Matrix of importance of environmental impacts; Proyecto Forestal del Caribe																
Environmental aspects Phase Elemen type			Name of impact			Qu X3	alit O W		e a	ttri	AC AC	es H	PR	MC	Importance	Relevance
	FC	1C	Removal of minor flora species by project staff.	-1	2	1	4	2	2	2	4	4	1	1	-28	Moderate
	FC	1D	Affectation of flora due to the construction and habilitation of roads within the farms.	-1	4	2	1	2	2	2	1	4	2	2	-32	Moderate
	FC	1E	Removal of vegetation by clearing the site where infrastructure is to be built.	-1	4	1	1	2	2	2	1	4	1	2	-29	Moderate
Flora	FC	1F	Destruction of habitat by clearing and preparation of land for melina plantation.	-1	12	8	8	4	2	4	1	4	2	4	-81	Critical
	FC	1G	Contamination and damage to flora due to the use of herbicides for	-1	4	4	1	1	1	2	4	1	2	2	-34	Moderate
	FO	1H	establishment of the seedlings Removal of flora by mowing and general maintenance of the project and the	-1	4	2	4	4	4	2	1	4	2	4	-41	Moderate
	FO	11	timber extraction process Elimination and/or reduction of illegal logging practices	1	4	4	4	4	1	2	1	4	4	1		Medium
	FC		Wildlife roadkill Displacement of wildlife due to noise generation by vehicles, the machinery,	-1	2	4	4	4	4	2	1	4	1	4	-38	Moderate
	FC FC	2C, 2D, 2E y 2H	equipment and personnel Impact on aquatic fauna due to leaks of oil derivatives	-1 -1	1	2	4	2	2	2	1	4	1	4	-25 -25	Moderate Moderate
	FC	200	Killing of snakes by project staff during construction phase	-1 -1	4	8	1	2	2	4	4	4	4	2	-51 -51	Severe
Fauna	FC FC	2D 2F	Fragmentation of wildlife habitat by roads  Destruction and fragmentation of wildlife habitat through the land preparation	-1 -1	12	8	8	4	2	4	1	4	2	4	-	Severe Critical
	FC	2G	Establishment of potential planted forest habitat for wildlife	1	12	8	5	4	2	4	1	4	2	1	75	High
	FO	2H	Displacement of wildlife due to sawmill noise generation  Destruction and fragmentation of potential planted habitat for wildlife due to 6-	-1 -1	4	1 8	8	2	2	4	1	4	2	2	-26 53	Moderate Severe
	'0	ΔΠ	year cutting cycles Killing of snakes by project staff in the operational phase	-1	4	8	1	2	2	4	4	4	4	2	-53 -51	Severe
Groundwater	FC	3C, 3D, 3E, 3F y 3G	Groundwater contamination by hazardous substances during the construction phase	-1	4	8	4	1	4	2	4	4	1	4	-52	Severe
	FC	3H	Contamination of groundwater by hazardous substances during the operational phase	-1	4	8	4	1	4	2	4	4	1	4	-52	Severe
Surface water	FC	4C, 4D, 4E, 4F y 4G	Pollution of surface water by hazardous substances during construction phase Pollution of surface waters by sediments during construction phase	-1 -1	4	4	4	1	1	2	4	1	2	2	-52 -37	Severe Moderate
	FO	4H	Pollution of surface waters by hazardous substances during the operational phase	-1	4	8	4	1	4	2	4	4	1	4	-52	Severe
	FC	5C, 5D, 5E, 5F y 5G	Pollution from flue gas emissions during the construction phase	-1	1	8	1	4	4	2	4	1	2	4	-41	Moderate
Air	FO	5G	Pollution from flue gas emissions during the operational phase	-1	1	8	1	4	4	2	4	1	2	4		Moderate
Relief	FO FC	5G 6D, 6E, 6F,	Carbon sequestration  Alteration of the topography by works associated with the construction phase	-1	4	4	4	4	4	1	1	4	1	2	45 -41	Medium Moderate
Relief	FC	6G 7C, 7D, 7E,	Soil loss due to activities associated with the construction phase	-1	4	4	4	4	4	1	4	4	2	8	-51	Severe
Soil	FC	7F 7G	Loss of infiltration capacity of the soil Soil protection against erosion	-1 1	2	2	4	4	4	1		4	2	4		Moderate Medium
	FO FC	7H 8A	Soil loss due to activities associated with the operational stage Rising land prices and land speculation	-1 -1	4	4	4	4	4	1	4	4	2	8	-51	Severe Moderate
	FC	8B, 8E, 8F, 8G	Generating expectations about the recruitment of labour during the constructive phase	-1	2	4	4	4	2	1	4	4	4	4		Moderate
Oi-I	FC	8C	Pressure on existing communication routes	-1	2	4	4	4	4	1	1	4	4	4	-40	Moderate
Social	FC FO	8D 8H	Temporary disabling of existing roads Employment generation in the operational phase	-1 1	2 12	4	1	4	1	1	1	4		1	61	Moderate high
	FO FO	8J	Reduction of authority gaps	1 -1	2	2	4	4	2	1	4	4	4	4		Medium Moderate
	FC		Increased conflict over project expectations (mainly due to the miners) in the area Generation of expectations for improvement and creation of infrastructure in the	-1 -1	2	4	4	4	1	1	1	4	4	2		Moderate
Infrastructure and transport	FC	9A 9D	area of the project Temporary disabling of existing infrastructure	-1 -1	2	1	4	1	1	1	1	4	1	1	-35 -22	Irrelevant
	FC FO	9E 9H	Creation and/or improvement of infrastructure  Infrastructure maintenance	1	4	4	4	4	2	2	4	4	4	4	48	Medium Medium
	FC	10A	Change in land tenure and land use during the construction phase	-1	4	8	4	4	4	4	4	4	2	4	-58	Severe
Londina	FC 10H Implementation of new land-use normality dur		Alteration and/or disturbance to land use during the construction phase	-1	2	4	4	4	4	2	4	4	2	2	-40	Moderate
Land use		Implementation of new land-use normality during operation phase	1	4	8	2	4	2	2	4	4	4	4	54	High	
	FC	11H, 11K, 11J	Land invasion in the interest of subsistence crop cultivation	-1	2	8	2	4	2	2	4	4	4	4	-48	Moderate
	FC FC	11C	Increased transport on community roads Road improvements	-1 1	4	4	4	4	4	2	1	4	4	4		Moderate Medium
Road	FO	11H, 11K, 11J	Reduction of transport demand	-1	4	4	4	4	4	2	1	4	4	4		Moderate
Archaeological sites	FC	12D, 12E, 12F, 12G,	Total or partial damage to cultural heritage by works involving the breaking o mechanisation of soil by the project		12	8	4	4	4	1	1	4	1	8	_	Critical
Landscape	FC	13D, 13E, 13F, y 13G	Disruption and alteration of the landscape	-1	4	4	4	4	2	4	4	4	4	2		Moderate
·	FO	13H, 13I, 13J	Establishment of new landscape line	1	4	4	1	4	4	2	4	4	4	4	47	Medium
	FC	14B	Risk of hiring staff with no health and safety knowledge, and security	-1	2	2	4	4	2	1	1	4	1	4	-31	Moderate
Harden and a first in	FC	14C, 14D y 14F	Health risks arising from the implementation of project activities in the construction phase	-1	8	8	4	4	4	2	1	4	1	8	-68	Severe
Health and safety at work	FO	14H	Health risks arising from the implementation of project activities in the operational phase	-1	2	2	4	2	2	2	4	1	1	2	-28	Moderate
	FO		Risks to community health and safety due to the use of agro-chemicals and/or	-1	2	8	4	4	4	2	1	4	1	8	-50	Moderate
Terminology: FC: Construction F	hase, <b>FO</b>		passage transport hase				_!	_!			<u> </u>	<u> </u>	_			

Proposed protective, corrective and compensatory measures of the project; Proyecto Forestal del Caribe								
Element type	Impact name	Measure name	Actions of the environmental and social control measure	Section of the ESMP containing the control measures				
10	Removal of minor flora species by project staff.		Induction and short talks (5 or 10 minutes maximum) to site personnel indicating the prohibition of removal of minor flora and warning of the implications of non-compliance with this measure.	ral Plan (FMP), Biodiversity management plan, Recruitmer is and labour management plan, Physical security plan Monitoring plan				
1D	Affectation of flora due to the construction and habilitation of roads within the farms.		Label sites that are likely to be impacted, especially those associated with nearby forest cover. The labeling should indicate the respective prohibition and the legal regulation that governs					
1E	Removal of vegetation by clearing the site where infrastructure is to be built.	Control over the removal of minor flora by project staff.	Conduct monitoring by the project to identify anomalies in the extraction of minor flora.	Environmental and social policy, Forest Management Plan (FMP), Biodiversity management plan, Physical security plan, Monitoring plan				
1F	Destruction of habitat by clearing and preparation of land for melina plantation.		Apply the sanctions stipulated in current legislation and administrative processes as appropriate.	Environmental and social policy, Forest Management Plan (FMP), Biodiversity management plan, Recruitment and labour management plan, Monitoring plan				
1G	Contamination and damage to flora due to the use of herbicides for establishment of the seedlings		Train workers in the use, handling, storage and disposal of agrochemicals.	Environmental and social policy, Forest Management   Plan (FMP), Biodiversity management plan, Occupational health and safety plan, Waste management plan, Monitoring plan				
1H	Removal of flora by mowing and general maintenance of the project and the timber extraction process		Do not cut trees without having previously carried out a forest inventory and acquired the required permits for this activity.	Environmental and social policy, Forest Managemen Plan (FMP), Biodiversity management plan, Monitoring plan				
11	Elimination and/or reduction of illegal logging practices	Planning tree felling	Conduct monitoring by the project to identify anomalies in the extraction of minor flora.	Environmental and social policy, Forest Management Plan (FMP), Biodiversity management plan, Physical security plan, Monitoring plan				
2C, 2D, 2E y 2H	Wildlife roadkill		Signage should indicate sites likely to be impacted, especially associated with nearby forest cover. The signage should indicate the maximum permitted speed and indicate that there are wildlife crossings.	Environmental and social policy, Biodiversity				
2C, 2D, 2E y 2H	Displacement of wildlife due to noise generation by vehicles, the machinery, equipment and personnel	Wildlife care	Signage should indicate sites likely to be impacted, especially associated with nearby forest cover. The signage should indicate the maximum permitted speed and indicate that there are wildlife crossings.	Environmental and social policy, Biodiversity				
2C, 2D, 2E y 2H	Impact on aquatic fauna due to leaks of oil derivatives		Train operators of small machinery (chainsaws), transporters and helpers in techniques for directional felling and handling of hydrocarbons and petroleum derivatives (oils and lubricants).	Environmental and social policy, Forest Management Plan (FMP), Biodiversity management plan, Waste management plan, Monitoring plan				
2C, 2D, 2E y 2H	Killing of snakes by project staff during construction phase	Wildlife traslocation	Translocate as much fauna as possible from the clearing and land preparation areas to the remaining forests of the AID and the AIP. This is particularly important for terrestrial fauna such as amphibians, reptiles and mammals. This should be done with the support and training of professional biologists.	Environmental and social policy, Biodiversity				
2D	Fragmentation of wildlife habitat by roads	Maintenance of living fencingareas	Laying of roads on existing roads or in areas with less impact on habitats.	Environmental and social policy, Biodiversity management plan, Transport plan, Monitoring plan				
2F	Destruction and fragmentation of wildlife habitat through the land preparation	waintenance of living lendingaleas	Maintain the row trees that still exist in the paddock areas and were used as living fences, but are also used by the monkeys to move from habitat to habitat.	Environmental and social policy, Forest Management Plan (FMP), Biodiversity management plan, Monitoring plan				
2G	Establishment of potential planted forest habitat for wildlife	Maintenance of remaining forests	Maintain the remaining forests as habitat islands for the region's fauna and flora, but with a view to improving their connectivity with the Cerro San Gil massif and the Rio Dulce National Park.	Plan (EMP). Pindiversity management plan Manifering				
2H	Displacement of wildlife due to sawmill noise generation	Wildlife care	Label sites likely to be impacted, especially those associated with nearby forest cover. The signage should indicate that there are wildlife crossings. In addition, sound barriers can be made with live fences to reduce the impact of noise on forest cover.	Environmental and social policy, Forest Management Plan (FMP), Biodiversity management plan, Transport plan, Monitoring plan				
2H	Destruction and fragmentation of potential planted habitat for wildlife due to 6-year cutting cycles	Enrichment of forest plantation with	If the forest planting standard for 1,111 tress/ha is used, 1,108 melina trees and 2 trees producing native fruits and flowers can be planted per hectare of the priority species list included in the blodiversity report. This intensity of fruit tree plantling has marginal economic costs for the plantation.	n Environmental and social policy, Forest Manageme e Plan (FMP), Biodiversity management plan, Monitorin				
2Н	Killing of snakes by project staff in the operational phase	Translocation of fauna	Translocate as much fauna as possible from the clearing and land preparation areas to the remaining forests of the AID and the AIP. This is especially important for terrestrial fauna such as amphibians, reptiles and mammals. This should be done with the support and training of professional biologists.	d Environmental and social policy, Forest Managements Plan (FMP), Biodiversity management plan, Monitoring				
21	Impact of harvesting on wildlife habitats	Noise control	Prohibit the use of loudspeakers or loud music in vehicles passing through the area.	Environmental and social policy, Biodiversity management plan, Physical security plan, Monitoring plan				
3C, 3D, 3E, 3F y 3G	Groundwater contamination by hazardous substances during the construction phase		Train operators of small machinery (chainsaws), transporters and helpers in techniques for directional felling and handling of hydrocarbons and petroleum derivatives (oils and lubricants).					
3Н	Contamination of groundwater by hazardous substances during the operational phase	Maintenance of vehicles and machinery to avoid spills	Perform periodic inspections of vehicles and machinery to check for leaks.	Environmental and social policy, Occupational health and safety plan, Monitoring plan				
4C, 4D, 4E, 4F y 4G	Pollution of surface water by hazardous substances during construction phase		Carry out periodic inspections on vehicles and machinery belonging to third parties.	y Environmental and social policy, Occupational healt and safety plan, Monitoring plan				
4C, 4D, 4E, 4F y 4G	Pollution of surface waters by sediments during construction phase		Inspect fuel maintenance	Environmental and social policy, Occupational heal and safety plan, Monitoring plan				
4H	Pollution of surface waters by hazardous substances during the operational phase	Avoid spillage of different products	Proper maintenance of all vehicles	Environmental and social policy, Occupational health and safety plan, Monitoring plan				
4A	Pollution of surface waters by hazardous substances during the operational phase	Sensitisation and training of personn	Conduct training for personnel on the handling of agrochemicals and hydrocarbons and oil derivatives (oils and lubricants).					
5C, 5D, 5E, 5F y 5G	Pollution from flue gas emissions during the construction phase	Moderate use of fossil fuels.	Proper maintenance of all vehicles	Environmental and social policy, Occupational health and safety plan, Monitoring plan				

Element type	Impact name	Measure name	Actions of the environmental and social control measure	Section of the ESMP containing the control measures					
5G	Carbon sequestration	Carbon measurement and sale	Measuring and selling carbon credits	Environmental and social policy, Forest Managemer Plan (FMP), Monitoring plan					
6A	Alteration of the topography by works associated with the construction phase		Minimise earthworks and place unused surplus land on roads in specific locations.	Environmental and social policy, Forest Management Plan (FMP), Transport plan, Monitoring plan					
6D, 6E, 6F, 6G	Alteration of the topography by works associated with the construction phase		Minimise earthworks and place unused surplus land on roads in specific locations.	Environmental and social policy, Forest Management Plan (FMP), Transport plan, Monitoring plan					
7C, 7D, 7E, 7F	Soil loss due to activities associated with the construction phase	Reduction of the impact of earthworks	Minimise earthworks and place unused surplus land on roads in specific locations.	Environmental and social policy, Forest Management Plan (FMP), Transport plan, Monitoring plan					
7C, 7D, 7E, 7F	Loss of infiltration capacity of the soil		The clearing of sites prioritised for reforestation should be done with small machinery to reduce soil compaction.	Environmental and social policy, Forest Management Plan (FMP), Transport plan, Monitoring plan					
6D, 6E, 6F, 6G	Alteration of the topography by works associated with the construction phase		Minimise earthworks and place unused surplus land on roads in specific locations.	s Environmental and social policy, Forest Management Plan (FMP), Transport plan, Monitoring plan					
7G	Soil protection against erosion	Avoid haulm and sowing on soils with a slope of more to degrees.		Environmental and social policy, Forest Management Plan (FMP), Monitoring plan					
7G	Soil protection against erosion	intervened.	The sites prioritised for reforestation should be rapidly covered with vegetation to protect the soil from the erosion	Environmental and social policy, Forest Management Plan (FMP), Monitoring plan					
7H	Soil loss due to activities associated with the operational stage	Planning of intervention area.	Avoid haulm and sowing on soils with a slope of more than 30 degrees.	Environmental and social policy, Forest Management Plan (FMP), Monitoring plan					
8A	Rising land prices and land speculation	Education programme on home gard	Implement an educational programme for communities promoting the creation of home gardens on the household plot and the raising of poultry.	Environmental and social policy, Forest Management Plan (FMP), Stakeholder engagement plan, Monitoring plan					
8B, 8E, 8F, 8G	Generating expectations about the recruitment of labour during the constructive phase	Effective Communication Campaign,	Implement a communication campaign on the realistic numbers of jobs to be created and the proportion of loca labour to be hired.	Environmental and social policy, Recruitment and labour management plan, Stakeholder engagement plan, Monitoring plan					
8C	Pressure on existing communication routes	Road Management Plan.	Implement a plan for the construction, extension, and maintenance of existing roads.	Environmental and social policy, Forest Management Plan (FMP), Transport plan, Monitoring plan					
8D	Temporary disabling of existing roads	Effective Communication Campaign,	Implement a communication campaign on the exact dates when existing roads and infrastructure will be disabled.	Environmental and social policy, Forest Management Plan (FMP), Stakeholder engagement plan, Transport plan, Monitoring plan					
8Н	Employment generation in the operational phase	Effective Communication Campaign,	Implement a communication campaign on the realistic numbers of jobs to be created and the proportion of loca labour to be hired.	Environmental and social policy, Forest Management Plan (FMP), Stakeholder engagement plan, Monitoring plan					
81	Reduction of authority gaps	Effective Communication Campaign a	Coordination with authorities on measures and work plans.	Environmental and social policy, Stakeholder engagement plan, Monitoring plan					
8J	Increased conflict over project expectations (mainly due to the miners) in the area	Effective Communication Campaign a	Campaign on the company's lines of work and impacts as well as their mitigation.	Environmental and social policy, Stakeholder engagement plan, Monitoring plan					
9A	Generation of expectations for improvement and creation of infrastructure in the area of the project		Implement a communication campaign on the exact dates when existing roads and infrastructure will be disabled.	Environmental and social policy, Stakeholder engagement plan, Transport plan, Monitoring plan					
9D	Temporary disabling of existing infrastructure	Effective Communication Campaign, Road and Infrastructure Maintenance.	Implement a communication campaign on the exact dates when existing roads and infrastructure will be disabled.	Environmental and social policy, Stakeholder engagement plan, Transport plan, Monitoring plan					
9E	Creation and/or improvement of infrastructure		Implement a communication campaign on the exact dates when existing roads and infrastructure will be disabled.	Environmental and social policy, Stakeholder engagement plan, Transport plan, Monitoring plan					
9Н	Infrastructure maintenance	Road Management Plan.	Implement a plan for the construction, extension, and maintenance of existing roads.	Plan (FMP), Transport plan, Monitoring plan					
10A	Change in land tenure and land use during the construction phase	Effective Communication Campaign,	implement a communication campaign about the realistic numbers of jobs to be created and the proportion of loca labour to be hired	Environmental and social policy, Stakeholder engagement plan, Monitoring plan					
10D, 10E, 10F y 10G	Alteration and/or disturbance to land use during the construction phase		Implement an educational programme for communities promoting the creation of home gardens on the household plot and the raising of poultry.	Environmental and social policy, Forest Management Plan (FMP), Stakeholder engagement plan, Monitoring plan					
10H	Implementation of new land-use normality during operation phase	Homegarden and Poultry Education Programme.	Implement an educational programme for communities promoting the creation of home gardens on the household plot and the raising of poultry.						
101	Land invasion in the interest of subsistence crop cultivation		Implement an educational programme for communities promoting the creation of home gardens on the household plot and the raising of poultry.	Environmental and social policy, Forest Management Plan (FMP), Stakeholder engagement plan, Monitoring plan					
110	Increased transport on community roads		Create a transport plan projecting the company's and communities' need for road use, identifying risks and vulnerabilities to address them together with the communities.	Environmental and social policy, Stakeholder engagement plan, Transport plan, Monitoring plan					
11D	Road improvements	Transport Plan	Create a transport plan projecting the company's and communities' need for road use, identifying risks and vulnerabilities to address them together with the communities.	Environmental and social policy, Stakeholder engagement plan, Transport plan, Monitoring plan					
11H, 11K, 11J	Reduction of transport demand		Create a transport plan projecting the company's and communities' need for road use, identifying risks and vulnerabilities to address them together with the communities.	Environmental and social policy, Stakeholder engagement plan, Transport plan, Monitoring plan					
12D, 12E, 12F, 12G,	Total or partial damage to cultural heritage by works involving the breaking or mechanisation of soil by the project	Request authorisation from the Guat	All work involving soil breaking or mechanisation must have an archaeological investigation prior to the start of such work Therefore, prior to any archaeological investigation activity authorisation from the Guatemalan Ministry of Culture and Sports must be obtained, and the time it takes to complete these procedures, which is two to three months, must be taker into account.	Environmental and social policy, Incidental Findings Procedure, Monitoring plan					
12D, 12E, 12F, 12G,	Total or partial damage to cultural heritage by works involving the breaking or mechanisation of soil by the project	Archaeological survey, probing and re	This activity includes carrying out systematic surveys in the AID dentifying areas with archaeological potential for investigation by means of boreholes and the rescue or extensive investigation in areas that will alter be mechanised for cultivation, work that depending on the area and the number of personnel in the work team can take two or three months.						

Element type	Impact name	Measure name	Actions of the environmental and social control measure	measures					
12D, 12E, 12F, 12G,	Total or partial damage to cultural heritage by works involving the breaking or mechanisation of soil by the project	Supervision of mechanisation or land	The archaeological investigation cannot cover 100% of the AID, as only a percentage of the land can be investigated, which is why supervision is required in areas where mechanisation or sowing work is carried out in order to document chance finds, which will be documented and the work can continue as appropriate.	Environmental and social policy, Incidental Findings Procedure, Monitoring plan					
12D, 12E, 12F, 12G,	Total or partial damage to cultural heritage by works involving the breaking or mechanisation of soil by the project	Dissemination of the results of the ar	All archaeological work carried out can be published in academic and public circles, or can be publicised by means of conferences or talks in the surrounding communities to publicise the most relevant findings of this work.	Environmental and social policy, Stakeholder engagement plan, Incidental Findings Procedure, Monitoring plan					
13D, 13E, 13F, y 13G	Disruption and alteration of the landscape	Request authorisation from the Guat	All work involving the breaking or mechanisation of earth must have an archaeological investigation prior to the start of such work. Therefore, prior to any archaeological investigation activity, authorisation from the Guatemalan Ministry of Culture and Sports must be obtained, and the time I takes to complete these procedures, which is two to three months, must be taken into account.	engagement plan, Incidental Findings Procedure,					
13H, 13I, 13J	Establishment of new landscape line	Native Species Management Plan.	Implement a project management plan that includes the preservation of some areas of guamil and the planting of other areas with native species.						
14B	Risk of hiring staff with no health and safety knowledge, and security		Implement a comprehensive training and equipment investment plan to ensure the occupational well-being of project employees in all phases of the project.						
14C, 14D y 14F	Health risks arising from the implementation of project activities in the construction phase			Environmental and social policy, Forest Management Plan (FMP), Recruitment and labour management plan, Occupational health and safety plan, Monitoring plan					
14H	Health risks arising from the implementation of project activities in the operational phase		Implement a comprehensive training and equipment investment plan to ensure the occupational well-being of project employees in all phases of the project.						
14l, 14J, 14K	Risks to community health and safety due to the use of agro-chemicals and/or passage transport	Waste management and road	Implement a waste management and road safety education programme with all workers and transporters in the company and communicate and educate on health and safety risks to the community.	Environmental and social policy, Waste management plan, Stakeholder engagement plan, Transport plan, Monitoring plan					
14l, 14J, 14K	Risks to community health and safety due to the use of agro-chemicals and/or passage transport	education programme.	Implement a programme of communication and education on health and safety risks to the community.	Environmental and social policy, Waste management plan, Stakeholder engagement plan, Transport plan, Monitoring plan					