Carbon Management Assessment (CMA)

Tokenize Amazon Project

Document Prepared by Sanzio C Maciel
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Project Title	*Tokenize Amazon Project*
Version	*V 4.0*
Date of Issue	*13/10/2023*
Project proponent/s	*Rainforest Token*
Prepared By	*Sanzio C Maciel*
Contact	*Rua das Manjeronas 364, District Jardim Maringá, in the city of Sinop/MT, ZipCode 78556-210, Brazil; phone number - +55 63 992032164, email - info@tmzn.io, website - www.tmzn.io*

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1. Description of Project Activity

1.1. Introduction of Project Activity

The project's core mission is to protect and preserve the **Amazon Rainforest** and its ecosystem, making every possible effort to combat illegal deforestation and climate change.

The project is located in the city of Presidente Figueiredo, State of Amazonas, Brazil. In the heart of Amazon Rainforest, in a place known as "the deforestation belt".

The extent of land being conserved under this project is 1001.4 ha. The project therefore falls under the small-scale category as defined by the PCS.

REDD+ is the sectoral scope applicable to this project activity.

This project does not involve reforestation or afforestation-related activities. The project is intended to be registered as a conservation project under REDD+ Category. Accordingly, the sole purpose of the project is to conserve a 1001.4 ha of lands from deforestation and degradation threats in the Amazon region in Brazil. The land declared under this project is rich with many endemic species.

The majority of the forest is contained within Brazil, with 60% of the rainforest, followed by Peru with 13%, Colombia with 10%, and with minor amounts in Bolivia, Ecuador, French Guiana, Guyana, Suriname, and Venezuela. The Amazon represents over half of the planet's remaining rainforests and comprises the largest and most biodiverse tract of tropical rainforest in the world, with an estimated 390 billion individual trees divided into 16,000 species.

Deforestation in Brazil's Amazon Rainforest has hit its highest level in over 15 years, official data shows. Despite this, governments have failed to stop deforestation effectively.

This project is registered under SLCCS with the purpose of generating long-term and credible Sri Lankan Certified Emission Reduction (SCER) from the avoided deforestation. The credits issued from the project is sought to be traded either in local or international voluntary carbon market. The proceeds receiving from the trading of the carbon credits will be used to acquire more forest assets that are prone to a high deforestation risk.

The owner of the project, Sanzio C Maciel is highly concerned with the increased annual loss of forest resource, biodiversity, and soil quality of the Amazon Region. Through the initiation of this project, a genuine intervention is made to disrupt the continuing deforestation trends in the region. It is understood that the communities living with the forest eco-system are the key stakeholders to be engaged in the conservation efforts.

Therefore, a mechanism has been put in place to incentivize the local communities supporting the conservation project.

1.2. Sectoral Scope and Project Type

AFOLU Category - Reduced Emissions from Deforestation and Degradation (REDD+). (Rainforest conservation project).

As per the second clause of the project ownership deed attached under 1.6 below, the project is classified as a Conservation project hence will not be considered for any urbanization or development projects.

> Second Clause – The business purpose shall be TOKENIZE AMAZON PROJECT AIMING TO CONSERVATION OF NATIVE FORESTS ONLY IN THE AMAZON BIOME IN THE AMAZON FOREST, MODERNIZATION OF MEANS TO COMBAT THE EFFECTS OF GAS EMISSION OF GREENHOUSE EFFECT, DIGITALIZATION AND CREATION OF APPLICATIONS AND COMPUTER PROGRAMS WITH THE PURPOSE TO PROTECT ENVIRONMENT AND MARKETING OF CARBON CREDITS ARISING FROM REDD+ PROJECTS.

1.3. Project Proponent

Organization Name	*Rainforest Token*
Contact Person	*Sanzio C Maciel*
Address	*Residencial Polinésia, Quadra 02, Lote 08, Palmas, Tocantins, Brazil, ZIP Code - 77.003-002*
Title	*CEO*
Telephone	*+55 63 992032164*
Fax	*N/A*
E-mail	*lidersanzio@gmail.com*

1.4. Other Entities Involved in the Project

Not Applicable

1.5. Location of Project Activity

Location of Project Activity	*KM 14, of BR-174, district of Presidente Figueiredo, State of Amazonas, Brazil*
Province	*State of Amazonas*

District	*Presidente Figueiredo*
DS Division	*Not Applicable*
City/Town	*Presidente Figueiredo*
Community	*Estrada da Nona*
Coordinates	*-1.520719° -60.449124°*
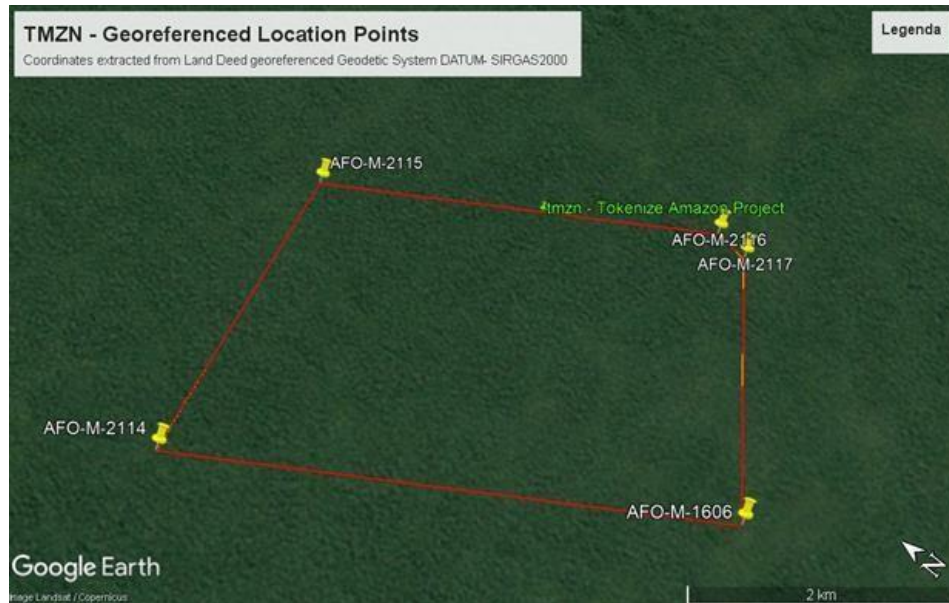
The figure above shows the location Points registered in the LAND DEED and georeferenced by the Brazilian Government, as described below -

"**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.**

1.6.   Project Ownership

This project is intended to be registered under SLCCS with the purpose of generating long-term and credible Sri Lankan Certified Emission Reduction (SCER) from the avoided deforestation. The credits issued from the project is sought to be traded either in local or international voluntary carbon market. The proceeds receiving from the trading of the carbon credits will be used to acquire more forest assets that are prone to a high deforestation risk.

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1.6.   Project Ownership

Elias Guttman
Certified Public Translator - English
Enrollment Commercial Registry Jucesp No. 850 – CPF 205.428.458-06
ID/RG 13.255.413 – CCM 2.939.360 – INSS 1.162.477.364-2
Alameda Casa Branca, 844 – Zip Code: 01408-000 – São Paulo/SP
Phone: (55 11) 3884-5320 - FAX: (55 11) 3884-9038 - e-mail: gtradutor@zmbil.com

Translation 35642   **Book CCXC**   **Page 004 to 006**

The undersigned, Public Translator, duly sworn and registered with the Board of Trade of the State of São Paulo under No. 850 certifies that a document, written in Portuguese was presented for translation into English, which has been done to the best of his knowledge as follows:--
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(THE DOCUMENT PRESENTED WAS AN AGREEMENT IN TWO(02) PAGES. FRONT ONLY.
IT READS:-)--

AGREEMENT OF FLORESTA TOKEN CONSERVAÇÃO DE FLORESTA NATIVA DO BIOMA AMAZÔNICO SPE LTDA.

1. SANZIO COELHO MACIEL, BRAZILIAN citizen, ENTREPRENEUR, married under Community Property System, date of birth 03/13/1978, CPF No. 667.526.471-00, Driver's License No. 02104574920, DETRAN, MT, domiciled and resident at LOTEAMENTO RESIDENCIAL POLINÉSIA, without number, BLOCK 02, LOT 08, district of LOTEAMENTO RESIDENCIAL POLINÉSIA, municipality of PALMAS – TOCANTINS, ZIP CODE 77003-002.

The company is constituted as a limited business company, by the following clauses:

First Clause: The company will adopt the corporate name of FLORESTA TOKEN CONSERVAÇÃO DE FLORESTA NATIVA DO BIOMA AMAZÔNICO SPE LTDA.
    Sole Paragraph: RAINFOREST TOKEN shall be the company's trade name.

Second Clause – The business purpose shall be TOKENIZE AMAZON PROJECT AIMING TO CONSERVATION OF NATIVE FORESTS ONLY IN THE AMAZON BIOME IN THE AMAZON FOREST, MODERNIZATION OF MEANS TO COMBAT THE EFFECTS OF GAS EMISSION OF GREENHOUSE EFFECT, DIGITALIZATION AND CREATION OF APPLICATIONS AND COMPUTER PROGRAMS WITH THE PURPOSE TO PROTECT ENVIRONMENT AND MARKETING OF CARBON CREDITS ARISING FROM REDD+ PROJECTS.

Third Clause – The company headquarters shall be at RUA DAS MANJERONAS, 364 district of JARDIM MARINGA, municipality of SINOP – MT, Zip Code 78556-210.

Fourth Clause – The company shall start its activities as of the registration date and shall finish with the achievement of the business purpose and after the disposal of all of Company's assets.

Fifth Clause – The equity capital is of R$ 100.000,00 (ONE HUNDRED THOUSAND Reais) divided in 100.000 quotas in the face value of R$ 1,00 (ONE real), paid in, hereby in Brazilian currency, by the partners:

Name	No. OF QUOTAS	VALUE IN R$
SANZIO COELHO MACIEL	100.000	100.000,00
TOTAL	100.000	100.000,00

Sixth Clause – The quotas are indivisible and cannot be assigned or transferred to third parties without the consent of the other partners, to whom is assured, in equal conditions and price right of preference for their acquisition if put up for sale, formalizing, if the assignment is made, the relevant contractual amendment.

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Translation 35642   **Book CCXC**   **Page 004 to 006**

Seventh Clause – The responsibility of each member is restricted to the value of their quotas, but all are jointly and severally liable for the payment of the equity capital.

Eighth Clause – The company's management shall be the administrator/member SANZIO COELHO MACIEL, with the powers and attributions of active and passive representation of the company, judicial and extrajudicial, being able to practice all acts included in the business purpose, always in the company's interest, authorized to use the corporate name, being forbidden, however, to do so in activities alien to the corporate interest or to assume obligations in favor of any of the quota holders or third parties, as well as to encumber or sell the company's real estate assets, without the authorization of the other partners.

Ninth Clause – At the end of each fiscal year, on December 31, the administrator will render justified accounts of his administration, preparing the inventory, the balance sheet, and the economic result balance sheet, and the partners will be responsible for the ascertained profits or losses in proportion to their quotas.

Tenth Clause – Within four months after the end of the fiscal year, the partners will deliberate on the accounts and appoint administrators whenever necessary.

Eleventh Clause – The signatories of the present act declare that the movement of the company's annual gross revenue will not exceed the limit established in item I of article 3 of Complementary Law No. 123 of December 14, 2006, and that they do not fall under any of the exclusion hypotheses in paragraph 4 of article 3 of the aforementioned law.

Twelfth Clause – The company may at any time, open or close a branch or other office, by means of a contractual alteration deliberated in the form of the law.

Thirteenth Clause – The partners may, by mutual agreement, establish a monthly withdrawal, as "pro labore" (monthly salary payment), observing the pertinent regulatory provisions.

Fourteenth Clause – If any partner dies or is interdicted, the company shall continue its activities with the heirs, successors and the incapacitated partner. If this is not possible or if these or the remaining partners have no interest, the value of their assets will be calculated and liquidated based on the equity situation of the company, on the date of the resolution, verified in a specially prepared balance sheet

Sole paragraph – The same procedure will be adopted in other cases in which the company resolves itself in relation to its partner.

Fifteenth Clause – The Administrators declare, under penalty of law, that they are not prevented from exercising the company's management, by federal law, or by virtue of criminal conviction, or for being under the effects thereof, to a penalty that prohibits, even temporarily,

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1.7. Project Fundings

Tokenize has fully funded this project for the conservation purpose.

1.8. Project Start Date

Project was started by Tokenize on 28th October 2021

1.9.   Project Commissioning Date

Not applicable to conservation projects

1.10.   Project Track

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

1.11.   Project Crediting Period

The crediting period is set for 10 years starting from 28th October 2021 until 12th October 2031

1.12.   The Scale of Project and Estimated Emission

Project Scale	
Small	√
Large	

Year	Estimated GHG emission reductions or removals (tCO₂e)
Year 01- 28/10/2021- 12/10/2022	*774,302*
Year 02- 13/10/2022- 12/10/2023	*774,302*
Year 03- 13/10/2023- 12/10/2024	*774,302*
Year 04- 13/10/2024- 12/10/2025	*774,302*
Year 05- 13/10/2025- 12/10/2026	*774,302*
Year 06- 13/10/2026- 12/10/2027	*774,302*
Year 07- 13/10/2027- 12/10/2028	*774,302*
Year 08- 13/10/2028- 12/10/2029	*774,302*
Year 09- 13/10/2029- 12/10/2030	*774,302*

Year 10- 13/10/2030- 12/10/2031	774,302
Total estimated ERs	7,743,025
Total number of crediting years	10
Average annual ERs	774,302

1.13. Description of the Project Activity

The key objective of this project is to conserve the project area from the risks of deforestation and forest degradation and retain carbon stock on the said land for an extended period for incentivizing the conservation efforts.

*the project is located **INSIDE THE AMAZON RAINFOREST**, a jurisdiction covered by a jurisdictional REDD+ program.*

Phase 1 – Buy Land that otherwise would go to deforestation

- *We will research the real estate market looking for areas offered to cattle ranchers, miners, loggers, and monoculture agribusiness, and make all efforts to purchase it. This action will drive the prices up, making it economically inviable for them to acquire new Amazon land.*
- *We will tactically buy land between the existing deforestation areas and protected areas, making it more difficult to transport illegal timber.*

Phase 2 - CO2 Credit (United Nations REDD+) Through United Nations REDD+ Initiative -

- *We will certify Tokenize Amazon's purchased area inside the United Nations REDD+ program that pays to keep forests standing. The payment, through the sale of carbon credits, reflected the value of carbon stored in forests or the environmental costs arising from wood extraction and agricultural occupation. When the certification occurs, the land is locked inside the UN program for a period of 30 to 50 years.*

Phase 3 - HELP INDIGENOUS TRIBES

- *With guidance and orientation of the Human Rights award winner from the International Society for Human Rights, great Chief Almir Surui, leaderthe of tribe Paeté Surui. He is also the Councilor of COIAB – Coordination of Indigenous Organizations of the Brazilian Amazon Representative of COIAB in CIPIACI. Tokenize Amazon Project will find ways to collaborate and implement technology, tools, and resources to help protect Indigenous Tribes. Supply Indigenous People with drones to patrol their areas, enforce ownership, and providing legal proof of invasions to local authorities.*

Phase 4 – HELP POOR PEOPLE LIVING INSIDE THE AMAZON RAINFOREST

- *According to Brazilian official data, more than 47% of the population of the Amazon Rainforest lives below the poverty line. According to a survey, of a total of 4.1 million people, 1.9 million lived in this condition in 2019. Without*

any hope, poor people end up being forced to work for illegal miners and deforesters.

- *Tokenize Amazon Project will set up a food stamp program in the City of Presidente Figueiredo-AM, where our first plot of land is located. Every child living below the poverty line will be entitled to food stamps as long as they keep attending school and their parents do not engage in illegal deforestation.*

Phase 5 - Small Farms Project.

- *We will provide technical assistance to Small Farmers to create a relationship chain to facilitate the export of "GREEN PRODUCTS" produced on their lands, only if they commit to protecting the forest and don't deforest more land.*

- *We will prospect customers for these products on international markets to provide liquidity and continuity to the production of organic, environmentally friendly products.*

Phase 6 - Green Amazon Products Online Store.

- *Creation of an online store for selling only products with proven traceability of their origin. Make sure all goods come from sources Environmentally and Socially compliant. Managing waste creation and disposal of packages and manufacturers. Enforcing Carbon Neutrality for all products in the portfolio.*

METAVERSE

- *Following the development of our project, we will collaborate with METAVERSE platforms to include our land inside their virtual world. We are building our METAVERSE AMAZON RAINFOREST.*

1.14. Conditions Prior to Project Initiation

Illegal loggers organized as syndicates take possession of roads and lands and start the deforestation process. The access to our land is known as "Estrada da nona" and has 18 km in length, enabling all illegal logging to be transported from this area.

Illegal deforestation in the region has achieved one of the highest rates in Brazil.

It's also one of the poorest areas of the Amazonian State, with children not attending schools any time of the day.

Since the initiation of the project, deforestation has stopped completely. Tokenize Amazon Project has enforced ownership of the area and also has organized neighborhood landowners to protect an area four times the size we own.

1.15. Compliance with Laws, Statutes, and Other Regulatory Frameworks

Tokenize Amazon Project is fully compliant with Brazilian environmental law nº 7.735/1989, also fully compliant with Paris Accord and UNCC REDD+ initiative.

This can be demonstrated by the bylaw registered by the Brazilian Government in the second clause of our Business Agreement registered at public notary as stated on section

1.2 -

"Second Clause – The business purpose shall be Tokenize amazon project aiming to conservation of native forests only in the amazon biome in the amazon forest, modernization of means to combat the effects of gas emission of greenhouse effect, digitalization, and creation of applications and computer programs with the purpose to protect environment and marketing of carbon credits arising from REDD+ projects."

As defined by the government of Brazil, forestland shall have a minimum area of 0.5 hectares with trees of a minimum height of 5 meters and minimum canopy coverage of 10 percent, or trees capable of reaching these limits in situ. Further, it is stated that the forestlands should not include areas predominantly used for agricultural or urban purposes.

The Tokenize Amazon project located in the Amazonian Region occupies 1001.4 ha in area and it meets the national minimum forest area threshold of 0.5 ha. The canopy cover of the trees in the project site was assessed using cartographic inputs of remote sensing for eligibility requirements of the national forest definition. It was evident that the forest cover of the site exceeded the minimum canopy cover of 10%. Further, in assessing the tree heights of the forest, field measurements were taken by the project proponent complying with approved protocols. The records showed that trees have already reached the minimum threshold of the tree height given in the forest definition. In this context, it can be concluded that the forestland subject to this carbon assessment falls within the national forest definition of Brazil.

1.16. Participation under Other GHG Programs

The Project has not sought registration in any other GHG program.

1.17. Other forms of Credit

The project has not sought or received another form of GHG-related environmental credit, including renewable energy certificates.

1.18. 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
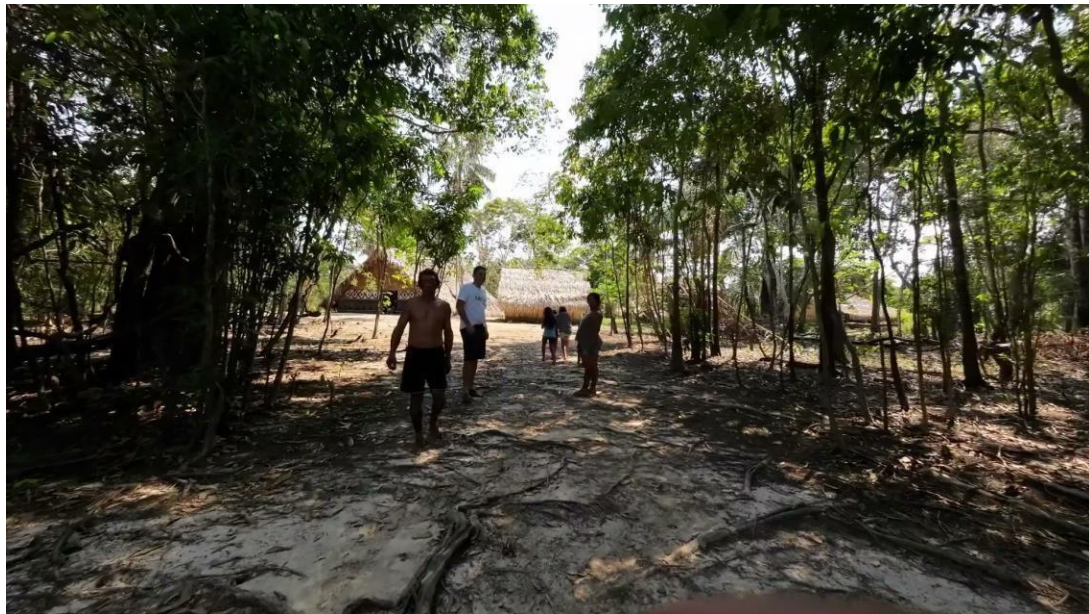
Figure 1 Collaborative Efforts - Local community members partnering with the Tokenize Amazon project for sustainable initiatives.

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 consultations for enhanced medical access.

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 counseling, mentoring, healthcare partnerships, and after-school programs, catering to individual needs.

Harnessing Technology for Inclusion - Leveraging technology, the project provides distance learning through services like satellite internet, 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
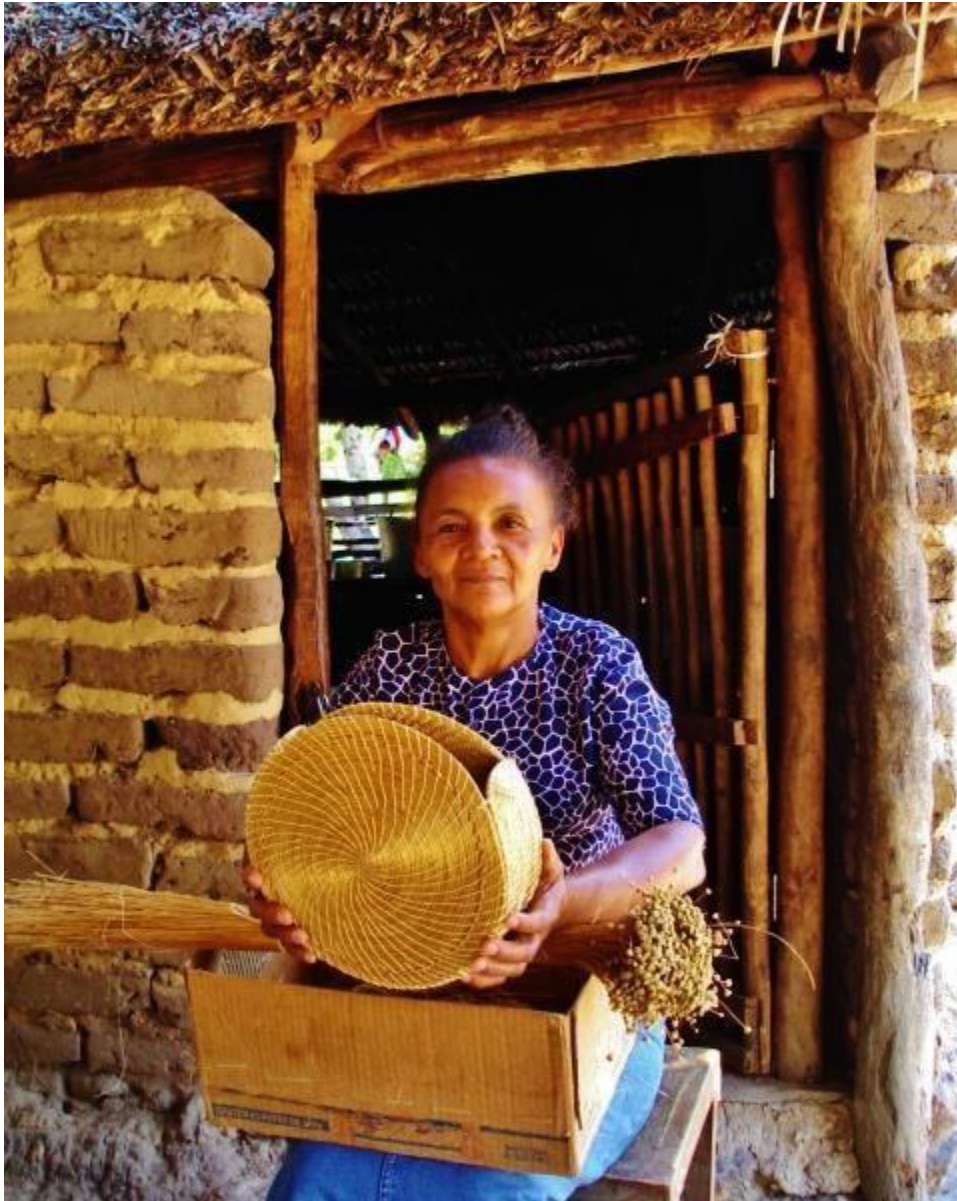
Figure 5 Empowering women by supporting their home-based sustainable craft production

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 counseling, 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 internet *Connectivity for Collaboration -* *S*atellite *internet enriches impact, enabling real- time data transmission, collaboration, and actionable insights among stakeholders.*

Telemedicine Centers for Healthcare - *Telemedicine centers using S*atellite internet *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 ecosystem

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.*

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Carbon Crediting
Scheme

1.19.   Leakage Management

No leakage is identified for this project.
No carbon emissions are involved with day to operations, monitoring, security patrols or periodic visits to the site by the project owner hence leakages are assumed to be Zero.

Security personnel employed from the local community do not use any mode of transportation as the project site does not have any access roads. They have to walk in and around the project site for their usual visits and perimeter security patrols.

The Project Owner uses an electric bike for his periodic visits to the project site. The electricity is generated through solar power hence no emissions are involved.

1.20.   Commercially Sensitive Information

Tokenize Amazon Project believes in transparency and enforce a policy that all of its documents must be made public and verifiable.

2.   Environment Impacts

2.1.   Analysis of environmental impacts

Tokenize Amazon Project, is located in the heart of the Brazilian Amazon Rainforest, located in the northern part of Brazil, is known for its rich biodiversity and natural beauty.

Flora -
The Amazon Rainforest is home to over 40,000 plant species, making it one of the most diverse regions in the world in terms of flora. Some of the most fascinating plants found in the Amazon include -

Giant Water Lily - The giant water lily, or Victoria Amazonica, is a stunning plant that grows in the rivers and lakes of the Amazon basin. It has leaves that can grow up to 3 meters in diameter, making it one of the largest aquatic plants in the world.

Brazil Nut Tree - The Brazil nut tree is one of the most important economic plants in the Amazon rainforest. The tree can grow up to 50 meters tall and produce nuts that are used in a variety of foods and products around the world.

Rubber Tree - The rubber tree, or Hevea brasiliensis, is another important economic plant found in the Amazon. The tree produces latex, which is used to make rubber products.

Orchids - The Amazon Rainforest is home to over 3,000 species of orchids, making it one of the most diverse regions in the world in terms of orchid diversity.

Fauna -
The Amazon Rainforest is also home to a diverse range of wildlife, including mammals,

birds, reptiles, and insects. Some of the most fascinating animals found in the Amazon include -

Jaguar - The jaguar is the largest cat in the Americas and is found throughout the Amazon Rainforest. It is a powerful predator and plays an important role in regulating the populations of other animals in the ecosystem.

Anaconda - The anaconda is the largest snake in the world and is found in the rivers and swamps of the Amazon basin. It is a powerful predator and can grow up to 30 feet long.

Harpy Eagle - The harpy eagle is one of the largest eagles in the world and is found in the Amazon Rainforest. It is a powerful predator and feeds on a variety of animals, including monkeys and sloths.

Poison Dart Frog - The poison dart frog is a brightly colored frog found in the Amazon Rainforest. It is known for its toxic skin, which is used by indigenous people for hunting. Land protected by Tokenize Amazon Project in the city of Presidente Figueiredo Presidente Figueiredo is located in the state of Amazonas, which is home to some of the largest rivers in the world, including the Amazon River and its tributaries. As a result, the hydrology of the region is heavily influenced by these waterways.

The region around Presidente Figueiredo is characterized by a tropical climate, with high levels of rainfall throughout the year. This precipitation feeds into the many rivers and streams that flow through the region, providing water for both human and ecological needs.

The region is also home to a number of waterfalls, including the popular Presidente Figueiredo Waterfall Circuit, which features over 100 waterfalls in a relatively small area. These waterfalls are fed by the regions many rivers and streams and are an important tourist attraction for the city.

Flora in our land in Presidente Figueiredo is very diverse, which complies with the state of preservation of the area. The following tree species are the most important economically and subsequently the most south after by illegal loggers -

Mezilaurus itauba - Commonly known as itaúba, is a tree species member of the Lauraceae family, which also includes other economically important species like cinnamon and avocado.

Itaúba can grow up to 40 meters tall and has a straight trunk with a diameter of up to 1.2 meters. The tree has smooth, grey bark that can peel in strips, and its leaves are shiny and leathery, with a distinctive elliptical shape.

The wood of itaúba is highly valued for its strength, durability, and resistance to decay. It is commonly used in construction, flooring, and furniture, and is also used in the

production of plywood and veneer.

In addition to its economic value, itaúba also plays an important ecological role in the Amazon rainforest. The tree provides habitat for a variety of wildlife, including birds and primates, and helps to regulate local weather patterns and soil moisture levels.

Nectandra rubra - Commonly known as redheart, is a tree species in the Lauraceae family. Redheart can grow up to 30 meters tall and has a straight trunk with a diameter of up to 1 meter. The tree has a dense, spreading crown with large, glossy green leaves that are aromatic when crushed.

The heartwood of redheart is highly valued for its deep reddish-brown color, durability, and resistance to decay. It is commonly used in construction, flooring, and furniture, and is also used in the production of veneer and musical instruments.

Lecythis Pisonis - Commonly known as sapucaia, is a tree species in the Lecythidaceae family. Sapucaia can grow up to 40 meters tall and has a straight trunk with a diameter of up to 2 meters. The tree has a wide, spreading crown with large, glossy green leaves. The fruit of sapucaia is a large, woody capsule that can reach up to 25 centimeters in diameter. The capsule contains up to 25 edible seeds, which are commonly roasted and eaten as a snack in the Amazon region. The seeds are rich in protein, fiber, and essential fatty acids, and are also used in traditional medicine.

In addition to its value as a food source and medicinal plant, sapucaia also plays an important ecological role in the Amazon rainforest. The tree provides habitat for a variety of wildlife, including birds and mammals, and its large, woody fruit helps to disperse seeds and promote the growth of other plant species.

Bocageopsis multiflora - A tree species in the Melastomataceae family. Bocageopsis multiflora can grow up to 15 meters tall and has a dense, rounded crown with dark green leaves. The tree produces small, purple flowers in large clusters that attract pollinators like bees and butterflies.

The fruit of Bocageopsis multiflora is a small, fleshy berry that is edible and is traditionally used by indigenous communities in the Amazon region for medicinal purposes. The tree also has some cultural significance among local communities, who believe that it has spiritual and protective qualities.

Dinizia excelsa Ducke - Commonly known as Angelim-vermelho or Brazilian giant, is a tree species in the Fabaceae family.

Dinizia excelsa can grow up to 60 meters tall and has a straight, cylindrical trunk that can reach up to 2 meters in diameter. The tree has a wide, spreading crown with large, glossy green leaves.

The wood of Dinizia excelsa is highly prized for its strength, durability, and resistance

to decay, and is commonly used in construction and furniture-making. The tree's seeds are also edible and are traditionally used by indigenous communities in the Amazon region for food and medicinal purposes.

Tabebuia spp - Tabebuia is a genus of flowering trees in the Bignoniaceae family, which are native to the tropical regions of South and Central America. Tabebuia app, also known as Pink Trumpet Tree, is one of the most common and widely planted species of Tabebuia due to its attractive pink flowers and ease of cultivation.

Tabebuia app typically grows to a height of 10-15 meters and has a wide, spreading canopy with a slightly irregular shape. The tree produces large clusters of trumpet-shaped pink flowers in the early spring, which attract pollinators such as bees and butterflies.

The leaves of Tabebuia app are deciduous and compound, with several pairs of leaflets that are a light green color. In the fall, the leaves turn yellow and then drop from the tree.

Tabebuia app is a popular ornamental tree in landscaping due to its showy flowers and attractive shape. It is also used in traditional medicine for a variety of ailments, including respiratory infections, fever, and malaria. The tree's bark and leaves contain several bioactive compounds with antimicrobial, anti-inflammatory, and antioxidant properties. Tabebuia app is relatively hardy and can tolerate a wide range of soil types and growing conditions, making it a popular choice for urban and suburban landscapes. It is also commonly planted as a street tree and in parks and gardens throughout its native range in South and Central America.

Fauna
The Faunal diversity in the land of Presidente Figueiredo is also very diverse. Within the area protected by Tokenize Amazon Projet been one of the last ones completely preserved and 100 % free from deforestation, it has drawn some of the fauna threatened by deforestation in the close area. Some of the most endangers species you can find protected in our area are -

The Amazonian jaguar, also known as the Onça Pintada, is the largest cat in the Americas and the third-largest cat species in the world, after the tiger and lion. It is a top predator in the Amazon rainforest and is an important part of the region's ecosystem.

The Amazonian jaguar has a distinctive yellowish-brown coat with black spots, which provide excellent camouflage in the dense rainforest. They have a muscular build and are capable of killing prey much larger than themselves, such as tapirs and capybaras. They are also excellent swimmers and can hunt for fish and turtles in rivers and lakes. Jaguars are solitary animals and prefer to hunt at night, using their powerful jaws and sharp teeth to deliver a fatal bite to the back of their prey's neck. They are known to be opportunistic hunters and will eat a wide range of prey, including deer, monkeys, birds,

and reptiles.

Unfortunately, jaguars are threatened by habitat loss and hunting, and their numbers have declined significantly in recent decades. Conservation efforts are underway to protect jaguar populations and their habitat in the Amazon rainforest, including the establishment of protected areas and the promotion of sustainable land use practices. The White-lipped Peccary, also known as the Tayassu pecari, is a species of pig-like mammal found in the Amazon rainforest and other regions of Central and South America. They are an important part of the ecosystem as they play a key role in seed dispersal and forest regeneration.

The White-lipped Peccary has a dark brown or black coat, with a distinctive white band around its lips and cheeks. They have a stocky build and can weigh up to 40-50 kg, with males being slightly larger than females. They live in large social groups called herds, which can consist of up to 100 individuals.

White-lipped Peccaries are omnivorous, feeding on a variety of fruits, nuts, roots, and small animals such as insects, rodents, and reptiles. They are known to travel long distances in search of food and water, and their presence can have a significant impact on the forest ecosystem.

Amazon River Dolphin - The Amazon River Dolphin is a unique species of dolphin that is found in the rivers and streams around Presidente Figueiredo. They are known for their distinctive pink color, which is more prominent in adult males.

The Amazon River Dolphin has a sleek body with a long snout and sharp teeth, which they use to catch fish and other small prey. They are highly social and live in groups of up to 10 individuals, which can include both males and females.

These dolphins are well adapted to life in the river, with specialized adaptations such as flexible necks and long beaks that help them navigate through the forest and catch prey in shallow waters. They are also known for their vocalizations, which include whistles, clicks, and pulsed sounds that they use to communicate with each other and locate prey.

The Botos, as they are locally known, have been a part of Amazonian folklore for centuries. According to legend, the dolphins are shape-shifting creatures that can transform into humans, and they are often associated with shamanism and magical powers.

In some indigenous cultures, the dolphins are believed to be protectors of the rivers and forests and are invoked in rituals to ensure good hunting, fishing, and farming. They are also associated with fertility and are believed to bring luck and prosperity to those who encounter them.

Overall, the project creates positive impacts on the environment and the society.

2.2. Environmental impact assessment

Through the implementation of Tokenize Amazon project, the project proponent seeks to conserve a forestland that has been at risk of deforestation for years. The lands dedicated for this project is originally owned by the Federal Government of Brazil and through a government authorized legal mechanism, the project proponent has released the said land from the relevant authorities of the government for conservation purpose.

Under the deed granted by the authority, the project proponent seeks to undertake following management activities on the project site.

- *Protecting the forestland from illegal logging, encroachment, mining etc.*

- *Development of forest inventory by taking field measurements*

- *Periodic monitoring of the project activity for carbon stock change calculation.*

- *Mobilization of community for effective use of forest resources while conserving the forest cover*

Thus, the implementation of above activities is creating positive impacts on the environment

Further, the project is situated in an area characterized by substantial soil erosion resulting from inadequate vegetation cover. The conservation project is expected to yield favorable outcomes in terms of soil erosion control. The broad root systems of trees play a crucial role in retaining water within the soil and slowing down the velocity of run-off water. Additionally, the project's efforts to expand forest cover are anticipated to have a positive impact on soil fertility and microbial activities. Consequently, the project activity demonstrates a beneficial influence on soil conservation.

According to the points outlined in section 2.1, the project activity is situated in an area of abundant biodiversity. The conservation measures implemented by this project play a vital role in further enriching the biodiversity in the region.

3.   Local Stakeholder Consultation

3.1.   Stakeholder Consultation Process

The project proponent conducted an organized stakeholder consultation on 16 of June 2021 at Mato Grosso, Brazil with the objective of gathering insights, feedbacks 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 - Small Farm Co-op leader.
- Mr Sanzio Maciel - Engineer, Entrepreneur, CEO of Tokenize Amazon Project
- Mr Francisco Jose Coelho Maciel - Senior Biologist of the University of the Estate of Mato Grosso, Chief Biologist of Tokenize Amazon Project
- Mr Murilo Dias - Lawyer, Legal Adviser of Tokenize Amazon Project
- Mr Bruno Dantas - Adviser for technological implementation of Tokenize Amazon Project

- *General Members of the Surui Tribe*

After all members of the meeting have described their concerns, needs and possible alternatives to improve the lives of the Indigenous Communities in general, the following terms have been agreed upon unanimously -

- *Honorable Chief Almir Surui will work as Special Adviser for the Tokenize Amazon Project, helping with the implementation of policies related to Indigenous Communities in general.*
- *Tokenize Amazon will seek financial aid to purchase Long-Range Drones for Indigenous Communities participating in the project.*
- *Tokenize Amazon will train and employ a member of the community to operate and give technical support to the Long-Range Drone.*
- *Tokenize Amazon will implement a program of Medical Consultation by Video Conference, offering pre-natal consultation to Indigenous women. Fight Sub-nutrition in Indigenous children and seek partnerships to provide free medical prescriptions.*
- *Tokenize Amazon will purchase and install satellite internet in the Indigenous Communities participating in the project. Enabling the Medical Consultation program and also enabling drone images of land invasions to be transmitted, alerting authorities and seeking a faster response.*
- *All the participants pledge to pressure local and national authorities to improve the means to fight illegal logging and mining inside Indigenous Lands. Raise awareness of the desperate situation of most of the Indigenous Communities of the Brazilian Amazon.*

3.2. Summary of Comments Received

Summary of comments and complaints from stakeholders -

- Low knowledge about the impacts of deforestation on the Climate Change and the impacts of GHG emissions from cattle farming.
- Complains about the process length and speed, and the waiting to receive aid.
- Bureaucracy in general - Majority of adults does not know how to read and can't understand why the need of paperwork and reports.

3.3. Consideration of Comments Received

Tokenize Amazon Project understand that most of the stakeholders live in a different culture. Where natural barriers to simple tasks may occur. Barriers as simple as writing or even speaking (in the case of the Indigenous Tribes) can be very challenging. We are introducing local people inside the project to fill this gap between cultures, addressing the problems to get closer to the community.

4.   Eligibility Criteria

4.1.   General Criteria

Indicate compliance with general eligibility criteria

Sub Section	Eligibility Criteria	Project Activity	Yes/No
4.1.1	The project activity shall be a new project, which will reduce/absorb GHG emissions, or the project activity shall be a project, which was implemented on or after 2010	Project activity is a new project proposed by Tokenize	Yes
4.1.2	The project activity shall be located in a jurisdiction recognized by SLCCS	The project is located in the Amazon region In Brazil	Yes
4.1.3	The project activity shall not happen in the absence of benefits received from trading Sri Lanka Certified Emission Reduction units (SCERs).	The project is additional to the business-as-usual scenario	Yes
4.1.4	The project shall be implemented voluntarily by the project owner but not implemented based on legislation or regulations in the country	The project proponent implements the project activity on a voluntary basis	Yes
4.1.5	The project activity satisfies environmental standard and regulations of the country	The project activity is located in Amazon biome in Brazil. It is developed in compliance with the national environmental standards and regulations	Yes

	4.1.6	The project shall not have been registered under any other national or international scheme. However, if a registered project under other scheme is willing to register with SLCCS, then, such project shall be deregistered from the other scheme in order to be eligible	Tokenize has not registered the project activity under any local or international GHG programme	Yes

4.2.   Bundling Criteria

Sub Section	Eligibility Criteria	Project Activity	Yes/No
4.2.1	The composition of bundles shall not change over time	Not applicable. This project falls under the sectoral scope of Afforestation and Reforestation (A/R)	N/A
2.2.2	All project activities in the bundle shall have the same crediting period	Not applicable. This project falls under the sectoral scope of Afforestation and Reforestation (A/R)	N/A
2.2.3	All project activities in the bundle shall have the same baseline.	Not applicable. This project falls under the sectoral scope of Afforestation and Reforestation (A/R)	N/A
2.2.4	All project activities in the bundle shall have the same project type, methodologies and technology/ measure	Not applicable. This project falls under the sectoral scope of Afforestation and Reforestation (A/R)	N/A
2.2.5	Maximum number of project activities per bundle shall be seven.	Not applicable. This project falls under the sectoral scope of Afforestation and Reforestation (A/R)	N/A
2.2.6	Maximum capacity of a project activity of the bundle shall be less than 1.5 MW.	Not applicable. This project falls under the sectoral scope of Afforestation and Reforestation (A/R)	N/A

5. Application of Methodology

5.1. Title and Reference of Methodology

Quantification of GHG emissions Reductions REDD+ Projects
(Reducing Emissions from Deforestation and Degradation+)
As specified in the, "Planetary Carbon Standard",
Within the UNFCCC Framework

VCS Module VMD0007 Version 1.0 were used as reference methodology to double confirm the PCS Methodology for REDD+.

(The PCS methodologies contained technologically advanced approaches such as Artificial Intelligence and remote sensing mechanisms. Above mentioned existing methodologies were used to double confirm the approaches of PCS against the traditional methodologies.)

5.2. Applicability of Methodology

The Quantification of GHG Emissions Reductions methodology for REDD+ Projects, as outlined The Planetary Carbon Standard Version-1, 2022, specifically aligns with the Approved VCS Module VMD0007 Version 1.0, which pertains to the Estimation of Baseline Carbon Stock Changes and Greenhouse Gas Emissions from Unplanned Deforestation (BL- UP). To address the applicability conditions of this methodology, the project must demonstrate how it meets each condition, as per Planetary Carbon Standard. VCS Module was used as a double confirmation methodology.

Baseline Identification- The project has established a credible and accurate baseline scenario that reflects the carbon stock changes and emissions that would have occurred in the absence of the project intervention. This involves accurately quantifying the forest carbon stocks within the project area and projecting their future trajectory based on historical trends and drivers of deforestation.

Demonstration of Additionality -The project proves that the emissions reductions achieved would not have occurred without the project's implementation. This involves comparing the projected emissions under the baseline scenario (without the project) to the emissions with the project's activities in place. The project provides evidence that these emissions reductions are additional and beyond business-as-usual activities.

Project Boundaries and Leakage- The project defines its geographic boundaries clearly to prevent emissions leakage, which refers to the displacement of deforestation from the project area to nearby or distant locations. The methodology requires assessing and addressing potential leakage risks to ensure that the project's impact is not undermined by deforestation elsewhere.

Monitoring and Reporting- The project has established a robust and reliable monitoring and reporting system to track carbon stock changes and emissions reductions accurately over time. This involves collecting field data, using appropriate tools and methodologies for measurement, and ensuring transparency in reporting.

Verification and Third-party Review -The project is verified by an independent third-party verification body to confirm the accuracy and credibility of the reported emissions reductions. SLCF, which is the independent verifier assesses the project against the methodology's requirements and ensure that the project adheres to rigorous standards.

Safeguards and Social Considerations - The project has considered social and environmental safeguards, including the potential impacts on local communities and biodiversity. Adequate measures are in place to avoid negative consequences and promote positive social and environmental outcomes.

Following tools are used collectively to assess baseline carbon stocks, monitor changes in forest cover and carbon stocks over time, and calculate emissions reductions achieved through the project.

Remote Sensing and Satellite Imagery -Remote sensing technologies, such as satellite imagery and aerial photography, are used to monitor changes in forest cover, land use, and deforestation rates. These tools provide spatial data that can be used to estimate carbon stock changes and emissions from unplanned deforestation.

Geographic Information Systems (GIS) - GIS is used to analyze and manage spatial data related to land cover, forest types, and deforestation rates. GIS tools help in mapping project areas, calculating forest area changes, and assessing deforestation trends.

Forest Inventory and Carbon Stock Assessment -Field-based Forest inventories involve collecting data on tree species, sizes, and densities. These data are used to estimate carbon stocks within the project area before and after the intervention. Various equations and models are applied to convert these measurements into carbon stock estimates.

Emission Factors and Carbon Accounting Models - Emission factors are used to convert changes in forest carbon stocks into greenhouse gas emissions. These factors consider the carbon content of different tree species and vegetation types. Carbon accounting models, often based on international standards, help in calculating emissions reductions achieved by the project.

Remote Sensing-Based Biomass Estimation -Remote sensing data are used to estimate forest biomass, which is then converted to carbon stocks. Light detection and ranging (LiDAR) technology and radar satellite data are some tools used for accurate biomass estimation.

Land-Use Change Modeling -Land-use change models simulate future scenarios of land cover changes based on different factors such as population growth, economic activities, and policy changes. These models help estimate potential emissions under different scenarios, enabling the assessment of project additionality.

Carbon Monitoring and Reporting Systems (CMRS) - CMRS are designed to track changes in carbon stocks over time. These systems integrate data from various sources, such as field surveys, remote sensing, and biomass measurements, to provide accurate and consistent carbon stock and emissions data.

Verification and Validation Protocols - Standardized verification and validation protocols are tools that guide third-party assessors in reviewing project documentation, monitoring procedures, and reported data. These protocols ensure transparency, accuracy, and consistency in emissions reductions reporting.

5.3. Project Boundary

Following carbon pools were considered within the scope of the project activity

Carbon pool	Whether selected (Yes/No)	Justification/Explanation

Aboveground biomass Arboreal vegetation	*Yes*	*The change in carbon content in this pool is significant according to the IPCC.*
Above ground biomass non-arboreal vegetation	*No*	*Not significant in the forest carbon accounting*
Belowground biomass	*Yes*	*The change in carbon content in this pool is significant according to the IPCC.*
Deadwood and litter	*No*	*Not significant and it is conservative to exclude it.*
	No	*Not significant and it is conservative to exclude it.*
Soil organic carbon	*No*	*It is a significant pool of carbon stocks in forest carbon accounting, but it is conservative to exclude it*

Following GHG sources are applicable to the project activity

Source		Gas	Included?	Justification/Explanation
Baseline	*Above-ground biomass*	CO_2	*Yes*	*CO_2 is released due to the loss of biomass from deforestation*
		CH_4	*No*	*Not significant*
		N_2O	*No*	*Not significant*
		Other	*No*	*Not significant*
	Below-ground biomass	CO_2	*No*	*CO2 is released due to the loss of biomass from deforestation*
		CH_4	*No*	*Not significant*
		N_2O	*No*	*Not significant*
		Other	*No*	*Not significant*
Project	*Source 1*	CO_2	*No*	*Not significant*
		CH_4	*No*	*Not significant*
		N_2O	*No*	*Not significant*
		Other	*No*	*Not significant*
		CO_2	*No*	*Not significant*

	Source 2	CH₄	No	Not significant	
		N₂O	No	Not significant	
		Other	No	Not significant	

The following diagram illustrates the operational framework of Tokenize Amazon Project. The key stakeholders of the project activity include government authorities, local communities, farmers, non-governmental organizations, and volunteers. Further the project is equipped with a robust MRV system which will facilitate the validation and verification activities under Sri Lanka Carbon Crediting Scheme.

Forestland at the high risk of deforestation

Stakeholders

Government authorities
Local Communities
Farmers/ Growers NGOs
Volunteers

Conservation of forestland under REDD+ programme

Monitoring
Reporting
Verification
Certification

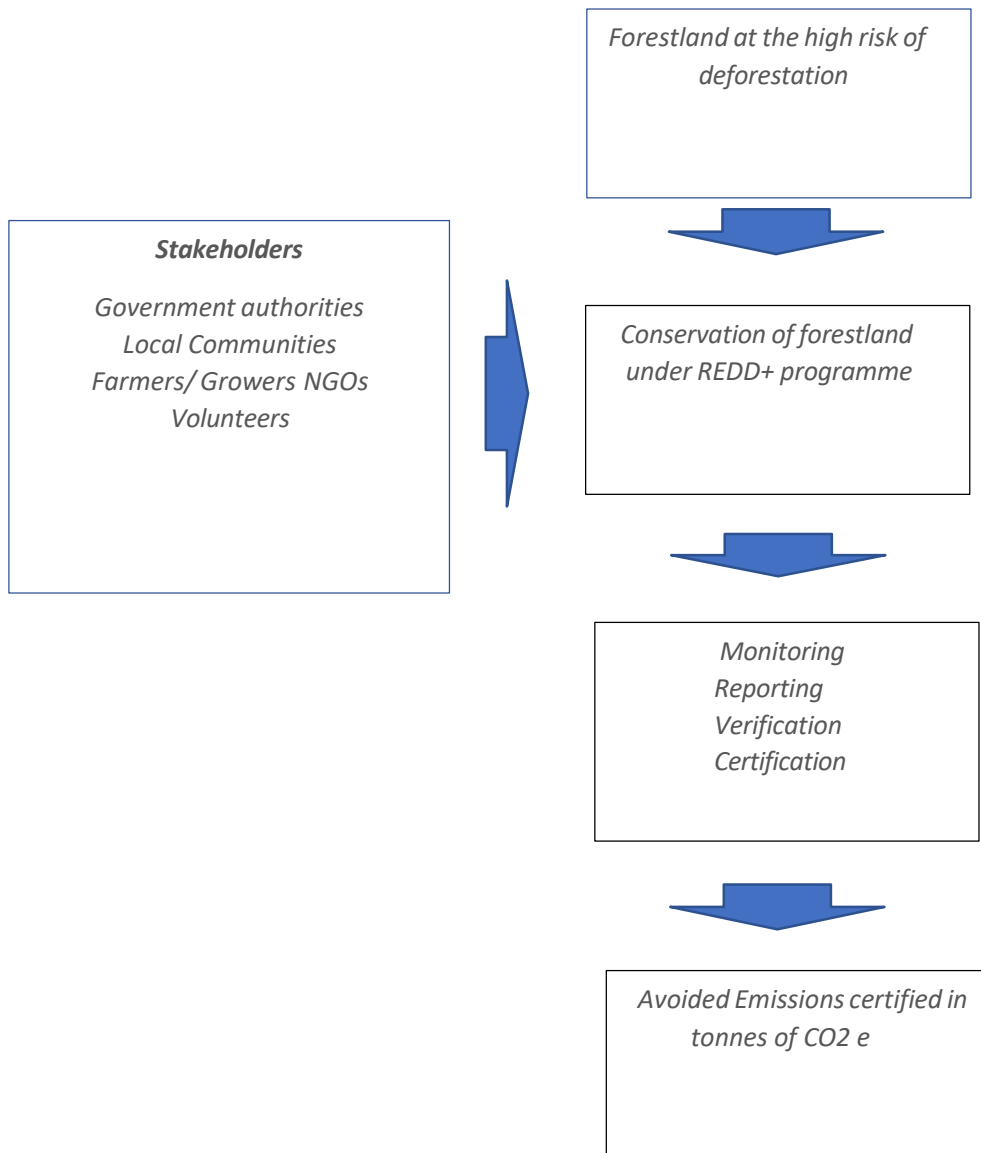*Avoided Emissions certified in tonnes of CO2 e*

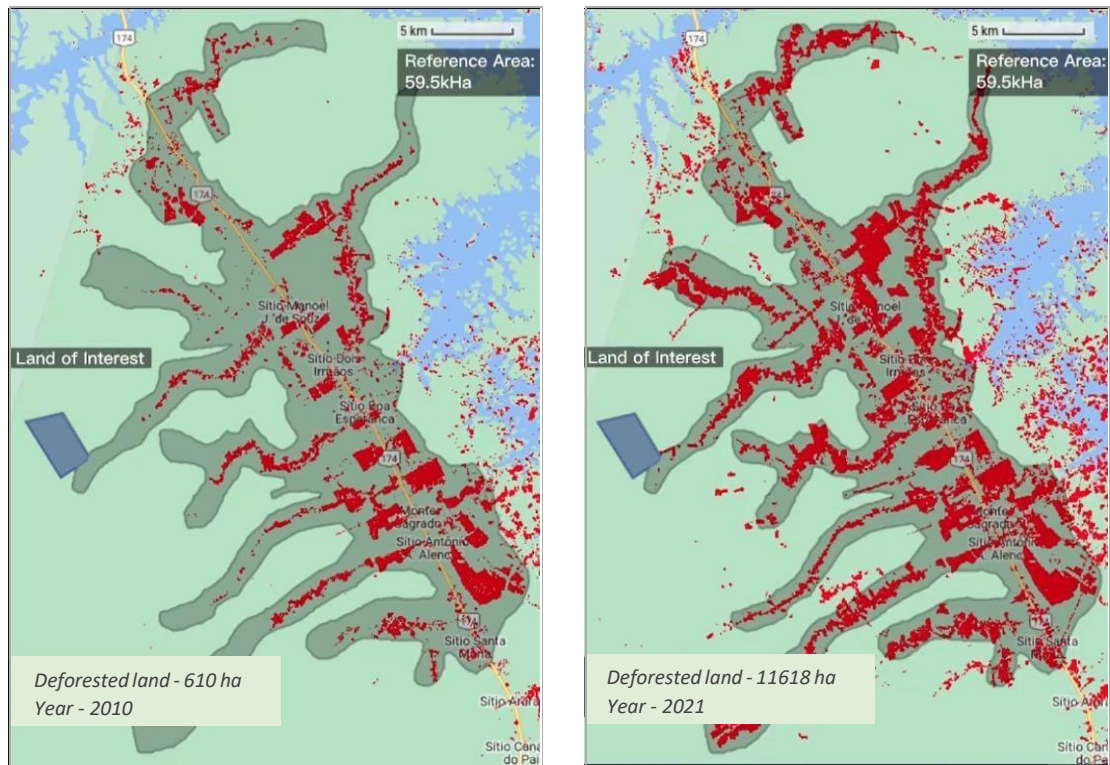Figure 18 - Operational diagram of Tokenize Amazon Project

Figure 19 - Deforestation rate in year 2010 and 2021

A comprehensive analysis of the deforestation rate is available in the PCS Registry, under Tokenize Amazon project – CPD support documents. Please refer following links for the same.

Tokenize Amazon Project – Perimeter land observation for signs of stress and possible threats. - https://pcs-s3bucket.s3.amazonaws.com/Tokenize%20Amazon%20Project%20-%20Perimeter%20Land%20Observation%20for%20sign%20of%20stress%20and%20possible%20threats.pdf

Risk Mitigation of TMZN Amazon rainforest project –
https://pcs-s3bucket.s3.amazonaws.com/Risk%20Mitigation%20TMZN%20-%20Amazon%20Rainforest%20Project.pdf

5.4.   Baseline Scenario

As per the methodology, Quantification of GHG emissions Reductions REDD+ Projects, the Planetary Carbon Standard, the baseline scenario of the project activity was studied. It was found that in the baseline scenario, the region where project activity is located has remained highly susceptible to the deforestation risks. Illegal loggers have encroached all possible land areas in the region and forests are being continuously cleared for short-term monetary benefits. Further the communities living in the areas does not have a strong leadership on the conservation of the existing forest resources.

In studying the baseline on a spatial basis, project proponent developed a series of spatial maps including the land use changes of the project area and the reference region. The initial and last reference year considered for this mapping are 2013 and 2022 respectively. The findings of this cartographic analysis are as follows.

Year	Deforestation (ha)
2010	610
2021	11618

As per **step 02 Equation** provided in section 19, deforestation of the refence region was calculated, which is about 1000.4 ha per annum. With the implementation of this project, the project proponent efforts to halt this deforestation rate with a long-term assurance on the biomass carbon stock.

5.5. Additionality

Additionality was demonstrated using the barrier analysis

a. *Investment barriers*

- *This project is implemented as a voluntary commitment by the project proponent, debt funding is not available for this type of Project, as banks are hesitant to consider these projects financially viable.*

- *No private capital is available due to inherent risks associated with this kind of project. An additional revenue therefore needs to be secured for the implementation of the project activity*

b. *Barriers due to Social Conditions*

The Tokenize Amazon project is surrounded by a vegetation cover that is highly vulnerable to deforestation and forest degradation. The local community settled around have no technical knowledge or education to understand the key drivers of deforestation and their consequences. Therefore, in the pre-project scenario, an active framework has not been in place to control or avoid the increased deforestation.

The project and its peripheral area are home to a wide variety of high-demanding timber species. Many illegal loggers in the region are used to harvest these timber resources in an unsustainable manner which in course of time can lead to a series of natural catastrophic events in the region.

In the last two decades, the population growth in the region has almost doubled causing a high pressure and demand on the natural resource. As poor communities are settled in the region, the small towns and villages are more likely to grow in a horizontal landscape. This phenomenon has been occurring for years and caused many high dense forests to degrade in the project and its surrounding area.

C. Institutional Barriers

Federal Government of Brazil has partnered with many local and international organizations & frameworks and pledged to enrich and conserve Amazon Forest reserves as a long-lasting carbon sink. Recently the government launched modern environment tools policies with the financial support of UN agencies and other funding organizations to protect the threatened Amazon Forest and other biomes. However, the policies have not delivered much in the conservation of the residual forests.

On average, Brazil spent US$ 1 billion/year on forest conservation policies at the federal level. Brazil's substantial reduction in annual forest loss after 2004 was

accompanied by a higher operational budget execution of disincentive-based policy instruments, and an absolute increase in both allocated and executed institutional budgets

D. Barriers relating to land tenure, ownership, inheritance and property rights

Lack of suitable land tenure legislation and regulation to support the security of tenure

Absence of clearly defined and regulated property rights about natural resource products and services

Formal and informal tenure systems that increase the risks of fragmentation of landholdings.

5.6.   Methodology Deviations

No Methodology deviations

6.   Quantification of GHG Emission Reductions and Removals

6.1.   Baseline Emissions

The following methodological procedure was applied in the establishment of the project baseline.

Step - 01 *Calculation of historical annual deforestation in the reference region*

$$MREF = RAF * PA \tag{1}$$

$$RAF = 7500 * PA^{-0.7} \tag{2}$$

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), to double confirm the scientific approach of the PCS, initially proposed by Joint Crediting Mechanism (JCM) Methodology form for Reducing Emissions from Deforestation and Forest Degradation (REDD) (2014REDD302_41_JCM_PM_ver01)

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).*

$$R_{yr} = (\frac{1}{t2 - t1}) \times A1 - A2$$

Where,
R_{yr} = *Annual rate of change in the forest cover, ha, reference scenario*
t2 = *Final year of the reference period; yr*
t1 = *Initial year of the reference period; yr*
A1 = *Forest surface in the reference region in the initial moment; ha*
A2 = *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 -

$$R_{REDD(pro+ect,yr)} = R_{bl,yr} x (1 - \%DD)$$

Where,

$R_{REDD(pro+ect,yr)}$ = *Annual rate of change in the forest cover, ha, project scenario*
$R_{bl,yr}$ =   *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

$$DTBi = D|AB \; x \; (1 + R)$$

Where,
$DTBi$ = *Difference total biomass transition i; t ha^{-1}*
DAB = *Average difference in aboveground biomass transition i; tC ha^{-1}*
R = *Belowground/aboveground biomass ratio; ton d.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 -

$$DTCBi = DTBi \; x \; CF$$

Where,

$DTCBi$ = *Difference total carbon biomass; tC ha-1*

$DTBi$ = *Difference total biomass; t ha-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 -

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

Where,

$DTBCO2eq$ = *Carbon dioxide equivalent in the difference of total biomass per hectare; tCO2e ha-1*

$DCTBi$ = *Carbon content in the difference of total biomass; tC 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 -

$$AE_{bl,r} = AD_{bl,yr} \; x \; TCO_{2eq}$$

Where,

$AEbl,$ = *Annual emission in the baseline scenario; tCO2 ha^{-1}*

$ADbl,$ = *Historical annual deforestation in the baseline scenario; ha*

$TCO2eq$ = *Total carbon dioxide equivalent; tCO2e ha^{-1}*

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

$$AE_{RED(pro+ect,yr} = AD_{REDD(pro+ect} \; x \; TCO_{2eq}$$

Where,

$(pro+ect,yr$ = *Annual emission in the project scenario; tCO2 ha-1*

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

$TCO_{2}eq$ = *Total carbon dioxide equivalent; tCO$_2$e ha-1*

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

$$AE_{lk,r} = AD_{lk,yr} \; x \; CO_{2eq}$$

Where,

$AE_{lk,yr}$ = *Annual emission in the leakage area; tCO2 ha-1*

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

CO_2eq = *Total carbon dioxide equivalent; tCO2e ha-1*

6.2. *Project Emissions*

No emissions are identified for this project activity.

6.3. *Leakage*

Leakage emissions are not identified for this project activity

6.4. Net GHG Emission Reductions and Removals

Year	Estimated baseline emissions or removals (tCO₂e)	Estimate d project emissio ns or removal s (tCO₂e)	Estimated leakage emissions (tCO₂e)	Buffer Pool Allocation	Estimated net GHG emission reductions or removals (tCO₂e)
Year 01- 28/10/2021 - 12/10/2022	860,336	-	-	86,034	774,302
Year 02- 13/10/2022 - 12/10/2023	860,336	-	-	86,034	774,302
Year 03- 13/10/2023 - 12/10/2024	860,336	-	-	86,034	774,302
Year 04- 13/10/2024 - 12/10/2025	860,336	-	-	86,034	774,302
Year 05- 13/10/2025 - 12/10/2026	860,336	-	-	86,034	774,302
Year 06- 13/10/2026 - 12/10/2027	860,336	-	-	86,034	774,302

Year 07- 13/10/2027 - 12/10/2028	860,336	-	-	86,034	774,302
Year 08- 13/10/2028 - 12/10/2029	860,336	-	-	86,034	774,302
Year 09- 13/10/2029 - 12/10/2030	860,336	-	-	86,034	774,302
Year 10- 13/10/2030 - 12/10/2031	860,336	-	-	86,034	774,302

Total estimated ERs	*7,743,025*
Total number of crediting years	*10*
Average annual ERs	*774,302*

There are no significant carbon emissions or leakages identified in this project activity. However, 10% buffer stock is deducted from the net emission reductions for future emergency incidents.

7. Monitoring

7.1. Data and Parameters Available at Validation

Data / Parameter	*RAF*
Data unit	*Unitless*
Description	*Reference Area Factor. Factor to multiply project area by to get minimum reference area; dimensionless*
Source of data	*This factor is calculated using the equation ($RAF = 7500 * PA^{-0.7}$) provided in the 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), Sectoral Scope 14 (As a double confirmation)*
Value applied	*59.5*

Justification of choice of data or description of measurement methods and procedures applied	*This is a dimensionless factor obtained from the Approved VCS Module VMD0007, Version 1.0. The factor is recommended to be used in determining the minimum size of reference region for projecting rate of deforestation (Used as a double confirmation) "and Joint Crediting Mechanism (JCM) Methodology form for Reducing Emissions from Deforestation and Forest Degradation (REDD) (2014REDD302_41_JCM_PM_ver01)"*
Purpose of Data	*To calculate minimum size of reference region for projecting rate of deforestation*
Comments	*This is additional to the methodological approach given in the Joint Crediting Mechanism (JCM) Methodology form for Reducing Emissions from Deforestation and Forest Degradation(REDD) 2014REDD302_41_JCM_PM_ver01)*

Data / Parameter	*PA*
Data unit	*ha*
Description	*Unplanned deforestation project area; ha*
Source of data	*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), Sectoral Scope 14 and Joint Crediting Mechanism (JCM) Methodology form for Reducing Emissions from Deforestation and Forest Degradation (REDD) (2014REDD302_41_JCM_PM_ver01)*
Value applied	*1001.4*
Justification of choice of data or description of measurement methods and procedures applied	*This value is provided in the deed issued to the project proponent*
Purpose of Data	*To calculate minimum size of reference region for projecting rate of deforestation*
Comments	

Data / Parameter	*MREF*
Data unit	*ha*

Description	Minimum size of reference region for projecting rate of deforestation
Source of data	Calculated
Value applied	59500
Justification of choice of data or description of measurement methods and procedures applied	This value is obtained by applying the equation provided in 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), Sectoral Scope 14 and Joint Crediting Mechanism (JCM) Methodology form for Reducing Emissions from Deforestation and Forest Degradation (REDD) (2014REDD302_41_JCM_PM_ver01 (As an additional confirmation)
Purpose of Data	To assess the deforestation rate of the region
Comments	A comprehensive risk assessment and risk mitigation plan was conducted. The subject land would be destroyed 100% by deforestation within 1.5 years if the project was not implemented.

Data / Parameter	T_1
Data unit	Year
Description	Initial year of the reference period
Source of data	Determined based on the Google Earth
Value applied	2010
Justification of choice of data or description of measurement methods and procedures applied	Selected the year based on the guidance provided in Quantification of GHG emissions Reductions REDD+ Projects, Planetary Carbon Standard Version 1 Under UNFCCC Framework.
Purpose of Data	To calculate the annual change in the surface covered by forest in the reference region
Comments	

Data / Parameter	T_2
Data unit	Year
Description	Final year of the reference period
Source of data	Determined based on the Google Earth
Value applied	2021

Justification of choice of data or description of measurement methods and procedures applied	Selected the year based on the guidance provided in Quantification of GHG emissions Reductions REDD+ Projects, Planetary Carbon Standard Version 1 Under UNFCCC Framework.
Purpose of Data	To calculate the annual change in the surface covered by forest in the reference region
Comments	

Data / Parameter	A_1
Data unit	ha
Description	Forest surface in the reference region in the initial moment
Source of data	Determined based on the Google Earth
Value applied	610
Justification of choice of data or description of measurement methods and procedures applied	Accounted based on the guidance provided in Quantification of GHG emissions Reductions REDD+ Projects, Planetary Carbon Standard, Version 1, 2022
Purpose of Data	To calculate the annual change in the surface covered by forest in the reference region
Comments	

Data / Parameter	A_2
Data unit	ha
Description	Forest surface in the reference region in the final moment
Source of data	Determined based on the Google Earth
Value applied	11618
Justification of choice of data or description of measurement methods and procedures applied	Accounted based on the guidance provided in Quantification of GHG emissions Reductions REDD+ Projects, Planetary Carbon Standard, Version 1, 2022
Purpose of Data	To calculate the annual change in the surface covered by forest in the reference region
Comments	

Data / Parameter	R_{yr}
Data unit	*ha*
Description	*Annual rate of change in the forest cover for reference scenario*
Source of data	*Calculated*
Value applied	*1,001.4*
Justification of choice of data or description of measurement methods and procedures applied	*"Annual rate of deforestation" formula by Fearnside,1993 and Liu et al.,1993. Standardized by Jean-Philippe Puyravaud (2003).* *Accounted based on the guidance provided in Quantification of GHG emissions Reductions REDD+ Projects, Planetary Carbon Standard, Version 1, 2022*
Purpose of Data	*To calculate the annual change in the surface covered by forest in the reference region*
Comments	

Data / Parameter	*%DD*
Data unit	*ha/year*
Description	*Projected decrease in deforestation due to the implementation of REDD+ activities*
Source of data	*N/A*
Value applied	*99%*
Justification of choice of data or description of measurement methods and procedures applied	*Tokenize Amazon Project is fully committed to protecting the project site from the deforestation risks. Hence the value of 99% is applied in the calculation in a conservative approach.*
Purpose of Data	*To calculate the annual change in the surface covered by forest in the project scenario*
Comments	

Data / Parameter	CF
Data unit	*Unitless*

Description	Carbon fraction
Source of data	Default value given in Quantification of GHG emissions Reductions REDD+ Projects, Planetary Carbon Standard Version 1, 2022
Value applied	0.47
Justification of choice of data or description of measurement methods and procedures applied	N/A
Purpose of Data	To calculate carbon content in total biomass
Comments	

7.2. Data and Parameters Monitored

Data / Parameter	$R_{REDD(project,yr)}$
Data unit	ha/year
Description	Annual rate of change in the forest cover for project scenario
Source of data	N/A
Value applied	1001.4
Justification of choice of data or description of measurement methods and procedures applied	*"Annual rate of deforestation"* formula by Fearnside,1993 and Liu et al.,1993. Standardized by Jean-Philippe Puyravaud (2003). 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, 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	Tonnes (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
Data unit	*Tonnes (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	

7.3.   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.

Risk = Likelihood × Consequences (R = P × 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= PX 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 = PX 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 = PX 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 = PX 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 = PX C	Risk Mitigation Actions
4	Natural Disasters (Extreme Whether/Flooding)	Medium	Medium	Medium	The PCS develops and implements disaster preparedness plans, establishes early warning systems, and conducts regular inspections of forest areas to identify potential hazards. This early detection enables them to take necessary measures and preventive actions to protect the land from any damages, ensuring its preservation and safety. 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.

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 -

```
Early Detection
System (AI, Remote Sensing, Satellite Imagery)
        ↓
Ground Truth Data Collection
        ↓
Risk Mitigation Protocol Implementation
```

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.

8. 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 liders alive, biologist, from a Family of Amazon Warriors, winner of United Nation Award. He is the heart o four 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.

Document Information

Title of document	Carbon Management Assessment
Document No	SLCCS-CMA-FRM
Document Type	Form
Business Function	Registration of Project Activity
Version	02.0

Revisions

Version	Date	Description
01.0	21-08-2019	Initial issuance
02.0	02-02-2021	Editorial changes