NON-PERMANENCE RISK REPORT

XICO2E: MEXICAN REFORESTATION PROJECT

DOCUMENT PREPARED BY FORLIANCE GMBH

Project Title	XiCO2e: Mexican Reforestation Project
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1 INTERNAL RISK

Project Management		
Risk Factor	**Risk Factor and/or Mitigation Description**	**Risk Rating**
a)	Tabasco: the project areas located in Tabasco are reforested with *Gmelina arborea*. In 2013, there were over 5,000 ha of commercial plantation of *G. arborea*. According to Jaramillo *et al.,* (2019) – Tabasco has optimal agroclimatic conditions for Melina commercial plantations Tamaulipas: the project areas located in Tamaulipas are reforested with *Gmelina arborea.* This species is native mainly to India, Bangladesh, Sri Lanka and has been successfully introduced in reforestation activities in tropical countries where economic strategies have been developed to commercialize its production. In Mexico, the first plantations of *Gmelina arborea* were registered in 1971, as part of a project launched by the National Institute for Forestry Research (INIF). By 2000 Melina plantations were grown in the state of Tabasco[1] and by 2004 in Tamaulipas[2]. Since then, the specie has been established in different Mexican states for multiple purposes such as Nayarit, Sinaloa, Veracruz, Chiapas, Jalisco, Michoaca, Oaxaca; proving that it is adapted to similar agro-ecological zones in which the project is located (Jaramillo *et al.,*2019).	0
b)	Tabasco: No on-going enforcement issues or disputes have been identified in relation to the ownership of the planting area. The property is delimited as private land. PROXYLO S.A.P.I DE C.V possesses the legal documentation and legal agreements on the properties. Tamaulipas: No on-going enforcement issues or disputes have been identified in relation to the ownership of the planting area. The property is delimited as private land. PROXYLO S.A.P.I DE C.V possesses the legal documentation and legal agreement on the properties. For both areas, please see Supporting documentation – Ownership (VCS Section 1.7)	0

[1] Link: http://www.conafor.gob.mx/biblioteca/PFC.pdf

[2] Potential Areas for Growing Gmelina arborea Roxb., under Rainfed Conditions in Tabasco, Mexico. (2019). Ramirez et al.

c)	Tabasco: PROXYLO S.A.P.I DE C.V is the project implementor of the project activities on the field. Tamaulipas: PROXYLO S.A.P.I DE C.V is the project implementor of the project activities on the field PROXYLO S.A.P.I DE C.V has over 18 years of experience in the development of forestry projects and dedicated to the establishment, management, and use of *Gmelina arborea* plantations in Mexico. Workers in PROXYLO S.A.P.I DE C.V become specialized through ongoing training sessions in specific forestry topics. These includes safe handling of equipment, nurseries activities, operation, maintenance, techniques for site preparation, etc. FORLIANCE has over 10 years developing nature-base projects worldwide with an emphasis in Latin-American. The technical expertise of FORLIANCE team include project management, carbon certification, and carbon project development[3]. Ala Bool is an organization that support agroforestry and forestry development in Mexico. It works as the link between small and medium landowners to connect with the best silvicultural practices and providing access to commercial products and environmental markets[4].	0
d)	Tabasco: PROXYLO S.A.P.I DE C.V has a headquarter in Tabasco, same as a sawmill to process the wood logs from the forestry activities. Therefore, it is located less than one day of travel. Tamaulipas: Similarly, PROXYLO S.A.P.I DE C.V has an office in Ciudad Mante,Tamaulipas state for management of the forestry and social activities in the region. PROXYLO S.A.P.I DE C.V has a complete organizational chart that specifies the divisions of the team that will oversee the establishment, management and care of the areas involved in the project (supporting documents). The chiefs of area and the forestry workers live in neighboring communities of the project farms.	0
e)	**Mitigation:** The carbon project developer, FORLIANCE GmbH, has extensive technical expertise in developing AFOLU projects under carbon standards, as well as in-depth knowledge of national and international carbon markets. FORLIANCE technical team has successfully managed projects through validation and verification events under VCS Program. Detailed information about the project developer is available at: https://forliance.com/	-2

[3] Link: https://forliance.com/

[4] Link: https://www.ala-bool.com/copia-de-inicio

f)	**Mitigation:** PROXYLO S.A.P.I DE C.V has a forest management plan in place and an adaptative management plan, including a monitoring plan, and it is available in the supporting documentation. The purpose of this unified forest management plan is to provide a consolidated overview of all planned activities during the accrediting period in order to ensure that the carbon against which VCUs are issued is not lost during a final cut with no subsequent replanting or regeneration. Activities that describe the system to regenerate and regrowth the areas after the thinning cycle are included in this plan. The management activities are regulated for every stratum in cycles of 7 years of plantation and regrowth. This unified forest management plan is valid for all reforestation areas in the project for the crediting period 2017-2047. Further, the management plan provides an overview of the adaptive management approach, including the monitoring system, applied in the project. This adaptative Forest Management Plan is based on the individual's Forest Management Plan elaborated by PROXYLO before the plantation activity took place on every property.	-2
Total Project Management (PM) [as applicable, (a + b + c + d + e + f)] Total may be less than zero.		**-4**

Financial Viability		
Risk Factor	**Risk Factor and/or Mitigation Description**	**Risk Rating**
a)	Not applicable	0
b)	Not applicable	0
c)	Project cash flow breakeven point greater than 4 and up to 7 years from the current risk assessment	1
d)	Not applicable	0
e)	Not applicable	0
f)	Not applicable	0
g)	Not applicable	0
h)	Project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven	0

i)	**Mitigation:** Project has available as callable financial resources at least 50% of total cash out before project reaches breakeven, as discussed with the project representative.	-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)	Not applicable	0
b)	Not applicable	0
c)	Not applicable	0
d)	Tabasco: the baseline scenario is agriculture activities supported by State policies (PD VCS Section 3.4). Positive impact is described in Section 1.17.1 of the VCS PD. Tamaulipas: the baseline scenario is agriculture activities supported by State policies (PD VCS Section 3.4). Positive impact is described in Section 1.17.1 of the VCS PD. 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	0
e)	Not applicable	0
f)	Not applicable	0
g)	Not applicable	0
h)	Not applicable	0
i)	Not applicable	0
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)	Without legal agreement or requirement to continue the management practice Tabasco: the project proponents have legal contracts with each landowners to secure the project activities implementation and monitoring. Tamaulipas: the project proponents have legal contracts with each landowners to secure the project activities implementation and monitoring. The Financial Model of the company presents a projection on the development of the plantations and on the subsidies from the National Forestry Commission (CONAFOR), which last through the carbon project crediting period (30 years). Although the concession contracts of the farms involved in the project area are shorter (6 years), than the project longevity (30 years), evidence that demonstrates that the project ownership can be maintained for the entire project longevity is presented as supporting documentation. This proves the permanence of PROXYLO's plantations of the 30 years established in the crediting period.	24 - (30/5) = 18
b)	Not applicable	0
Total Project Longevity (PL) May not be less than zero		**18**

Internal Risk	
Total Internal Risk (PM + FV + OC + PL) Total may not be less than zero.	**14**

2 EXTERNAL RISKS

Land Tenure and Resource Access/Impacts		
Risk Factor	**Risk Factor and/or Mitigation Description**	**Risk Rating**
a)	Tabasco: PROXYLO S.A.P.I DE C.V. has the rights to the lands and resources (Section 1.7 VCS PD) Tamaulipas: PROXYLO S.A.P.I DE C.V. has the rights to the lands and resources (Section 1.7 VCS PD) Ownership and resource access/use rights are held by same entity, in this case PROXYLO S.A.P.I DE C.V., who granted Ala Bool and FORLIANCE with the use right of the carbon credits.	0
b)	Not applicable	0
c)	Not applicable	0
d)	Not applicable	0
e)	Not applicable	0
f)	**Mitigation:** The project will have management practices that protect the credited carbon stocks over the duration of the project crediting period. PROXYLO S.A.P.I DE C.V., therefore, ensures the permanence of the carbon stock in the project area for at least that time period.	-2
g)	**Mitigation:** There are currently no land disputes. However, in future potential disputes over land tenure, the project will endeavor to resolve them or clarify overlapping claims.	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)	Tabasco: 100% of the households has been consulted. PROXYLO S.A.P.I DE C.V. has engaged the private landowners and ejidatarios (communal land) directly and as a result an agreement is signed to develop forestry project activities. Tamaulipas: 100% of the households has been consulted. PROXYLO S.A.P.I DE C.V. has engaged the private landowners and ejidatarios (communal land) directly and as a result an agreement is signed to develop forestry project activities. All communities and actors directly involved and affected by the project, have been consulted and records of the consultation can be found in the supporting documents.	0
b)	Tabasco: Other stakeholders identified has been informed about the project development and there is an ongoing communication plan (Section 2.2 PD VCS). Evidence of the meetings and communication is presented as supporting documentation. In folder CAR 7 Tamaulipas: Other stakeholders identified has been informed about the project development and there is an ongoing communication plan (Section 2.2 PD VCS). Evidence of the meetings and communication is presented as supporting documentation. All communities and actors indirectly involved and affected by the project, were effectively invited to participated in the consultation executed. Records of invitation can be found in the supporting documents.	0
c)	**Mitigation:** Tabasco: in Tabasco there is a sawmill that provides employment to women including them in the forestry value chain, in addition, the reforestation activities provide employment to the surrounding local communities. PROXYLO S.A.P.I DE C.V. follows the Mexican labour law to provide health care, training and capacity building, promotes the forestry sector in the region (Stakeholders rights can be seen in Table 6 PD VCS). Tamaulipas: Tamaulipas supports forestry innovation through the implementation of technified irrigation. In addition, the reforestation activities provide employment to the surrounding local communities. PROXYLO S.A.P.I DE C.V. follows the Mexican labour law to provide health	-5

	care, training and capacity building, promotes the forestry sector in the region (Stakeholders rights can be seen in Table 6 PD VCS). The project generates net positive impacts on the social and economic well- being of the local communities who derive livelihoods from the project area, by providing employment, facilitating the access to the social security benefits, including health care and also by executing trainings related to the forest management of the planting area.	
Total Community Engagement (CE) [where applicable, (a + b + c)] Total may be less than zero.		-5

Political Risk		
Risk Factor	**Risk Factor and/or Mitigation Description**	**Risk Rating**
a)	Not applicable	
b)	Mexico's governance score from the 2017-2021 period is -0.43	4
c)	Not applicable	
d)	Not applicable	
e)	Not applicable	
f)	México is receiving funding from the World Bank Forest Carbon Partnership Facility and submitted their Readiness Package in 2016. The country also has an established Designated National Authority under the CDM (Ministry of Environment and Natural Resources of Mexico (SEMARNAT)).	-2
Total Political (PC) [as applicable ((a, b, c, d or e) + f)] Total may not be less than zero.		2

External Risk	
Total External Risk (LT + CE + PC) Total may not be less than zero.	0

3 NATURAL RISKS

Natural Risk - Fire	
Significance	Insignificant (less than 5% loss of carbon stocks) or transient (full recovery of lost carbon stocks expected within 10 years of any event). Tabasco: In Tabasco, farmers use fires to clean the land for agricultural purposes. Nonetheless, more than 80% of the fires in the region are located in Centla (North of the state)[5] and the main fire hotspot are protected natural areas in the state. In the project area, firebreaks are made around the perimeter of the plantation as prevention measure. Direct communication with the neighbor landowners is active and ongoing to early spot any potential fire in the area. Proxylo in Tabasco has worked with firefighter brigades at CONAFOR to strengthen its reaction capacity and techniques. Tamaulipas: In Tamaulipas, one of the main forest fire causes are drought, nonetheless, the project proponent has implemented technified water irrigation in this state. In addition, similar to Tabasco, most of the fires are located in protected natural areas Furthermore, the state has implemented is own Forestry Fire Prevention program[6]. Proxylo has worked together with the CONAFOR fires brigades to strengthen its reaction capacity and keep up-to-date to the technical personnel in fire controlling and management. Lastly, firebreaks are made around the perimeter of the plantation as a prevention measure. The project area is considered to have a low risk of fires. Since the beginning of the plantations, PROXYLO has decided to eliminate the use of fire from their site preparation activities. However, fires are still use as part of the site preparation for neighboring sugar cane plantations which require a series of measures to prevent, and eventually, control fires.
Likelihood	Less than every 10 years
Score (LS)	1
Mitigation	**Prevention measure:** PROXYLO has its own management plan and mitigation strategies for fires, which can be found in the supporting documents. It has also an internal forest brigade both in Tabasco and Tamaulipas areas. It performs fire drills and identified sensitive areas to

[5] Link: https://www.elheraldodetabasco.com.mx/local/perdio-tabasco-casi-35-mil-has.-de-vegetacion-por-incendios-forestales-9913443.html

[6] Link: https://www.tamaulipas.gob.mx/proteccioncivil/wp-content/uploads/sites/36/2023/03/programa-incendios-forestales-2023.-tamaulipas.pdf

	forest fires to keep it under constant monitoring. Lastly, every year between January and June fire lines are constructed around the perimeter of the property. These lines are 3 meters wide and all material that could be used as fuel is removed. In case there is any fire, Proxylo immediately notifies the corresponding authorities of the location, magnitude, and possible consequences of the fire. Once the fire is controlled and extinguished, a detailed report is made to the corresponding authorities of CONAFOR and SEMARNAT. Score: 0.5. **Proven history:** Proxylo has worked in the area for 5 years. The forest fires brigades from Proxylo in both stated have acted during different scenarios to control any fire incident. The early-stage detection and good relations in the project areas are one of the main prevention actions, that alert Proxylo to be aware about potential agricultural fires in the areas to prevent any expansion into the project areas. Score: 0.5

Natural Risk - Pest and Disease outbreaks	
Significance	No loss Melina is a species introduced for more than 60 years in the country, both in Tabasco[7] and Tamaulipas[8] states. According to Cibrián (2013)[9] there is no risk for Melina to loss the carbon stocks. The main problem for the specie is related to water and soil conditions (abiotic characteristics). Tabasco: occasionally the melina is attacked by ants *(Atta formica)*[10], nonetheless, it is combated directly by Proxylo after identified. The ants does not present a direct risk to the carbon stock. Tamaulipas: occasionally the melina is attacked by ants *(Atta formica)*[11], nonetheless, it is combated directly by Proxylo after identified. The ants does not present a direct risk to the carbon stock
Likelihood	Less than every 10 years

[7] Link: https://www.scirp.org/journal/paperinformation.aspx?paperid=95370

[8] Link: http://sivicoff.cnf.gob.mx/ContenidoPublico/02%20Informes%20de%20acciones%20operativas/DiagnosticosEstatales/2020/Tamaulipas.pdf

[9] Link: http://www.conafor.gob.mx/biblioteca/Manuales-Tecnicos/Manual_para_la_identificacion_y_manejo_de_plagas_en_plantaciones_forestales.pdf

[10] Link: http://e-plagas.cnf.gob.mx/ContenidoPublico/02%20Informes%20de%20acciones%20operativas/DiagnosticosEstatales/2021/Tabasco.pdf

[11] Link: http://www.inifapcirne.gob.mx/Biblioteca/Publicaciones/893.pdf

Score (LS)	0
Mitigation	Preventive measures include the selection of Melina clones, site preparation, planting and thinning practices; measures that favor the sustainable control of natural enemies. In addition, visual inspections are made every 2 months in both states to monitor the presence of pests or diseases. In case there is a pest, this is identified and the decision is made to use mechanical or biological control (biological pesticides). Score: 0.5

Natural Risk - Extreme Weather	
Significance	Insignificant (less than 5% loss of carbon stocks) or transient (full recovery of lost carbon stocks expected within 10 years of any event) Tabasco: the man risk in Tabasco is flood in the coastal area and coastal erosion[12]. The project area is not located in the coastal area of the state. The risk of frost for the plantation is insignificant[13]. In case of any anormal precipitation[14] in the project area, Proxylo counts with water channels for drainage of excess water as preventive measure for melina forest management. Tamaulipas: the main risk in Tamaulipas are flood and cyclones affecting mainly the coastal areas[15]. and in the northern area of the state[16]. Nonetheless, project area is not located in the coastal region of Tamaulipas. Further, another future extreme weather is heavy precipitation, but similar to Tabasco, Proxylo counts with water channels for drainage of excess water as preventive measure for melina forest management.
Likelihood	Every 25 to less than 50 years
Score (LS)	1
Mitigation	No harms or loss have occurred inside the planted area as a result of extreme weather. Further, prevention measures are taken by Proxylo in terms of selecting the planting site (areas) and selecting the specie, plus also the water channels as mitigation measures for heavy rain. Further, the *Gmelina* clones used are resistant to water saturation and it is already adapted easily to the humid and subhumid tropical regions of Mexico[17] There is no record of cyclons, affected planting due to heavy rain in the project area in Tabasco and Tamaulipas.

[12] Link: https://www.redalyc.org/journal/3221/322161687012/html/

[13] Link: https://tabasco.gob.mx/sites/default/files/sites/default/files/public_files/programa_estatal_accion_cambio_climatico.pdf

[14] https://tabasco.gob.mx/PeriodicoOficial/descargar/1773

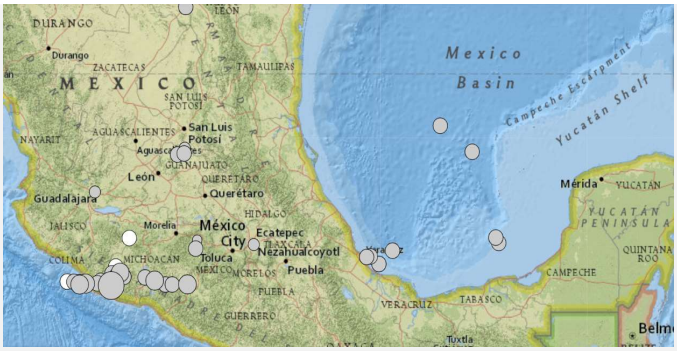
[15] Link: https://atlasvulnerabilidad.inecc.gob.mx/page/Proyecciones/img/28_Ficha.pdf

[16] Link: https://www.gob.mx/cms/uploads/attachment/file/162974/2015_indc_esp.pdf

[17] Link: http://cienciasforestales.inifap.gob.mx/index.php/forestales/article/view/163/771 & https://sma.gob.mx/wp-content/uploads/2021/06/SRNSEFLibro-Situacion-Actual-y-Perspectivas_de_las_Plantacionaes_Forestales_Comerciales_en_Mexico.pdf

	Score: 0.5.

Natural Risk – Geological Risk	
Significance	Insignificant (less than 5% loss of carbon stocks) or transient (full recovery of lost carbon stocks expected within 10 years of any event The country is frequently affected by seismic and earthquake events. However, these events are generally very low in specific project area and are not expected to cause significant losses of carbon stocks. Hence, the significance of geological risks on the project's sequestered carbon stocks is considered to be minor.
Likelihood	Once every 100 years or more Figures below present the seismicity map of the project area for the period 2017-2022 according to the Earthquake Hazards Program. The maps indicate earthquake occurrences (gray circles) in the country of magnitude 2.5 and above, but none has occurred in the project area. Also, a map showing the geological risk per region in Mexico is presented, where Tabasco and Tamaulipas are classified as low risk regions. Hence, the likelihood of the geological risk occurrence in the project area is negligible and considered to be at least every 100 years.

	 
Score (LS)	0
Mitigation	No harms or loss have occurred inside the planted area as a result of a geological risk. Score: 0.5.

Score for each natural risk applicable to the project (Determined by (LS × M)	
Fire (F)	0.5
Pest and Disease Outbreaks (PD)	0
Extreme Weather (W)	0.5
Geological Risk (G)	0
Other natural risk (ON)	0
Total Natural Risk (as applicable, F + PD + W + G + ON)	1

4 OVERALL NON-PERMANENCE RISK RATING AND BUFFER DETERMINATION

4.1 Overall Risk Rating

Risk Category	Rating
Internal Risk	14
External Risk	0
Natural Risk	1
Overall Risk Rating (a + b + c)	**15**

4.2 Calculation of Total VCUs

Year	Baseline emissions or removals (tCO2e)	Project emissions or removals (tCO2e)	Leakage emissions (tCO2e)	Net GHG emission reductions or removals (tCO2e)	Buffer pool allocation	VCUs eligible for issuance
11-01-2017 to 31-12-2017	2,172	10,272	0	8,101	1,215	6,885
01/01/2018-31/01/2018	2,308	17,994	0	15,686	2,353	13,332
01/01/2019-31/01/2019	2,528	22,272	0	19,744	2,962	16,782
01/01/2020-31/01/2020	0	22,759	0	22,759	3,414	19,344
01/01/2021-31/01/20	3,001	22,938	0	19,938	2,991	16,947
01-01-2022 to 30-07-2022	0	13,304	0	13,304	1,996	11,308

Total	10,009	109,539	0	99,531	14,930	84,598

The non permanence risk rating is 15% (as determined in the AFOLU non-permanence risk report attached as a separate document). Therefore, the total number of buffer credits that need to be deposited into the AFOLU pooled buffer account is 14,930 t CO2-e. The total VCU for the monitoring period is 84,598.