The Global Biodiversity Standard

TGBS Site Certification Registry

Pedro Galindo – Bolivia

Project title:

ArBolivia

Site name:

Pedro Galindo

Final score:

5.48

Criterion	Score
Criterion 1: Select appropriate sites to enhance native biodiversity	4.21
Criterion 2: Enhance protection of existing habitats and biodiversity	0.00
Criterion 3: Protect, restore and manage biodiversity in consultation and partnership with local communities and other stakeholders	7.50
Criterion 4: Aim to maximise biodiversity recovery through ecosystem restoration	6.67
Criterion 5: Avoid and reduce invasive or potentially invasive species	4.00
Criterion 6: Prioritise the use of native, threatened and rare species	8.00
Criterion 7: Promote biodiversity and adaptive capacity	6.00
Criterion 8: Implement robust monitoring, evaluation and adaptive management of biodiversity	7.50

Project details:

Name of applicant organization/s, agency/es or institution/s: SICIREC and Ecosia

Name of project: ArBolivia. Arboles para Bolivia

Site location: Provincia de Ichilo, Santa Cruz de la Sierra, Bolivia

Area: 2.39 ha

Number of zones of different restoration types: 1

Restoration type: Agroforestry

Restoration approach: Assisted natural recovery with planting

Biome: Tropical-subtropical forests biome

Ecosystem type: Tropical subtropical lowland rainforest

Assessor details:

Names of assessors: José Mamani, Gabriela Orihuela, Lizeth Huamán

Affiliated institution: Huarango Nature

Dates of visit: 04/2024, 09/2024

Project Objectives:

- Biodiversity: Quality
- Climate: Adaptation
- Climate: Mitigation
- Community: Income
- Food and Products: Market
- Food and Products: Yield

Restoration Activities:

- Enforcement of restrictions or prohibitions on ecosystem conversion or destruction
- Implementation of sustainable ecosystem management practices in productive landscapes
- Tree planting

Project description:

Represented by SICIREC Bolivia Ltda, the ArBolivia Project is part of the implementation and forest management of a carbon reforestation project with the aim of contributing to the mitigation of climate change and social risks in developing countries. The ArBolivia Project together with local rural smallholders promotes rural and productive development through reforestation activities with mixed, mainly native tree species, sustainable forestry plantation management and the provision of environmental services. Specific silvicultural and forest management tasks are defined together with the farmer. The application of a poly-cyclic harvesting system aims to ensure a relatively high average carbon storing capacity in the plantations. The carbon calculations are based on a mono-cyclic harvesting system applying a conservative approach. The project is being implemented in settler areas in the Cochabamba Tropics, Northern La Paz, and Western Beni, spread by three focal regions as follows: zone of Beni/La Paz covering municipalities of Reyes, Rurrenabaque, San Borja y San Buenaventura; Zone of Cochabamba covering municipalities of Chimoré, Puerto Villaroel y Shinahota. The settlers' areas have been a destination for migrants coming from the "High Valley" and Altiplano regions of Bolivia since the 1930s. Smallholders own 95% of the land in the portfolio regions. The sizes of the properties vary, but they are on average 20 hectares per family in the Cochabamba Tropics, and 25 to 50 ha in the other regions. Only a few farmers have land less than 20 ha. The settlers are organized into syndicates of 20 to 60 farmer families. Approximately 5 syndicates form a "central", which in turn belong to a federation. Traditional land-use practices associated with over-harvesting of native forests have led to widespread deforestation, which has led to a growing shortage of timber from commercial native species. This has spurred interest of smallholder farmers in the conservation and sustainable management of the primary and secondary forests and in planting trees on their farmland. Areas reforested represent only small portions of the holdings of farmers which they designate voluntarily for this purpose in consideration of their food security and livelihood needs. Special programs like Integrated Land Use Planning, Agroforestry systems and silvopastoral systems accompany the project to guarantee food and income security for the farmers involved. The implementation as well as the maintenance activities necessary to ensure tree development within plantations are carried out by the farmers. The activities, e.g. weeding or pruning, are planned together with the project staff during the farm visits. During the visit a personalized on-farm capacity building assessment is realized by the technician with the farmer to assure accomplishment according to certain minimal technical standards and schedule.

Ecosystem Integrity:

Key attribute	Sub-attribute	Baseline		Current Conditions		Trajectory	Score
		Description	Star Rating	Description	Star Rating		
Absence of Threats	Contamination	There was no management of contaminants. These were used to a significant extent for crops such as rice and corn.	1 star	There is a persistent presence of agrochemicals linked to coffee plantations, as well as noise from chainsaws and other nearby agricultural machinery. However, organic certification is being discussed by SICIREC.	1 star	Declining	-2
	Invasive species	There are more than 5 potentially invasive species present in the areas, brought by livestock, which cover an area of approximately 40% of the surface.	1 star	There are more than 5 potentially invasive species present in the areas, brought by livestock, which cover an area close to 30% of the surface.	1 star	Improving	2
	Over-utilisation	Fallow land with pastures and 50% crops such as corn or rice. Soils could be in a state of compaction due to the entry of livestock.	2 stars	Forest plantation with evidence of habitats in the ground litter, in trees (little), in dead trunks, among others. No livestock present. NDFI value and trend.	2 stars	Improving	2

	Other degradation drivers	There is no clear evidence that burning has been carried out, however it is very likely that it was done, affecting 25% of the surface.	3 stars	Fires occurred nearby that caused collateral damage to vegetation.	4 stars	Improving	6
Physical conditions	Substrate physical conditions (both abiotic and biotic components)	50% of the land is covered by herbaceous vegetation and agriculture	1 star	Soil conditions improved thanks to the addition of leaf litter (30% in the dry season and around 50% in the wet season) and the absence of livestock. Beetles from the large telecoprid guild were also present.	2 stars	Improving	6
	Substrate chemical conditions	Unable to assess	N/A	Unable to assess	N/A	N/A	N/A
	Water chemo-physical conditions	Unable to assess	N/A	Unable to assess	N/A	N/A	N/A
Species composition	Desirable plants, fungi and lichens	Absence of native trees, except for some fruit trees (*Inga* sp). Less than 20% of the reference ecosystem species are represented. Fungi and ferns are absent.	0 stars	There is evidence of a native tree (*Cetrolobium* sp.) and some useful native plants such as *Daedalea quercina* and *Cookeina speciosa*. Fungi were recorded up to 35% compared to 80% at the reference site.	1 star	Improving	6
	Desirable animals	The presence of desirable animals is low due to	0 stars	There are 15 species of decomposers (beetles), out of a	3 stars	Improving	10

		habitat alteration. Fewer than 15 species of decomposers (beetles) are found, and primates are absent.		total of 132 individuals collected. The presence of large telecoprids is also evident. There are also two species of primates.			
	Rare and threatened species	Occasionally, rare birds can be observed due to its proximity to Amboró National Park, but primates and plants are not. Dung beetles are not recorded.	0 stars	A beetle in danger of extinction in Bolivia and birds are present. The *Amazona aestiva* (NT) was reported in a nearby plot.	2 stars	Improving	10
	No undesirable species	Livestock may be present occasionally. Weeds cover more than 25% of the area. Domestic animals are occasionally present.	1 star	There is little evidence of livestock, and weeds are present in an area covering approximately 20% of the grass cover. Weeds are being controlled.	2 stars	Improving	6
	Provenance, genetic diversity and genetic resilience	There was no consideration of seed origin and treatment. Conditions for seed dispersal are appropriate.	1 star	The seeds were initially collected from a reputable supplier trained by FAO. More recently, they have been selected and collected from their own plantation.	2 stars	Improving	6
Structural Diversity	All vegetation strata	Dominance of the herbaceous stratum with the presence of shrubs and	1 star	There is a herbaceous stratum as well as a young, still incomplete	2 stars	Improving	6

		occasional trees typical of a fallow land		upper arboreal stratum (devoid of bromeliads or orchids)			
	All trophic level	Only the first trophic level is found, with the presence of primary consumers being scarce.	1 star	Producers, occasional primary consumers and decomposers (beetles) are found in greater diversity.	2 stars	Improving	6
	Spatial mosaic	The spatial mosaic is composed of a dominant cover of little fragmented forest with similarity conditions of 50% of the reference cover.	3 stars	The spatial mosaic is composed of a dominant cover of fragmented forest with similarity conditions to 50% of the reference cover.	3 stars	Improving	2
Ecosystem Function	Productivity/ cycling	GPP values with a similarity level of 75% of the reference ecosystem	4 stars	GPP values with a similarity level of 75% of the reference ecosystem	4 stars	Improving	2
	Habitat & interactions	Unable to assess	N/A	Unable to assess	N/A	N/A	N/A
	Resilience & recruitment	There is no evidence of regeneration of almost any species, especially due to the influx of livestock.	0 stars	There is no clear evidence of regeneration	0 stars	No change	0
External Exchanges	Landscape flows	There are no forest patches nearby, but there is a river and riparian forest	2 stars	The planted forest patch promotes connectivity with the river and more distant forest patches.	2 stars	Improving	2

		that can allow for landscape connectivity flows.					
	Intraspecific gene flows	The distance from the agroforestry plots to the forest patches is more than 100 m. There is no evidence of native species, birds, or beetles.	0 stars	Native tree plantations have favored proximity and gene flow with forest patches. There is evidence of some forest species, not in plants, but in beetles. Even so, the distances between deforested areas are very large, in some cases greater than 100 m.	1 star	Improving	6
	Habitat links	Unable to assess	N/A	Unable to assess	N/A	N/A	N/A

Level of Protection:

Baseline: Paper Park (1 star)

Management activity	Sufficient level	Insufficient level
Soil erosion control		x
Watershed management		x
Management of wetland hydrology		
Enforcement of restrictions or prohibitions on ecosystem conversion or destruction		
Implementation of sustainable ecosystem management practices in productive landscapes (e.g., organic farming; agroforestry; Farmer Managed Regeneration)		x
Protection from overhunting, overharvesting, overfishing, or poaching		x
Protection from uncharacteristic fire		x
Maintenance of natural or semi-natural disturbance regimes (e.g., fire; flooding; grazing; haymaking)		x
Fire management, including site preparation (e.g., thinning, hardwood reduction, establishment of fire breaks)		x
Prescribed burning		x
Grazing management (e.g., control of native grazer populations; reductions, removal, or exclusion of non-native grazers)		x
Species control measures, physical or mechanical (e.g., cutting, pulling, burning, covering, digging up, ploughing, scalping, mowing, capturing, hunting)		x

Species control measures, biological (release of biological control agents, grazing, predation)		x
Species control measures, organic or non-synthetic chemical (e.g., organic herbicides)		x
Species control measures, synthetic chemical		x
Post-control measures		x
Re-invasion monitoring and prevention measures		x
Management of secondary invasives		x
Other control of invasive species		x

Current: Paper Park (1 star)

Management activity	Sufficient level	Insufficient level
Soil erosion control		x
Watershed management		x
Management of wetland hydrology		
Enforcement of restrictions or prohibitions on ecosystem conversion or destruction		
Implementation of sustainable ecosystem management practices in productive landscapes (e.g., organic farming; agroforestry; Farmer Managed Regeneration)		x
Protection from overhunting, overharvesting, overfishing, or poaching		x
Protection from uncharacteristic fire		x

Maintenance of natural or semi-natural disturbance regimes (e.g., fire; flooding; grazing; haymaking)		x
Fire management, including site preparation (e.g., thinning, hardwood reduction, establishment of fire breaks)		x
Prescribed burning		x
Grazing management (e.g., control of native grazer populations; reductions, removal, or exclusion of non-native grazers)		x
Species control measures, physical or mechanical (e.g., cutting, pulling, burning, covering, digging up, ploughing, scalping, mowing, capturing, hunting)		x
Species control measures, biological (release of biological control agents, grazing, predation)		x
Species control measures, organic or non-synthetic chemical (e.g., organic herbicides)		x
Species control measures, synthetic chemical		x
Post-control measures		x
Re-invasion monitoring and prevention measures		x
Management of secondary invasives		x
Other control of invasive species		x

Stakeholder Engagement and Social Benefits:

Attribute		Score	Description
Stakeholder engagement	Stakeholders identified	1	Interviews with stakeholders including: local municipalities, forestry committees, union leaders (communities), forest authority (ABT).
	Grievance mechanism	1	There is a chain of command to receive complaints according to SICIREC staff. Some cases have been reported with oral evidence.
	Primary stakeholders involved	1	Land owners involved in the selection of tree species, as workers in some activities. Forest committees are created with support of SICIREC to strengthen local capacities.
	Secondary stakeholders involved	0	There is insufficient evidence of secondary stakeholder engagement.
Benefits distribution	Capacity increased/building	1	Nursery interviews. List of nursery workers. Agreements signed with SICIREC evidencing a commitment to training. Interviews with field technicians and owners.
	Benefits/opportunities equitably distributed	1	Evidence of significant participation by women among nursery workers. Support for disadvantaged members by providing humanitarian loans.

	Improved community wellbeing	1	SICIREC promotes the appreciation of rural life by offering more dignified livelihoods for farmers. It supports people in disadvantaged situations. It also participates in educational activities and collaborates with the Municipality.
Knowledge Enrichment	Inclusion of local or Indigenous knowledge in project development	0	There is no ancestral knowledge specific to the area, as the current inhabitants are settlers. The knowledge brought by newcomers is sometimes counterproductive to nature.
	Inclusion of scientific / conservation best practice in project development	0.5	Knowledge and experience from the team, which has worked on several projects, especially those linked to FAO. Theses have been written on the topic and extensive experience corroborated by interviews.
	Project contributes to the scientific community / wider knowledge	0.5	Theses completed in Bolivia and abroad. Knowledge contributed to science.
Sustainable Economies	Increased employment	0.5	The SICIREC team in Santa Cruz has doubled in size in recent years. Most of the professionals hired come from the region. Permanent and temporary staff are hired at the nursery. Additional income is generated for farmers through coffee collection and sales.

	Improvement to local supply chains/local economy	0	There is insufficient evidence of benefits to local supply chains.
	Inclusion of sustainable business and employment models	0	There are no business initiatives derived from the project intervention

Monitoring, Evaluation and Adaptive Management:

Ongoing Management Planning:

- The management plan is co-developed with stakeholders and rights and knowledge holders, including local restoration practitioners and implementers.
- The plan builds as far as possible on effective practices, including traditional and Indigenous Peoples' management practices.
- The management plan identifies the ongoing management team, and clearly communicates roles and responsibilities of members of the team.
- The ongoing management plan is modified based on the results of periodic monitoring, and of changes in trade-offs or stakeholder or rights and knowledge holder interests or needs.

Long-term Resourcing:

- If not fully secured, appropriate long-term sources of funding for ongoing management are determined. There is coordination with other restoration projects to reduce costs and duplication of effort. These synergies can include, for example, alignment of schedules to facilitate sourcing of plant materials, sharing equipment, and monitoring.
- The project conducts site protection measures needed to prevent deleterious external or internal impacts (e.g. protection from unsustainable grazing, prevention of inappropriate fire, prevention of unsustainable harvesting, control of infestations by invasive species, management of weeds and other vegetative competitors).
- The project develops or supports training and stewardship programs for local communities and practitioners, to improve ongoing management of the site and prevent harm from inappropriate management.
- The project provides a governance structure to oversee ongoing management and stewardship of the site, and ensure legal protections for the investments made in restoration.

Adaptive Management:

- The project prepares contingency plans and protocols in case known degradation drivers re-emerge (e.g. populations of invasive animals that were previously managed through a biocontrol agent that ceases to function).

Continuous Improvement:

- The project promotes engagement and buy-in from local stakeholders and rights and knowledge holders, including Indigenous Peoples and key groups, so that they can foster and be part of continuous improvement.
- The project explores further funding mechanisms and capital investment to extend restoration to adjacent or nearby sites, including the development of partnerships with local agencies and other organisations.

Monitoring and Evaluation:

- The monitoring programme was planned while the restoration project or programme was being designed, rather than after implementation
- The monitoring programme/activities is adequately resourced
- The monitoring programme/activities includes collecting, managing (including cleaning and meta-data documentation), and archiving data
- The monitoring program includes a plan for interpreting results and sharing findings

Certification issued to:

SICIREC BOLIVIA Ltda

Pasaje Tupiza II N-1124, Zona Recoleta, Cochabamba, Bolivia

Website: www.SICIREC-bolivia.org

Social Safeguarding:

This project has not undergone a social safeguards assessment by The Global Biodiversity Standard. Responsibility for identifying and managing environmental and social risks lies with the implementing organisation and associated funders.