: Efforts dismantle crime networks, promoting transparent urban management and resilient communities, vital to SDG 11.

Indigenous Empowerment for Inclusive Urbanization: Supporting indigenous communities against logging preserves culture, livelihoods, rights, fostering inclusive and diverse urban spaces as per SDG 11.

Economic Stability and Community Engagement: Project empowers communities via skills and knowledge, nurturing sustainable urban planning and resilient economies, echoing SDG 11.

Collaborative Partnerships for Sustainability: Partnerships with local groups, NGOs, and agencies drive well-planned and inclusive urban spaces, aligning with SDG 11.

Goal 12 - Responsible Consumption and Production



Figure 12 Empowering Local Farmers: Engaging in Hydroponic Farming for Responsible Consumption and Production with Tokenize Amazon.

Hydroponic Farming to Counter Deforestation: Project shifts to hydroponic farming, minimizing deforestation, embracing responsible production per SDG 12.

Resource Efficiency and Technology Integration: Efforts in hydroponics optimize resource usage, aligning with SDG 12's efficient natural resource management and technological innovation.

Circular Economy and Collaborative Approach: Advocates policies, partnerships, and cooperatives for hydroponic farming, resonating with SDG 12's waste reduction and collaborative enterprise.

Empowering Communities and Food Security: Project educates, empowers, and supports communities, aligning with SDG 12 through responsible consumption, production, and addressing underserved needs.

Goal 13 - Climate Action



Figure 13 Preserving the Amazon Rainforest: A Project in Support of Climate Action.

Amazon's Precious Biodiversity: Largest tropical rainforest, rich biodiversity at risk due to deforestation and climate change.

Deforestation and Climate Synergy: Deforestation accelerates climate change, triggers ecological feedback loops, emphasizing urgent preservation.

Hydrological System's Role: Amazon's hydrological system stabilizes global and regional climates; Tokenize Amazon recognizes its climate impact.

REDD+ for Conservation: Championing REDD+ initiative, valuing forest carbon stocks, incentivizing preservation, combating deforestation's toll.

Economic-Ecological Incentives: REDD+ generates economic incentives via carbon credit sales, promoting forest conservation and global cooperation.

Holistic Climate Resilience: Tokenize Amazon combats deforestation, sustainable land use, and partnerships, aligning with SDGs for climate resilience.

Goal 14 - LIFE BELOW WATER



Figure 14 Safeguarding Amazon River from Pollution: A Commitment to Protecting Life Underwater, Including Amazon Pink Dolphins.

Indirect Aquatic Conservation: Project's rainforest conservation indirectly supports aquatic ecosystems, maintaining ecological balance for rivers and streams.

Mitigating Piranha Imbalance: Studies address increased Piranha population impact, showcasing commitment to aquatic biodiversity preservation.

Pollution Prevention Awareness: Educating local communities on pollution prevention aligns with UNSDG Goal 14, curbing land-based marine pollution threats.

Ecological Balance for Water Sources: Rainforest preservation sustains water sources, critical for aquatic life during dry seasons, indirectly supports life below water.

Holistic Ecosystem Approach: Tokenize Amazon's holistic conservation strategy aligns with UNSDG Goal 14, recognizing interconnectedness of terrestrial and aquatic environments, contributing to sustainable ecosystems.

Goal 15 - Life on Land



Figure 15 Preserving Amazon Monkey Habitat: Tokenize Amazon Ensuring Land Life Protection.

Conserving Amazon Biodiversity: Project's core aligns with UNSDG Goal 15, focuses on Brazilian Amazon Rainforest conservation, vital for diverse species habitats.

Halting Illegal Wildlife Trade: Project combats wildlife trafficking, preserving biodiversity, tackling insecurity, and conflicts tied to illicit activities.

Sustainable Hydroponic Farming: Innovative hydroponic farming mitigates environmental impacts, exemplifying sustainable agriculture, Goal 15's focus.

Community Engagement and Education: Beyond direct conservation, Tokenize Amazon engages local communities, fosters sustainable coexistence, embodies community-based approach.

Advanced Drone Monitoring: Integration of drone technology enhances real-time forest monitoring, detects deforestation, addresses threats like fires and illegal activities.

SDG 16 - Peace, Justice and Strong Institutions



Figure 16 Combatting Illegal Loggers: Tokenize Amazon's Pursuit of Peace, Justice, and Strong Institutions.

Illegal Logging Crackdown: Project's dedication to SDG 16 evident through combatting organized crime, corruption in illegal logging. Upholds rule of law and governance.

Indigenous Rights and Stability: By preventing land conflicts, respecting indigenous rights, Tokenize Amazon fosters peace, stability, protecting marginalized communities.

Economic Strength and Legitimacy: Project supports legal timber industries, sustains forest management, prevents job losses, economic instability. Bolsters prosperity, peace.

Community Governance and Collaboration: Engages local governance, partnerships, environmental awareness. Contributes to institution-building, environmental integrity, and SDG 16.

Environmental Peacebuilding: Drone tech for monitoring, forest fire prevention. Supports peace, institution strength through environmental sustainability.

Goal 17 - Partnerships for the Goals



Figure 17 "Government Official Pilots a Drone: Tokenize Amazon's Collaborative Approach in Fostering Partnerships for the Goals.

Community and Indigenous Involvement: Engages local communities and indigenous leaders, empowering them in decision-making for sustainable conservation. Fosters ownership aligns with SDG 17's shared responsibility.

NGOs and Conservation Organizations: Partnerships with NGOs amplify impact. Expertise, resources, coordinated efforts combat illegal logging, meeting SDG 17's emphasis on global cooperation.

Academic and Research Partnerships: Collaborations with academia and research organizations enable tech innovation (drones), knowledge exchange. Technology use aligned with SDG 17's tech for development.

Government and Law Enforcement: Collaborations combat illegal logging, corruption. Joint efforts enforce laws, ensure accountability, dismantle crime networks, align with SDG 17's sustainable management.

Funding and Development Collaborations: Partnerships with conservation organizations and research institutions provide financial, technical support. Aids scalability, meeting SDG 17's sustainable funding.

Technology Providers: Collaboration with SpaceX bridges digital divide, enhances communication, data transmission. Supports global cooperation and tech access per SDG 17.

Local Businesses and Government: Engages local businesses, government, NGOs for funding and economic growth. Aligns with equitable trading systems of SDG 17.

2. Implementation Status

2.1. Implementation Status of the Project Activity

The project Implementation involved a series of events.

- **Developing a project design-** *Identifying the location of the rainforest, defining the project boundaries, and setting the objectives and goals of the project. It also involves identifying the stakeholders and developing a stakeholder engagement plan.*
- **Baseline studies** - *Conducting baseline studies to assess the existing conditions of the rainforest, including its biodiversity, carbon stocks, and land use patterns.*
- **Developing a monitoring plan** - *Identifying the indicators that will be used to measure the success of the project and developing a monitoring plan that outlines how these indicators will be measured and reported.*
- **Developing a carbon accounting plan** - *Developing a plan for estimating and verifying the amount of carbon that is being sequestered by the rainforest.*
- **Stakeholder engagement** - *Engaging with stakeholders to obtain their input and support for the project. This includes working with local communities, indigenous peoples, and other stakeholders to ensure that their rights and interests are respected.*
- **Developing and implementing activities:** *Implementing activities to reduce deforestation and forest degradation, such as promoting sustainable land use practices, supporting alternative livelihoods, and implementing conservation agreements with local communities.*
- **Monitoring and reporting-** *Monitoring the project activities and reporting on the results. This involves regular reporting on the carbon sequestration achieved by the project, as well as any other benefits, such as improvements in biodiversity or the livelihoods of local communities.*
- **Verification and certification** - *Verification of the carbon accounting and the effectiveness of the project by an independent third party and certification of the project's carbon credits by an accredited certification body.*

Implementing a rainforest conservation project under REDD+ required careful planning and monitoring to ensure its success. As of this monitoring period, the project activities have been in operation and have been successful in reducing GHG emissions and promoting carbon sequestration through the conservation of rainforests. The project has been monitoring events that impact GHG emission reductions and has been adjusting its strategies accordingly.

For AFOLU projects, there have been no new project activities that lead to the intended GHG benefit commenced during the monitoring period. However, project activities that commenced prior to the monitoring period have continued to be implemented during this time. The project has been actively managing and monitoring leakage and non-permanence risk factors to ensure that the benefits of the project are long-lasting and sustainable.

To manage and monitor leakage risk factors, the project has implemented a comprehensive system of checks and balances to ensure that any activities outside the project boundary do not undermine its effectiveness. The project has also been working closely with local communities to ensure that their needs are met and that they are not incentivized to engage in activities that could lead to leakage.

To address non-permanence risk factors, the project has been implementing a range of activities designed to promote the long-term sustainability of the rainforest. These activities include sustainable land use practices, reforestation, and conservation agreements with local communities.

There have been no significant changes to the project proponent or other entities during this monitoring period. The project continues to be implemented by the same team, with the same goals and objectives, and with a strong commitment to the conservation of rainforests and the mitigation of climate change.

2.2. Deviations

2.2.1. Methodology Deviations

- *No methodology deviations*

2.2.2. Project Description Deviations

No project description deviations.

3. Safeguards

3.1. No Net Harm

No potential negative environmental and socio-economic impacts.

3.2. Local Stakeholder Consultation

- *The project proponent organized a stakeholder consultation on 16th June 2021 in Mato Grosso, Brazil, aiming to gather insights, feedback, and reflections from the project stakeholders and beneficiaries.*
- **Participants-**
 - *Honorable Almir Surui - United Nations Award Winner, Indigenous Leader of the Surui Indigenous Community.*
 - *Mr Jorge dos Santos - Leader of the Small Farm Co-op.*
 - *Mr Sanzio Maciel - Engineer, Entrepreneur, CEO of the Tokenize Amazon Project.*
 - *Mr Francisco Jose Coelho Maciel - Senior Biologist at the University of the State of Mato Grosso, Chief Biologist of the Tokenize Amazon Project.*
 - *Mr Murilo Dias - Lawyer, Legal Adviser for the Tokenize Amazon Project.*
 - *Mr Bruno Dantas - Adviser for the technological implementation of the Tokenize Amazon Project.*
 - *General Members of the Surui Tribe.*
- *After all meeting members expressed their concerns, needs, and potential solutions to enhance the lives of the Indigenous Communities, the following terms were unanimously agreed upon:*
 - *Honorable Chief Almir Surui will serve as a Special Adviser for the Tokenize Amazon Project, assisting with the formulation of policies related to Indigenous Communities.*
 - *Tokenize Amazon will seek financial assistance to acquire Long-Range Drones for Indigenous Communities involved in the project.*
 - *Tokenize Amazon will train and employ a community member to operate and provide technical support for the Long-Range Drone.*
 - *Tokenize Amazon will launch a Video Conference Medical Consultation program, offering prenatal consultations to Indigenous women, combating malnutrition in Indigenous children, and seeking partnerships to provide free medical prescriptions.*
 - *Tokenize Amazon will purchase and set up satellite internet in the participating Indigenous Communities, facilitating the Medical Consultation program and allowing for the transmission of drone images of land invasions, thereby alerting authorities and seeking prompt action.*

- All participants commit to urging local and national authorities to enhance measures against illegal logging and mining within Indigenous Lands and to raise awareness about the dire circumstances faced by many Indigenous Communities in the Brazilian Amazon.

3.3. AFOLU-Specific Safeguards

The AFOLU (Agriculture, Forestry, and Other Land Use) safeguards relevant to the "Tokenize Amazon" rainforest project pertain to ensuring that the project's activities align with best practices for environmental and social sustainability in the context of land use and forestry.

Rights of Indigenous Peoples and Local Communities - Given the project's emphasis on protecting indigenous communities and fostering close ties with them, it's crucial to ensure that their rights to land, resources, and cultural heritage are respected and upheld.

Biodiversity Conservation - The project seeks to conserve a biodiversity hotspot in the Amazon Rainforest. Safeguards ensure that conservation activities do not inadvertently harm other species or ecosystems.

Emission Reductions and Carbon Sequestration- As the project is centred around carbon credits and aligns with the REDD+ sectoral scope, safeguards ensure that the project genuinely reduces emissions and enhances carbon sequestration in the forest.

Sustainable Land Management The project's aim is to prevent both planned and spontaneous deforestation, safeguards promote sustainable land and forest management practices.

Stakeholder Engagement - The organized stakeholder consultation indicates a commitment to inclusive decision-making. Safeguards ensure ongoing, transparent, and meaningful engagement with all stakeholders, especially the indigenous communities.

Benefit Sharing - The project aims to ensure that local communities reap the benefits of conservation efforts. Safeguards should ensure equitable distribution of benefits derived from the project.

Monitoring and Verification: The project has a system for monitoring and verification. Safeguards ensure that this system is robust, transparent, and leads to corrective actions when needed. Advanced technological approaches included the project monitoring plan ensures that the project is well monitored around the clock while identifying any risks that could damage the project site in advance in order to take precautionary actions.

Avoidance of Involuntary Resettlement: While not explicitly mentioned, any land procurement has not involved in displacing people against their will as there are no people settled within the project site.

Cultural and Heritage Preservation - Given the involvement of indigenous communities, safeguards ensure the protection of cultural sites and heritage.

Transparency and Accountability - The sale of carbon credits and the potential for funds to be reinvested, safeguards ensure transparency in financial transactions and accountability in the use of funds.

4. Data and Parameters

4.1. Data and Parameters Available at Validation

Complete the table below for all data and parameters that are determined or available at validation and remain fixed throughout the project crediting period (copy the table as necessary for each data unit/parameter). Data and parameters monitored during the operation of the project are included in Section **Error! Reference source not found.** (Data and Parameters Monitored) below.

Data / Parameter	RAF
Data unit	Indicate the unit of measure
Description	Provide a brief description of the data/parameter
Source of data	Indicate the source(s) of data
Value applied	Provide the value applied
Justification of choice of data or description of measurement methods and procedures applied	Justify the choice of data source, providing references where applicable. Where values are based on measurement, include a description of the measurement methods and procedures applied (e.g., what standards or protocols have been followed), indicate the responsible person/entity that undertook the measurement, the date of the measurement and the measurement results. More detailed information may be provided in an appendix.
Purpose of Data	Indicate one of the following: <ul style="list-style-type: none"> • Determination of baseline scenario (AFOLU projects only) • Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Comments	Provide any additional comments

4.2. Data and Parameters Monitored

Data / Parameter	$R_{yr,REDD}(\text{project, yr})$
Data unit	ha/year
Description	Annual rate of change in the forest cover
Source of data	N/A
Value applied	1001.4337
Justification of choice of data or description of measurement methods and procedures applied	The projected annual deforestation in the REDD+ Project activity is estimated using the equation provided in Quantification of GHG emissions Reductions REDD+ Projects, Planetary Carbon Standard (PCS), Version 1, 2022
Purpose of Data	To calculate the annual change in the surface covered by forest in the project scenario
Comments	

Data/ Parameter	$Biomass_{AG}$
Data unit	Tons (t)
Description	Above ground biomass
Source of data	Calculated
Value applied	1,478,164
Justification of choice of data or description of measurement methods and procedures applied	N/A
Purpose of Data	To calculate net carbon sink/sequestration
Comments	

Data / Parameter	$Biomass_{BG}$
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Data unit	Tons (t)
Description	Below ground biomass
Source of data	Calculated
Value applied	868,128
Justification of choice of data or description of measurement methods and procedures applied	N/A
Purpose of Data	To calculate net carbon sink/sequestration
Comments	N/A

4.3. Description of the Monitoring Plan

A plan has been developed to monitor the Tokenize Amazon Project with regard to its climate related objectives, namely the reduction in the emissions of tCO₂e by reducing deforestation in the Project Area. The primary objective of the monitoring plan is to ensure accurate estimates of carbon stocks and carbon emission reductions from the REDD+ Project over the crediting period of the Project. The climate monitoring plan includes three primary monitoring activities that will be performed throughout the lifetime of the project activity

A comprehensive risk assessment was conducted as part of the establishment of the monitoring plan

A simplified risk assessment model was employed to facilitate a practical and efficient evaluation of the identified risks. In assessing risks, it is beneficial to consider two key metrics or parameters:

- *Consequences/Severity: This metric evaluates the potential seriousness or impact of the risk in the event that it occurs.*
- *Likelihood/Probability: This metric assesses the probability or likelihood of the risk actually materializing or occurring.*

By incorporating these metrics into the risk assessment process, we gain a comprehensive understanding of both the potential severity and the probability of each identified risk. This approach enables effective risk management and allows for informed decision-making based on a thorough analysis of the risks involved.

$$\text{Risk} = \text{Likelihood} \times \text{Consequences} \quad (R = P \times C)$$

Probability/Likelihood	Description
Low	Rarely happen or very unlikely to happen
Medium	Likely to happen
High	Very likely to happen

Impact	Description
Low	Impact that would not cause any exposure of information, any injury, any unauthorized entry, any asset loss, or no system or operation disruption. Rarely happen or very unlikely to happen
Medium	Impact that may lead to less than minor injury, undetected or delay in the detection of unauthorized entry with no asset loss or access to sensitive materials, or no system or operation disruption. Likely to happen

Consequences	Description
High	The impact that would cause exposure of Confidential information, or cause embarrassment or difficulty to administration, bringing limited financial losses to the Organization, minor injury not requiring hospitalization, or delay in the detection of unauthorized entry resulting in limited access to assets or sensitive materials, or major system and operation disruption. Very Likely to Happen

Serial Number	Identified Risk	Probability (P)	Consequences (C)	Risk Rating= P X C	Risk Mitigation Actions
1	Deforestation due to Urbanization/ Development of Roads within the area	High	High	High	By acquiring this land, the Project Owner, Sanzio Maciel, effectively preempted potential harm to the area. Since the land is now under the complete ownership of the Project Owner, no damage can be inflicted upon it without their explicit permission. The primary objective behind this acquisition is to safeguard the land from destruction.

Serial Number	Identified Risk	Probability (P)	Consequences (C)	Risk Rating = P X C	Risk Mitigation Actions
1	Deforestation due to Urbanization/ Development of Roads within the area	High	High	High	Implement strict regulations and monitoring systems through dedicated security personnel, who provide round-the-clock coverage. Additionally, the PCS employs advanced technological tools and remote sensing mechanisms to oversee the land, effectively mitigating any risks of deforestation. We also promote and educate local communities about the importance of forest conservation.

Serial Number	Identified Risk	Probability (P)	Consequences (C)	Risk Rating = P X C	Risk Mitigation Actions
2	Human Activities- Illegal Logging/hunting, mining, farming and agricultural, River expansion activities	High	High	High	Implement strict regulations and monitoring systems through dedicated security personnel, who provide round-the-clock coverage. Additionally, the PCS Strengthen law enforcement and patrol efforts, provide alternative income-generating opportunities to local communities, promote sustainable livelihoods through eco-tourism initiatives

Serial Number	Identified Risk	Probability (P)	Consequences (C)	Risk Rating = P X C	Risk Mitigation Actions
3	Climate Change (Wildfire)	Medium	Medium	Medium	The PCS employs advanced technological tools such as artificial intelligence and remote sensing mechanisms to closely track humidity levels and soil temperature in the area. Additionally, the PCS develops and implements a forest management plan that considers climate change adaptation, promotes reforestation and forest restoration initiatives, and enhances early warning systems with the use of new technology for wildfires.

Serial Number	Identified Risk	Probability (P)	Consequences (C)	Risk Rating = P X C	Risk Mitigation Actions
4	Natural Disasters (Extreme Whether/Flooding)	Medium	Medium	Medium	<p>The PCS develops and implements disaster preparedness plans, establishes early warning systems, and conducts regular inspections of forest areas to identify potential hazards.</p> <p>This early detection enables them to take necessary measures and preventive actions to protect the land from any damages, ensuring its preservation and safety.</p> <p>It is important to note that the land is situated in an elevated area, making it highly improbable for the river to reach and affect the land. The landowner conducted a thorough analysis, taking all potential risks into consideration, and it was determined that the land is not under any threat of flooding.</p>

Permanence Monitoring and Risk Mitigation:

a. Early Detection System- The project utilizes state-of-the-art AI technology, ground truth data, satellite imagery, and remote sensing mechanisms for early detection of potential risks to the project site. These tools provide real-time insights into changes in biomass and carbon levels, allowing prompt intervention to avoid damages and losses.

b. Ground Truth Data Collection- Regular ground truth data collection by qualified experts ensures accurate assessments of biomass and carbon stocks. These data act as a reference for comparison with satellite imagery, enabling quick identification of any discrepancies.

c. Risk Mitigation Protocol- A well-defined risk mitigation protocol is in place, specifying actions to be taken in response to early detection of potential threats. This protocol includes coordination with local authorities, community involvement, and timely execution of counteractive measures.

2. Functional Layout- The diagram below illustrates the functional layout of the permanence monitoring and risk mitigation system:



3. Permanence Monitoring Procedure- The procedure for addressing carbon losses and ensuring permanence is as follows:

Step 1- Early Detection and Monitoring

- Continuously monitor forest biomass and carbon levels using AI technology, satellite imagery, and remote sensing.
- Regularly collect ground truth data to validate and calibrate satellite observations.

Step 2- Risk Identification and Assessment

- Analyze monitoring data to identify any deviations or potential risks to the project site.
- Assess the magnitude and severity of the identified risks.

Step 3- Immediate Intervention

- Activate the risk mitigation protocol promptly in case of early detection of threats.
- Collaborate with local communities and relevant authorities to implement necessary measures.

Step 4- Compensation Strategies

- In the event of carbon losses, compensate buyers through various strategies:
- Insurance coverage to offset any verified carbon losses during the monitoring period.
- Maintain a 10% buffer stock of carbon credits to cover unforeseen losses.
- Offer equal number of carbon credits from future projects in the pipeline to maintain commitment to buyers.

The Tokenize Amazon Rainforest Conservation Project prioritizes permanence through a robust monitoring and risk mitigation system. The early detection mechanisms and compensation strategies serve to maintain the integrity of the project and fulfil our commitment to carbon credit buyers. With continuous monitoring and proactive measures, we are confident in achieving our conservation and sustainability goals.

5. Quantification of GHG Emission Reductions and Removals

5.1. Baseline Emissions

The project owner recognizes the importance of establishing a baseline emission for their carbon project. This baseline emission refers to the quantity of greenhouse gas emissions that would have been discharged into the atmosphere if the forest had been unprotected and deforested.

By estimating the carbon dioxide and other greenhouse gases that would have been produced due to activities like logging, burning, and clearing of the forest for agricultural or other purposes,

Tokenize Amazon can determine the baseline emission. This serves as a crucial reference point against which the actual emissions from the project are measured. The following methodological procedure was applied in the establishment of the project baseline.

Step: 01 Calculation of historical annual deforestation in the reference region

$$MREF = RAF * PA \quad (1)$$

$$RAF = 7500 * PA^{-0.7} \quad (2)$$

If RAF as calculated using equation 2 is <1, RAF shall be made equal to 1

Where:

MREF	Minimum size of reference region for projecting rate of deforestation; ha
PA	Unplanned deforestation project area; ha
RAF	Reference Area Factor. Factor to multiply project area by to get minimum reference area; dimensionless

The equation is obtained from Approved VCS Module VMD0007, Version 1.0 REDD

Methodological Module: Estimation of baseline carbon stock changes and greenhouse gas emissions from unplanned deforestation (BL-UP). initially proposed by Joint Crediting Mechanism (JCM) Methodology form for Reducing Emissions from Deforestation and Forest Degradation (REDD) (2014REDD302_41_JCM_PM_ver01) (This is used to double check the approaches of PCS methodology only)

The following equation estimates annual historical deforestation in the reference region. The formula was called "annual rate of deforestation" by Fearnside, 1993 and Liu et al., 1993. The same has been standardized by Jean-Philippe Puyravaud (2003).

$$R_{yr} = \left(\frac{1}{t_2 - t_1} \right) \times A_1 - A_2$$

Where,

R_{yr} = Annual rate of change in the forest cover, ha

t_2 = Final year of the reference period; yr

t_1 = Initial year of the reference period; yr

A_1 = Forest surface in the reference region in the initial moment; ha

A_2 = Forest surface in the reference region in the final moment; ha

Step 02: Projecting annual deforestation in the REDD+ project scenario

The projected annual deforestation in the REDD+ Project is estimated with the equation:

$$FSCREDD_{(pro+ect,yr)} = FSC_{bl,yr} \times (1 - \%DD)$$

Where,

$FSCREDD_{(PTO+ect,YT)}$ = Annual change in the surface covered by forest in the project scenario; ha

$FSC_{bl,yr}$ = Annual change in the surface covered by forest in the baselinescenario; ha

$\%DD$ = Projected decrease in deforestation due to the implementation of REDD+ activities

Step 03: Total Forest biomass calculation

Total forest biomass is the sum of aboveground forest biomass and belowground forest biomass. The forest shall be stratified by ecological zone to obtain the total biomass by fragmentation class transition

$$DTBi = DAB \times (1 + R)$$

Where,

$DTBi$ = Difference total biomass transition i ; tha^{-1}

DAB = Average difference in aboveground biomass transition i ; $tC ha^{-1}$

R = Belowground/aboveground biomass ratio; $tond.m^{-1}$

i = Degradation type; 1-primary degradation, 2-secondary degradation

The carbon in total biomass is the product of total biomass and the carbon fraction, according to the following equation:

$$DTCBi = DTBi \times CF$$

Where:

$DTCBi$ = Difference total carbon biomass; $tC ha^{-1}$

$DTBi$ = Difference total biomass; tha^{-1}

CF = Carbon fraction; 0.47

The equivalent carbon dioxide contained in the DTB is the product between the DBCF and the molecular ratio constant between carbon (C) and carbon dioxide (CO₂), according to the following equation:

$$DTBCO_{2eq} = DCTBi \times \frac{44}{12}$$

Where:

$DTBCO_{2eq}$ = Carbon dioxide equivalent in the difference of total biomass per hectare; $tCO_2e \text{ ha}^{-1}$

$DCTBi$ = Carbon content in the difference of total biomass; $tC \text{ ha}^{-1}$

Step 04: Annual emission due to deforestation in the baseline scenario

The annual emission due to deforestation in the baseline scenario is estimated with the following equation:

$$AE_{bl,yr} = AD_{bl,yr} \times TCO_{2eq}$$

Where:

AE_{bl} = Annual emission in the baseline scenario; $tCO_2 \text{ ha}^{-1}$

AD_{bl} = Historical annual deforestation in the baseline scenario; ha

TCO_{2eq} = Total carbon dioxide equivalent; $tCO_2e \text{ ha}^{-1}$

The annual emission due to deforestation in the project scenario is estimated with the following equation:

$$AERED_{(pro+ect,yr)} = ADREDD_{(pro+ect)} \times TCO_{2eq}$$

Where:

$(pro+ect,yr)$ = Annual emission in the project scenario; $tCO_2 \text{ ha}^{-1}$

$(pro+ect)$ = Projected deforestation with project activities; ha Total

TCO_{2eq} = carbon dioxide equivalent; $tCO_2e \text{ ha}^{-1}$

The annual emission due to deforestation in the leakage area is estimated as follow:

$$AE_{lk,yr} = AD_{k,yr} \times CO_{2eq}$$

Where:

AE_{lk} , = Annual emission in the leakage area; tCO₂ ha⁻¹

AD_{lk} , = Annual projected deforestation in leakage area; ha

TCO_{2eq} = Total carbon dioxide equivalent; tCO_{2e} ha⁻¹

5.2. Project Emissions

No emissions are identified for this project activity.

5.3. Leakage

Leakage emissions are not identified for this project activity

5.4. Net of GHG Emission Reductions and Removals

Year	Estimated baseline emissions or removals (tCO _{2e})	Estimated project emissions or removals (tCO _{2e})	Estimated leakage emissions (tCO _{2e})	Estimated net GHG emission reductions or removals (tCO _{2e})
Year 01- 28/10/2021 - 12/10/2022	860,336	-	-	860,336
Year 02- 13/10/2022 - 12/10/2023	860,336	-	-	860,336
Total				1,720,672

5.5. Comparison of actual emission reductions with estimates in the CMA

No Difference with then Calculation in the CMA

Item (For the monitoring period)	Values applied in ex-ante calculation of the registered CMA	Actual values reached during the monitoring period



Emission reductions (tCO ₂ e)	1,548,604	1,720,672
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5.6. Remarks on difference from estimated value in the CMA

The buffer stock allocation is not applicable for the first 2 years of the project monitoring period which has already been completed.


6. APPENDIX

Annex 01

Qualifications of personnel engaging in the monitoring activities.

SPE - Save Planet Earth (AI Technology)

Tokenize Amazon Project team:



Francisco Maciel
BIOLOGIST

Graduated from University of State of Mato Grosso, all his teaching career has been around the Amazon Rainforest.



Chief Almir Surui
SPECIAL ADVISER

Brazilian Hero, one of the greatest indigenous leaders alive, biologist, from a Family of Amazon Warriors, winner of United Nation Award. He is the heart of our Project. He will be the guide of all our actions related to the indigenous tribes.



Murilo Dias
LAWYER

Specialize in Real State laws and environment



Alexandre Gobbi
ACCOUNTANT

Responsible for all government paperwork, tax and compliance.



Sanzio Maciel
CEO/FOUNDER

Entrepreneur, father of two beautiful children, lives throughout his entire life in cities within the Amazon region, vast knowledge of the area and the effects of deforestation and climate change. Fight so that the next generation can have the pleasure of seeing the Amazonia alive and not only in the history books.

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