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Guidelines for Structuring Projects that Generate High Integrity Biodiversity Units

Mariana Sarmiento
Néstor Galindo Ruiz
Francisco Gómez
María Lucía Rodríguez
Mauricio Serna
Jennyfer Ruiz

Inter-American Development Bank
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*Terrasos

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GUIDELINES FOR STRUCTURING PROJECTS THAT GENERATE HIGH INTEGRITY BIODIVERSITY UNIT

TERRASOS IDB LAB

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Authors: IDB Lab and Terrasos (Mariana Sarmiento, Néstor Galindo, Francisco Gómez, María Lucía Rodríguez, Mauricio Serna and Jennyfer Ruiz).

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Abstract

This technical note summarizes Terrasos Protocol for the Issuance of Voluntary Biodiversity Units a mechanism that promotes the conservation and restoration of ecosystems through the issuance of Biodiversity Units. Each unit represents 10 square meters of threatened ecosystems preserved or restored for at least 20 years. The protocol establishes key principles such as traceability, permanence and scientific rigor, and details a methodology for calculating the units issued, based on factors such as ecosystem threat, connectivity, size, conservation actions, and community engagement. The document includes a hypothetical scenario illustrating the calculation of units in a project, and a checklist for the registration document, which ensures compliance of the minimum requirement for projects issuing Biodiversity Units. This summary emphasizes the integrity of the process and ensures that investments generate real and sustainable impacts on biodiversity conservation.

Introduction

The world is facing an unprecedented environmental crisis, driven by accelerated biodiversity loss and climate change. These two interlinked threats are the result of decades of unsustainable exploitation of natural resources and population growth, leading to the degradation of essential ecosystems.

In response to this need, Terrasos, a company specialized in the structuring and management of environmental investments, has developed the **Protocol for the Issuance of Voluntary Biodiversity Units (Tebu or Terrasos Biodiversity Units).** This innovative mechanism is designed to effectively increase and improve investments in ecosystem conservation and restoration by establishing a results-based payment framework tied to biodiversity net gains. The protocol offers a structured solution that enables conservation projects to quantify and issue Biodiversity Units in a transparent and verifiable manner.

The Protocol responds to the increasing demand for financing mechanisms that promote ecosystem conservation from an ecological perspective, while also incorporating economic and social dimensions. In this context, it aims to facilitate direct, transparent, and verifiable investments by individuals, businesses, and governments in the protection and restoration of biodiversity.[1]

1 Consult the full version of the Protocol for Issuance of Terrasos Voluntary Biodiversity Units: https://www.terrasos.co/wp-content/uploads/biodiversity-units-protocol-version-4-0-english.pdf

This instrument establishes a rigorous and traceable monitoring and evaluation system to ensure that progress in conservation is measured clearly and transparently, guaranteeing that each Biodiversity Unit issued corresponds to tangible management and ecological outcomes on the ground. Furthermore, it promotes the development of projects that positively impact threatened ecosystems, offering a sustainable and financially viable framework for their conservation.

The Protocol offers a robust technical, financial, and legal framework that allows for the structuring of projects with long-term sustainability guarantees. In addition to protecting species and habitats, investments in Biodiversity Units generate economic opportunities for local communities, promote environmental education, and contribute to the development of a greener and more resilient economy.

In this context, the Protocol seeks to establish guidelines for structuring high-integrity projects that generate quantifiable benefits for biodiversity. Through a system of monitoring, evaluation, and verification by independent third parties, it ensures that investments in biodiversity result in tangible and lasting benefits for ecosystems and local communities, confirming that each issued unit represents a genuine commitment to conservation.

What is a Terrasos Biodiversity Unit?

A Terrasos Biodiversity Unit (Tebu) is a **transactional unit representing 10m² of preserved and/or restored ecosystem**, reflecting quantifiable biodiversity outcomes over a minimum period of 20 years. The criteria utilized for the quantification of Tebu include habitat quality, ecosystem functionality, community engagement, and the total area encompassed by the project.

Similarly, if a project has a greater impact on the ecosystem—whether by intervening in threatened habitats, facilitating species movement, or enhancing ecosystem services, among other criteria—it may generate more credits compared to projects focused on conserving non-threatened habitats.

The scheme proposed by the Tebu Issuance Protocol to ensure investor protection involves releasing credits based on the achievement of ecological and management milestones established for the project, tailored to its specific context and conditions. This approach provides greater assurances for investors by linking credit release to measurable outcomes.

Principles

Terrasos establishes a set of common principles for projects implementing this Protocol to ensure their technical, legal, and economic integrity. The registration document must reflect these principles to guarantee compliance with the project's structure and operation, encompassing all aspects from the issuance and marketing of credits to their monitoring. The principles and their definition are presented below:

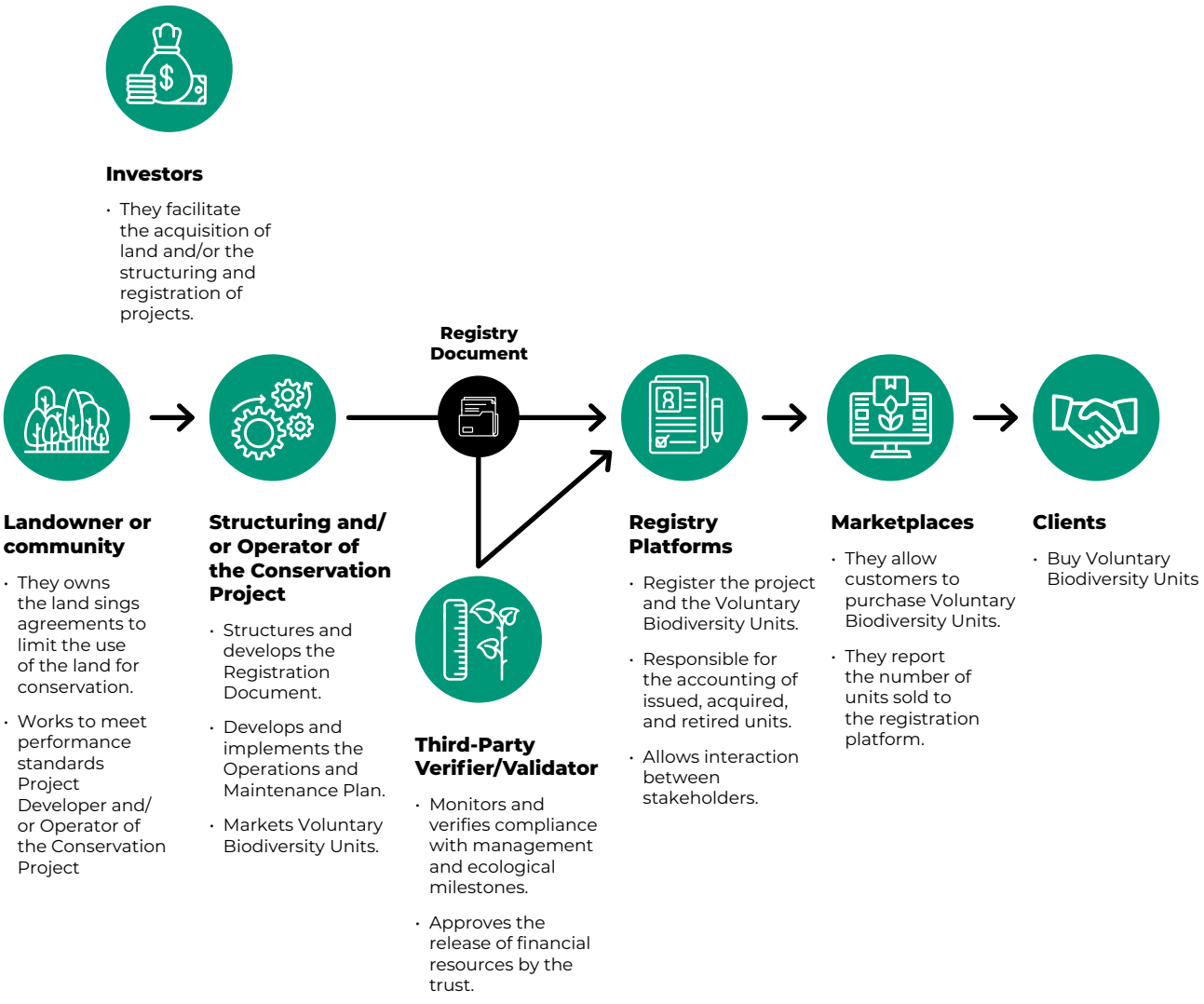
Principle	Description
Traceability	Projects must provide comprehensive access to information on the value chain and biodiversity outcome award data, including detailed results of monitoring actions.
Permanence	Projects must establish technical, administrative, financial and legal conditions that guarantee the continuity of actions for a minimum of 20 and up to 50 years.
Rigor	Projects must demonstrate analytical and scientific rigor by executing all activities outlined in the management plan with comprehensive and adaptable monitoring to ensure that the intended results are achieved.
Transparency	Projects must engage in open public consultation procedures and provide full disclosure of participants, their roles, customer data and pricing information.
Additionality	Projects must produce verifiable conservation outcomes that exceed what would occur without the interventions, contributing to the reduction of barriers related to investment, institutional frameworks, technology, environmental conditions, prevailing practices, property rights, and social factors.
Complementarity	Project strategies and actions must align with and support the environmental planning and management instruments of the territory, as well, as national or regional conservation priorities.
Applicability	The possibility of integrating projects from diverse environmental, social and economic contexts must be ensured.

Value chain

In environmental conservation projects, the value chain aims to structure a system in which various stakeholders interact to generate environmental, economic, and social value throughout the project lifecycle. This cycle includes the identification of the intervention area, technical design, the implementation of conservation actions, subsequent verification, and finally the issuance and commercialization of Biodiversity Units.

The key actors in this chain include the landowners, the project developer, the operator, and the third-party verifier. The project developer is responsible for designing and planning the conservation actions based on a biophysical baseline; the operator implements these actions; and the third-party verifier ensures transparency and compliance with the milestones established for the issuance of Tebu.

This value chain must follow a collaborative, adaptive, and long-term approach to generate tangible positive impacts on biodiversity through a transparent process that guarantees traceability and sustainability in resource management.



Eligible projects

Eligible projects must demonstrate additionality and meet minimum conditions to be able to access the Protocol as a financing mechanism for conservation projects. This includes, but is not limited to:

Preservation actions

Actions or activities necessary to maintain and protect natural cover and, indirectly, the biodiversity associated with the ecosystem of interest.

Restoration actions

Ecological restoration is a complex process that goes beyond the traditional concept of transforming anthropogenic land cover into natural ones. Ecological restoration must involve environmental, social, legal and economic aspects .

Minimum project duration

Demonstrate the implementation of a legal and territorial strategy that allows for a minimum durability of 20 years, with the aim of achieving a quantifiable and sustainable gain in biodiversity over time.

Project area of influence

To accurately assess the positive impacts of a conservation project, it is insufficient to consider only the immediate study area. A comprehensive approach that integrates abiotic, biotic, and socioeconomic factors is essential. The concept of the area of influence serves to identify and spatially delineate the positive impacts generated while establishing clear criteria for the design of sampling protocols and management strategies. This framework enhances the effectiveness of project monitoring and facilitates the quantification of biodiversity gains

How to determine the number of credits a project can issue?

The **Protocol considers ecosystems as biodiversity indicators,** as they serve to identify key biodiversity groups that need protection. To this end, it establishes a methodology for determining the number of Tebu (Terrasos Biodiversity Units) to be issued, based on five differentiating factors: ecosystem threats, connectivity (measured as landscape heterogeneity), level of community involvement, the ratio between preservation and restoration areas, and project duration.

This approach aims to quantify the complexity of a given landscape in enhancing and increasing biodiversity within the project's area of influence. The greater the effort and the more activities required to achieve biodiversity gains, the higher the number of credits awarded.

The added value of this methodology lies in the incorporation of a social factor, which includes strategies for engaging local communities, contributing to the revitalization of the local economy and the development of community-led conservation initiatives.

Differentiating factors for the quantification of Biodiversity Units

Any project aiming to generate Tebu must calculate five key differentiating factors to determine the potential number of credits it can issue, based on Protocol's scoring system and formula.

Intervened ecosystem (Threat category - IUCN) X **Opportunity for Connectivity** X **Community Engagement** X **Project Duration** (Years of operation) X **Activities** (Restoration Preservation)

1. **Ecosystem Threat Category: This factor** incorporates the level of threat faced by the ecosystem according to the IUCN (International Union for Conservation of Nature) Red List of Ecosystems. Ecosystems under greater threat will receive a higher number of Tebu, as their vulnerability and resilience are directly related to the effort required to achieve biodiversity gains.

2. **Ecological Connectivity Opportunities: This** considers the project's potential to enhance ecological connectivity in the project area. Projects that contribute to the consolidation of the natural landscape matrix will be positively valued.

3. **Community Involvement: This factor** establishes different levels of community involvement, from organizational structure to participation in the implementation of the Project Management Plan. The goal is to promote the ownership of conservation projects by local communities and Indigenous Peoples.

4. **Project duration:** The length of the conservation project influences the number of Tebu issued. Long-term projects (over 20 years) are generally more valuable in terms of the sustainability of conservation efforts.

5. **Area Dedicated to Preservation and Restoration:** This factor correlates the proportion of the project's surface area dedicated to preservation and restoration activities with the total project area. The larger the restoration area, the greater the amount of Tebu issued.

Calculation of potential units

Each differentiating factor is assigned a score according to the protocol, with a maximum score of 0.2, while the minimum score varies according to the factor. This scoring system reflects that each factor holds equal significance in the development of a conservation project, whose primary goal is to achieve biodiversity gains.

Factor	Description	Factor
 **1** **Threat Category according to the LRE (2016)**	Critically Endangered (CR) Ecosystem	0.20
	Endangered Ecosystem (EN)	0.18
	Vulnerable Ecosystem (VU)	0.16
	Not in threat category	0.12

Factor	Description	Factor
 **2** **Potential contribution to regional connectivity**	The project shows a **highly significant contribution** to maintaining or restoring landscape connectivity at a regional scale.	0.20
	The project demonstrates a **significant contribution** to maintaining or restoring landscape connectivity at a regional scale.	0.18
	The project shows a **moderate contribution** to maintaining or restoring landscape connectivity at a regional scale	0.16
	The project **does not contribute or contributes minimally** to the maintenance or restoration of landscape connectivity at a regional scale	0.12

Factor	Description	Factor
 **3** **Social/cultural values of the project**	The community holds political and economic rights over the project	0.20
	The community has economic rights over the project	0.18
	The community participates in the construction of the project's Management Plan, reflected in binding actions	0.16
	There is no community involvement in the construction of the project's Management Plan	0

Factor	Description	Factor
4 **Project duration in years**	50 years	0.20
	45 years	0.19
	40 years	0.18
	35 years	0.17
	30 years	0.16
	25 years	0.14
	20 years	0.12

Factor	Description	Factor
5 **Actions to implement**	Restoration	0.20
	Preservation	0.16

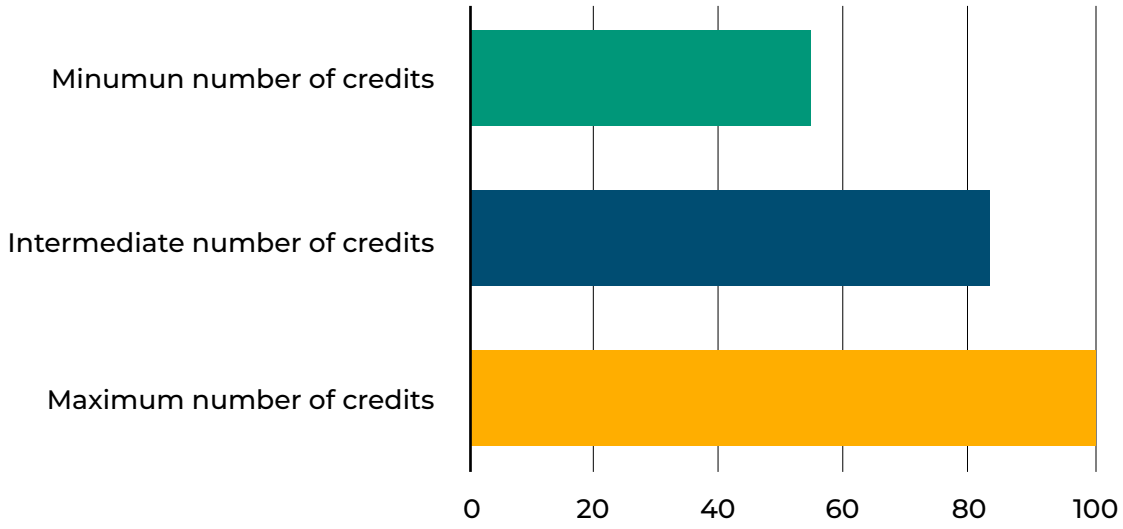
Once the scores for each differential factor are determined, the following formula is used to calculate the Biodiversity Units (Tebu) that the project will be able to issue during its operation, also known as the potential units.

$$Tebu = \frac{ATP * (F1 + F2 + F3 + F4) + (ARes * F5_{Res}) + (APres * F5_{Pres})}{10}$$

Where,
TPA: total project area in square meters (m^2)
ARes : total area dedicated to restoration activities (m^2)
APres : total area dedicated to preservation activities (m^2)

The impact of each factor's score, expressed in percentage terms, is illustrated in the figure below. It shows that when a project obtains the lowest scores across all five factors, it issues 54.7% fewer Biodiversity Units compared to the maximum potential. This situation occurs, for example, when the project area is entirely dedicated to preservation, has a minimum duration of 20 years, and does not involve local or ethnic communities. On the other hand, when a project is located in a territory with intermediate scores, it emits 19.25% fewer Biodiversity Units than it would if it achieved optimal scores across all evaluated factors.

Figure 1. Percentage of credits issued under 3 escenarios



Note: This table presents the potential Tebu as a percentage. Assuming the maximum value is found in scenario 1, represented as 100%, the other percentages are calculated in relation to this value.

Baseline Characterization

To ensure biodiversity gains, it is essential to consider the status of the following components and their impact on the project's area of influence.

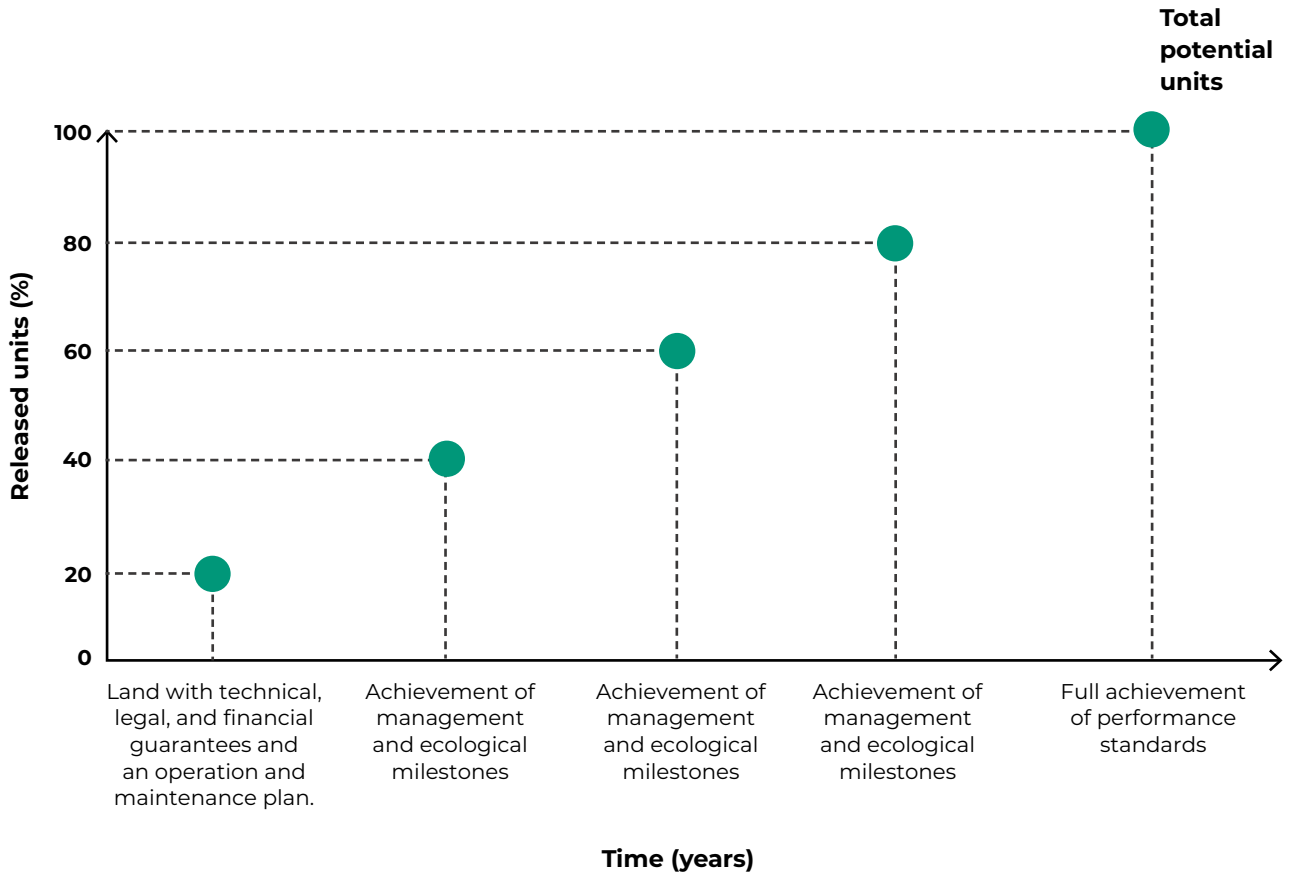
- **Biotic component:** This component is critical for assessing improvements in the biodiversity of the project area. Defining the taxonomic groups to be studied and establishing a unit of analysis will be crucial to measuring the positive impact of the implemented restoration strategies. Indicators such as species richness, abundance, or distribution could be used. This also involves setting ecological performance standards and the frequency at which biodiversity indicators will be monitored.

- **Abiotic component:** Similar to the biotic component, the analysis focuses on factors such as soil and water quality, which indirectly contribute to increasing biodiversity in the projected area. These factors are key to quantifying habitat improvements that, in turn, generate biodiversity gains.

- **Socioeconomic component:** Unlike the previous components, this assesses the human and economic context surrounding the project area and can be evaluated using secondary data. It examines land use, main economic activities, and land tenure systems. This component is essential for integrating the project with territorial activities and ensuring long-term sustainability while respecting the cultural context of the area.

Credit Release Program and Results-based Payment System

The Protocol establishes a release schedule for Tebu based on management and ecological milestones. Credits are released in batches and can only be sold once they are available for sale. Upon purchase, they are deducted from the total credits in the released batch. The Protocol proposes that the first batch, corresponding to 20% of the potential credits, be released upon the registration and approval of the project by the verifier. Subsequent batches are released as management and ecological milestones are achieved.



Milestones are established according to the context of the landscapes, with examples presented below.

Management Milestones: These refer to achievements in planning and administration that contribute to biodiversity conservation objectives or ensure sustainability. Examples include land acquisition, land-use restrictions, funding for long-term maintenance, fencing, or initiating the planting process, among others.

Ecological Milestones: These focus on achievements related to the restoration of the natural environment. Examples include replacing artificial and degraded cover with natural cover, strengthening ecological connections between the various forest strips, enhancing habitats for wildlife species, increasing species diversity, as well as protecting and restoring the structure and physicochemical composition of the soil. An example would be improvements in a biodiversity index or vegetation structure.

As mentioned above, the Protocol establishes guidelines for defining high-quality project compliance milestones. This allows for precise quantification of biodiversity gains. Additionally, it facilitates effective communication of generated impacts by companies or individuals, as the project will be able to measure the positive effects on the biotic, abiotic, and socioeconomic environment. This characteristic of management and administration milestones is key, as it enables the voluntary management of generated impacts.

To validate compliance with these milestones, the involvement of a third-party verifier is necessary to confirm their achievement. Upon verification, the Tebu can be released for sale and commercialization. Specific functions are described below.

Third-party verifier

The Protocol requires project promoters to ensure that audits are conducted by well-informed and impartial third parties. This process is essential to verifying whether a conservation project meets the proposed ecological performance milestones and standards, as well as for registering on the selected platform to authorize the release and commercialization of Tebu. External verification bodies are responsible for reviewing the registration document, conducting independent and objective evaluations of the ecological and management milestones, and approving the release of the Tebu.

Verifiers must operate under the principles of:

1. Independence
2. Integrity
3. Impactiality in presentation
4. Due professional care
5. Professional criteria
6. Evidence-based approach

Monitoring and evaluation

Each project must conduct two types of monitoring and evaluation:

- Monitor and evaluate management and ecological milestones.
- Monitor and assess available Tebu.

In this regard, each conservation project must implement a monitoring plan that includes biological, physical, and management indicators to demonstrate an increase in biodiversity within the project area.

Minimum parameters to include in each project's monitoring protocol:

a) Key parameters to be monitored
b) Monitoring frequency
c) Data collection methods
d) Responsible Individuals and entities for measurements

Registration platform

To ensure transparency and traceability of the results, as well as to build trust among potential clients and stakeholders, all projects using the protocol must be registered in a platform that guarantees:

- Timeliness and availability of information
- Privacy and confidentiality of sensitive data
- Traceability of information
- Service level agreements, terms and conditions
- Project workflow
- Automated transactions
- Unit serialization
- Accounting module
- Client reporting on project outcomes
- Security protocol
- Clearly defined stakeholder roles as outlined in the Protocol

The use of new technologies such as distributed ledger systems (DLT) is employed by some registration platforms to ensure transparency, traceability and immutability of information associated with projects[2].

Registration document

Projects are required to prepare and submit a Registration Document containing the technical, legal, and financial information necessary for issuing Biodiversity Units in the market. Initially, this document must include details about the project leader, along with general information regarding the project's location and characteristics. Following this, the significance and strategic importance of the project for the conservation and restoration of critical ecosystems must be demonstrated through a comprehensive analysis of complementarity and additionality. The project area must be clearly defined, with descriptions of its biophysical characteristics, land cover, and biological diversity.

The document must then specify the project's objectives, the conservation actions to be implemented, and the management strategies to be followed. Once the objectives are established, the credit release schedule and the monitoring and evaluation plan should be detailed, including the indicators used to measure biodiversity gains. A thorough risk analysis is also required, alongside evidence of the legal and financial conditions necessary

2 For more information on how this technology contributes to biodiversity units, please refer to the document "Strengthening the Integrity, Credibility, and Effectiveness of Terrasos' Biodiversity Units through the Application of Distributed Ledger Technology". Document available at the following link: https://www.terrasos.co/wp-content/uploads/biodiversity-units-protocol-version-4-0-english.pdf

to ensure the project's long-term sustainability. Finally, the Registration Document must outline the procedures for credit registration and environmental accounting.

Legal Notice (Disclaimer)

The Protocol for the Issuance of Voluntary Biodiversity Credits is **one of the first global frameworks for issuing biodiversity credits. This document is a version 4.0 and remains** under constinous review. You can download the latest version at:

https://www.terrasos.co/wp-content/uploads/whitepaper-biodiversity-units-tokenization-dlt-english.pdf

We welcome your comments or suggestions at biodiversitycredits@terrasos.co

Hypothetical scenario for the quantification of Biodiversity Units (Tebu)

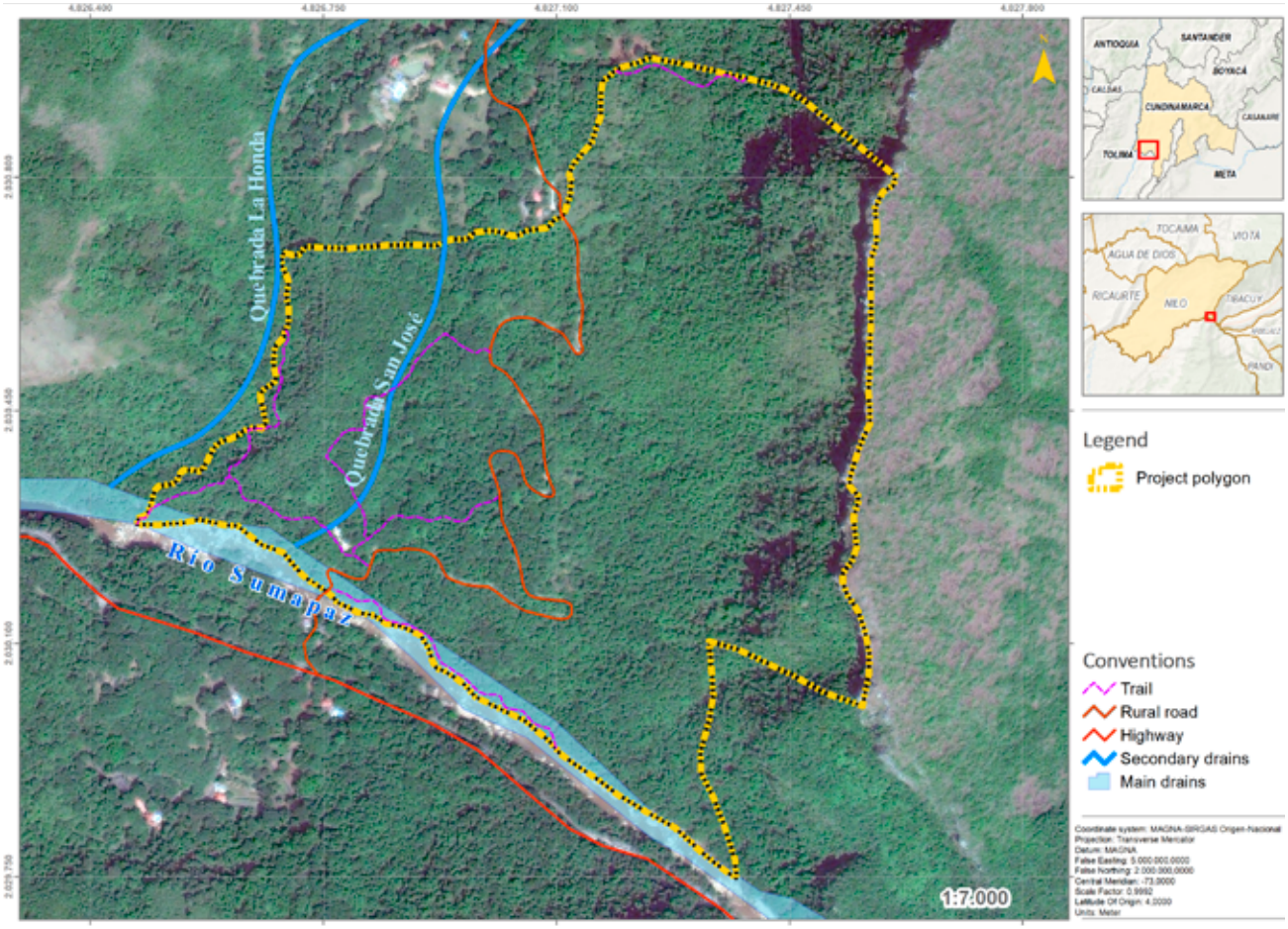
This section aims to present, through a hypothetical case, the step-by-step process for calculating the Biodiversity Units (Tebu) of Terrasos. The methodology outlined is based on open source tools and secondary information available in official spatial data repositories. Furthermore, potential variations in the calculation of Units are highlighted, depending on the conditions of the territory[3].

Project Description

The project is located within a hypothetical polygon in Colombia, within the territory of an indigenous community that is legally constituted and registered with the Ministry of the Interior of Colombia. As part of its Resource Management Plan, the community has chosen to propose the development of projects focused on sustainable land use and landscape conservation. To achieve this objective, the community has decided to implement a Biodiversity Units scheme to finance the project for a period of 40 years. For the issuance of Tebu, an area of 71.2153 hectares has been designated.

3 Based on secondary information available for different parts of the world.

> Project polygon location



Source: Terrasos.

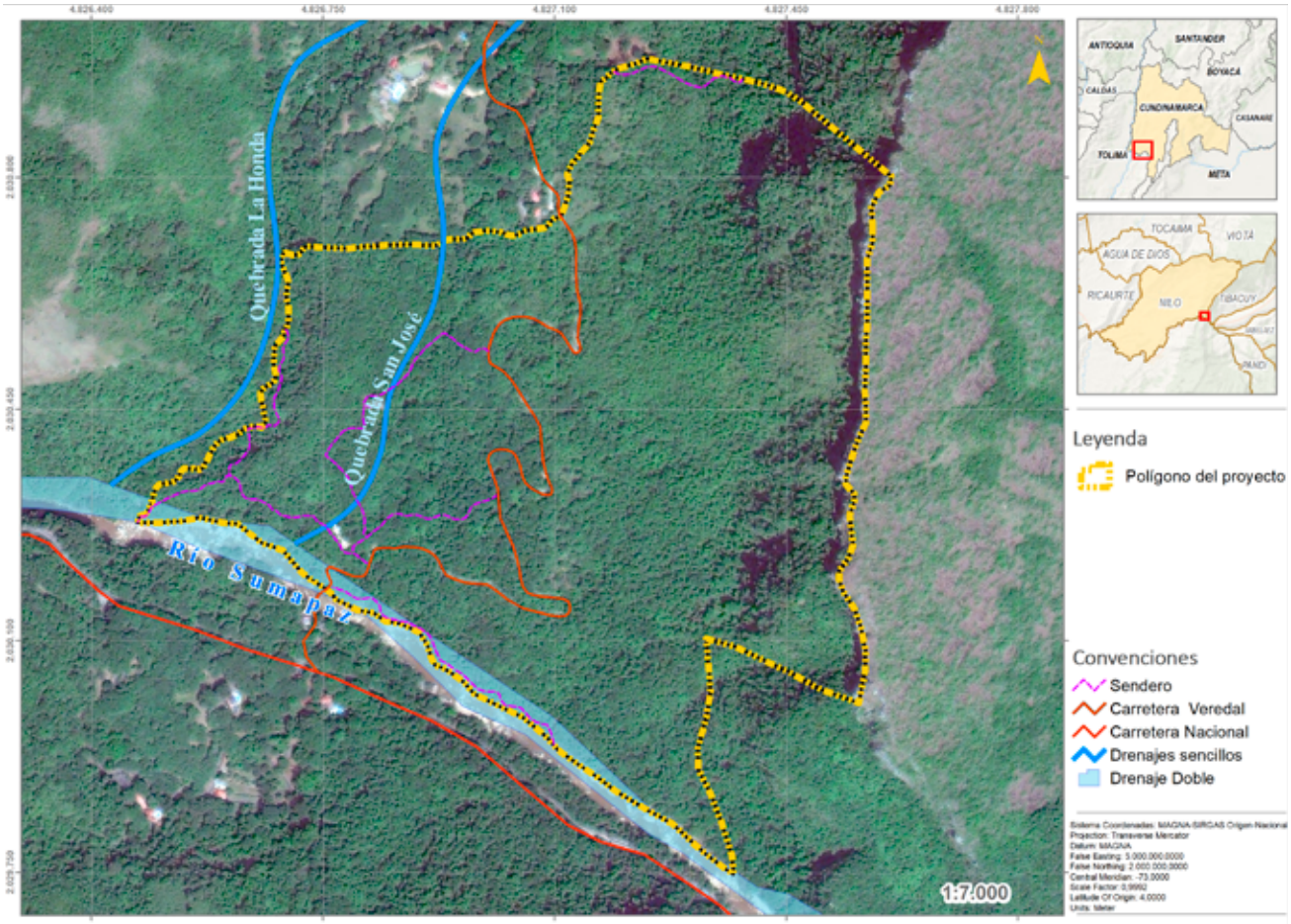
Areas where actions will be implemented (zoning):

- **Total Project Area:** 71.2153 ha or 712,153 m^2
- **Area to be preserved:** 53.4115 ha or 534,115 m^2
- **Area to be restored:** 17.8038 ha or 178,038 m^2

Differential Factor 1: Threat Category

To analyze the first factor presented in the Protocol, it is necessary to import information regarding the project area and the map of the Red List of Ecosystems (RLE), both in *shapefile format*. This should be done using GIS-compatible software, such as ArcGIS, or open-source tools like QGIS or R. When a project is associated with more than one threat category, it is important to assign the threat category factor based on the IUCN mapping. In this scenario, the application of the Protocol is relatively straightforward; however, when a territory lacks IUCN categorization, two alternatives are proposed.

> Red list of ecosystems in the area of influence of the project's polygon



Source: Terrasos.

The first and preferred alternative is to classify the project area according to the criteria established by the IUCN in the assessment of the Red List of Ecosystems. This will depend on the studies conducted and the available information regarding the project area. To facilitate this process, the IUCN provides a step-by-step guide for assessing the threat category of the ecosystem in question (available at the following link)[4].

When it is not possible to implement the Red List of Ecosystems, another alternative can be applied, which aims to describe the ecosystem's vulnerability based on the impacts of climate change. This phenomenon generates profound negative impacts on biodiversity, manifesting in various ways. For instance, rising temperatures affect species adapted to limited thermal ranges, potentially leading to habitat loss or increased intra- and interspecific competition for resources. Additionally, changes in precipitation patterns may cause droughts or floods, threatening the survival of organisms due to natural disasters and resulting in habitat loss.

Moreover, in marine ecosystems, ocean acidification, resulting from high carbon dioxide concentrations in the atmosphere, impacts marine organisms that rely on calcium carbonate to build their structure. This is compounded by rising temperatures, leading to shifts similar to those occurring in terrestrial ecosystems. Therefore, the vulnerability of an

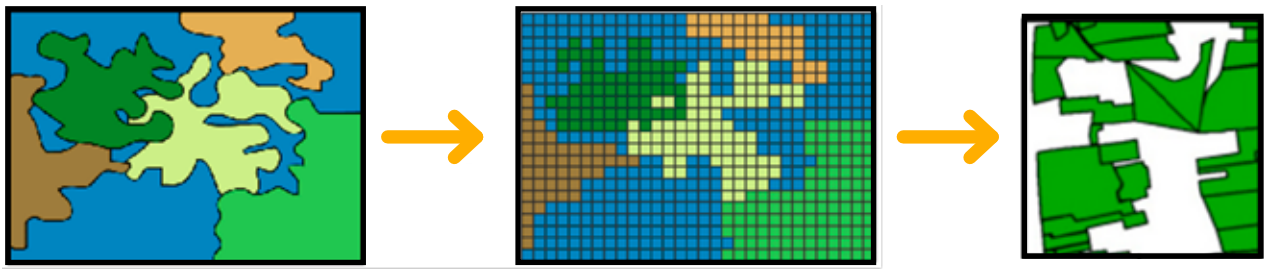
4 Access link : https://github.com/red-list-ecosystem/rle_indices

ecosystem to climate change can be generally utilized to determine Differential Factor 1. In the hypothetical project, although the polygon does not directly overlap, the surrounding area is classified as critically endangered. Furthermore, the project's ecosystem is classified as tropical dry forest (according to the Colombian Institute of Environmental Studies and Meteorology - IDEAM), which is considered a low-resilient and endangered ecosystem in Colombia (Alexander von Humboldt Institute, 2019). For this reason, **a rating of 0.20 is assigned for Differential Factor 1: Threat Category according to the IUCN**.

Differential Factor 2: Project Connectivity

To calculate the connectivity factor, it is essential to gather information related to the land cover of the project area, following a verification process in the field. It is important to distinguish between natural or anthropized covers; this information should be integrated as a *FeatureClass* with the *Shapefile* of the vegetation covers. For analysis, the land covers must be exported in Raster format to facilitate accurate analysis in R.

Figure 1. Workflow for the consolidation of the cartographic information and the connectivity analysis in the project area



Source: Vector and Raster figures are from online resources provided by ArcGIS Desktop[5] and the connectivity analysis image is from Lecoq et al., 2021 [6].

For the analysis in R, a script was developed[7] to calculate the connectivity factor, whose result is normalized on a scale of 0 to 100. As illustrated in the Figure below, Secondary or Transitional Vegetation coverage is present in a higher percentage, which aligns with expectations for this type of ecosystem. Consequently, the project's contribution to enhancing connectivity is assessed as low or minimal, as indicated in the table below, **resulting in a score of 0.12 for the project area.**

5 ArcGIS, *How features are represented in a raster.* Available at: https://desktop.arcgis.com/en/arcmap/latest/manage-data/raster-and-images/how-features-are-represented-in-a-raster.htm

6 Lecoq, L., Ernoult , A., & Mony, C. (2021). *Past landscape structure drives the functional assemblages of plants and birds*. Scientific Reports, 11(1), 3443.

7 Terrasos, *Biodiversity Credits Protocol*. Available at: https://github.com/nfgrTerrasos/Biodiversity-Credits-Protocol.git

Guy	Type of value	Value
Patch	Max	36,5033
	Min	0
	Mean	5,2169
Class	Max	58,0485
	Min	1,3623
	Mean	21,9776
Landscape	Patch Fragmentation	18,2553
Connectivity Factor		**21,7924***

* The value of 21.7924 for the Connectivity Factor is considered low, as it falls within a scale of 1 to 100, where higher values indicate greater connectivity between landscape patches.

Differential factor 3: Social Involvement

As outlined in the Project Description, this is a community-driven initiative, which means that the community owns the land and will retain ownership of the project throughout its development and operation. The registration document must include evidence of the community's legal constitution and the status of land ownership.

Additionally, it should detail how other community members are expected to benefit from the project. These benefits may encompass economic gains, the restoration of ecosystem services (evidenced by improvements in soil productivity), environmental education, the promotion of gender equity, and enhanced access to goods and services.

All this information must be incorporated into the project registration document, specifically in the Performance Standards section, to provide evidence and ensure traceability of information related to the social component. With comprehensive and well-documented information, **the project will be assigned the highest factor score of 0.2.**

Differential Factor 4: Project Duration

As mentioned previously, the community is committed to developing this project over a period of 40 years, **which assigns a value of 0.18 to this factor**.

Differential Factor 5: Preservation and Restoration Actions

Based on the field coverage validation, it is possible to determine the area designated for preservation and restoration. The area for preservation actions is 534,115 m^2, to which a **factor of 0.16 is applied.** For the 178,038 m^2 designated for restoration, **a factor of 0.20 is applicable.**

Unit Calculation

The results from each Differential Factors are summarized below, detailing how to apply the formula for quantifying the potential units the project can emit , which totals 63,382 Units/10 m^2 . Note that only factors 1 to 4 are applied to the total area of the project.

- **F1:** Threat Category: 0.2
- **F2:** Connectivity: 0.12
- **F3:** Social Commitment: 0.2
- **F4:** Project Duration: 0.18
- **F5:** Preservation and Restoration Actions: **0.16 for preservation and 0.2 for restoration**.

Characteristics		Credit factors					
Management strategies	Area (m ²)	F1	F2	F3	F4	F5	Potential Units
		Threat Category	Connectivity	Sociocultural context	Duration project	Actions to be implemented	
Preservation	534.115	–	–		–	0.2	106,823
Restoration	178,038	–	–		–	0.16	28.486
Total Project	712.153	0.2	0.12	0.2	0.18	–	498.507
TOTAL, POINTS							633,816
Potential units/10m ²							**63,382**

$$Tebu = \frac{ATP \; F1 \; F2 \; F3 \; F4 \quad ARes \; F5_{Res} \quad ARres \; F5_{PRes}}{7\,12.153 * (0{,}2 + 0{,}12 + 0{,}2 + 0{,}18) + (178.038 * 0{,}2) + (534.115 * 0{,}16)}{10}$$

Following the calculation of Biodiversity Units (Tebu), the project planner must proceed with a series of steps:

1. **Project Milestones:** Milestones are critical points that must be achieved throughout the project's development to ensure its proper progress. These milestones may be ecological, such as the recovery of specific species or improvements in habitat quality, or managerial, such as the implementation of preservation measures. Each milestone must be measurable and reflect progress towards the project's overall objectives, as they determine the release of Biodiversity Units.

2. **Management Plan:** This document outlines the strategies and activities to be implemented in order to achieve conservation and restoration goals. The Management Plan includes detailed information regarding land use, restoration of degraded areas, species to be protected, and control and monitoring measures to be adopted. Proper implementation of the Management Plan is essential to ensure that the project yields tangible biodiversity benefits in the long term.

3. **Financial model:** The financial model should establish the economic viability of the project, ensuring its sustainability over time. This includes identifying sources of funding, covering operational and maintenance costs, and establishing payment-for-results mechanisms. The model should guarantee that revenues from the sale of Biodiversity Units will cover the project's costs and ensure its long-term permanence.

4. **Consolidation of the project registration document:** This process involves compiling all key project information, including objectives, areas of intervention, milestones achieved, and Biodiversity Units issued. The registration document is essential for ensuring that the project is thoroughly documented and transparent, enabling proper monitoring and verification by third parties. Additionally, this document is presented on platforms to guarantee the traceability of the Biodiversity Units issued and their commercialization.

5. **Project Verification:** After consolidating the registration document, it is essential for an independent third-party verifier to review and validate the calculations and methodologies applied. This step ensures both transparency and technical rigor.

6. **Project registration on a platform:** The next step is to formally register the project on a platform that enables tracking and traceability. This registration must include complete project information, the calculated Biodiversity Units, and the details of those responsible for its implementation.

7. **Release of Units:** The release of Biodiversity Units must follow a predefined schedule, contingent on the achievement of ecological and administrative milestones. This process may occur in phases, ensuring that Units are only released when all necessary conditions are met.

8. **Monitoring and Follow-up:** It is essential to implement a monitoring plan to assess the project's progress and compliance with its conservation and restoration objectives. Ecological and management milestones should be periodically reviewed.

9. **Transparency and Reporting:** Finally, all actions and results should be made publicly available to ensure transparency. This allows investors and other stakeholders to follow the project's development and outcomes.

This flow facilitates the sustainability of the project and enables the Biodiversity Units to have a real impact on the conservation and restoration of ecosystems, reflected in quantifiable biodiversity gains.

Checklist registration document

The registration document must include the following minimum sections to incorporate the necessary information related to the Protocol for the Issuance of Voluntary Biodiversity Units.

Numeral	Description	Status
0	**Cover**	
0.1	Representative image of the project	
0.2	Title: Registration Document	
0.3	Project Name	
0.4	Prepared by [Name of structurer]	
0.5	Date of submission	
0.6	Logos of the developer and supporting companies	
1	**Introduction**	
1.1	Brief presentation of the project	
1.2	Relevant background information	
1.3	Project objectives	
1.4	Protocol version applied	
2	**About the Project Developer**	
2.1	Information about the developer	
2.2	Business background and experience	
23	Roles and participation of allied entities	
3	**Project Overview**	
3.1	Project name	
3.2	Start date and duration	
3.3	General goals	
4	**Location and General Characteristics of the Project Area**	
4.1	Location and size of the area	
4.2	General physical and biotic characteristics	
5	**Justification of the Area Selected**	
5.1	Suitability of the area	
5.2	Additionality analysis	
5.3	Complementarity analysis	
6	**Project Delimitation**	
6.1	Property details and geographical boundaries	
6.2	Maps and coordinates of the project area	
7	**Characterization and Baseline**	
7.1	Project scope area	

Numeral	Description	Status
7.2	Methodology for collecting abiotic, biotic and socioeconomic data	
7.3	Characterization of the area of influence on abiotic, biotic and socioeconomic aspects.	
7.4	Services ecosystemic partners	
7.5	Conservation status	
8	**Project Objectives**	
8.1	Specific objectives related to conservation and restoration	
8.2	Management strategies	
9	**Management Strategies**	
9.1	Details of conservation, preservation, and restoration strategies	
9.2	Adaptive management based on monitoring	
10	**Calculation of the Number of Potential Credits to be Issued**	
10.1	Methodology for quantifying credits	
10.2	Description of the differentiating factors	
10.3	Credit calculation and simulation	
10.4	Credit calculation *buffer*	
11	**Credit Release Scheme**	
11.1	Credit release plan based on project progress	
12	**Monitoring and Follow-up Plan**	
12.1	Indicators and methodologies for monitoring	
12.2	Frequency and responsible parties for monitoring	
13	**Risk Analysis**	
13.1	Identification and evaluation of potential risks	
13.2	Mitigation strategies	
14	**Conditions of Land Tenure and Permanence**	
14.1	Details on land ownership	
14.2	Mechanisms to ensure long-term permanence	
15	**Environmental Registration and Accounting**	
15.1	Procedures for registering credits	
15.2	Environmental accounting and results reporting	
16	**Literature Cited**	
16.1	Bibliographic references used in the document	
17	**Annexes**	
17.1	Additional relevant information	
17.2	Supplementary documentation and graphic support	

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