ASES ON-CHAIN PROTOCOL

PROPOSED PROJECT ACTIVITY ALIGNMENT ASSESSMENT

La Samaritana Páramo Biotácora

LSP-001-COL-04072024 CHIPAQUE, CUNDINAMARCA, COLOMBIA

LA SAMARITANA PÁRAMO BIOTÁCORA

Modality B

July 9, 2024

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ALIGNMENT ASSESSMENT FOR THE PROJECT SUBMITTED BY LA SAMARITANA PÁRAMO BIOTÁCORA "LA SAMARITANA PÁRAMO BIOTÁCORA" WITH AOCP IDENTIFIER LSP-001-COL-04072024 CHIPAQUE, CUNDINAMARCA, COLOMBIA.

CONTEXT

As part of the process for the certification of nature-positive projects and the consequent issuance of Verified Nature-Positive Credits (VNPCs) under the ASES on-chain protocol, the Project developer "La Samaritana Páramo Biotácora" submitted the project "La Samaritana Páramo Biotácora". This Project activity is in the onboarding stage with the aOCP identification code **LSP-001-COL-04072024 CHIPAQUE, CUNDINAMARCA, COLOMBIA.** It is a Forest management project in Cundinamarca, Colombia, and project activities were implemented on April 9th, 2019. Compliance with the principles, values, standards, and requirements of the aOCP is a fundamental requirement to participate in the program. This evaluation takes place during the onboarding phase, before the registration of the project activities, as stipulated in the aOCP Procedures document, which describes all the stages that a Project goes through from its inception to the issuance, sale, and purchase.

Since Project activities have been implemented before the start of the onboarding process, it participates as a project of Modality B. According to the *aOCP Procedures* document, Modality B projects shall go through the following process be registered:

1. Application via the Project Submission Form (PSF), done by Project proponent.
2. Documentation review and alignment assessment, done by aOCP Operations Team.
3. Payment of onboarding fee by the project proponent.
4. Project pre-registration, done by aOCP Operations Team.
5. On- site Validate of the implemented Project activities, done by aOCP Operations Team.
6. Elaboration of Baseline report, Monitoring plan, Contingent table of credits issuance, done by aOCP Operations Team.
7. Project proponent agreement.
8. Project Verification by an external, independent, 3rd-party Verifier, delivering a Project Verification Report.
9. Project registration letter and first credits issuance, done by aOCP Operations Team.

This report corresponds to step 2, alignment assessment. The methodology and data gathered on-site are presented here.

ALIGNMENT ASSESSMENT

The aOCP is founded on robust principles aimed at ensuring that Project activities seeking registration and accreditation with Verified Nature Positive Credits (VNPCs) demonstrably and positively impact ecosystems in a real, measurable, permanent, and additional manner while avoiding any harm to ecosystems and/or society.

Conformity with the aOCP's principles, values, rules, and requirements is a fundamental prerequisite for participation in the program. This evaluation occurs during the onboarding phase, before the registration of Project activities. This mandate is stipulated in the *aOCP Procedures* document, which outlines all the stages a Project undergoes from its inception to the issuance, trading, and retirement of VNPCs.

A positive result of the alignment assessment with aOCP's principles, values, rules, and requirements confirms that the proposed Project activity:

1. Falls into one of the following project types:
    a. Forest management, including Afforestation, Reforestation, and Revegetation (ARR)
    b. Regenerative agriculture
    c. Silvopastoral management
    d. Urban forests / individual tree climate action
    e. Biochar
    f. Water Saving in Agriculture
2. Adheres to the environmental and social no-harm prerequisites,
3. Is anticipated to yield positive impacts on biodiversity,
4. The Project was developed less than 5 years ago;
5. Conforms to the additionality criteria for the requested VNPCs,
6. Possesses documentation substantiating land ownership or an agreement for the project's duration,
7. The Project area has not been degraded, deforested, or burned in the last 24 months;
8. For Projects requesting *Biodiversity Credits for Species Conservation,* a positive alignment assessment also confirms that the proposed Project area has a high conservation value due to its commendable state of preservation.
9. Areas where the Mean Species Abundance indicator (also reported as Biodiversity intactness) is lower than 0.80, indicating that biodiversity is at risk and requires restoration action are eligible for Biodiversity restoration credits.
10. The Key species for biodiversity conservation reported by the Project proponent, are recognized as Key species according to the criteria established in the *aOCP Methodology for biodiversity assessment for species conservation V2.0.*

Certain circumstances may result in an unfavorable assessment and, if not rectified or clarified satisfactorily, could lead to the rejection of the Project activity's registration within the aOCP.

These circumstances include:

- Non-compliance with aOCP's principles, values, rules, and requirements,
- Issuance of contradictory and/or false declarations by the Project proponent or Project developer,
- Diminished confidence in the Project activity's ability to yield anticipated ecosystem and/or social benefits due to an inadequate risk management plan, which encompasses a comprehensive assessment of internal, external, and natural risks, as well as risk mitigation and contingency planning.

According to the information provided by the project proponent in the Project Submission Form (PSF), the proposed activity falls under the aOCP category of Forest Management. The project “La Samaritana páramo Biotácora”, was completed on a 128-hectare property near Bogotá, Colombia. The project began on April 9, 2019, addressing agricultural degradation by removing invasive species, allowing natural regeneration, and closing inappropriate roads and paths. Five hectares were targeted for intervention, with invasive species removed and a frailejóne nursery established to restore degraded areas—reforestation involved planting 1,700 frailejones and recovering 7 hectares of eroded soils. Illegal mining was halted, and a Sustainable Development Plan was implemented in collaboration with Fundación Quioto and Biotácora ecotourism. Key species identified by the project proponent for conservation include frailejones, spectacled bears, endemic hummingbirds, trout, condors, and hawks. The project seeks carbon, biodiversity, and water credits.

The Project area and sampling points used for the present analysis are shown in Figure 1.

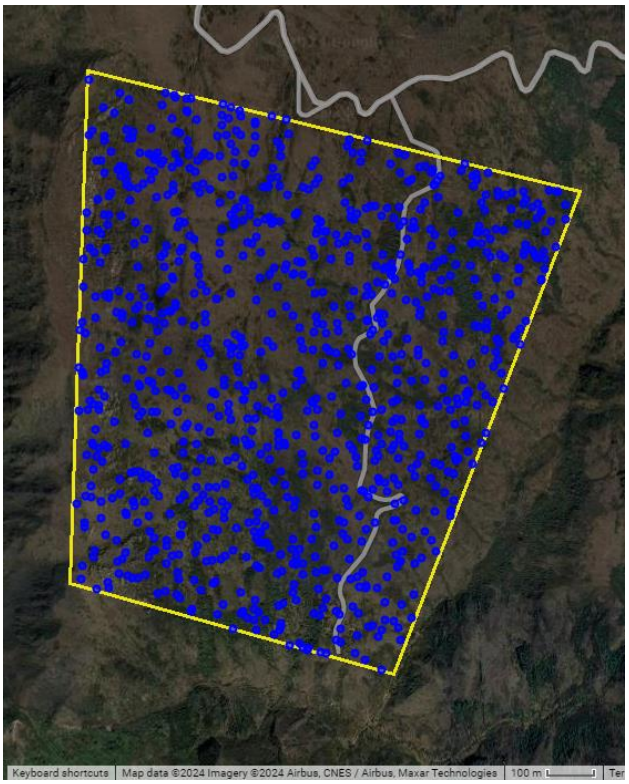


Figure 1. Project area and sampling points used for the NDVI analysis

METHOD OF ANALYSIS

The proposed Project activity was assessed for its alignment with the aOCP rules and requirements, using the following checklist.

Alignment criteria	Y: yes N: no P: partially N.A.: not applicable	Comments
Does the project belong to one of the following types: • Forest management, including ARR • Regenerative agriculture • Silvopastoral management • Urban forests / individual climate action • Biochar • Water Saving in Agriculture	**Y**	
Does the project comply with the environmental and social no-harm requirement?	**Y**	
Is the project expected to have positive impacts on biodiversity?	**Y**	
If the project has already started, is it less than 5 years old?	**N***	**The project was completed in April 2019.**
Do the requested VNPCs comply with the additionality criteria?	**Y**	
Has documentation establishing land ownership or an agreement for the project's duration been provided?	**Y**	
Have any trees or shrubs been cleared in the project area in the last 2 years?	**N**	
For biodiversity conservation credits, the Biodiversity intactness indicator is > 80%	**N**	
For biodiversity restoration credits, the Biodiversity intactness indicator is < 80%	**Y**	**The project area has a biodiversity intactness of 71.32%.**
Are the proposed key species aligned with the aOCP criteria for key species?	**Y**	

Historical land cover dynamics was analyzed using Google Earth high-resolution images as well as NDVI (Normalized Difference Vegetation Index) analysis. The NDVI is a widely used remote sensing metric that provides information about the density and health of vegetation in a specific area. It is calculated from the difference between near-infrared and red light reflectance from the Earth's surface.

When analyzing historic land cover, NDVI can be used to track changes in vegetation over time. By examining archived NDVI data, it is possible to observe trends in vegetation density, identify shifts in land use patterns, and monitor the effects of factors like urbanization, deforestation, or natural disasters.

NDVI provides information on the quantity and quality of vegetation in a given area. It varies from -1 to +1, where values closer to +1 indicate dense and healthy vegetation, while values close to -1 suggest a lack of vegetation or the presence of artificial surfaces.

In Google Earth Engine, the maximum monthly NDVI from January 2019 to June 2024 was calculated using Sentinel-2 satellite imagery. Random control points were then plotted in each property (Figure 1) and the monthly NDVI value at each point was extracted.

Google Colab was used to generate a box plot showing the distribution of NDVI values at the control points. A box plot is a standardized way of displaying the distribution of a data set based on its summary of five numbers of data points: the "minimum", the first quartile [Q1], the median, the third quartile [Q3], and the "maximum". Box plots provide information on outliers, symmetry of the data, degree of clustering, and whether and how the data are skewed[1].

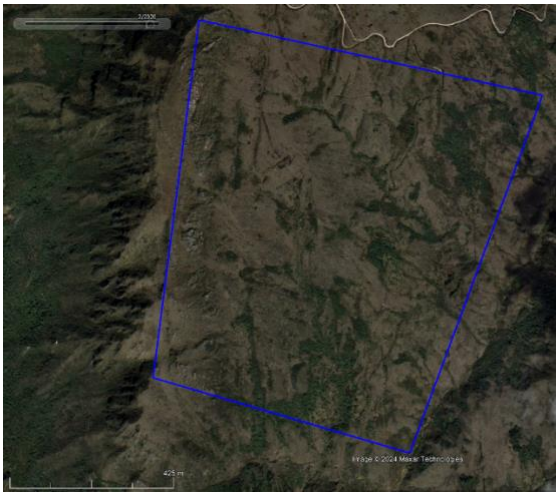
Biodiversity intactness quantifies the impact humans have had on the intactness of species communities. Anthropogenic pressures such as land use conversion cause dramatic changes to the composition of species communities and this layer illustrates these changes by focusing on the impact of forest change on biodiversity intactness[2]. This information was assessed via the Orbify platform.

RESULTS

The assessment of Google Earth images (Figure 2) reveals minimal visible land cover changes between 2020 and 2024. Any changes in green cover in the area can likely be attributed to seasonal differences between the two images.

[1] Galarnyk, M. Understanding Boxplots. https://builtin.com/data-science/boxplot

[2] Hill, S. L., Arnell, A., Maney, C., Butchart, S. H., Hilton-Taylor, C., Ciciarelli, C., ... & Burgess, N. D. (2019). Measuring forest biodiversity status and changes globally. Frontiers in Forests and Global Change, 2, 70.



February 2020

July 2024

Figure 2. Google Earth images of the project area from 2022 and 2024

Figure 2 shows the project area, but there is a discrepancy in the reported sizes. The PSF states the total owned area is 128 hectares; however, Figure 2 indicates a project zone of only 98.6 hectares. Additionally, the PSF mentions 5 hectares for replanting and 7 hectares for soil restoration, but these precise locations were not specified. Clarification is needed regarding the specific zones of implementation and the total owned area.

Figure 3 provides a monthly analysis of NDVI and rainfall from January 2019 to June 2024. The data reveals a generally low average NDVI in the project area, with a noticeable correlation between higher rainfall and increased NDVI values. Each year, NDVI peaks from January to March, while the lowest values occur during the summer. The monthly average NDVI fluctuates between 0.25 and 0.35, suggesting either overall unhealthy vegetation or minimal vegetation in the area. Additionally, the reforested frailejone plants, which are not naturally high in chlorophyll, may also impact the NDVI analysis.

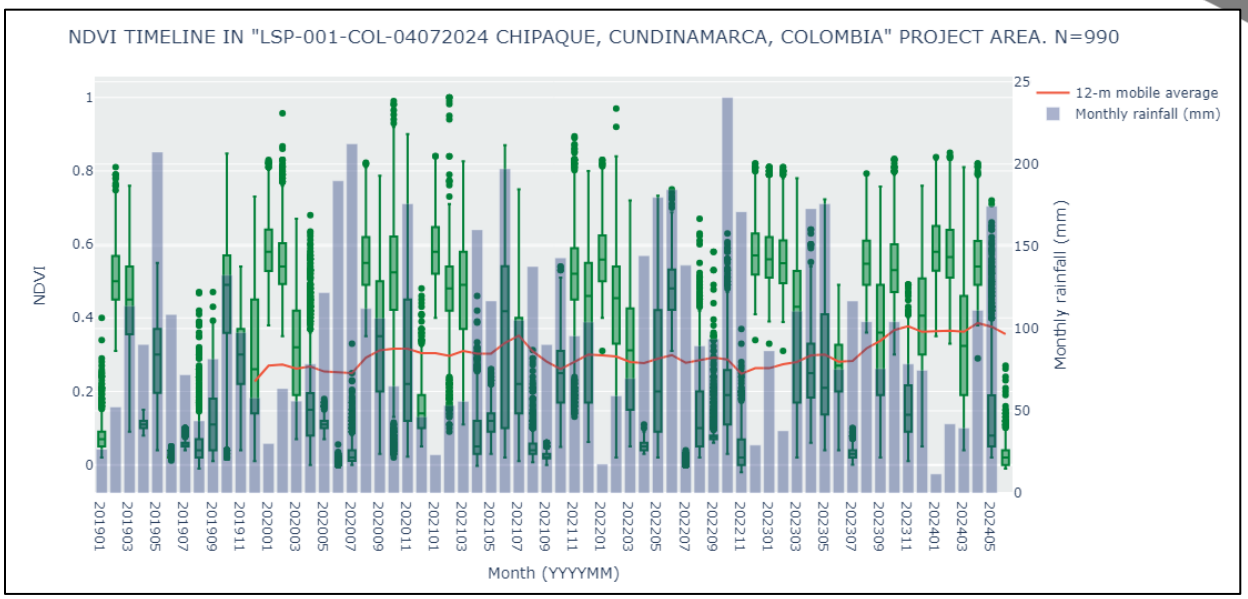


Figure 3. NDVI and monthly rainfall since January 2019

Biodiversity intactness, seen in Figure 4, decreased from **73.71% in 2018 to 71.32% in 2020**. The biodiversity intactness value in the project area is therefore eligible for **biodiversity restoration** credits. More detailed information on the ecological status of the project area and its risks can be consulted in the *Preliminary assessment* document.

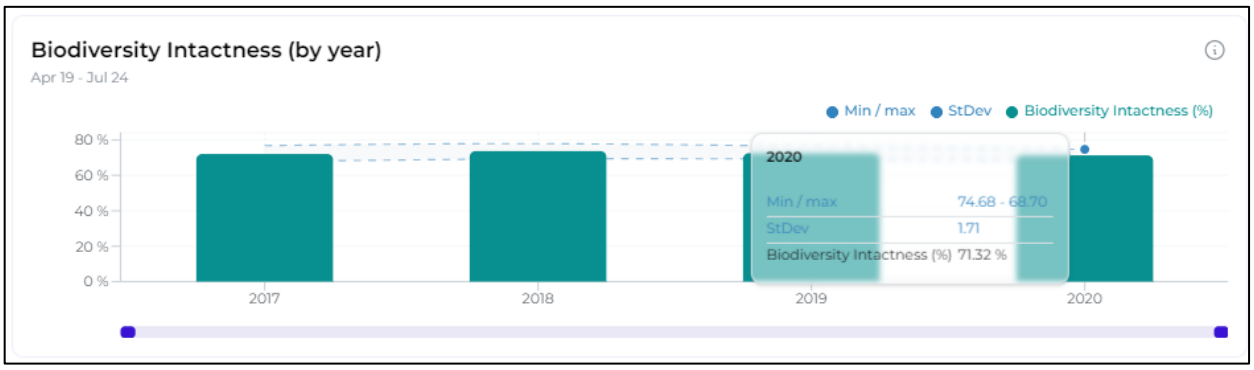


Figure 4. Biodiversity intactness of project area

The project focuses on the conservation of crucial endemic species and their habitats, giving priority to the preservation of biodiversity. This prolonged effort aims to catalog meticulously and understand ecological dynamics, providing valuable data for strategies-informed conservation policies and management practices aimed at safeguarding the delicate balance of ecosystems. Therefore, the planned activities of the project represent an important step towards forestry and biodiversity management in the area of the project, while bringing crucial environmental benefits to the local community.

CONCLUSIONS

- The Project intervention area has a biodiversity intactness of 71.32%, which is aligned with **biodiversity restoration** objectives.
- In addition to positively impacting biodiversity, the project is expected to increase carbon dioxide removal and sequestration by enhancing vegetation cover, as well as safeguarding the soil from erosion and sustaining rainfall water infiltration.
- The Project activities have not caused net harm to ecosystems or society, on the contrary, they are expected to create ecological, social, and economic benefits, thus driving sustainable development.
- The project implementation began in April 2019, which does not meet the requirement of projects not more than 5 years old at the time this alignment assessment is carried out.
    - **Additional information is requested about the project's implementation period duration and any updates on present or planned future activities.**
- The provided project area is larger (128 hectares) compared to the indicated zone of intervention (5 hectares for replanting and 7 for soil works).
    - **Before onboarding, more information is required to explain the difference in the indicated intervention area and the noted 128 total hectares for the project area. Additionally, more information is requested regarding the true size of the owned land, as the provided plot was only 98.6 hectares.**
- Having assessed all these criteria for the aOCP Modality B project alignment criteria, the project “La Samaritana páramo Biotácora” with key identifier **LSP-001-COL-04072024 CHIPAQUE, CUNDINAMARCA, COLOMBIA** is **provisionally deemed eligible** to be registered as a Modality B, Forest Management project once the requested additional information regarding the project intervention zone is provided.
    - **Upon positive assessment of the requested additional information, the project may proceed to the next steps of assessment for Biodiversity Credits for Species Conservation (BCSCs), Carbon Removal Credits (VCCs), and Water Credits (VWCs).**