PROPOSED PROJECT ACTIVITY ALIGNMENT ASSESSMENT

Santa Isabel Water and Soil Credits,Chihuahua, México
LT-012-MEX-210823
Forest management
Modality B

November 2023

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ALIGNMENT ASSESSMENT FOR THE PROJECT SUBMITTED BY LIFE TERRA FOUNDATION, "SANTA ISABEL WATER AND SOIL CREDITS", WITH AOCP IDENTIFIER **LT-012-MEX-210823 Chihuahua, México.**

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 "Life Terra Foundation" submitted the project "Santa Isabel Water and Soil Credits" located in Santa Isabel, Chihuahua, Mexico. This Project activity is in the onboarding stage with the aOCP identification code **LT-012-MEX-210823**.

Compliance with the aOCP's principles, values, standards, and requirements is a fundamental for participating in the program. This assessment takes place during the onboarding phase, prior to the registration of 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, trading, and retirement of VNPCs.

Since Project activities have been started before the start of the onboarding process, it participates as a project of Modality B. According to the aOCP rules and procedures, Modality B projects shall go through the following process in order to 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.

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 ARR

    b. Regenerative agriculture

    c. Silvopastoral management

    d. Urban forests / individual tree climate action

    e. Biochar

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 24 months 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;

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.

The proposed project was registered in the PSF in the Watershed Management category and consists of the following activities:

The project is located on the outskirts of the Santa Isabel community, Chihuahua municipality. It was developed on a private property with an area of 13.4 hectares devoid of vegetation due to overgrazing (figure 1).

6000 individuals of the Mezquite (Prosopis glandulosa) species were planted in the period from July to August 2021. The size of the replanted individuals was 35 to 45 centimeters tall with an age of 1.6 years.

The afforestation was carried out on soil works of ditch-bank on level curves with machinery, with a depth of 30 to 35 centimeters, at a distance of 6 meters between each line. This work is intended to capture and retain moisture. The spacing between each tree replanted on the ditch-bank lines was 3 meters.

Figure 1. Proposed properties and control points used in this 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	Yes	No
Does the project belong to one of the following types?: • Forest management, including ARR • Regenerative agriculture • Silvopastoral management • Urban forests / individual climate action • Biochar	X	
Does the project comply with the environmental and social no-harm requirement?	X	
Is the project expected to have positive impacts on biodiversity?	X	
If the project has already started, is it less than 5 years old?	X	
Do the requested VNPCs comply with the additionality criteria?	X	
Has documentation establishing land ownership or an agreement for the project's duration been provided?	X	
Have any trees or shrubs been cleared in the project area in the last 2 years?		X

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, researchers can observe trends in vegetation density, identify shifts in land use patterns, and monitor the effects of factors like urbanization, deforestation, or natural disasters. Additionally, monthly rainfall is observed together with monthly NDVI to detect changes in vegetation associated with rainfall patterns.

The NDVI provides information on the amount and quality of vegetation in a particular area. The NDVI ranges from -1 to +1 and values closer to +1 indicate dense, healthy vegetation, while values closer to -1 suggest a lack of vegetation or the presence of artificial surfaces.

In Google Earth Engine, the maximum monthly NDVI was calculated from January 2019 to September 2023 using Sentinel-2 satellite images, using only images with a cloud cover percentage of less than 35%. Subsequently, random control points were drawn in each property (figure 1) and the monthly NDVI value was extracted at each point.

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

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

RESULTS

Figures 2 and 3 show the proposed area in March 2021 and September 2023, respectively. No changes in vegetation cover are observed, beyond those due to the hydrological dynamics of flooding in the region. This highlights the relevance of the proposed earthworks for flood management.

Figure 2. High-resolution satellite image of May 2017.

Figure 3. High-resolution satellite image of March 2023.

The NDVI results are shown in Figure 4. The highest NDVI values were generally observed in the months of July to October. The average annual NDVI has remained constant since 2019, with values between 0.2 and 0.35. The temporality of NDVI variations is coupled with the monthly precipitation volume, as the NDVI increases after the start of the rainy season. This relationship is evident, as there is a monthly increase in NDVI proportional to the volume of rainfall. Due to this, the seasonal NDVI variations are considered normal.
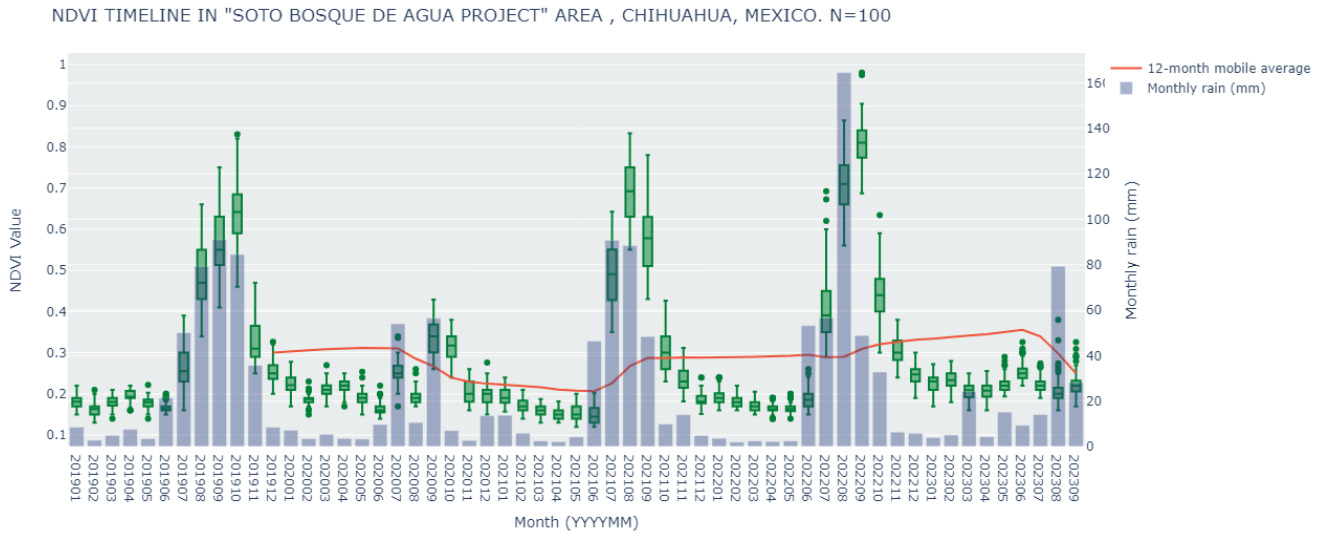
NDVI TIMELINE IN "SOTO BOSQUE DE AGUA PROJECT" AREA , CHIHUAHUA, MEXICO. N=100

Figure 4. Monthly NDVI box plot at control points.

CONCLUSIONS

- The vegetation has maintained regular seasonal variation since 2019 and has averaged monthly NDVI values between 0.2 and 0.35.
- The site photographs show the relevance of planting, reforestation, and soil works to contribute to the restoration of the ecological functions of the proposed area.
- The site photographs show the relevance of planting, reforestation, and soil works to contribute to the restoration of the ecological functions of the proposed area.
- The proposed project is considered to be aligned with the rules and requirements of the aOCP and is eligible for registration as a watershed management project, under Modality B: projects implemented before the filling of the PSF.
- To proceed with the registration, the next step is to pay the onboarding fee.