



**Verified Carbon
Standard**

NON-PERMANENCE RISK REPORT



MLR

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Project Title	Integrated Project for Reforestation and Agroforestry on Degraded lands in Nicaragua
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1 INTERNAL RISK

Project Management		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	<i>Species planted (where applicable) associated with more than 25% of the stocks on which GHG credits have previously been issued are not native or proven to be adapted to the same or similar agro-ecological zone(s) in which the project is located.</i> More than 25% of the stocks on which GHG credits have previously been issued are derived from Teak (<i>Tectona grandis</i>). Teak is not native to the project region, but this species has proven to grow in the agro-ecological zone(s) in which the project is located (Chaves, 1991) (Bolaños Taleno, 2001). This is also demonstrated by the many projects utilizing this species in reforestation projects (R. de Camino, 2002.).	0
b)	<i>Ongoing enforcement to prevent encroachment by outside actors is required to protect more than 50% of stocks on which GHG credits have previously been issued.</i> There is ongoing enforcement to prevent encroachment by outside actors to protect the entire project area. There is a security team deployed by MLR Forestal that regularly surveys each management unit within the project area boundaries, consisting of a staff of 4, led by the Head of Administration (MLR Forestal, 2018). The security staff has an accreditation of the National Police, and have received extensive trainings on numerous topics (TECDEA, 2019).	0
c)	<i>Management team does not include individuals with significant experience in all skills necessary to successfully undertake all project activities (ie, any area of required experience is not covered by at least one individual with at least 5 years experience in the area).</i> The management team is formed by staff with significant experience in their respective professional fields, which is mainly spread over the following key staff: • CEO: S. Rios • General Manager: Eng. C. Domke • Head ESMS department: MSc. L. Lopez • Head legal department: Dra. Adela Rodriguez • Social expert: Lic. Mabel Lazo Quino • Environmental expert: Biol. Abiécer Soza	0

d)	<i>Management team does not maintain a presence in the country or is located more than a day of travel from the project site, considering all parcels or polygons in the project area.</i> The Management Team is based in Managua and Siuna; Managua is within one day's travel from the project area (both Siuna and Bonanza), while the Siuna office on the project site itself.	0
e)	<i>Mitigation: Management team includes individuals with significant experience in AFOLU project design and implementation, carbon accounting and reporting (eg, individuals who have successfully managed projects through validation, verification and issuance of GHG credits) under the VCS Program or other approved GHG programs.</i> There are no AFOLU experts with VCS project references part of the Management Team. Mitigation is therefore not applicable.	0
f)	<i>Mitigation: Adaptive management plan in place</i> Adaptive management is carried out to address the largest risks described in this tool, which are fire, pests and diseases and extreme weather risks. A comprehensive management plan is active and translated into yearly Operational plans to ensure adaptive management (MLR Forestal, 2018). PP is yearly audited internally for FSC certification ensuring monitoring and incorporation of corrections in the project decision making process. The company's adherence to FSC certification requirements guarantees the well- functioning and maintenance of this system.	-2
Total Project Management (PM) [as applicable, (a + b + c + d + e + f)] Total may be less than zero.		-2

Financial Viability		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	<i>Project cash flow breakeven point is greater than 10 years from the current risk assessment</i>	n/a
b)	<i>Project cash flow breakeven point is between 7 and up to less than 10 years from the current risk assessment</i>	n/a

c)	<i>Project cash flow breakeven point between 4 and up to less than 7 years from the current risk assessment</i>	n/a
d)	<i>Project cash flow breakeven point is less than 4 years from the current risk assessment</i> Project cash flow breakeven point is expected to be at start of 2025, which is within 4 years from actual risk assessment. Cash flow in includes commercial revenue streams associated with the project and upfront investments. Cash flow out includes project implementation costs, costs associated with GHG credit generation and interest expenses.	0
e)	<i>Project has secured less than 15% of funding needed to cover the total cash out before the project reaches breakeven</i>	n/a
f)	<i>Project has secured 15% to less than 40% of funding needed to cover the total cash out required before the project reaches breakeven</i>	n/a
g)	<i>Project has secured 40% to less than 80% of funding needed to cover the total cash out required before the project reaches breakeven</i>	n/a
h)	<i>Project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven</i> Company has secured investment to cover the funding period till breakeven point.	0
i)	<i>Mitigation: Project has available as callable financial resources at least 50% of total cash out before project reaches breakeven</i> Callable financial resources have been secured for 100% of the cash out before the project reaches breakeven.	-2
Total Financial Viability (FV) [as applicable, ((a, b, c or d) + (e, f, g or h) + i)] Total may not be less than zero.		0

Opportunity Cost		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	<i>NPV from the most profitable alternative land use activity is expected to be at least 100% more than that associated with</i>	n/a

	<i>project activities; or where baseline activities are subsistence-driven, net positive community impacts are not demonstrated</i>	
b)	<i>NPV from the most profitable alternative land use activity is expected to be between 50% and up to 100% more than from project activities</i>	n/a
c)	<i>NPV from the most profitable alternative land use activity is expected to be between 20% and up to 50% more than from project activities</i>	n/a
d)	<i>NPV from the most profitable alternative land use activity is expected to be between 20% more than and up to 20% less than from project activities; or where baseline activities are subsistence-driven, net positive community impacts are demonstrated</i> The only alternative scenario without obstacles as identified in the alternative land use scenarios (section 3.5) is the continuation of pre-project land use, namely extensive and low-productive cattle ranging for subsistence ends, and continuation or deterioration of the degradation level of the lands. Because the baseline activities and credible land use scenario are subsistence-driven, no NPV calculation of alternative land use is provided. Instead, net positive community benefits of PP's sustainable forest management activities are elaborated below. The PP commits to managing the plantations in an environmentally appropriate, socially beneficial, and economically viable way according to the principles and criteria of FSC. MLR is supporting farmer communities through its Environmental and Social Management System. Nearby farmer communities are supported with trainings on cacao best management practices, the use of best genetical material and MLR provides assistance to farmers on cacao certification. A social and environmental impact assessment (SEIA) was conducted in 2019 (TECDEA, 2019). The social study showed that many people that live in the project area found either temporal or permanent employment with the PP. The presence of PP has therefore positively changed their income situation. Furthermore, the improved and regularly maintained infrastructure is mentioned as a social benefit, as well as the supply of groceries, consumables and construction materials.	0
e)	<i>NPV from project activities is expected to be between 20% and up to 50% more profitable than the most profitable alternative land use activity</i>	n/a

f)	<i>NPV from project activities is expected to be at least 50% more profitable than the most profitable alternative land use activity</i>	n/a
g)	Mitigation: <i>Project proponent is a non-profit organization</i> The PP is not a non-profit organization.	0
h)	Mitigation: <i>Project is protected by legally binding commitment to continue management practices that protect the credited carbon stocks over the length of the project crediting period (see project longevity)</i> The project is not protected by a legally binding commitment to continue management practices that protect credit carbon stocks.	0
i)	Mitigation: <i>Project is protected by legally binding commitment to continue management practices that protect the credited carbon stocks over at least 100 years (see project longevity)</i>	n/a
Total Opportunity Cost (OC) [as applicable, (a, b, c, d, e or f) + (g + h or i)] Total may be less than 0.		0

Project Longevity		
a)	<i>Without legal agreement or requirement to continue the management practice</i> There is no legal requirement to continue management practice. The company is owner of the land where the project is being developed, which ensures long-term continuation of management practice. The project strategy and business model is based on a continuous replant of areas that were harvested as part of rotational harvesting. This is also reflected in the company long-term cash flow projections. The long-term commitment is further demonstrated through the certification of the plantations under the Forest Stewardship Council (FSC) standard. As such, the relevant maximum duration of more than 100 years is applied.	0
b)	<i>With legal agreement or requirement to continue the management practice</i>	n/a

Total Project Longevity (PL) May not be less than zero	0
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Internal Risk	
Total Internal Risk (PM + FV + OC + PL) Total may not be less than zero.	-2 + 0 + 0 + 0 = 0

2 EXTERNAL RISKS

Land Tenure and Resource Access/Impacts		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	<i>Ownership and resource access/use rights are held by same entity(s)</i> Hold by the same entity (MLR Forestal).	0
b)	<i>Ownership and resource access/use rights are held by different entity(s) (eg, land is government owned and the project proponent holds a lease or concession)</i>	n/a
c)	<i>In more than 5% of the project area, there exist disputes over land tenure or ownership</i> There are no disputes of land tenure or ownership of MLR's properties.	0
d)	<i>There exist disputes over access/use rights (or overlapping rights)</i> There are no disputes over access/use rights (or overlapping rights) of the properties.	0
e)	<i>WRC projects unable to demonstrate that potential upstream and sea impacts that could undermine issued credits in the next 10 years are irrelevant or expected to be insignificant, or that there is a plan in place for effectively mitigating such impacts</i>	n/a
f)	Mitigation: Project area is protected by legally binding commitment (eg, a conservation easement or protected area) to	0

	<i>continue management practices that protect carbon stocks over the length of the project crediting period</i> The project area is not part of a legally binding commitment to continue management practices.	
g)	Mitigation: <i>Where disputes over land tenure, ownership or access/use rights exist, documented evidence is provided that projects have implemented activities to resolve the disputes or clarify overlapping claims</i> No disputes exist over land tenure rights.	0
Total Land Tenure (LT) [as applicable, ((a or b) + c + d + e + f + g)] Total may not be less than zero.		0

Community Engagement		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	<i>Less than 50 percent of households living within the project area who are reliant on the project area, have been consulted</i> There are no households living within the project area.	0
b)	<i>Less than 20 percent of households living within 20 km of the project boundary outside the project area, and who are reliant on the project area, have been consulted.</i> No more than 20% of households living within 20km of the project area were consulted. The urban village of Siuna, with a reported 22,856 inhabitants (Wikipedia Commons, 2021), lies close to the project area (within 2.5 km from the farm Matis). Although localities were consulted, this 20% threshold has therefore not been reached. It must be noted that the large majority of the villagers of Siuna are not relying on the project area.	0
c)	Mitigation: <i>The project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area.</i> The project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the area (TECDEA, 2019).	-5
Total Community Engagement (CE) [where applicable, (a + b + c)]		-5

Total may be less than zero.

Political Risk																																																															
Risk Factor	Risk Factor and/or Mitigation Description						Risk Rating																																																								
a)	Governance score of less than -0.79						n/a																																																								
b)	Governance score of -0.79 to less than -0.32 Governance score is -0.73, as shown in the table below, and therefore falls in this category. <table><tr><th>Indicator</th><th>2015</th><th>2016</th><th>2017</th><th>2018</th><th>2019</th><th>AVG</th></tr><tr><td>Voice and Accountability</td><td>-0.41</td><td>-0.68</td><td>-0.72</td><td>-1.08</td><td>-1.08</td><td>-0.79</td></tr><tr><td>Political Stability No Violence</td><td>-0.09</td><td>-0.09</td><td>-0.05</td><td>-0.94</td><td>-1.03</td><td>-0.44</td></tr><tr><td>Government Effectiveness</td><td>-0.82</td><td>-0.69</td><td>-0.63</td><td>-0.80</td><td>-0.77</td><td>-0.74</td></tr><tr><td>Regulatory Quality</td><td>-0.39</td><td>-0.51</td><td>-0.67</td><td>-0.71</td><td>-0.69</td><td>-0.59</td></tr><tr><td>Rule of Law</td><td>-0.74</td><td>-0.64</td><td>-0.64</td><td>-1.06</td><td>-1.18</td><td>-0.85</td></tr><tr><td>Control of Corruption</td><td>-0.89</td><td>-0.87</td><td>-0.87</td><td>-1.09</td><td>-1.12</td><td>-0.97</td></tr><tr><td>TOTAL</td><td></td><td></td><td></td><td></td><td></td><td>-0.73</td></tr></table> Source: http://info.worldbank.org/governance/wgi/#home						Indicator	2015	2016	2017	2018	2019	AVG	Voice and Accountability	-0.41	-0.68	-0.72	-1.08	-1.08	-0.79	Political Stability No Violence	-0.09	-0.09	-0.05	-0.94	-1.03	-0.44	Government Effectiveness	-0.82	-0.69	-0.63	-0.80	-0.77	-0.74	Regulatory Quality	-0.39	-0.51	-0.67	-0.71	-0.69	-0.59	Rule of Law	-0.74	-0.64	-0.64	-1.06	-1.18	-0.85	Control of Corruption	-0.89	-0.87	-0.87	-1.09	-1.12	-0.97	TOTAL						-0.73	4
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c)	Governance score of -0.32 to less than 0.19						n/a																																																								
d)	Governance score of 0.19 to less than 0.82						n/a																																																								
e)	Governance score of 0.82 or higher						n/a																																																								
f)	Mitigation: Country implementing REDD+ Readiness or other activities such as: a) The country is receiving REDD+ Readiness funding from the FCPF, UN-REDD or other bilateral or multilateral donors b) The country is participating in the CCBA/CARE REDD+ Social and Environmental Standards Initiative c) The jurisdiction in which the project is located is participating in the Governors' Climate and Forest Taskforce d) The country has an established national FSC or PEFC standards body e) The country has an established DNA under the CDM and has at least one registered CDM A/R project The country of Nicaragua received REDD+ Readiness funding from the FCPF (FCPF, 2018).						-2																																																								
Total Political (PC) [as applicable ((a, b, c, d or e) + f)]							2																																																								
Total may not be less than zero.																																																															

External Risk	
Total External Risk (LT + CE + PC)	0 + -5 + 2 = -3
Total may not be less than zero.	Result: 0

3 NATURAL RISKS

Natural Risk (Fire)	
Significance	<i>Insignificant (less than 5% loss of carbon stocks) or transient (full recovery of lost carbon stocks expected within 10 years of any event)</i> Fire risk is considered low in the project region, as, due to the rainfall pattern, vegetation is green almost throughout the year, and as such fire has little chance to propagate (MLR Forestal, 2018). There exist however conditions that increase the limited and latent fire risks: - Prolonged drought periods - Accumulation of biomass after e.g. pruning or thinning activities. - Use of fire in adjacent lands at the moment there is combustible biomass inside the plantations. Furthermore, the species planted (<i>Tectona Grandis</i>) is relatively resistant against moderate fire risks. As such, although no large damage can be expected from fire, and no fire inside the plantation has taken place during the project period, it is a risks that has to be mitigated.
Likelihood	<i>Every 25 to less than 50 years</i> Considering the rainfall patterns, historic fire incidence and mitigation matters, likelihood of fires is small, and was put at 25 to less than 50 years.
Score (LS)	1
Mitigation	Score: 0.25 MLR has implemented a series of preventative measures to limit fire risks, namely: 1. Plantation design. The eco-corridors crossing the plantations are functioning as fire corridors.

	2. All roads have a four meter width clean border to avoid fire risks. 3. Manual removal of high vegetation where biomass accumulation is high. Furthermore, the company has not suffered fire incidents in the project period, indicating effectiveness of the mitigation strategy applied.
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Natural Risk (Extreme weather (incl. hurricanes))	
Significance	<i>Minor (5% to less than 25% loss of carbon stocks)</i> Hurricanes have demonstrated to be a risk to the plantation, as the wind strengths and exceptional rainfall can lead to damage to the plantation and carbon stock, through fallen trees, broken stems, and uprooting of trees. This occurred in 2020, when two major hurricanes crossed the RACCN region 10 days apart, leading to partial damage to the plantation. Other extreme weather risks considered are drought and exceptional rainfall. The latter mainly occurs as result of a hurricane (touched upon above). The impact of drought is resulting in increased fire risks, and is covered in the previous section. The significance rating was qualified as minor (5% to less than 25% loss of carbon stocks), considering that due to the topography of the terrain geographical spread of the areas, and difference maturity levels of the tree plantations, potential hurricane impacts can be significant but not major.
Likelihood	<i>Every 25 to less than 50 years</i> Strong hurricanes in Nicaragua are not frequent. The most updated list of Atlantic hurricanes (that could form a threat to the project), is available on Wikipedia (Commons, 2021), and indicates 3 hurricanes of >4 Category in the past 100 years (excl. hurricane Iota). The hurricane season with two consecutive 2020 hurricanes Eta and Iota landing on the Atlantic coast of Nicaragua, is considered exceptional (Korosec, 2020). The GFDL, based on IPCC's AR5 report, concludes that climate change is leading to an increase in hurricane intensity (1 to 10% in +2 degrees scenario) and rainfall intensity (10-15% increase, within the storm's 100km radius, in +2 degrees scenario). Most modeling predict a decrease or little change in frequency of Category 4 and 5 hurricanes (GFDL, 2020).

	Considering the relatively small likelihoods of hurricanes in the Central American Pacific coast region, the decrease or little change in frequency, the limited increase in storm intensity and rainfall intensity in a 2 degrees climate change scenario, the likelihood was determined at every 25 to 50 years.
Score (LS)	2
Mitigation	0.5 In the design of the plantation risk mitigation of extreme weather, including hurricanes, has been taken into account. The geographical spread of the terrain, the planning of eco-corridors that also function as windbreaks, and the topography in the terrain result in limiting potential extreme weather damage. Preventive measures are not applicable in case of extreme weather and hurricanes. As such, a score of 0.5 was assigned to mitigation.

Natural Risk (Pest and diseases)	
Significance	<i>Minor (5% to less than 25% loss of carbon stocks)</i> The tree species accounting for carbon is teak (<i>Tectona grandis</i>), and is not very vulnerable towards pests and diseases. Generally, a pest/disease outbreak can be mitigated before affecting large areas of the plantation. Furthermore, the project area consists of different isolated areas (not all connected), and as such a pest or disease outbreak could be contained to a part of the project site, limiting its risk potential.
Likelihood	<i>Every 50 to less than 100 years</i> Pests and diseases are mainly occurring in monocultures, while MLR Forestal management is more diverse (intercropping with cacao). No significant pest and disease outbreaks occurred during the project period, and teak plantations are not considered vulnerable to pests and diseases. As such, a low likelihood of every 50 to less than 100 years was applied.
Score (LS)	1
Mitigation	0.25 In the design of the plantation forest patches are conserved and eco-corridors are established, thereby providing space to native flora and fauna that limit pests and disease risks (MLR Forestal, 2018).

The company applies Integrated Pest Management to reduce risk of pests. It allows the use of organic products and actions that rule out the application of chemicals on some farms owned by the company. In the case of leaf-cutter ants, which feed on teak leaves, the company has been applying neem (*Azadirachta indica*) to combat the ants with organically herbicides (MLR Forestal, 2018).

Other biological control methods were found to successful, namely to *not* kill snakes that feed on e.g. rats (which is the local culture), but rather having them function as control agent to combat rats, which sometimes feed on the bark of commercial trees, thereby damaging the plantation.

The company has shown these methods are successful, as no pests or disease have affected the project site during the project period.

Score for each natural risk applicable to the project (Determined by $LS \times M$)	
Fire (F)	$1 \times 0.25 = 0.25$
Pest and Disease Outbreaks (PD)	$1 \times 0.25 = 0.25$
Extreme Weather (W)	$2 \times 0.5 = 1.00$
Geological Risk (G)	n/a
Other natural risk (ON)	n/a
Total Natural Risk (as applicable, $F + PD + W + G + ON$)	1.50

4 OVERALL NON-PERMANENCE RISK RATING AND BUFFER DETERMINATION

4.1 Overall Risk Rating

Risk Category	Rating
Internal Risk	0
External Risk	0

Natural Risk	1.50
Overall Risk Rating (a + b + c)	1.50

Since 1.50 is below the minimum risk rating according to paragraph 2.5.2 of the AFOLU Non-Permanence Risk Tool, the risk rating is set at 10.

4.2 Calculation of Total VCUs

The total number of GHG credits generated in the monitoring period is 17 680. With a risk rating of 10%, a total number of 1 768 GHG credits need to be deposited in the AFOLU pooled buffer account. Therefore, a total number of 15 912 GHG credits are eligible to be issued as VCUs.

5 BIBLIOGRAPHY

- Bolaños Taleno, K. N. (2001). Estudio de dieciséis procedencias de teca (*Tectona grandis* (L.) F.) en Nicaragua. Universidad Nacional Agraria, UNA.
- Chaves, E. &. (1991). Teca: *Tectona grandis*: La Especie de árbol de uso múltiple en América Central (Vol. 11). . Bib. Orton IICA/CATIE.
- Commons, W. (2021, 03 03). *List of Category 5 Atlantic hurricanes*. Retrieved from https://en.wikipedia.org/wiki/List_of_Category_5_Atlantic_hurricanes
- FCPF. (2018). *Forest Carbon Partnership - Nicaragua*. Retrieved from 2018: <https://www.forestcarbonpartnership.org/country/nicaragua>
- GFDL. (2020, 09 23). *Global warming and hurricanes*. Retrieved from <https://www.gfdl.noaa.gov/global-warming-and-hurricanes/>
- Korosec. (2020). *Hurricane Iota landfall Nicaragua*. Retrieved from <https://www.severe-weather.eu/tropical-weather/hurricane-iota-landfall-nicaragua-mk/>
- MLR Forestal. (2018). *Plan General de Manejo - Plantaciones de MLR Forestal de Nicaragua S.A.,*. Managua, Nicaragua.: MLR Forestal de Nicaragua S.A.
- R. de Camino, M. A. (2002.). Teak (*Tectona grandis*) in Central America. *Forest Plantations working paper*, vol. 19, p. 28.
- TECDEA. (2019). *Evaluación de Impactos Ambientales y Sociales (EIAS) Proyecto Forestal Javier Chamorro Mora*. Tegucigalpa, Honduras: Tecnología y Desarrollo Ambiental S.A. de C.V. (TECDEA).