2025

ALIGNMENT ASSESSMENT

BEL-003-MEX-20082024 PICHUCALCO, CHIAPAS, MÉXICO

Manejo Forestal y Biodiversidad Pichucalco

Desarrollos Sostenibles BELMEX S.A. de C.V.

August 29, 2024

The regenerative
Standard

ALIGNMENT EVALUATION FOR THE PROJECT SUBMITTED BY DESARROLLOS SOSTENIBLES BELMEX S.A DE C.V, "MANEJO FORESTAL Y BIOVERSIDAD PICHUCALCO", IDENTIFIED WITH THE UNIQUE CODE BEL-003-MEX-20082024-PICHUCALCO, CHIAPAS, MEXICO.

CONTEXT

As part of the certification process for positive nature projects and the subsequent issuance of Verified Positive Nature Credits (VNPCs) under the Ases On-Chain Protocol (aOCP) Certification Program, the project developer "DESARROLLOS SOSTENIBLES BELMEX S.A DE C.V" presented the "Manejo Forestal y Bioversidad Pichucalco" project. This project activity is in the aOCP onboarding stage. Compliance with the aOCP principles, values, standards, and requirements is a fundamental requirement for participation in the program. This assessment is carried out during the onboarding stage, prior to the registration of project activities, as stipulated in the aOCP Procedures document, which describes all the stages a project goes through from its inception to issuance, sale, and purchase.

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

1. Application through the Project Submission Form (PSF), completed by the project proponent.
2. Documentation review and alignment assessment, conducted by the aOCP Operations Team.
3. Payment of incorporation fee by the project proponent.
4. Project pre-registration, carried out by the aOCP Operations Team.
5. On-site validation of the Project's implemented activities, carried out by the OCP Operations Team.
6. Preparation of Baseline Report, Monitoring Plan, Credit Issuance Contingent Table, carried out by the aOCP Operations Team.
7. Project proponent agreement.
8. Project Validation by an external and independent Validator, delivering a Project Validation Report.
9. Project registration letter and issuance of first credits, carried out by the aOCP Operations Team.

This report corresponds to step 2, Alignment Assessment.

ALIGNMENT ASSESSMENT

The aOCP is based on sound principles intended to ensure that Project activities seeking registration and accreditation with VNPC demonstrably and positively impact ecosystems in a real, measurable, permanent and additional manner, while avoiding any harm to ecosystems and/or society.

Compliance with the aOCP principles, values, standards, and requirements is a fundamental requirement for participation in the program. This assessment is conducted during the onboarding phase, prior to the registration of project activities. This mandate is stipulated in the aOCP Procedures document, which describes all stages of a project from its inception to the issuance, marketing, and retirement of VNPCs.

A positive result of the Alignment Assessment with the principles, values, rules and requirements of aOCP confirms that the proposed Project activity:

1. It belongs to one of the following types of projects:
    a. Forest management, including afforestation, reforestation and revegetation (ARR)
    b. Regenerative agriculture
    c. Silvopastoral management
    d. Urban Forests / Climate Action of Individual Trees
    e. Biochar
2. Adheres to environmental and social requirements of doing no harm;
3. It is expected to have positive impacts on biodiversity;
4. The Project was developed less than 5 years ago;
5. Meets the additionality criteria for the requested VNPCs;
6. Has documentation proving ownership of the land or an agreement for the duration of the project;
7. The Project area has not been degraded, deforested or burned in the last 24 months;
8. For projects applying for biodiversity credits for species conservation, a positive Alignment Assessment also confirms that the proposed project area has a high conservation value due to its preservation status;
9. Areas where the average species abundance indicator (also reported as biodiversity integrity) is less than 0.80, indicating that biodiversity is at risk and requires restoration actions, 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 the evaluation of biodiversity for species conservation V1.0.

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

These circumstances include:

- Failure to comply with the principles, values, standards and requirements of aOCP,
- Issuance of contradictory and/or false statements by the proponent or developer of the Project,
- Decreased confidence in the Project activity's ability to deliver the intended ecosystem and/or societal benefits due to an inadequate risk management plan, which includes 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 "Manejo Forestal y Biodiversidad Pichucalco" project, led by Desarrollos Sostenibles Belmex S.A. de C.V., is a forest management initiative located in Pichucalco, Chiapas, Mexico. It covers 30 hectares out of a total titled area of 31.79 hectares and involves three landowners. The project addresses the decline in wildlife populations and the need for reforestation in previously deforested zones. Activities include land clearing, fence reinforcement, tree planting (15,151 trees from six native species), protection against illegal logging, fire, pests, and diseases, and ongoing site maintenance. The project seeks Carbon (VCC) and Biodiversity (VBBC) credits.

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

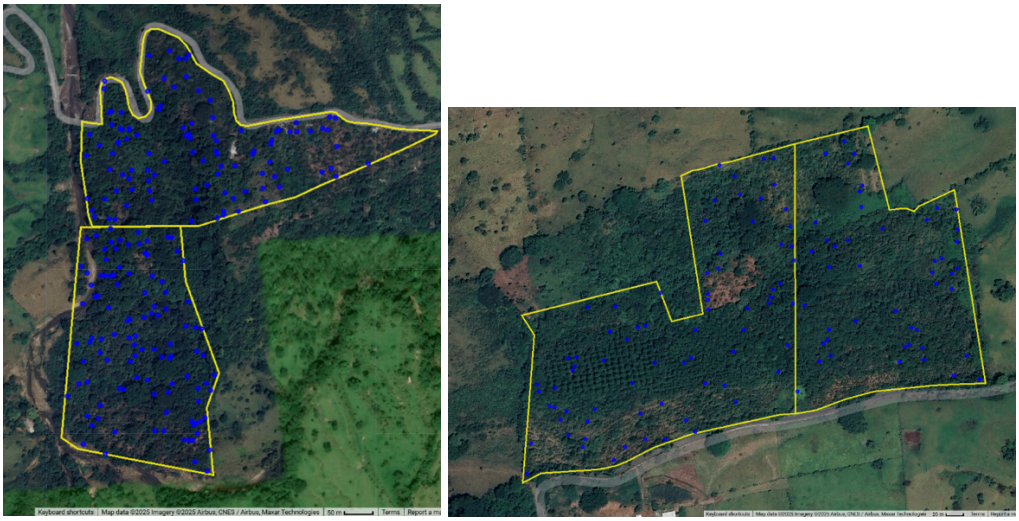


Figure 1. Project area and sampling points used for NDVI analysis.

METHOD OF ANALYSIS

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

Alignment criteria	Y: Yes N: No P: Partially NA: 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	**Y**	The project falls into the forest management category.
Does the project meet the requirement of not causing environmental and social harm?	**Y**	
Has documentation proving landownership or an agreement been provided for the duration of the project?	**Y**	
If the project has already started, is it less than 5 years old?	**Y**	The project began in May 2024.
Are the species considered for reforestation classified as “invasive” or “exotic”?	**N**	
Is the project expected to have positive impacts on biodiversity?	**Y**	The introduction of six native species for reforestation will have positive impacts on biodiversity.
Do the requested VNPCs meet the additionality criteria?	**Y**	
Have any trees or shrubs been cut down in the project area in the last 2 years?	**N**	
Is the project area located in a Protected Natural Area?	**N**	
For biodiversity restoration credits, the biodiversity integrity indicator is < 80%.	**NA**	
For biodiversity conservation credits, the biodiversity integrity indicator is > 80%.	**Y**	The biodiversity integrity index is 80.296%.

Alignment criteria	Y: Yes N: No P: Partially NA: Not applicable	Comments
Are the proposed keystone species aligned with the aOCP criteria for keystone species?	**NA**	
For carbon credits, what is the value of the ARR Site Suitability Statistic?	**N**	Area within Trees (Unsuitable), eligibility may be low (0.0%)
For carbon credits, what is the value of the New Project Performance Benchmark Estimation tool?	**N**	The performance benchmark is likely to be negligible or low.

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

By analyzing historical land cover, NDVI allows us to track changes in vegetation over time. By examining archived NDVI data, it is possible to observe trends in vegetation density, identify changes in land-use patterns, and monitor the effects of factors such as urbanization, deforestation, or natural disasters.

NDVI provides information on the quantity and quality of vegetation in a given area. It ranges from -1 to +1, with values close to +1 indicating dense, healthy vegetation, while values close to -1 suggest the absence of vegetation or the presence of artificial surfaces.

Using Google Earth Engine, the maximum monthly NDVI was calculated from January 2019 to May 2025 using Sentinel-2 satellite imagery. Random control points were then plotted on each property (Figure 1), and the monthly NDVI value at each point was extracted.

Google Colab was used to generate boxplots showing the distribution of NDVI values at the control points. A boxplot is a standardized way of displaying the distribution of a data set based on its five-point summary: the minimum, the first quartile [Q1], the median, the third quartile [Q3],

and the maximum. Boxplots provide information about outliers, data symmetry, the degree of clustering, and whether and how the data are skewed.[1].

Biodiversity integrity quantifies the impact humans have had on the integrity of species communities. Anthropogenic pressures, such as land-use conversion, cause dramatic changes in the composition of species communities, and this layer illustrates these changes by focusing on the impact of forest changes on biodiversity integrity[2]. This information was evaluated through the Orbify platform.

RESULTS

Analysis of Google Earth imagery (Figure 2) reveals minimal changes in vegetation cover between 2019 and 2023, although vegetation cover does appear reduced in 2023. A more comprehensive analysis of vegetation cover can be seen in the NDVI analysis of the project area (Figure 3).

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

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

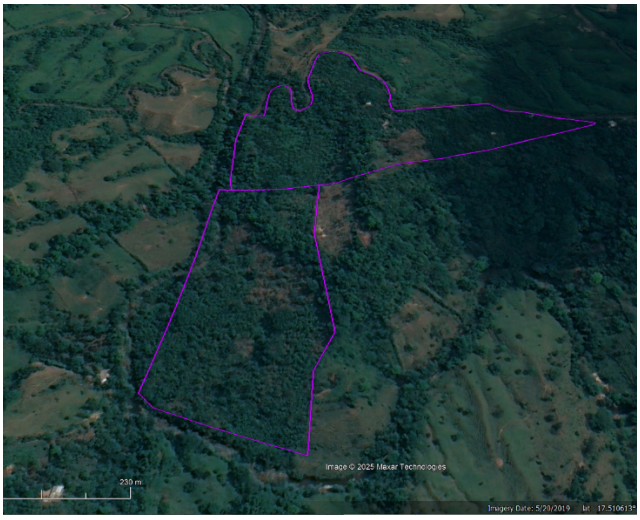
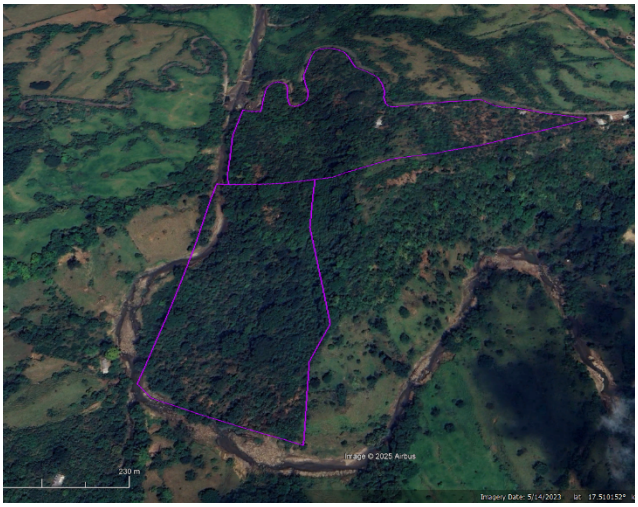
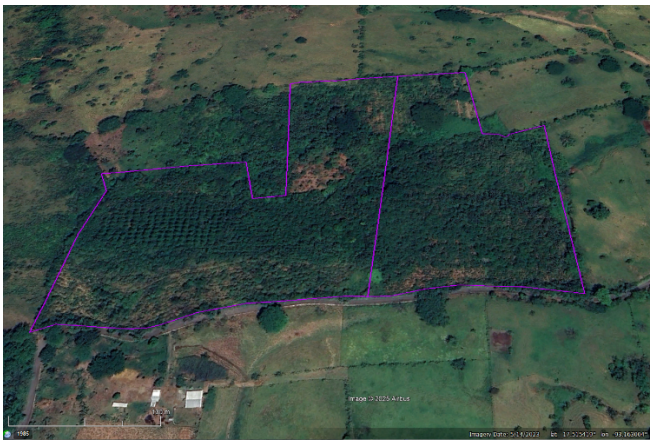
May 2019	May 2023
	
	

Figure 2. Google Earth images of the Project area from 2019 and 2023.

The NDVI analysis from 2019 to 2025 (Figure 3) shows that the average NDVI value has remained relatively stable with one notable and extended decrease from late 2022 to late 2023. Between January 2019 and August 2022, the average NDVI in the project area remained consistent, showing a gradual upward trend and reaching around 0.88—an indication of dense, healthy vegetation. A sharp decline occurred in September 2022, potentially due to the increased rainfall during that month. While NDVI values partially rebounded in the following months, a steady

decrease ensued, with values dropping to approximately 0.81 by August 2023. From September 2023, NDVI began to rise again, reaching about 0.88 by December and remaining above 0.85 into early 2024. After reforestation activities commenced in May 2024, a slight dip to 0.79 was observed—possibly reflecting initial soil disturbance or early vegetation establishment—but this was followed by a gradual increase, with NDVI reaching 0.85 by May 2025. While the post-reforestation period remains short for conclusive analysis, early trends suggest encouraging signs of vegetation recovery. Importantly, NDVI values remained consistently above 0.5 throughout the monitoring period, indicating generally healthy vegetation cover. Continued monitoring and strong project management are expected to support further NDVI improvements, advancing the goal of a lush, resilient landscape.

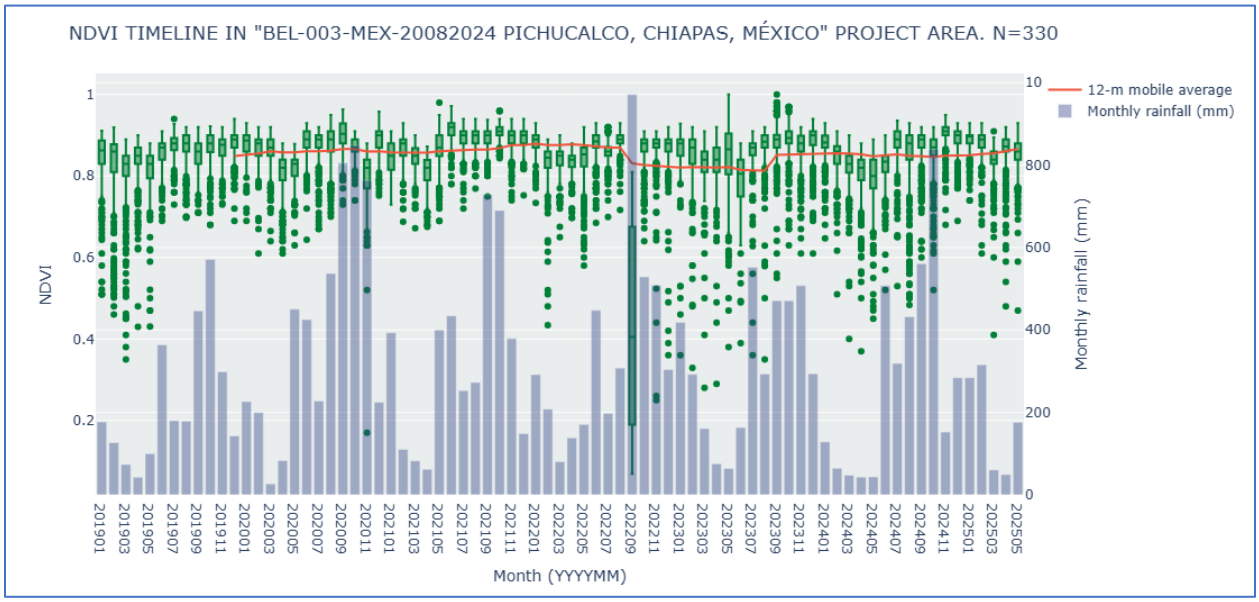


Figure 3. Monthly NDVI and precipitation from January 2019 to May 2025

Biodiversity integrity remained stable at 80.296% between 2017 and 2020 (Figure 4); therefore, this value is aligned with biodiversity conservation goals.

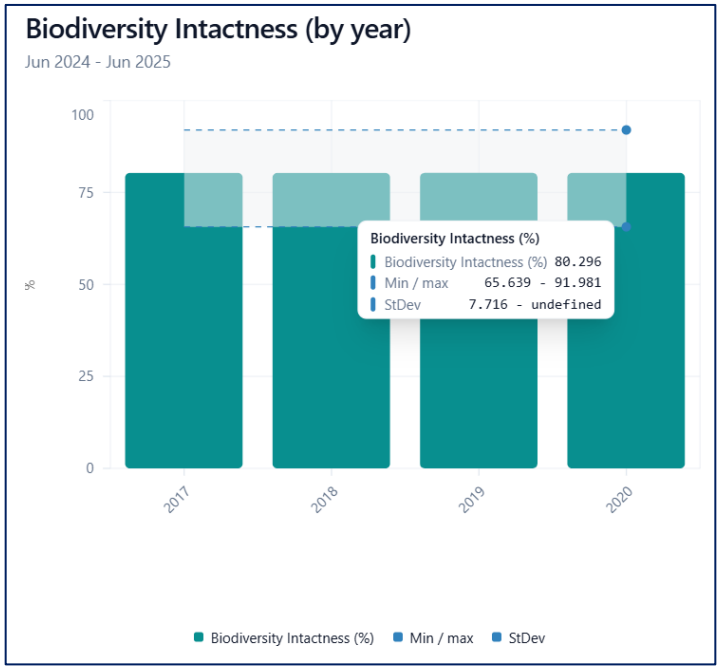


Figure 4. Biodiversity integrity

The “Manejo Forestal y Bioversidad Pichucalco” project emphasizes wildlife habitat restoration by reintroducing six native species across a moderately dense plantation area. It prohibits the use of invasive or exotic species and avoids environmentally sensitive or protected natural areas, thereby minimizing ecological disruption. Conservation measures include ongoing surveillance to prevent illegal deforestation, as well as ecosystem maintenance practices that reduce threats such as fire and disease.

Beyond the scope of the project, there are other species, particularly those identified as key due to their endemism or classification as at-risk species. Their potential distribution is found within the project area, according to bibliographic information, which can be found in Table 1.

Table 1. Key species with potential distribution (inaturalist.org)

Class	Scientific name	Common name	National status*	World Status**	Distribution Mexico
Fauna					
Insecta	***Anartia jatrophae***	White Peacock			**Native**
Reptilia	***Boa imperator***	Central American Boa	**A**	**LC**	**Native**
Amphibia	***Agalychnis taylori***	Taylor’s Leaf Frog			**Native**

Class	Scientific name	Common name	National status*	World Status**	Distribution Mexico
Reptilia	***Adelphicos quadrivirgatum***	Middle American Burrowing Snake		**LC**	
Reptilia	***Dermophis mexicanus***	Mexican Caecilian	**Pr**	**LC**	**Native**
Reptilia	***Ninia sebae***	Red Coffee Snake		**LC**	**Native**
Reptilia	***Kinosternon leucostomum***	White-lipped Mud Turtle	**Pr**		**Native**
Insecta	***Apatelodes torrefacta***	Spotted Apatelodes Moth			**Native**
Insecta	***Danaus gilippus***	Queen		**LC**	**Native**
Reptilia	***Drymarchon melanurus***	Central American Indigo Snake		**LC**	**Native**
Reptilia	***Anolis lemurinus***	Ghost Anole		**LC**	**Native**

*** National status NOM-059-SEMARNAT-2010:** (E) Probably extinct in the wild, (P) Endangered, (A) Threatened, (Pr) Subject to special protection, (NA) Not applicable.

**** Global status of the IUCN Red List:** (E) Extinct, (EW) Extinct in the wild, Collapsed, (CR) Critically Endangered, (EN) Endangered, (VU) Vulnerable, (NT) Near Threatened, (LC) Least Concern, (DD) Data Deficient, (NE) Not Evaluated.

CONCLUSIONS

a) The project falls into the forest management category, with a focus on ecosystem restoration and wildlife habitat protection, aligning with the criteria established by the aOCP Program.
b) Activities began in May 2024, which meets the requirement that projects be no more than five years old at the time of this alignment assessment.
c) The six species used for reforestation are native to Mexico and ecologically appropriate for the region, supporting restoration and biodiversity goals. Additionally, 11 species of fauna either native or registered as an “at-risk” species were documented within the project area.
d) The project area has not been subject to deforestation in the last two years, and active measures such as fencing, fire prevention, and pest control are in place, aligning with the criterion of avoiding environmental degradation.
e) The project area is not located within a legally designated Protected Natural Area, which complies with the additionality criterion.
f) Biodiversity intactness is 80.296%, aligning with biodiversity conservation objectives.

g) The Project Developer has submitted documentation proving land ownership and an agreement with local communities, which fulfills the criterion of not generating social harm.
h) The activities proposed by the project have strong potential to contribute to biodiversity conservation:
    - The use of native species and active habitat protection efforts help restore ecological function and support the return of native fauna.
i) The project presents a sound foundation for ecosystem and biodiversity restoration. The project may be eligible for registration under **Modality B of the aOCP**, allowing it to advance in the evaluation process for the generation of Carbon (VCC) and Biodiversity (VBBC) credits.