

CABEI

Central American
Bank for
Economic
Integration

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORKS Light Rail Transit for the Greater Metropolitan Area Project (GAM)



PÚBLICO

EXECUTIVE SUMMARY

The Light Rail Transit for the Greater Metropolitan Area (GAM) Project aims to upgrade the existing diesel intercity passenger train system into a state-of-the-art electric driven passenger train system. The project will be executed by the Costa Rican Institute of Railways (INCOFER) and will consist of three components: (1) an 85-km light rail transit infrastructure; (2) urban integration of non-motorized transport (NMT); and (3) capacity building and gender measures. The project is seeking financing from the Central American Bank for Economic Integration (CABEI) and Green Climate Fund (GCF) and has been classified as a risk Category A which would require a full Environmental and Social Impact Assessment (ESIA) study. However, a full ESIA study cannot yet be undertaken as the detailed engineering design is still to be developed and for that purpose, the government intends to engage a concessioner who would then construct and eventually operate the system. Hence, this Environmental and Social Management Framework (ESMF) was prepared in order to provide a general assessment of the project's potential environmental and social impacts and risks, and to identify key impacts and mitigation measures, and to set out the processes and requirements for project's compliance with CABEI's Environmental and Social Risk Management System¹, including the Environmental and Social Action Plan (ESAP) and the GCF's Environmental and Social Standards (ESS).

Potential Environmental and Social Impacts and Risks. Based on the general assessment, the key potential social and environmental impacts of the project would include: (i) physical and economic displacement of residents and businesses due to the right-of-way recovery and acquisition of additional lands for expansion of the railway tracks and stations and other facilities. The displacement would likely involve informal settlements; (ii) risks associated with influx of labor and economic migrants into the railway communities during construction. This may include increased pressure on local housing spaces and services, outbreaks of diseases, and increased criminality; (iii) risks of non-compliance with labor and working condition standards for contracted workers such as denial of basic workers' rights, hiring of children, and non-compliance with occupational health and safety; (iv) potential impacts on biodiversity and wildlife due to clearing of patches of natural habitats along the railway line and roaming range fragmentation due to the barrier effect of the enhanced railway tracks; (v) potential exposure of local residents, particularly the communities along the railway to accident hazards during construction and train operations; (vi) potential exposure of workers and residents to nuisance and health hazards from fine suspended particulates and noise during construction; (vii) possible water pollution and soil contamination from construction wastes and spillages, and from effluents and solid wastes at worker's camps; (viii) possible land degradation at borrow pits, quarries and construction spoil disposal sites; (ix) possible displacement, destruction or degradation of cultural heritage sites and/or structures and chance finds during excavation works; (x) potential issues on accessibility of the train service to certain groups, particularly person with disabilities (PWDs), children and elderlies; (xi) fire; and, (xii) seismic hazards in the system buildings and facilities during operations.

¹ CABEI's System for Identification, Evaluation and Mitigation of Environmental and Social Risks (SIEMAS for its acronym in Spanish), is aligned with the Performance Standards of the International Finance Corporation (IFC) to guarantee the application of best international practices. SIEMAS aims to categorize, analyses and mitigate the environmental and social risks associated with operations financed with CABEI resources.

Environmental and Social Management Framework/Compliance Plan. The following have been identified as possible mitigation measures for the above potential impacts and risks: (i) preparation and implementation of Resettlement Plans for the residents to be displaced by the project; (ii) requiring contractors to provide living quarters for their workers at camp sites, in case of it be required and applicable; (iii) incorporation of clauses in contractors' contracts about strict observance of labor standards, provision of labor management guidelines to contractors that highlight critical compliance areas/aspects, and periodic labor and working conditions audit by project management; (iv) conservation and maintenance of connected network of green spaces/parks and wildlife crossings along the railway lines; (v) requiring contractors to always secure construction areas, install barriers, proper signages and provide safe and well-lighted passageways and road crossings for the public; (vi) employ dust suppression such as wet cutting when demolishing concrete or brick structures and restriction of works in residential areas to normal waking hours only; (vii) confinement and natural treatment of domestic effluents and septage at workers camp and proper disposal of solid wastes and construction wastes; (viii) restoration of lands deformed by borrow pit, quarries and spoil disposal operations; (ix) identification and inventory of cultural heritage sites along the entire stretch of the railway and prospective sites of facilities and consultation with authorities as to their cultural significance and the possible conservation measures to apply; (x) adoption of the concept of "universal access" when designing the stations and connectivity facilities; (xi) strict compliance with the National Fire Protection Association (NFPA) codes in design and operations of public places and systems; (xii) strict compliance with the Costa Rica's Seismic Code and good international industry practice in the structural design of buildings, bridges and elevated railway tracks. Various activity-specific measures and techniques to protect or mitigate impacts of project's activities to air, water, soil, flora and fauna, cultural heritage structures, the landscape, and employment, local economy and social welfare have also been identified.

The above potential impacts and risks as well as the suggested mitigation measures need to be validated and studied for further considerations and refinement, and to explore alternative construction approaches, designs and other mitigation measures. The detailed environmental and social impact assessment (ESIA) to be conducted by the concessioner under the auspices of INCOFER shall cover the above impacts and risks and all other issues associated with the GCF environmental and social safeguards (ESS) Standards, namely: (ESS1) Assessment and Management of Environmental and Social Impacts and Risks; (ESS2) Labor and Working Conditions; (ESS3) Resource Efficiency and Pollution Control; (ESS4) Community Health and Safety; (ESS5) Land Acquisition and Involuntary Resettlement; (ESS6) Biodiversity Conservation and Sustainable Management of Living Natural Resources; (ESS7) Indigenous People; and, (ESS8) Cultural Heritage. It should be emphasized that the detailed ESIA should be conducted for the entire project undertakings (i.e., all three components as described in the proposal) including the LRT component.

Environmental and Social Management Plan (ESMP). Aside from activity- and site-specific mitigation measures, the ESMP in the detailed ESIA shall include project design considerations, compliance plans to regulations as well as references to other sub-plans and guidelines. Upon inception of the ESIA study, the ESIA team shall prepare an initial draft of the Stakeholder Engagement Plan (SEP) which it would implement and continuously update throughout the ESIA study. As part of the ESMP in the ESIA report, the following will be developed: (i) Updated SEP which contains the plans and strategies for further engaging the project stakeholders during the construction phase; (ii) a Grievance Redress Mechanism (GRM) system to be set up at the start of

construction activities; (iii) Resettlement Plans; (iv) possible Cultural Heritage Development Plans; (v) Labor and Working Conditions contract clauses and Guidelines for contractors; and, (vi) Labor and Working Conditions Audit Protocols.

Implementation Arrangements. INCOFER, as the Executing Entity, shall be responsible for the implementation of this ESMF while CABEI will provide the first level oversight. INCOFER shall hire or designate from its existing staff, one (1) Lead Safeguards Advisor (LSA) who shall take the lead in implementing the provisions of this ESMF, and one (1) Involuntary Resettlement Advisor (IRA) who will be take the lead in the right of way (ROW) recovery and eminent domain land acquisition as well as the implementation of the Resettlement Policy Framework (RPF), particularly the preparation and implementation of the Resettlement Plans. In so far as can be permitted under Costa Rica's laws, the winning Concessioner will be in charge of conducting the ESIA and the application for Environmental Viability. As such, the Concessioner will be responsible for complying with the requirements of SETENA. According with CABEI's ESAP, during pre-construction (i.e., the preparation of Detailed Engineering and detailed ESIA), INCOFER shall submit information to the CABEI regarding the status of the implementation ESMF requirements. During construction, the INCOFER will submit to CABEI a quarterly report on status: (i) Status of the Overall ESMF implementation (ii) Status of RPs Preparation and implementation (iii) Status of detailed ESIA's ESMP implementation; and (iii) Status of the SEP implementation.

Cost Estimate. The cost of the implementation of this ESMF and the environmental and social management plans, excluding the cost of land acquisition, is estimated between \$9.5 million to \$10.5 million

ACRONYMS

CABEI	Central American Bank for Economic Integration a.k.a BCIE
CSCR	Código Sísmico de Costa Rica (Costa Rican Seismic Code)
EIA	Environmental Impact Assessment may also be referred to as ESIA
ESAP	Environmental and Social Action Plan (CABEI's)
ESIA	Environmental and Social Impact Assessment may also be shortened as EIA
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standard
GAM	Gran Área Metropolitana (Greater Metropolitan Area)
GCF	Green Climate Fund
GIIP	Good International Industry Practice
GRM	Grievance Redress Mechanism
IFC	International Finance Corporation
INCOFER	Instituto Costarricense de Ferrocarriles (Costa Rican Institute of Railways)
LRT	Light Rail Transit
MINAE	Ministry of Environment and Energy
NMT	Non-Motorized Transport
OSH	Occupational Safety and Health may also be referred to as OHS
RAP	Resettlement Action Plan may also be called RP
RP	Resettlement Plan may also be called RAP
RPF	Resettlement Policy Framework
SETENA Secretariat)	Secretaría Técnica Nacional Ambiental (National Environmental Technical Secretariat)
SEP	Stakeholder Engagement Plan
TRP	Tren Rapido de Pasajeros (Rapid Passenger Train)
NFPA	National Fire Protection Association

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1. INTRODUCTION

The Light Rail Transit for the Greater Metropolitan Area (GAM) Project aims to upgrade of the existing single tract, diesel intercity passenger train system into a state-of-the-art, mostly dual tract, electric passenger train system. The project is part of the main mass transit initiative currently under development in Costa Rica. The project is a priority for the government as a means to help alleviate road congestion in the most populated areas of the country and improve economic competitiveness. The project will consist of three components, namely: (1) a Train System; (2) Urban Integration with Non-Motorized Transport (NMT) and connectivity/accessibility; and (3) Capacity building and gender measures. The Project is seeking financing from CABEI and Green Climate Fund (GCF) and hence will comply with its Environmental and Social Standards as follows:

ESS1 - Assessment and Management of Environmental and Social Risks and Impacts

ESS2 - Labor and Working Conditions

ESS3 - Resource Efficiency and Pollution Control

ESS4 - Community Health and Safety

ESS5 - Land Acquisition and Involuntary Resettlement

ESS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources

ESS7 - Indigenous People

ESS8 - Cultural Heritage

Aside from complying with the above standards, projects financed by GCF are also required to undertake a stakeholder engagement process during project planning and implementation, to publicly disclose the environmental and social impacts, and to set up a functional grievance redress mechanism for those affected by the project.

The development of a modern passenger train system in the Greater Metropolitan Area (GAM) has been extensively studied over the past few years, with a series of diagnoses that have been evaluated and improved over time. The latest feasibility study is the basis for the current project proposal. The project proposal has been classified as a Category A project which would require a full Environmental and Social Impact Assessment (ESIA) study. However, a full ESIA study cannot yet be undertaken as the project's final engineering design is still to be developed. The Government intends to award the project to a concessioner who will undertake the detailed engineering design, construction and subsequent operation of train project. The concessioner will also be the one responsible for the detailed ESIA study and obtain environmental clearance and associated permits from the government. Hence, this Environmental and Social Management Framework (ESMF) is developed to help provide the basis for the investment decisions of the GCF and other stakeholders.

This Environmental and Social Management Framework (ESMF) sets out the general measures, steps and procedures and requirements, including the conduct of a much-detailed environmental and social assessment and detailed site-specific and activity-specific environmental and social management plans to ensure compliance with all of CABEI's and the above GCF ESS Standards and requirements. In particular, the ESMF will provide:

- (1) A general assessment of the potential environmental and social impacts and risks of the project based on available technical information and a cursory study of the baseline

environmental and social conditions. The general assessment will identify and evaluate the significance of the project's potential impacts and risks relating to the IFC ESS2-8; and,

- (2) A general Environmental and Social Management Plan (ESMP) based on the results of the assessment, the requirements of the Costa Rica laws and regulation systems and the CABEI's and GCF's environmental and social safeguards (ESS) standards.

2. PROJECT DESCRIPTION

The "Fast Passenger Train" (TRP) Project aims to develop, build and operate an electric passenger rail transport system connecting the main urban centers of the Greater Metropolitan Area (GAM) of Costa Rica. It will basically transform the current intercity diesel trains service into a modern dual-tract electric train system.

2.1 Project Components

The project will have the following components:

Component 1: Light Rail Transit (LRT). The LRT will be carried out on the existing right of way of the National Railway Network, which currently connects the cities of San José, Alajuela, Cartago and Heredia, in a corridor which extends approximately 84.85 km. The works involve rehabilitation and expansion of railroad tracks and bridges over more than 50 water channels; the construction/remodeling of 47 railway stations, train depots, including 10 intermodal stations; and construction of ancillary facilities such as central workshop, signaling and communication systems, 4 courtyards/garages, an administrative building, 24 substations, catenary and power supply, procurement of 78 rolling stocks, relocation of public services, drainage and road connectivity works, and waste management. Component 1 will be tendered to a private concessioner who will undertake the LRT design, build and operate, including as sub-activities: (i) detailed engineering design of all LRT components; (ii) tendering and construction of LRT tracks, stations, depots and ancillary components; (iii) tendering and procurement of rolling stocks; (iv) conduct of detailed ESIA for LRT; and, (v) negotiation and approval of all permits required to build and operate the LRT.

Component 2: Urban Integration of Non-Motorized Transport. This component will involve improvements of connectivity and accessibility of areas around the stations, including construction and integration into the train system of up to 16 km of segregated cycle lanes that connect to LRT stations, parking facilities for cyclists, improved walkways, pedestrian access bridges, installation of security cameras, and greening of spaces, improved accessibility features, including e.g. the construction of various access bridges for pedestrians and bicycles to avoid dangerous crossings or to reduce walking distances, and greening of spaces, including arborization measures. Component 2 has the following activities and sub-activities: (1) Design, build and ready to operate cycling lanes including (i) detailed engineering design of cycle lanes; (ii) tendering of construction of cycle lanes; (iii) construction of cycle lanes; (2) Integration, design and building of connectivity interventions at 6 LRT stations, including: (i) detailed engineering design of interventions; (ii) tendering of construction activities (iii) delivery of integrated stations; and, (3) Non-motorized Transport (NMT) promotion activities including (i) detailed design of activities; (ii) identification and contracting of delivery institution; and, (iii) delivery of planned activities.

Component 3: Capacity Building and Gender Measures. This component will involve improved data collection to generate sources of information on how to improve service quality, inclusive measures for all, safety and how to encourage people to use environmentally friendly transport. Monitoring is realized for the LRT, last-mile connectivity and NMT components and also includes tracking of mode-shift, the impact of activities on the trip structure of people, the identification of triggers of change in transport behavior and the monitoring of GHG and sustainable development impacts. The results shall be synthesized in guidelines for NMT and last-mile connectivity, best practice reports and other knowledge products which shall be published and discussed at workshops. For gender intervention as detailed in the gender action plan the component will involve various gender specific investments that are already included in the LRT as well as the NMT components. The following activities and sub-activities will be pursued:

- Establishment and implementation of a monitoring system for LRT, last-mile connectivity and NMT interventions.
- Capacity building and outreach including publications on project components with a focus on NMT/connectivity; and outreach events.
- Implementation of the gender action plan including: (i) establishment of social communication campaigns to identify sexual harassment practices and other types of violence in trains and at waiting stations; (ii) training of INCOFER staff on the new sexual harassment law; (iii) implementation of a rapid reporting system for cases of violence against women; (iv) establishment of a complaint mechanism for cases of violence against women; (v) implementation of an adequate lighting system that protects the safety of users; (vi) conduct of a gender-sensitive evaluation at the user level to better understand the different needs and perspectives in terms of access to services and infrastructure; (vii) implementation of an LRT infrastructure designs with a gender focus in which their physical integrity is safeguarded and allows an adequate use of the infrastructure; (viii) improving women's accessibility to non-motorized mobility services; (ix) attracting women to the INCOFER workforce and offering of equal conditions with men; (x) promotion of the hiring and provision of spaces for women entrepreneurs to be part of the tertiary service providers that train requires; and (xi) establishment of spaces for women to be promoted to decision-making positions within the activities relevant to the LRT.

2.2 General Layout and Alignment

Length and Alignment. In general, the TRP is estimated to have a total length of 84.85 km, consisting of three main stretches: (a) the 27.4km Atlántico–Paraíso Station stretch; (b) the 21.6km Atlántico–Alajuela Station stretch and (c) the 25.4km Atlántico–Ciruelas Station stretch; and, (d) possible two sections connecting the terminals of Alajuela and Ciruelas with a distance of approximately 7.8 km and Ciruelas- El Coyoil with a distance close to 2.7 km, which are still currently being evaluated.

General Layout and Facilities. The railway would consist of electrified two-way and bidirectional tracks, consisting of 38.4 km, double track at plate level and 46.5 km double track at ballast level. The layout will be carried out on the surface, with the exception of conflict crossings and areas where it is necessary to go uneven. This classification excludes the sections of Alajuela–Ciruelas and Ciruelas–El Coyoil, although it is expected that they will be in ballast for the most part. The route crosses more than 50 water channels in the public domain hence the project will also involve

the rehabilitation and extension of existing bridges to accommodate the expanded two-way service. A total of 47 stations are proposed, taking advantage of, as the design parameters permit, the location of current stations. Of the total stations, 10 will be intermodal, which will allow for greater articulation of the transport system. Complementary works such as a central workshop, 4 courtyards/garages, an administrative building, 24 substations, catenary system and power to stops, relocation of utilities (when necessary), drainage and road connectivity works.

Right-of-Way Requirements. The train system will be developed within existing right of way which is established by Decree No. 22483-MOPT. For the purposes of the TRP, the relevant road rights are as follows:

- (a) Atlántico–Paraíso Station, 6.70 meters on both sides from the center of the track; in cut or filling terrain, 5 meters on both sides from the top of the cuts or from the foot of the slope.
- (b) In the Cartago – Paraíso section, 10 meters on either side from the center of the track in flat condition; in cut or filling terrain, 5 meters on both sides from the top of the cuts or from the foot of the slope.
- (c) Atlántico–Alajuela Station, 6.70 meters on either side from the center of the track; in cut or filling terrain, 5 meters on either side from the top of the cuts or from the foot of the slope.
- (d) Atlántico–Ciruelas Station: 7.62 meters on both sides from the center of the track on flat ground; on cut or filled terrain, 5 meters on both sides from the top of the cuts or from the foot of the slope; and,
- (e) On the stretch between the Atlantic Station and the Pacific Station, 5 meters on either side from the center of the track.

A still unspecified area of additional lands and easements are likely to be acquired to accommodate the space requirements of the new stations and other facilities, including the facilities under Component 2.

2.3 Project Location

The Greater Metropolitan Area (GAM) Rapid Passenger Train project is located, as the name implies, across 15 counties in the 4 provinces that make up the GAM, namely: the counties of San José, Goicoechea, Tibás, Montes de Oca and Curridabat in the province of San José; Alajuela in the province of Alajuela; Cartago, Paraíso, La Unión and Oreamuno in the province of Cartago; and Heredia, Santo Domingo, Belén, Flores, San Pablo in the province of Heredia (Figure 1).

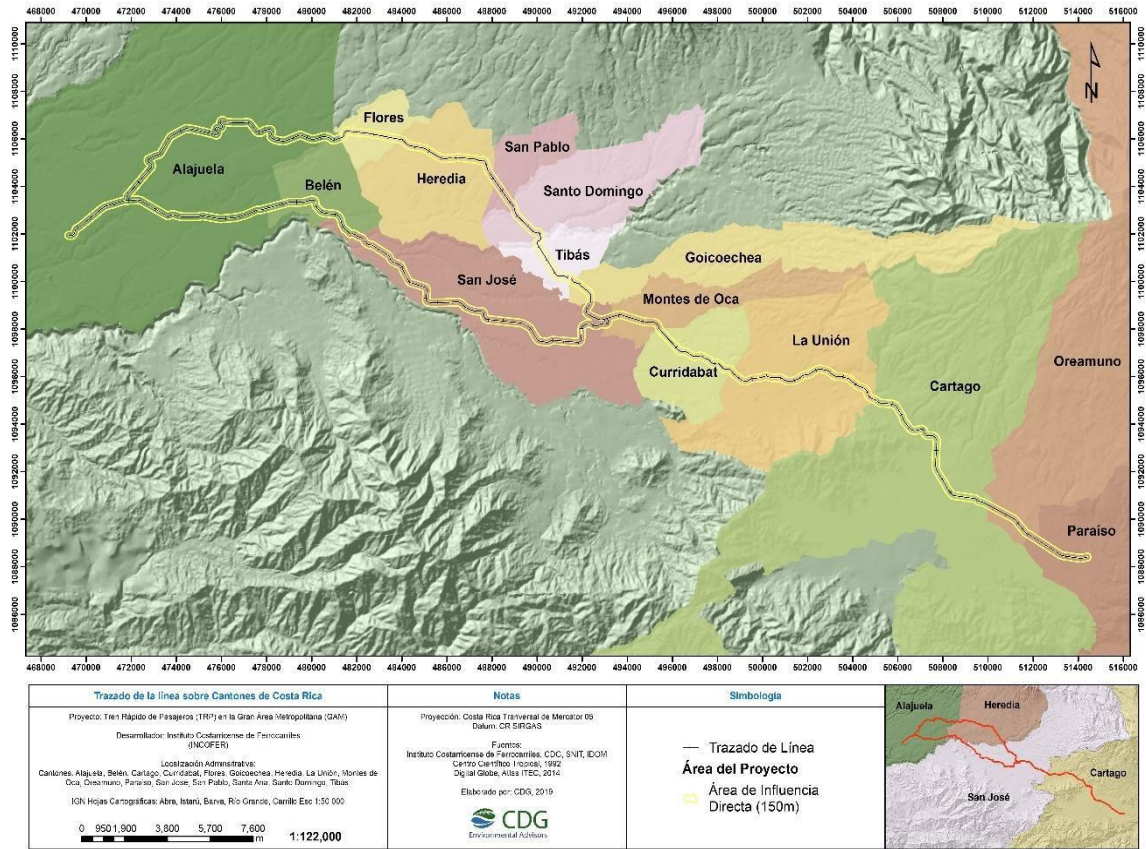


Figure 1. Political-administrative location of the Fast Passenger Train project

2.3 Development Phases

The TRP project development consists of several phases:

1. **Prefeasibility:** This was already completed.
2. **Feasibility:** This was also already completed and serve as the basis of the current project funding proposal and this ESMF.
3. **Detailed Studies:** In this phase all technical engineering studies will be made to move towards a detailed design, which would allow for a more accurate calculation of the costs of the civil works. In this phase also, the Environmental and Social Impact Assessment (ESIA) study will be undertaken to obtain the Environmental Viability and other permits related to the project. It is expected that the land acquisition (expropriations) by the government will also be completed during this phase.
4. **Construction Phase:** In this phase infrastructure works are developed, including the removal and demolition of existing structures, rehabilitation and recovery of the right of way, expansion and improvement of bridges, installation of new railways and acquisition of rolling equipment, layout configuration on plate, ballast or viaduct, construction of uneven steps for vehicles, relocation of homes and utilities, construction of the power supply system, configuration of courtyards and workshops.
5. **Operation Phase:** This phase consists of the start-up of the service in each section, as it ends its respective construction stage, for the period established in the contract of the concession. Includes all maintenance and renovation of roads and equipment, as well as other related TRP works.

A concessioner will be selected to undertake the detailed studies, construction and operation phase of the project through a public tender. The public tender will also define which company or consortium will be in charge of the civil works, equipment and operation of the TRP.

3. COSTA RICA'S ENVIRONMENTAL AND SOCIAL REGULATION SYSTEMS

5.1 Costa Rica's EIA system

The Environmental Impact Assessment (EIA) System of Costa Rica is provided in the Organic Law of the Environment No. 7554 (Ley Orgánica del Ambiente General No. 7554), the Regulations on Environmental Impact Assessment Procedures, Decree 31849-2004 (Reglamento General sobre los Procedimientos de Evaluación de Impacto Ambiental, Decreto 31849-2004), and the Guidelines of Technical Tools for the Environmental Impact Assessment Process Parts I, II, IV (Decretos). Table 1 below summarizes the salient features of Costa Rica's EIA system.

Table 1. Salient features of the Costa Rica EIA System

EIA Law	Organic Act of the Environment 7554 (Ley Orgánica del Ambiente General No. 7554)
EIA Regulations	Regulations on Environmental Impact Assessment Procedures, Decree 31849-2004 (Reglamento General sobre los Procedimientos de Evaluación de Impacto Ambiental, Decreto 31849-2004).
EIA Guidelines or Other Guidance	Guidelines of Technical Tools for the Environmental Impact Assessment Process Parts I, II, IV (Decretos)
Abridged Assessments	"B2" projects (moderate- low potential environmental impact) located inside an area with an approved zoning plan and "C" projects (low potential environmental impact) do not need to present a full EIA. The project developer submits a D2 form with information about the project and an Environmental Commitments Document. The D2 form includes a description of the proposed activity, including its potential to generate waste and emissions as well as other risks posed to the environment, and the proposed measures to mitigate such risks. EIA Regulations, Articles 9, 12 and 13
Who Conducts Screening	Government
Who Conducts Screening Detail	The developer presents the project for an initial assessment proposing the category of its project. The government reviews the project's category and approves the developer's proposal. EIA Regulations, Article 8
Criteria for Screening	List or appendix of project or activity types. Proposed project or activity may cause significant environmental impact
Criteria for Screening Detail	EIA Regulations, Article 7
Who Prepares EIA	Project Proponent (with or without contractor). EIA Regulations, Article 112
Who Pays for EIA	Project Proponent. The cost of environmental impact assessments shall be borne by the proponent. Law 7554, Art. 18. See also EIA Regulations, Art. 112.
EIA Contractor Qualifications	There is a registration process for environmental consultants in SETENA. Such process requires contractors to present relevant documentation about EIA-related training. EIA Regulations, Article 72

Conflict of Interest	Yes. Individual consultants or consulting firms may be disqualified from the consultant registry when they incur any of the following data forgery, demonstrating bias in the preparation of the EIA, unjustified refusal by the consultant to apply the required environmental guidelines included in the terms of reference requested by SETENA, among other reasons. EIA Regulations, Article 100
Terms of Reference	EIA Regulations, Articles 24, 27 & 28
Days for Decision Maker Review	10 weeks (and up to 5 months for large-scale projects)
Written Decision	Yes. The approval or denial of the activity, work or project shall be communicated by SETENA to the developer through an administrative, technical and legally motivated resolution. EIA Regulations, Art. 45
Authority to Impose Conditions	Yes. EIA Regulations, Article 45
Expiry of Decision	2 years (EIA Regulations, Article 46)
Financial Assurances	Yes (Organic Law of the Environment, Article 21; See also EIA Regulations, Articles 86, 87, and 88.)
Interdisciplinary Team	Yes. Environmental impact assessments must be carried out by an interdisciplinary team of professionals, registered and authorized by the National Environmental Technical Secretariat (SETENA). Law 7554, Art. 18. See also EIA Regulations, Art. 31.
Range of Alternatives	Yes. EIA Regulations Article 34, and Section 10.6 of Annex I EIA Guidelines Part IV.
No Action Alternative	No
Type(s) of Impact Analysis	Direct environmental impacts; Cumulative environmental impacts; Social impacts; Economic impacts
Mitigation	Yes. The EIA must contain measures to be taken to mitigate potential environmental impacts. EIA Regulations, Art. 9.
Monitoring Plans	Yes. EIA Regulations, Articles 47, 48, 50 and 79. The developer must hire an independent contractor to verify fulfillment of the EIA.
Public Notice of Draft EIA	No. EIA draft is not available for public access.
Public Notice of Final EIA	Yes. Environmental Impact Assessments received by SETENA will be published in a national newspaper and will indicate the availability of the reports for public consultation. To the extent possible, and as a complementary mechanism, SETENA will use other available and authorized means of communication to disclose the information to society in general. EIA Regulations, Article 41
Final EIA Available	Yes. EIA Regulations, Article 41
Final EIA Locations	Agency or ministry office
Availability of Reference Studies	Yes. The information contained in the record of an environmental impact assessment will be of a public nature and will be available for consultation by any person or organization. Law 7554, Art. 23.
Public Notice of Final Decision	Yes. Article 23 of Law 7554 can be interpreted to imply that the decision is made publicly available.

Public Scoping	Yes. Project proponent and EIA contractor must present the activity, work or project to the communities and local authorities, and conduct a survey to collect the inputs from the communities. EIA Regulations, Articles 33 and 34
Public Review of TOR	Yes. Individuals, whether public or private, shall have the right to be heard by the National Environmental Technical Secretariat, at any stage of the evaluation process and in the operational phase of the work or project. The observations of the interested parties will be included in the record and taken into consideration for the final report. Law 7554, Art. 22. See also EIA Regulations, Art. 42.
Public Participation Opportunities	Scoping; Terms of reference; Public Meetings and/or public hearings; Review of final EIA.
Public Meetings	Yes. Public hearings may be convened ex officio by SETENA, or at the request of a natural or legal person, in cases deemed necessary. EIA Regulations, Art. 57.
Public Input at Meeting	Yes (EIA Regulations Articles, 55 and 60)
Criteria to Hold Public Meeting	Members of the public must request a meeting and/or hearing. Ministry or agency has discretion to decide whether to hold a meeting and/or hearing.
Public Comments on Final EIA	Yes. EIA Regulations, Articles 41 and 42
Response to Public Comments	Yes. Observations are part of the EIA file and they must be considered by decision making authorities. The regulations do not provide guidance on how public comments and observations are to be formally addressed. EIA Regulations Article 42
Facilitation of Public Participation	No
Citizen Administrative Review	Yes. Citizens may submit complaints to an Administrative Environmental Tribunal for violations of environmental laws. Law 7554, Articles 107, 108 and 111. See also EIA Regulations, Articles 51 and 52.
Citizen Judicial Review	Yes. Citizens can seek judicial review from administrative decisions in the Courts of First Instance. See Organic Law of the Judicial Branch, No. 7333.
Project Monitoring	Yes. The proponent must submit environmental reports periodically to SETENA for review. SETENA must also conduct environmental inspections for monitoring and control purposes. EIA Regulations, Articles 47 and 48. The developer must hire an independent contractor to verify fulfillment of the EIA.
Enforceability of EIA	Yes. Citizens may submit complaints to an Administrative Environmental Tribunal for violations of environmental laws. Law 7554, Articles 107, 108 and 111. See also EIA Regulations, Articles 51 and 52.
Enforceability of Permit	Yes. Citizens may submit complaints to an Administrative Environmental Tribunal for violations of environmental laws. Law 7554, Articles 107, 108 and 111. See also EIA Regulations, Articles 51 and 52.

Source: Environmental Law Alliance Worldwide. <https://www.elaw.org/eialaw/costa-rica>.

The Costa Rica EIA regime is set out under the Environmental Act (Act No. 7554). However, other regulations may also be applicable. The most significant of these other regulations is the Administrative Procurement Law (Law No. 7479). The introduces the environmental variable in the procurement processes of the public administration by having in general terms the requirement to develop EIA, as a prerequisite for the execution of public works. Consequently, the prerequisites for the initiation of the administrative procurement procedure referred to in the Law require the

development of an EIA, which will measure the effects of the project on the environment. The EIA must provide information necessary to establish what impact mitigation measures should be followed by the project manager and those who will implement it. This is provided for in article 59 of the Law on Administrative Procurement (Table 2).

Table 2. Environmental protection provisions set out in the administrative procurement law

Law	Provision
Law No. 7479 (Administrative Procurement Law)	Article 59.- Environmental impact study: The commencement of the procurement procedure for a public work will always be preceded, in addition, by the requirements established in this law and its regulations, by an environmental impact study that defines the effects of the Work. Projects shall include the forecasts necessary to preserve or restore environmental conditions, when they may deteriorate. They shall also involve in the preceding the competent entities in the matter.
General Regulations on Administrative Procurement. Executive Decree No. 25038-H	This regulation provides that: (1) Any procedure for the procurement of a new public work shall be preceded, both by the requirements laid down by the Law on Administrative Procurement and its Regulations, and by an environmental impact study defining the effects of the work. (2) The respective projects shall include the forecasts necessary to preserve or restore environmental conditions, where they may be impaired by the execution of the work, all in accordance with the above-mentioned study. (3) The Authorities shall bring such a study to the attention of the competent bodies in this field so that, within the term conferred for that purpose, they rule on their quality and content. Where such a pronouncement is negative, the Administration shall seek a new study with the relevant corrections. (4) The competent bodies and entities shall participate in the safeguard of the environment in general or the environmental impact of the work in particular, in all procedures that seek to preserve or restore the environmental conditions affected for that work.

Agency Responsible. The Ministry of Environment and Energy (MINAE) is the main institution responsible for environmental matters in Costa Rica. MINAE sets policies for the environmental sector, which are later implemented by the appropriate entities. The Environment Law (Law N°7554, 1995), grants to MINAE additional competencies in the area of natural resources management as well as environmental impact assessments. The law also created other environmentally related entities such as the Environmental Comptroller Office; the Administrative Environmental Tribunals; and the National Environmental Technical Secretariat (*Secretaría Técnica Nacional Ambiental* or SETENA) which is in charge of the implementation of the EIA system.

The National Environmental Technical Secretariat (SETENA) is the institution in charge of managing the Environmental Impact Assessment (EIA) processes of any activity, work or project that is intended to be developed in Costa Rica. This institution is an organ of the Ministry of Environment and Energy (MINAE) and was created on November 13, 1995 through the Organic Law of the Environment No. 7554.

The EIA Process under SETENA. The National Environmental Technical Secretariat (SETENA), created in 1995 (Law N°7554, October 4, 1995), is a technically independent agency from MINAE. As such, the agency enjoys technical independence in its decisions. SETENA's main purpose is to achieve harmony between the productive industrial processes and their environmental impacts.

According to the applicable regulations, activities that alter or affect environmental elements or generate toxic or dangerous materials require a prior environmental impact assessment. This assessment is then approved. The environmental impact assessment is mandatory and cannot be waived in order to begin activities, works, or projects.

SETENA analyzes the environmental impact assessments and renders its decisions and/or recommendations within established time frames. In order to make these decisions, SETENA has issued a series of regulations by which projects are classified and, depending on the categorization, specific environmental assessment tools are applied. The tool complexity varies with the nature, conditions, and scope of the project. Applications may invoke up to three levels of requirements:

- No requirements apply (low or no environmental impact);
- D1 Form Application; or
- D2 Form Application.

Project developers and SETENA commonly agree on certain environmental measures as well. Additionally, SETENA is increasingly requesting the presence of an environmental foreman and periodic reports. In most cases, SETENA requires an environmental guarantee. This guarantee does not exceed 1% of the value of the land and the proposed works; penalties are enacted when environmental commitments are violated.

SETENA also recommends actions to prevent environmental impacts and/or technically viable mechanisms to recover from impacts; resolves any claims related to environmental damage; performs optional field inspections before issuing decisions; prepares environmental guides for activities, works, and projects of environmental impact; and monitors and controls the implementation of its decisions. SETENA also holds open public hearings on certain projects. These hearings have recently been reserved for large projects with a high potential of environmental effects, such as waste treatment fields and hydroelectric plants.

According to the law, SETENA has three clearly defined processes and areas of responsibility:

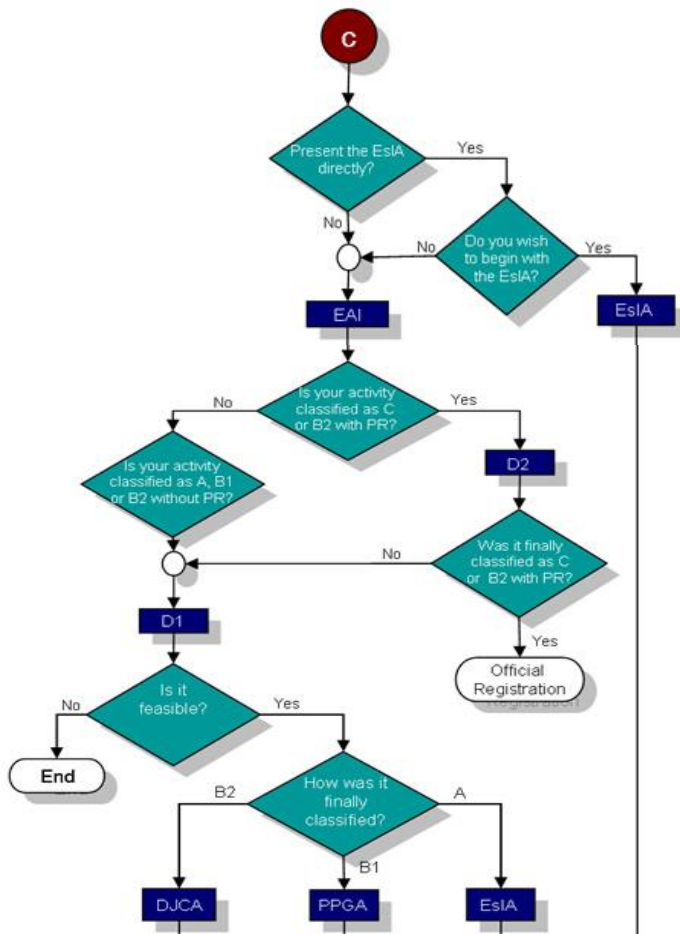
- Review of preliminary Application Forms (D1 and D2)
- Assessment of Environmental Studies
- Environmental Audits and Follow Ups

SETENA's Technical Commission, the highest-ranking body of the Secretariat, is formed by representatives of the following entities:

- MINAE as General Secretary;
- The Ministry of Health, specializing in sanitary engineering;
- The Costa Rican Institute of Water and Sewers, specializing in hydrology;
- The Ministry of Agriculture, specializing in agronomy;
- The Ministry of Public Works and Transportation, specializing in civil engineering;
- ICE, specializing in energy development; and
- Public universities, specializing in biology.

Annex A of the General Regulation on EIA classifies projects based on size and type of impact and defines the permitting procedure for construction of new infrastructure. The procedure is described in the Investor Manual of the Ministry of Trade⁷ (*Ministerio de Comercio Exterior*, or COMEX). The service provider is responsible for following the applicable environmental permit process established by SETENA, as described in *Figure 3.1*. The service provider must complete a D1 form, which is evaluated by SETENA’s Institutional Management Department (*Departamento Gestión Institucional*). Depending on the level of environmental risks and impacts of the project, SETENA either requires the environmental commitments to be signed into a “Sworn Statement of Environmental Commitments” (*Declaración Jurada de Compromisos Ambientales*, or DJCA), an EMP, or an EIA. The Costa Rican regulation on EIA does not require the SETENA to conduct inspections or environmental monitoring of project sites with low impacts (i.e., projects required to complete a DJCA).

Construction permits from the municipality are also required for the installation of new infrastructure in Costa Rica; this requirement does not apply to state-owned infrastructure. All infrastructure project proponents are required, however, to inform the municipality of new construction within its jurisdiction. Figure 1 summarizes the current environmental evaluation process, as set out in the Investor Manual of the Ministry of Trade.



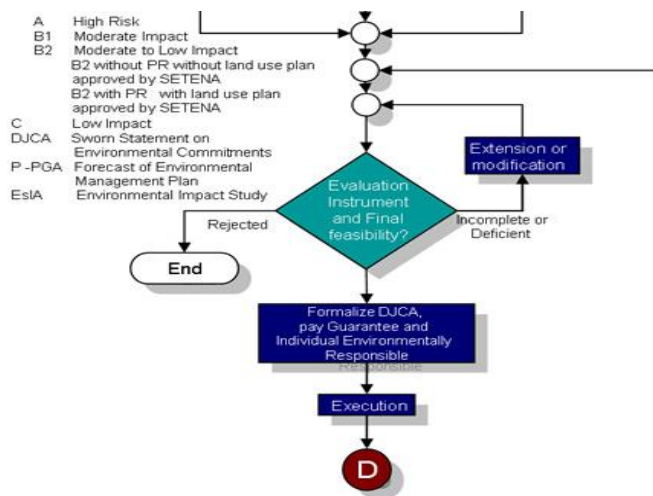


Figure 2. Environmental Procedure

Source: <http://www.tramites.go.cr/manual/english/diagrama3.htm>

5.2 Country Regulations on Labor and Working Conditions

The primary statute on labor and working conditions in Costa Rica is the Labor Code, Law No. 2 of 27 August 1943 (Código de Trabajo as amended 2011). The other important labor-related statutes include:

1. Constitutive Law of the Costa Rican Social Security Fund, Law No. 17 of 22 October 1943;
2. Law on the payment of bonuses to private company servers, Law No. 2412 of 23 October 1959;
3. Law against Sexual Harassment in Employment and Teaching, Law No. 7476 of 3 February 1995;
4. Code of Childhood and Adolescence, Law No. 7739 of 6 January 1998;
5. General Migration and Immigration Act, Law No. 8764 of 19 August 2009;
6. Personal Protection Law against the processing of personal data, Law No. 8968 of 7 July 2011;
7. Regulation of the Disability, Old-Age and Death Insurance of the Costa Rican Social Security Fund; and,
8. Regulation of the Health Insurance of the Costa Rican Social Security Fund.

Together, these laws and regulations define the regulation system for labor and working conditions in Costa Rica. The laws provide for basic workers' rights, including freedom of assembly and the right of collective bargaining; prohibition of child labor; accommodation of PWDs; and occupational health and safety. The key features of the system are summarized in Table 3 below.

Table 3. Key features of the labor and working conditions regulation system in Costa Rica

Written contract	<p>The verbal employment contract is of an exceptional nature, so it is only guaranteed for agricultural, or livestock work carried out in the field (excluding those of an industrial nature) and accidental and temporary work not exceeding 90 days. In all other cases, the labour contract must be stipulated in writing in accordance with articles 23 and 24 of the Labour Code.</p> <p>In the absence of a written contract, the employer has the duty to prove all working conditions. Documentary evidence is the main type of evidence used to prove all working conditions (articles 25 and 478 of the Labour Code).</p>
Working hours	<p>The limits to the working day cannot be waived by the worker (articles 135 and 136 of the Labour Code). The daily limits of the working day depend on whether it is a day shift (from 5am to 7pm), night shift (7pm to 5am) or mixed shift. In a day shift, the daily limit is eight hours, expandable to 10 hours if the work is not unhealthy or dangerous, with a weekly limit of 48 hours. In a night shift, the daily limit is six hours, with a weekly limit of 36 hours. In a mixed shift, the daily limit is seven hours with a weekly limit of 42 hours, expandable to eight hours daily if the work is not unhealthy or dangerous, with a weekly limit of 48 hours.</p> <p>If the mixed shift comprises 3.5 hours or more within a night shift, it becomes a night shift for all legal purposes.</p> <p>There are exceptional cases of workers whose working hours can be 12 hours a day and 72 hours a week (article 143 of the Labour Code), as is the case for managers or trusted personnel (ie, an employee that influences the strategic direction or corporate policies of the company), among others.</p>
Overtime Pay	<p>Except for adolescent workers (between the ages of 15 and 18), all workers have the right to work overtime. Overtime is prohibited in unhealthy or dangerous work or when the daily workday exceeds 12 hours, taking into consideration the ordinary and extraordinary hours. Overtime cannot be habitual or permanent. It is calculated based on the limits of the working day (whether on the legal maximum or agreed between the parties if the standard daily hours are less than the legal maximum). Overtime must be remunerated with 50 per cent more than the ordinary salary. On holidays or weekly rest days, its value is tripled (articles 139, 140, 149 and 152 of the Labour Code).</p> <p>Can employees contractually waive the right to overtime pay? Such a resignation is not valid. Neither can overtime be subject to compensation with free time or rest. However, the courts admit that contracts can include an ‘integral’ salary, which expressly indicates that it is an understanding of the overtime worked; this will be valid as long as the remuneration received for the ordinary and extraordinary working hours exceeds the legal minimums.</p>
Vacation and holidays	<p>Article 153 of the Labour Code establishes that every worker has the right to annual paid vacations, establishing a minimum amount of two weeks for every 50 weeks worked. In the event that the annual period is not completed, the worker will be entitled to at least one day of vacation for each month worked. However, the right to vacation may be extended by a collective agreement between employer and workers.</p> <p>As for holidays (articles 147 and 148 of the Labour Code), these are classified as compulsory payment holidays (1 January, 11 April, the Thursday and Friday of Holy Week, 1 May, 25 July, 15 August, 15 September and 25 December) and non-mandatory payment holidays (2 August and 12 October). If an employee does not work on these days, only the compulsory payment holidays give the right to a paid salary. If an employee works during any class of holiday, he or she is entitled to triple the ordinary salary</p>
Right to Sick Leave	<p>Workers must be enrolled in the Sickness and Maternity Insurance administered by the Costa Rican Social Security Fund, and the employer must sign and pay the Occupational Risk Policy administered by the National Insurance Institute. Under both regimes, the worker may be compensated for his or her work.</p>

<p>Leave of absence with pay</p>	<p>Only the following licences or permits are recognised by law:</p> <ul style="list-style-type: none"> • Permission to exercise the vote: with salary, for the time necessary to attend the voting centre, both in national elections or referendums and to decide their support for a call to strike (articles 69(j) and 381 of the Labour Code). • Maternity leave: with salary, for four months (one month before delivery and three months after). In the case of multiple births, it is extended by one month for each newborn. In the case of adoption, it is three months (article 95 of the Labour Code). • Licence to assist family members in the terminal phase of illness or minors who are seriously ill: without salary, for the time determined by the doctor (article 1 of Law No. 9353). • Nursing leave: with salary, for all the time that breastfeeding is maintained, of one hour per day (article 97 of the Labour Code). • Permission by medical appointment: without salary, for the time necessary to go to the medical centre and receive care. • Permission for judicial summonses: with salary, for the time necessary to attend as a witness or as a party to a trial or attend court hearings (article 515 of the Labour Code).
<p>Wages and benefits</p>	<p>The benefits regulated by law, in addition to the licences or permits indicated above, are: the ordinary salary equal to or higher than the legal minimum wage (annual fix), the annual bonus (or 13th month), annual leave (two weeks), holidays (11 days a year), weekly rest (one day) and retirement owing to permanent disability, age, the loss of parents or widowhood.</p>
<p>Termination</p>	<p>In the private sector, free dismissal applies, so the employer can dismiss a worker without just cause, based on his or her own will, but with the payment of the corresponding labour indemnities (article 85(d) of the Labour Code).</p> <p>The Labour Code also has a list of grounds for disciplinary dismissal for individual (article 81) and collective (article 369) reasons, in which case no compensation shall be paid.</p> <p>There may also be a dismissal for health reasons, when it is not possible to relocate the worker (article 254), with employer responsibility. When the worker is dismissed without just cause in contracts for an indefinite period, he or she must be compensated with notice and severance (articles 28 and 29 of the Labour Code).</p> <p>The following employees are protected from dismissal:</p> <ul style="list-style-type: none"> • women who are pregnant or breastfeeding (article 94 of the Labour Code); • workers in formation of a trade union, representatives and union candidates and representatives freely chosen by the workers (article 367 of the Labour Code) and those protected by any other protective provision of the trade union immunity (article 540 of the Labour Code); • workers reporting sexual harassment (Law against Sexual Harassment in Employment and Teaching); and • workers participating in a collective economic and social conflict, a conciliation, arbitration, strike or procedure, in the case of a failed collective agreement (articles 394 and 620 of the Labour Code). <p>In the case of the aforementioned workers, a due process must be followed before the Ministry of Labour and Social Security in order to prove the worker's non-compliance and to obtain approval prior to the application of the dismissal. In the case of adolescent workers of between 15 and 18 years of age (article 91 of the Code on Children and Adolescents), the same procedure is required to dismiss them without employer responsibility. However, in the event that the dismissal is with employer responsibility, the calculation of the indemnities that will be paid must be sent the Ministry of Labour, so that the estimate can be revised.</p>

Freedom of assembly and worker representation	Freedom of association is a fundamental right enshrined in article 60 of the Political Constitution, which establishes the possibility that both employers and workers can unionize freely. In the same way, Costa Rica has ratified agreements Nos. 87, 98 and 135 of the International Labor Organization. The legislation regulates the organisation of unions but does not have specific rules for the creation of other non-union forms of permanent representation. However, in practice, there are permanent workers' committees, which must be elected in a workers' assembly. The trade unions require a minimum of 12 workers, and permanent workers' committees that are made up of a maximum of three workers must be elected in a meeting in which at least 50 per cent of the company's workers participate (Executive Decree 37184-MTSS of 19 June 2012).
Dispute Resolution and Arbitration	The clauses of the contract that refer labour disputes to a conciliation or arbitration do not prevent the worker from later claiming judicially. However, if desired, the differences can be submitted to conciliation or arbitration at the administrative headquarters before the Ministry of Labour, in judicial offices before the labour courts and at alternative conflict resolution centres, which are private centres duly registered with the Ministry of Labour (Law on Alternative Resolution of Conflicts and Promotion of Social Peace, Law No. 7727 of 9 December 1997 and article 456 of the Labour Code).
Employee waiver of rights	Waivers made by workers to their legal rights or conditions of the same included in their employment contracts are absolutely null and void (article 11 of the Labour Code), including waivers to file judicial or administrative claims (Second Chamber of the Supreme Court of Justice, No. 363-2006, 23 May 2006).
Prohibition on discrimination	Initially, the principle of non-discrimination was regulated by Law No. 2694 of 22 November 1960, which prohibits all kinds of discrimination in labor matters, and refers to race, color, sex, age, religion, marital status, opinion and politics, national ancestry, social origin, filiation or economic situation. Subsequently, with the reform of the Labor Code in 2016, criteria for discrimination were extended in article 404 to include ethnicity, sexual orientation, disability and union membership, and an imprecise concept that covers any other analogous forms of discrimination. Additionally, the country has ratified conventions Nos. 100 and 111 of the International Labor Organization (ILO).
Provisions for PWD	The Equal Opportunities for Persons with Disability (Law no. 7600, 1996). Chapter II of the law provides for PWD's access to work. The law guarantees PWD's right to work and defines discriminatory acts. It mandates that employer must provide, without any form of discrimination, training opportunities so all the workers may improve their capacities.
Prohibitions of Child Labor	It establishes the regulations and administrative measures required to comply with Law No. 8922 referring to the prohibition of dangerous and unhealthy work for adolescent workers, without prejudice to other legal and regulatory provisions, especially what is established in Decree No. 29220-MTSS of October 30, 2000, called Regulation for Labor Hiring and occupational health conditions of adolescents. The following is prohibited: <ul style="list-style-type: none"> • Hiring of persons under 12 years of age • For persons between 12 and 15 years of age: working more than 5 hours per day and work in theatres. • For persons between 15 and 18 years of age: working more than 7 hours per day. • For workers under 18 years of age: <ol style="list-style-type: none"> 1. unhealthy work, heavy or dangerous tasks; 2. night work; 3. works in contact with alcohol; 4. employment that interferes with school attendance; 5. occupation in public spaces.

Occupational Health and Safety	The Labor Code (as amended in 2011) under the Title IV about the protection of workers during the exercise of the work, completes the OSH norms. There are also many other regulations addressing specific hazards or risks (such as pesticides, noise and vibration, asbestos, ionising radiation, etc.)
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Source: Q&A: Labour & Employment Law in Costa Rica. Lexicology.com.
<https://www.lexology.com/library/detail.aspx?g=4e2ee7ec-b297-4afa-84f7-94cd8d83870b>

Basic Workers Rights. Costa Rica's laws guarantees rights of workers, including the right to fix working hours, overtime pay, annual vacation, sick leave with pay, freedom of assembly and collective bargaining, etc.

Nondiscrimination. Initially, the principle of non-discrimination was regulated by Law No. 2694 of 22 November 1960, which prohibits all kinds of discrimination in labor matters, and refers to race, color, sex, age, religion, marital status, opinion and politics, national ancestry, social origin, filiation or economic situation. Subsequently, with the reform of the Labor Code in 2016, criteria for discrimination were extended in article 404 to include ethnicity, sexual orientation, disability and union membership, and an imprecise concept that covers any other analogous forms of discrimination. Additionally, the country has ratified conventions Nos. 100 and 111 of the International Labor Organization (ILO).

Child Labor. The Executive Decree No. 36640-MTSS (Regulation to the Law on Prohibition of Dangerous and Unhealthy Work for adolescent workers and reforms the Regulation for Labor Hiring and occupational health conditions of adolescents) establishes the regulations and administrative measures required to comply with Law No. 8922 referring to the prohibition of dangerous and unhealthy work for adolescent workers, without prejudice to other legal and regulatory provisions, especially what is established in Decree No. 29220-MTSS of October 30, 2000, called Regulation for Labor Hiring and occupational health conditions of adolescents.

Person with Disabilities. The Equal Opportunities for Persons with Disability. Law no. 7600, Chapter II of the law provides for Access to Work of PWD. Guarantees Right to Work, the right to an adequate job, considering their personal conditions and needs. Discriminatory acts. The use of personnel selection mechanisms which do not adapt to the conditions of the applicant, to demand additional requirements with respect to those established for other applicants, and not hiring because of disability an otherwise idoneous worker, constitute discriminatory practices. The denial of access to means of production because of disability, will also constitute a discriminatory practice. Priority training. This law established job training as a priority to be provided to persons with disabilities, older than eighteen years of age, who as consequence of their disability have not had access to education and lack job training. Technical assistance to employers. The State must provide technical assistance to employers in order for them to be able to adapt job requirements and the work environment to the needs of persons with disabilities. In terms of the employer's obligation, the law mandates that they must provide, without any form of discrimination, training opportunities so all the workers may improve their capacities. All persons with disabilities performing any profitable activity, have the right to social security coverage, including work hazards, medical attention, maternity, disability, old age and death benefits. The law also obligates the Ministry of Labor and Social Security to maintain service of qualified professionals to provide job readaptation, job placement, adaptation to new positions for persons with disabilities. To

improve the performance of its activities, this service must be in contact with the organizations of persons with disabilities.

Worker Protection (Occupational Health and Safety). The Constitution of Costa Rica provides, in the article 66, a duty upon employers to take all the necessary hygiene and security measures in the workplace. The General Occupational Safety and Health Regulations of 1967 (*Decreto 1 por el que se promulga el reglamento general de seguridad e higiene de trabajo*) is the leading OSH legislation. It aims to provide general and obligatory OSH conditions at all workplaces to protect the life, health, physical integrity and the morality of workers (ILO, 2013) .

The Labor Code as amended in 2011, under the Title IV about the protection of workers during the exercise of the work completes the OSH standards. The Labor Code requires a short term and long-term National OSH Plan to be developed.

Costa Rica's OSH standards cover physical and psychological health. The Labor Code declares the public interest of all issues in relation to occupational health, which aims to promote the highest level of physical, mental and social health for workers. The Labor Code defines worker as any person who provides services (physical, intellectual or both) under an employment contract (implicit or explicit, oral or written, individual or collective). It covers migrants, domestic workers, home workers and self-employed workers (ILO, 2013). The General Occupational Health and Safety Regulations at Work do not exclude any sectors of activity from its scope of application. It includes agriculture, construction, services, public sector, etc. A list of occupational diseases is provided in the Labor Code. In the case of occupational diseases not included in the article 224 of the Labor Code but complying with the requirements of article 197, the Executive power in consultation with the National Institute of Insurance and the Occupational Health Committee may extend by decree the table of occupational diseases. The Occupational Health Committee is entitled to request the extension of the list.

There are also many other regulations addressing specific hazards or risks (as pesticides, noise and vibration, asbestos, ionizing radiation, etcetera) issued and enforced by the Ministry of Labor and Social Security in coordination with other agencies. Table 4 lists laws and regulations addressing specific OHS hazards.

Table 4. Laws and regulations addressing specific occupational health and safety hazards

Year	Hazard	Law	Summary of Relevant Provisions
2017	Silicosis	Executive Decree No. 39612-S-MTSS, of April 28, 2016 (Regulation for the prevention of silicosis in the workplace)	The decree sanctions the Regulations for the prevention of silicosis in the workplace
2003	DBCP Pesticide	Decree no. 30983-MTSS (Creation of Executing Unit to attend to requests of former workers who have proven to have been exposed to the pesticide DBCP)	It establishes the creation of an Executing Unit which will attend and operationalize the requests of former workers who, in accordance with Law No. 8130, of September 6, 2001, Law on the Determination of Social and Economic Benefits for the Population affected by the DBCP, have proven to have been exposed to the DBCP based on their work in the period from 1967 to 1979.

2001	DBCP Pesticide	Law no. 8130 (Social and economic benefits for the population affected by the "DBCP")	It establishes, among other issues, that the State will compensate those who prove they have suffered objective physical and / or moral damage, as a consequence of having used the product "1.2 dibromo, 3 chloropropane", known as DBCP, in the country.
1996	Gas and fumes	Decree no. 25115-S (Regulation on the control of inhalant products)	The sale or supply of inhalant products to minors or mentally disabled persons is prohibited. The use of inhalant substances or products in jobs that, due to their characteristics, present unsafe conditions, which present risks to the worker, is prohibited. Employers will be responsible for conducting periodic examinations of exposed workers, at no cost to the worker. Pregnant women and nursing mothers should not work in places where inhalant products are manufactured, stored, mixed, or used. Workers who work with such substances should receive adequate training.
1996	Asbestos	Decree no. 25056-S-MEIC-MINAE	It applies to all activities in which workers are exposed to asbestos. For the permissible exposure limits, refer to those recommended by the ILO. Regulates the periodicity of measurements according to the characteristics of the job, the methods to be used, prevention and protection measures, transport, handling, waste disposal, demolitions, etc. The Code of Practice, issued by the ILO "Safety in the Use of Asbestos", and its respective reforms, will be applied in a supplementary and mandatory manner.
1994	Ionizing Radiation	Decree no. 24037-S	Protection of workers against ionizing radiation. It establishes the requirements that radioactive facilities, equipment that emits ionizing radiation, personnel who work in them, operate the equipment and carry out any other related activity such as: production, import, export, transport, transfer of radioactive material or equipment that generates radiation must meet. ionizing radiation.
1994	Toxic substances and dangerous products	Decree no. 24099-S by	Regulates the participation of natural and legal persons in the import, manufacture, repackaging, sale, distribution or supply of dangerous substances, products or objects of a radioactive, flammable, corrosive, irritant or other dangerous nature declared by the Ministry of Health.
1992	Toxic substances and dangerous products of objects	Decree no. 21406-S	Registration and control of toxic substances and products. Every natural or legal person dealing with this type of substances or products is obliged to instruct their workers in the correct handling of these substances and to keep them informed about the risks and precautions to adopt and to supply the necessary protective equipment. Mandatory periodic medical examinations are established. (Articles 22 and 23 of the regulation).
1991	Toxic substances Surveillance	Decree no.20197-S	creates a Surveillance Commission attached to the Department of Registration and Control of Toxic Substances and Occupational Medicine of the Ministry of Health.

1990	Pesticide regulation	Decree no.20013-S	Dictates the regulation of pesticide stores and warehouses.
1989	Garbage handling	Decree no. 19049-S	It contains provisions related to storage, presentation, collection, transportation, treatment, sanitary disposal, sweeping and cleaning of roads and public areas, transfer and recovery, and covers pathogenic, toxic, combustible, flammable, explosive, volatilizable and radioactive wastes and packaging or containers of chemical products of any nature, especially preparations for agricultural or livestock use.
1979	Noise and vibrations	Decree no. 10541-TSS	Regulation for the control of noise and vibrations is issued.
1968	Toxic substances in agriculture	Safety regulations on the use of toxic substances in agriculture	General provisions, obligations and prohibitions in general, protection of workers, sanctions.

Agency Responsible for Enforcement of Regulations. The Ministry of Labour and Social Security is responsible for all labor and social welfare issues. The Ministry must monitor the implementation of laws, decrees and regulation related to labour relations between employers and workers. The Ministry of Labor and Social Security, through the Department of Social Welfare, has an Occupational Safety and Health Office.

According to Law No. 1860 of 21 April 1955, the Organic Law of the Ministry of Labor and Social Security, the main governmental technical body responsible for the effective application of labor legislation is the National Inspection Directorate of the Ministry of Labor. With regard to social security, the Constitutive Law of the Costa Rican Social Security Fund delegates to the Inspection Department the supervision of the compliance of employers with the payment of their duties. There is also a special court in charge of resolving individual and collective labor disputes and issues related to social security (Lexicology, 2021).

The Inspectorate of Labor, through its inspectors will ensure compliance with laws, collective agreements and regulations governing the conditions of work and OSH. The National Insurance Institute can also appoint inspectors to perform enforcement of the relevant OSH regulations. Inspectors have the power to enter workplace premises to conduct an inspection/ visit at the workplace during the day or the night. In particular, the inspectors must ensure the compliance with OSH law and the prevention of risks at work.

The Ministry of Labor and Social Security (*Ministerio de Trabajo y Seguridad Social*) was originally created in 1928 and was further consolidated in 1943, with the legal approval of the current Labor Code (Law N°2, August 26, 1943). The Ministry is in charge of oversight, development, improvement, and application of laws, decrees, and agreements on labor issues. It also coordinates labor matters; develops labor strategies; creates national labor policies; coordinates with related international organizations; supervises and mediates labor issues; determines minimum wages; grants pensions; supports small companies; and carries out programs on labor issues.

The Ministry of Labor and Social Security is a government organization in charge of administering the labor laws, the social security and labor sectors. It is also in charge of developing public labor

policies to serve the needs of participants in the labor market with the goal of increasing quality of life; generating and improving a climate of dialogue and agreement; adding value to national production through pertinent and innovative interventions; preserving the rule of law; and creating social peace and justice in the country, thus contributing to the development of the nation.

5.3 Resource Efficiency Policies

Energy. Energy demand management policy is based on the Law on Rational Use of Energy (1994). Policy measures today include energy efficiency standards for electrical appliances and fuel efficiency standards, as well as an obligation for energy-intensive companies to execute energy efficiency programs to reduce their energy use. A revision of the General Electricity Law is being discussed, with 'national electricity sector roundtables initiated in October 2014. The proposed revision aims to increase the energy efficiency of the electricity sector (e.g., more efficient appliances), optimize the electricity grid (increase use of natural gas, geothermal, biomass and solar energy, as well as distribution and transportation efficiency), regulate electricity prices and access of private independent producers to the grid, and adapt the sector to the fast increase in electricity consumption, especially in the residential sector.

Transportation. Costa Rica introduced its first fuel economy standards in 1996 (Vehicle Emissions Act) and biofuel mandates in 2008 (first National Biofuels Program: 10% bioethanol and 20% biodiesel mandates). After being temporarily removed in 2011, an update of the mandates and biofuels policy strengthening have been considered since 2013, when the Biofuels Law was proposed. The Law should promote the sustainable development of the national biofuel industry and aim at contributing to enhanced energy security and efficiency, climate change mitigation, environmental protection, agricultural land revitalization, employment creation and local development. The law would also create the National Biofuel Program, placing the Ministry of Environment and Energy in charge of its co-ordination. Finally, the law should confirm the minimum volume of biofuels that must be included in fossil fuels, 8% for bioethanol and 5% for biodiesel.

Water. In Costa Rica, there are 34 hydrological basins and 59 known aquifers. Costa Rica has a national scale abstraction regime. Since the year 2000, reforms have been carried out in order to adjust water usage fees, to promote new economic tools in the management of water rights, and to improve the administrative process for water concessions. Currently, the complete reform of the Water Law No. 276 is under consideration.

5.4 Pollution Control Laws

The main law on pollution control is Law no. 7554, Organic Law of the Environment (Ley núm. 7554, Ley orgánica del ambiente). Chapter XV of this law provides for regulations of, among others, environmental pollution, prevention and control, water pollution, responsibility for the treatment of discharges, disposal of polluting residues, importation of wastes. The National Environmental Council, the position of environmental comptroller and the administrative environmental court are created. Chapter XIX establishes penalties for damage or contamination to the environment.

Air Quality and Emissions Control. Air emissions are regulated under the Environmental Act (Act No. 7554), which states that the air quality must be above the minimum levels set out.

Water Quality and Effluents Control. Wastewater emissions are regulated under the Water Act (Act No. 276), which establishes the general rules regarding water use and disposal, and the competent authorities.

Solid Waste Management. Waste disposal is regulated under the Waste Management Act (Act No. 8839), which regulates the plans and obligations that must be observed in relation to appropriate waste disposal and management.

5.5 Community Health and Safety

Construction Hazards Regulations. There is currently no specific legislation addressing construction-related hazards to residents or host communities. Most construction health hazards are managed through occupational health and safety policies of the company. Construction-related safety hazards exposure of the communities are expected to be covered in the Environmental and Social Management Plans of the ESIA's. Some companies adopt the integrated Safety, Health and Environment (SHE) approach which extends OSH measures to community exposures to physical hazards at construction sites and construction traffic safety. In terms of health, the Health Permit Regulations (Executive Decree No. 34728-S) requires construction projects to obtain Health Permit.

Traffic and Road Safety. Costa Rica's Council on Road Safety is the lead agency for road safety in Costa Rica. The functions of the agency include coordination, legislation and monitoring and evaluation of road safety strategies. The country only has a fatal road safety target, to reduce fatalities by 20% with a timeline of 2016 - 2020 (IRF, 2012).

Infrastructure Safety. The seismic standard for buildings and structures is provided by Costa Rican Seismic Code-1974 (CSCR-74 or Código Sísmico de Costa Rica 1974). The code is maintained and periodically updated by the Costa Rican Permanent Seismic Code Committee, the country's professional group legally responsible for the drafting and dissemination of its Seismic Code.

Fire Safety. The National Fire Protection Association (NFPA) codes were adopted in 2007 after the catastrophic hospital fire by the National Insurance Institute (INS) which oversees the National Firefighters Corps. The National Fire Protection Association (NFPA) is a global self-funded nonprofit organization, established in 1896, devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards. In terms of enforcement of the codes, the Bomberos and the Ministry of Health work together to review NFPA codes and standards compliance in construction. It starts with the professionals, engineers and architects, who submit construction documents through a digital platform called the Administration of Construction Projects (APC), which was created by the CFIA. The CFIA then assigns the project a number and becomes available to Bomberos, the Ministry of Health and some of the local municipalities. The Bomberos act as consultants to the Ministry of Health, review construction documents and performing on-site inspections, and generate reports regarding their findings. The Ministry of Health and Municipal governments hold the power to issue operational and occupancy licenses, based on the Bomberos' observations regarding new construction. The Ministry of Health must inspect buildings every 3-5 years in order to give occupancy licenses. They also cannot issue licenses if the building is found non-compliant. The Bomberos perform regular inspections every

3 years to maintain building compliance. The Ministry of Transportation also plays a role in enforcing NFPA codes for public transportation routes.

Health. General Health Law, N° 5395, October 30, 1973 (shares competences with the Ministry of Health). The Ministry of Health (*Ministerio de Salud*) defines the national health policy; it regulates, plans, and coordinates all public and private activities related to health and the environment as well as the execution of those activities stated by law. Its functions include controls and registers on food, medical and cosmetic products; authorization permits for commercial or services offices; epidemic control; scientific and technological investigation; regulation of health services; solid waste management; waste waters; noise; and strategic development of programs for food and environmental and human health promotion. Its main legal framework is the General Health Law (Law N° 5395, October 23, 1973). Two Ministry of Health departments are directly related to environmental matters:

- The Department of Human Environment Protection regulates all human activities that affect, directly or indirectly, the health of the population; such as potable water, waste waters, sanitary issues on construction sites, atmospheric pollution (including noise), solid wastes, noxious fauna, food, radiation, occupational health and safety, and dangerous substances.
- The Department of Registers and Controls regulates products, materials, and equipment that affect, directly or indirectly, the health of the population, especially regarding food, toxic materials, cosmetics, personal hygiene products, and biomedical equipment and materials.

The Ministry of Health also grants location permits, construction permits, and sanitary permits required for certain construction and commercial operations. The Ministry of Health is the lead agency for the health sector. As such, it acts as a rector of the following entities in those areas where the entities' competencies are considered as part of the health sector: the social security institution (*Caja Costarricense de Seguro Social*), the Costa Rican Institute of Water and Sewers and several smaller entities dedicated to issues such as youth, pharmacological dependency, children, senior citizens, sports, nutrition, and cancer.

5.6 Land Acquisition and Resettlement

Eminent domain land acquisition (or expropriation) in Costa Rica is currently governed by Law No. 9286 or the Integrated Reform of Law No. 7495, Law of Expropriations. The key provisions of this law are as follows:

- (1) The expropriation is for public interest purpose such as public infrastructure.
- (2) The legal owner of the property has to be paid in full before government may take possession of the property.
- (3) In case of refusal by the owner, the authorization must be requested from the appropriate judge (It should be noted that before the State carries out studies of the property for the purpose of expropriation on behalf of public interest, the owner must be notified by a commissioned official and will also be notified in writing of the date, time, type of study and the reasons for it.)

The law provides compensation only for the loss of land, and non-land assets. But it does not address the aspect of displacement from one's own home which is often a much deeper social issue than mere loss of land and structure.

Informal dwellers or squatters. According to Costa Rican law, a person can acquire rights to a property if the property owner allows that person to use or maintain possession of the property for more than a year. Once the property has been acquired it cannot be taken away, except for reasons such as eminent domain, and then only with proper compensation. If a person has held possession of a property for at least ten years, that person can go to court, claim full ownership of the property and register the property at the Registro Publico. If a landlord does not take action to evict squatters during the first three months of their invasion, then squatters may not be evicted at all. If the landlord does not take action within a year, the squatter has a right to demand compensation for any improvements he has made to the land.

5.7 Biodiversity Conservation and Sustainable Management of Living Natural

Costa Rica's Biodiversity Law No. 7788 (Ley N° 7788 – Ley de Biodiversidad). Since its adoption on 23 April 1998, Costa Rica's Biodiversity Law has been amended through different decrees. The overall objective of the law concerns the conservation of biodiversity and the sustainable use of resources as well as the equitable distribution of the benefits, and derived costs, from the use of its elements. The conceptual framework of the law sets forth the following elements:

- Equity in access to and in the distribution of benefits derived from the use of the elements (genetic and biochemical elements) of biodiversity.
- Respect of human rights, especially of those groups that are marginalized because of their culture or socio-economic condition.
- Sustainable use of biodiversity, in order to respect the development options of future generations.
- Biosecurity shall be interpreted in the broadest sense to include technological, environmental, alimentary and sanitary aspects.
- Democracy as a guarantee of greater citizen participation in decision-making.

Implementation uses both the concepts of tangible elements of biodiversity, as defined by the CBD, and intangible elements, such as individual or collective knowledge, innovation and practices:

- A model of objective liability is established, reversing the probative facts on the accused in the cases of environmental damage.
- The Biodiversity Law provides legal authority and support to the National System of Conservation Areas (SINAC) and conceptualizes a participatory system through the creation of regional and local councils in each conservation area, integrated by five elected members of different sectors from that geographical area.
- The Law creates the CONAGEBIO (National Biodiversity Management Commission) with the participation of the indigenous, peasant, academic, government and private sectors.
- Both institutions SINAC and CONAGEBIO are fully implemented and operational.
- Regulations regarding the access to genetic resources are established and principles such as cultural denial incorporated. In practice, the ABS system suffers from criticism because of its slow and bureaucratic processes.
- The Law recognizes different systems of intellectual property, e.g. farmers' rights and sui generis community intellectual rights. For this reason, the law excludes non-genetically modified plants, animals and microorganisms from intellectual property rights.

- The biodiversity law has often been used by the Constitutional Chamber to support their sentences in environmental issues. The intellectual property right regulations and other elements in this law were objects of debate during the process of approval of the Free Trade Agreement between the United States, Central America and Dominican Republic.

Other laws on biodiversity and sustainable management of living natural resources include:

- (1) Forest Law No. 7575 (Ley N° 7575 – Ley Forestal).
- (2) National Parks Law, N°6084, August 24,1977
- (3) Forestry Law, N° 7575, February 5, 1996
- (4) Biodiversity Law, N° 7788, April 30, 1998
- (5) Wildlife Conservation Law, N° 7317, October 21, 1992

The 1996 Forest Law establishes the protection, conservation and management of forest areas as a priority and central responsibility of the State. The government is in charge of regulating and supervising the use and exploitation of forest resources in a sustainable manner. In addition, the government should seek to improve living conditions for rural communities. The law forbids land cover changes in forest and calls for moderate use of natural resources. At the institutional level, the law establishes the creation of the National Forest Office, in charge of proposing policies and programmes on forest issues, as well as managing the activities of projects in place, working closely with local communities and other governmental bodies. Operating on the basis of decentralisation of policy-making, the 1996 law also supported the Regional Environmental Councils, which have played a limited role so far. Creating the Payment for Environmental Services (PES) Programme, the law rewards landholders for their environmental services, which include:

- mitigation of GHG emissions through emissions reduction and carbon fixation, capture, storage or absorption; protection of water for urban, rural or hydroelectric use;
- biodiversity conservation for conservation, sustainable use, scientific investigation or genetic enhancement; and protection of ecosystems or scenic natural beauty for tourism or science.

Convention on Biological Diversity. Costa Rica has is signatory to the International Treaty on Plant Genetic Resources for Food and Agriculture (IT PGRFA). Since Costa Rica signed the Dominican Republic-Central America-Free Trade Agreement (CAFTA-DR) that entered into force in 2009, it has been obliged to adhere to the terms of other international conventions; namely the Budapest Convention and UPOV (Union for the Protection of New Plant Varieties).

Main Agency Responsible. MINAE is currently responsible for consolidating a National System of Areas for Conservation, known as SINAC (*Sistema Nacional de Areas para la Conservación*). MINAE provides policies and carries out plans for natural resources, energy, and mining resource development as well as environmental protection. It also shares competences with Agriculture and Stockbreeding Ministry in the Use, Administration and Conservation of Soil.

5.8 Indigenous People

There are a total of 24 indigenous territories located throughout Costa Rica. Act No. 5251 of 1973 created the National Indigenous Affairs Commission (CONAI). In 1977, the government passed

the Indigenous Act No. 6172, which recognized their territories as protected reserves that could not be sold to non-indigenous people. This law covers such aspects as who are indigenous people, the legal character of indigenous communities, ownership of reservations and their inclusion in the Public Register, the organizational structure of indigenous communities, formalities for expropriation and compensation, means to prevent invasions of lands, expropriation funds, the internal administration of commercial premises, the exploitation of natural resources and the priority nature of the Act. The law also provides that good-faith landowners who were already there before the law should be removed and compensated. The law also provides that the national banking system and other State institutions, together with the CONAI shall apply a special system of regulations to ensure that members of aboriginal communities can obtain funds for the appropriate exploitation of their lands, as indicated in this interim provision. Costa Rica is a signatory to the UN Declaration on the Rights of Indigenous Peoples in 2007. It also ratifies the ILO Convention No. 169.

The National Commission of Indigenous Affairs (*Comisión Nacional de Asuntos Indígenas - CONAI*) is agency in charge with promoting the socioeconomic development of the indigenous people. Among its objectives are to: (i) promote the improvement of social, economic, and culture of the indigenous people the intention to elevate their living conditions and integrate the aborigines communities to the development process; (ii) serve as an instrument of coordination among the different public institutions obligated to execute the projects and the lending services benefiting the indigenous communities; and (iii) serve as the official tie with the Interamerican Indigenous Institute and with the other international agencies that labor in these areas. The government recognizes the Indigenous Integral Development Association (ADII), under the supervision of the National Directorate for Community Development as the official representatives of the Indigenous People. Nationally, the Indigenous People are represented by the National Indigenous Board of Costa Rica.

Under the ILO Convention 169, Prior Consultation is mandatory if it is determined that the collective rights of indigenous peoples may be affected by a government decision, or a bill promoted by the Executive or the private sector. The specific matters to be consulted are those mentioned in ILO Convention 169 and in the United Nations Declaration on the Rights of Indigenous Peoples, particularly the development or exploitation of natural resources within their lands or territories. All agreements reached are binding for the parties. Consultation with indigenous people is also provided in Article 83 of the Biodiversity Law 1998. The Presidential Decree No. 40932 provides the general mechanism for consultation with indigenous peoples (Mecanismo General de Consulta a Pueblos Indígenas N° 40932- MP-MJP), issued on 3rd March 2018. The agency responsible for conducting indigenous consultations is the Technical Unit for Indigenous Consultation (UTCI) under the Ministry of Justice and Peace. Each indigenous territory will create territorial instances for indigenous consultation as counterparts of the UTCI for the preparation of consultations.

Step1: Project developers must request a prior consultation whenever their proposed interventions affect the collective rights of indigenous peoples. Indigenous peoples may request a prior consultation if they feel that a certain project will affect their rights. The request must fulfill a number of conditions.

Step 2: The UTCI will have 8 days to resolve on the request. If not, all conditions were met, the requesting party will have 5 days to fulfill them. The UTCI notifies the territorial entity for indigenous consultation of its intention to conduct a prior consultation. The

- territorial entity may consent to the prior consultation in the terms proposed by the UTCI or establish other conditions within 15 days.
- Step 3: Within the next 15 business days, the UTCI resolves on the beginning of the consultation. The resolution must prove that collective rights have or will be affected. The resolution may be challenged by lodging an appeal for revocation.
- Step 4: During the first meeting, the counterparts discuss and decide on the methodology to be used as well as other aspects of the consultation. The UTCI will have 8 business days to validate this Consultation Plan.
- Step 5: The executing agency initiates a dialogue to provide the indigenous communities concerned with all the relevant information both in Spanish and in their indigenous language(s). The indigenous people may contribute information regarding their culture, world view, etc.
- Step 6: The indigenous people examine all the evidence in private within the time limit established in the Consultation Plan. The indigenous people may decide to hire advisors of their choice who will be financed by the UTCI. The indigenous people will have two options: (i) grant its consent or not, and (ii) modify the project in order to mitigate, offset or prevent the affectation of collective rights.
- Step 7: The parties engage in dialogue in order to reach consensus. Three situations may arise: If the indigenous people give its consent, the project negotiation starts. If the indigenous people propose modifications, the parties will try to reach minimum standards for agreement. If the indigenous group declines to give its consent and is not willing to reach minimum agreements, the Government may proceed with the project only if it can invoke a superior public interest with full respect for Human Rights.
- Step 8: The UTCI will have 10 business days to review the lawfulness of the agreement and recommend improvements. The issuance of the final document marks the end of the consultation process. If differences cannot be resolved, the process ends with the realization that no agreement can be reached.
- Step 9: The Government, the indigenous peoples, the UTCI and the territorial instances monitor compliance with the agreements. Executing agencies submit progress reports to the UTCI to confirm compliance or to justify the lack of advances in this respect.

5.9 Cultural Heritage

Law 7 of 1938. This law aims to protect all pre-Columbian archeological objects and monuments and claims State ownership of them. It appoints the National Museum as the responsible institution for recognizing archeological heritage, allowing its export, the overlooking of ownership transfer, the acquiring of assets to be sold, and the conduction of two registries and an inventory. It is characteristically archeological and provides measures for expeditions, discoveries, and excavations. It also provides certain sanctions for infringers. Within this nature, the law defines archeological objects and monuments as “results of human activity of artistic, scientific, and historic value.”

Law 6703 of 1981. This law also aims to protect pre-Columbian assets designated as “archeological national heritage, movable and immovable, product of the indigenous cultures previous or contemporary to the establishment of Hispanic culture in the national territory, as well as human remains, flora and fauna related to these cultures.” Thus, the scope of protected archeological goods is expanded in this law. It is similar in form to its predecessor, claiming state

ownership, calling for owners to register their goods in possession, and appointing the National Museum with most regulatory functions, such as authorizing export, overlooking custody, evaluating discovered monuments, and authorizing excavations and explorations. It also provides detailed sanctions for infringers.

Law 7555 of 1995, or Law for the Historical Architectural Heritage of Costa Rica and its regulations. This law covers historic-architectonic heritage, namely immovable heritage, and mimics the World Heritage Convention in its definitions, classifications of heritage, value criteria, and designation procedures. It also introduces incentives and detailed sanctions. The regulations include information on the value criteria, procedures, intervention permits, and relevant organizations. The main national legislative instruments target either pre-Columbian or immovable heritage. This clear-cut division allows little space for the inclusion of other types of assets. Thus, intangible and movable heritage are addressed only in internationally ratified conventions. International instruments have relieved the national government from drafting an independent legislation by providing a model to follow and conventions to ratify. However, as the conventions are not country-specific, they may not be ideally suited to the characteristics of a particular country's cultural heritage. Although separating pre-Columbian heritage from more recent heritage may seem arbitrary or old-fashioned, it may actually be appropriate for the reality of Costa Rican cultural heritage. One of the most famous pre-Hispanic expressions, and the object of the only World Heritage Cultural Site of Costa Rica are the stone spheres. Before more rigorous archeological methodologies were implemented, many of these spheres were removed from their original site and transferred to the National Museum and other places (Fig. 1). They are neither movable nor immovable heritage: although they can be removed, doing so de-contextualizes them from their environment. Distinguishing between "movable" and "immovable" heritage is particularly difficult for these spheres as they range in size from a few centimeters to over two meters. Thus "pre-Columbian" may be a more adequate category than either "movable" or "immovable."

5.10 Stakeholder Engagements and Disclosure

Consultation is not mandatory for projects included in the Environmental Impact Assessment System (EIAS). However, there are opportunities for public participations in the EIA process (See also Table 1). The following steps are based on the provisions in the Law 7554 (Organic Law of the Environment, 1995), specifically provisions in Articles: 6 through 11; 23; 24; 29.d; 35.c; 60 inc. final; 78.c. and the General Regulation on Environmental Impact Assessment Procedures issued on 28th June 2004, particularly in Articles: 41; 42; 55 through 58; 63, provides the following procedure:

- Step 1: The Environmental Authority will periodically post the list of environmental impact assessments received in a daily newspaper of national circulation and inform of their availability for public consultation. It will also indicate the time and the venues for consultation, the deadlines to receive observations, and the form to submit them. The information contained in the environmental impact assessment document will be publicly available for consultation by any individual or organization. However, the developer may request that some information related to the assessment be withheld if it is determined that disclosure would infringe industrial property rights.

- Step 2: Individuals and legal entities may submit their representations in writing. All observations received from Civil Society will be included in the project administrative file and must be considered during the EIA review process.
- Step 3: Requests for hearings must be sent to the Environmental Authority in writing, indicating the postal address, telephone or fax number, and the time and date for informing the decision. Hearings will be scheduled (i) within fifteen calendar days from reception of the request in the case of private hearings, and (ii) within three months from reception of the request in the case of public hearings.
- Step 4: After considering the potential environmental impact, the Environmental Authority will determine whether there is sufficient ground to warrant the consultation or not. If it opts not to conduct the public hearing, it will determine the manner in which observations will be received.
- Step 5: If the consultation is conducted, the Environmental Authority will coordinate the event with the local municipalities, associations for development and stakeholders concerned, as well as the producers located within the area of influence. The Environmental Authority will only conduct one public hearing, which will be convened by announcing it twice in a major daily newspaper circulating in Costa Rica at least 10 business days prior to the event. During the public hearing, the developer will present the project together with the technical team that prepared the EIA.

4. GAPS ANALYSIS OF COUNTRY SYSTEMS WITH RESPECT TO GCF'S ESS

ESIA study under GCF ESS1 automatically cover issues relating to all the other ESS. Under the Costa Rica EIA system, the scope of the study may fail to cover issues relating to the ESS Standards, particularly the ESS2 (Labor and Working Conditions), the ESS4 (Community Health and Safety), the ESS5 (Land Acquisition and Resettlement), the ESS7 (Indigenous People) and the ESS8 (Cultural Heritage).

Table 5. Gap analysis of the EIA system with respect to the requirements of ESS1

Key Requirement/Feature in ESS1	Costa Rica EIA System	Description
Conducted during project planning phase	Requirement met	EIAs are typically conducted during the planning phase of the project when changes in the design and approach are still possible.
Screening and categorization and use of commensurate study	Requirement met	Project proposals are screened and classified into categories. Projects deemed to have significant impacts are required to undergo full EIA/ESIA.
Public participation	Requirement met	Public consultation is not mandatory but there are opportunities for public participation in the process and SETENA may require public hearing for highly controversial projects.
Disclosure of EIA/ESIA Report	Requirement met	The final EIA/ESIA report is disclosed in
Inclusion of associated/linked projects/facilities	Requirement not met.	The system does not provide for assessing or conducting due diligence of other projects/facilities that are associated or operationally linked with the project being subjected to the EIA process.

Table 6. Gap analysis of the country systems of laws and regulations with respect to other ESS Standards

ESS Standard	Relevant issues are covered in the ES assessment and addressed in the management plan?	Summary of gaps analysis
ESS2: Labor Standards	Not typically. Labor issues are traditionally not part of the EIA	The Costa Rica Labor Laws are compliant with the international standards. However, labor laws are intended for, and thus are applied to, establishments which are already operating. The laws do not require project proposals to prepare any HR management plans or any compliance plan for labor standards. Hence, the project proposals are usually not evaluated for potential compliance or noncompliance with labor standards and labor authorities are not involved in reviewing project proposals.
ESS2: Occupational Health and Safety	Yes	Costa Rica's OHS regulations are consistent with good international industry practice (GIIP). The EIA/ESIA guidelines also include OHS in the scope of the EIA/ESIA study.
ESS3: Resource Efficiency	No	There is no requirement for project proposals to consider resource efficiency measures in the project design. This may not be important for appropriately priced resources (i.e., when the true societal cost of resources is fully reflected in the developers/operators cost. However, for resources that have externalities such as fossil fuels or water supporting ecosystem services, resource saving measures would be highly desirable.
ESS3: Pollution Control	Yes	Costa Rica's pollution control laws are adequate. Banned chemicals? Management of Pesticides? Hazardous Waste? Greenhouse Gas?
ESS4: Community Health and Safety	Some	There is currently no single law addressing health and safety of communities in development projects. In terms of infrastructure, Costa Rica adopts stringent building standards against seismic and fire hazards. Construction projects are required to obtain a Health Permit from the Ministry of Health. There is no law requiring application of the concept of universal access in publicly accessed infrastructure and services.
Involuntary Resettlement	Some	Costa Rica's Eminent Domain Law addresses titled property owners. There is no provision for the rights and entitlements of informal settlers/occupants. No provision for resettlement for those who have lost their homes.
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Yes	Costa Rica's laws and regulations on biodiversity and management of forest are adequate. Critical natural habitats are identified and protected.
Indigenous People	Only if the project is located in IP reserves	Indigenous Peoples and their territories are adequately protected in the country laws, including the law ratifying the ILO Convention 169. Prior consent is also guaranteed through the mandatory prior consultation whenever the collective interest of the indigenous people will be affected.
Cultural Heritage	Yes	Known cultural heritage sites are adequately protected by country laws and regulations. But development projects are not required to assess the risk of damaging cultural heritage resources and to adopt procedures or contingencies in case of chance finds.

Stakeholder Engagement and Public Disclosure	No	Costa Rica's ES laws and regulations provide for public consultations on a case-to-case basis only during the EIA/ESIA process. There is no mandate to extend stakeholder engagement during construction and during operation's phase of the project and EIA reports typically do not include Stakeholder Engagement Plan.
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5. BASELINE STUDY

5.1 The Study Area

The area where everything related to the project will be developed is the current right of route, along the 84,85 kilometers of the planned route, in the three sections described above (Atlántico – Paraíso, Atlántico – Alajuela, Atlántico – Ciruelas and the possible junction Ciruelas – Alajuela y Ciruelas-El Coyol). According to Executive Decree No. 32966-MINAE and based on field visits by professionals in charge of the Environmental Impact Study, the Direct Influence Area (DIA) and the Indirect Influence Area (IIA) are identified:

- (1) The Direct Influence Area (DIA) corresponds to an area immediately to the periphery of the project (right of way), where, due to the nature of the works to be developed, the physical, biological and social impacts will potentially be felt. For this Project, it is defined as the area surrounding the right of route at a distance of 150 meters on both sides.
- (2) The Indirect Influence Area (IIA) is defined as the area that will receive the physical, social and biological impacts generated indirectly by the project. Given the nature of the project, considering the nature of the surrounding lands, and the permanence and magnitude of the work, the decision is taken not to establish a fixed IIA. This is a regional project, the development of which has an impact on the entire Central Valley, so it makes no sense to confine the IIA to a specific space.

Spatial scope is defined as the physical, biological and socioeconomic environment within which the Project will be developed. For the purposes of this study, three geographical spaces have been delimited for the assessment of potential impacts: the Project Area (PA), which corresponds to the current right-of-way area over the 84,85 kilometers covering the different TRP sections and where the construction phases will take place and operation; the Area of Direct Influence (ADI), which is defined as the area that will potentially receive biological, physical, and social impacts directly; and the Indirect Influence Area (AII), where they will be perceived impacts generated indirectly by the Project. As noted above, these areas have already been impacted by the construction and operation of the railway currently existing. This environmental assessment focuses mainly on what is known as additional or parallel impact, since what is proposed is an expansion, improvement and modernization of an existing service. Such a project generates fewer impacts than a train whose route was entirely new.

5.2 Physical Environment

5.2.1 Geology of the Project Area

Plate tectonics. Costa Rica is located on the western margin of the Caribbean Plate, forming part of the tectonic province called "Origin of South-Central America" which, in turn, is part of the Caribbean Plate. Costa Rica presents in the Pacific sector a subduction zone (Fosa Mesoamericana)

where the Cocos Plate is subducted under the Caribbean Plate. Figure 3 shows the location of the study area (red arrow) with respect to the main tectonic and neotectonics elements. As can be seen the study area is presented in an area of double geological threshold, both in a north-south direction, and east-west orientation. This geotectonic situation gives it a feature of high neo-tectonic activity.

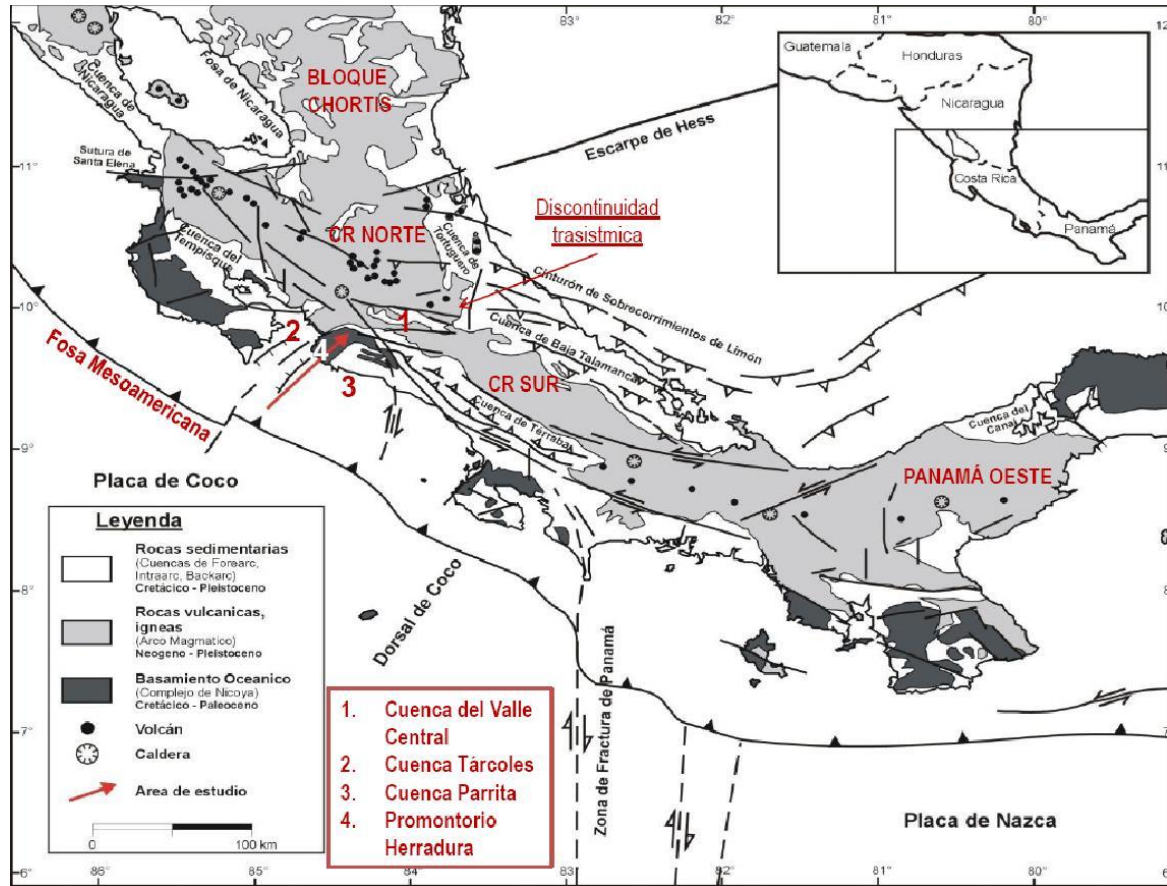


Figure 3. Tectonic map of part of the Orogen of South-Central America.

Structural geology. The structural geology of the study area is characterized by a relatively simple structure wherein the deepest subsoil is formed by the oldest sedimentary rocks of the Oligocene - Miocene, possibly over-lying Eocene rocks. These sedimentary rocks are structurally deformed forming folds and homoclinals, with a tendency of inclination (buzine) of the layers in the N-NE direction (Figure 4). In turn these sedimentary rocks are intruded by igneous rocks of intermediate to acidic composition in whose contacts present metamorphic rocks of the cornubian type. In a coalescing way with the sedimentation that was filling the Central Valley basin, as is natural in a volcanic intraarc basin, there were various volcanic events, which greatly influenced, until they completely dominated the final phases sedimentary filling (see Astorga et al, 1989, 1991, 1995, Denyer & Arias, 1991, Denyer et al., 1994, Campos, 2001). In the final phase of volcanic filling and as a result of the presence of pronounced relief in the territory under study, intense erosion processes were developed that result in the development of alluvial fans and other types of associated deposits. Recent evidence that this erosive activity still prevails is represented by Holocene landslide deposits, as well as any deposits of ash layers from volcanic activity, as was the case in the cycle of eruptions of the Irazú volcano between 1963 and 1965.

It is important to note that the entire sector of the Central Valley, to which it is geologically attached, the study area has an emerging tectonic condition, since it is a system under geological survey. This fact explains the geological situation of high activity of erosion and sedimentation processes present in the area.

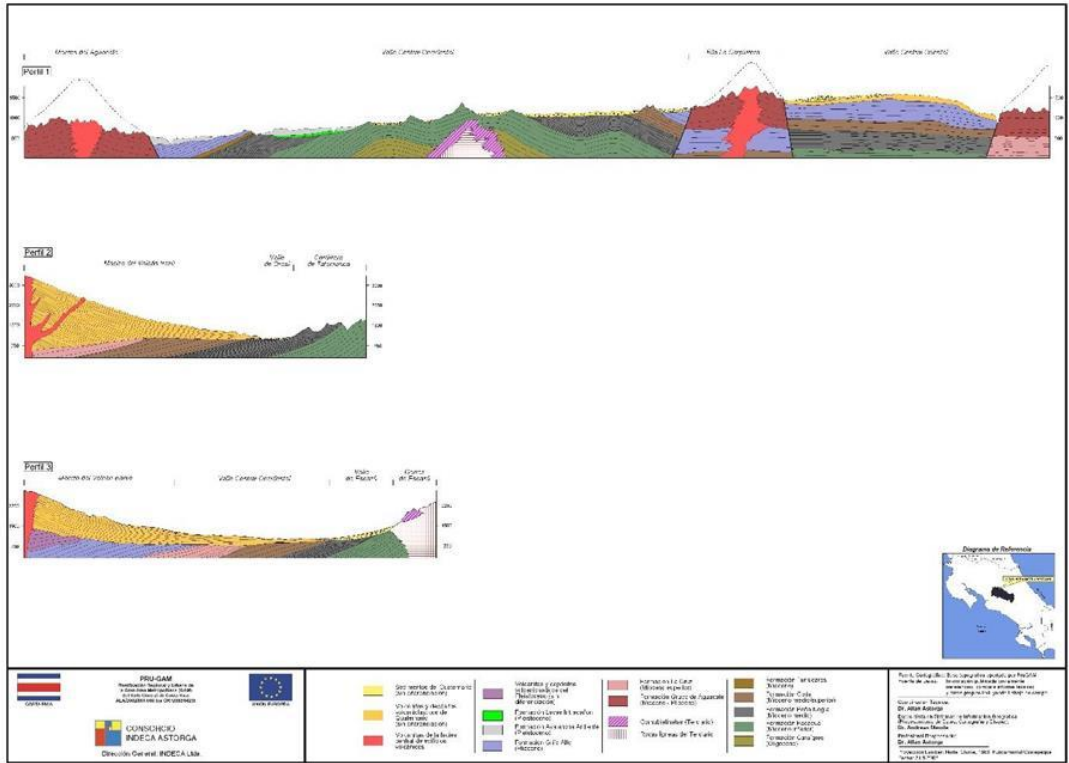


Figure 4. General geological profiles along Costa Rica's Central Valley (cf. Astorga et al., 2008).

5.2.2 Air Quality

Based on the World Health Organization's guidelines, the air quality in Costa Rica is considered moderately unsafe. The most recent data indicates the country's annual mean concentration of PM2.5 is 16 µg/m³ which exceeds the recommended maximum of 10 µg/m³. Contributors to poor air quality in Costa Rica include vehicle emissions and the construction industry. Available data indicates that Belén, the province of Heredia, and San José experience high levels of air pollution. (IAMAT, 2021).

The recommended limit established by the WHO for PM10 particles is of 20 micrometers per cubic meter however certain areas of Greater Metropolitan Area like La Ribera de Belén registered 55 micrometers per cubic meter. The center of Heredia also reaches 45 micrometers per cubic meter and Río Segundo in Alajuela 41 micrometers per cubic meter. The areas of the Greater Metropolitan Area that registered lower PM10 particles were San Vicente de Moravia, Santo Domingo de Heredia, and Zapote in San José.

5.3 Biological Environment

Below is the description of the biological environment of the Project area (PA) and Direct Influence Area (DIA) of the Rapid Passenger Train Project. They describe the different ecosystems present, biological corridors, as well as the flora and fauna that characterizes each type of ecosystems. The flora and fauna are shown in two tables, which indicate the relevant aspects of the category of ecological risk by the IUCN and the CITES database, as well as the provisions of national wildlife legislation.

5.3.1. AP Protection Status.

The Project area is not directly affected by any protected wilderness area established by executive decree. The nearest protected area is the Cerros la Carpintera Protection Zone; however, it is not located in the PA. With regard to biological corridors, the project passes in two sections the "Intercity Subcuencado Aguacaliente COBRI-SURAC Biological Corridor" (ACCVC). Figure 6.1 shows the location of these zones relative to the PA.

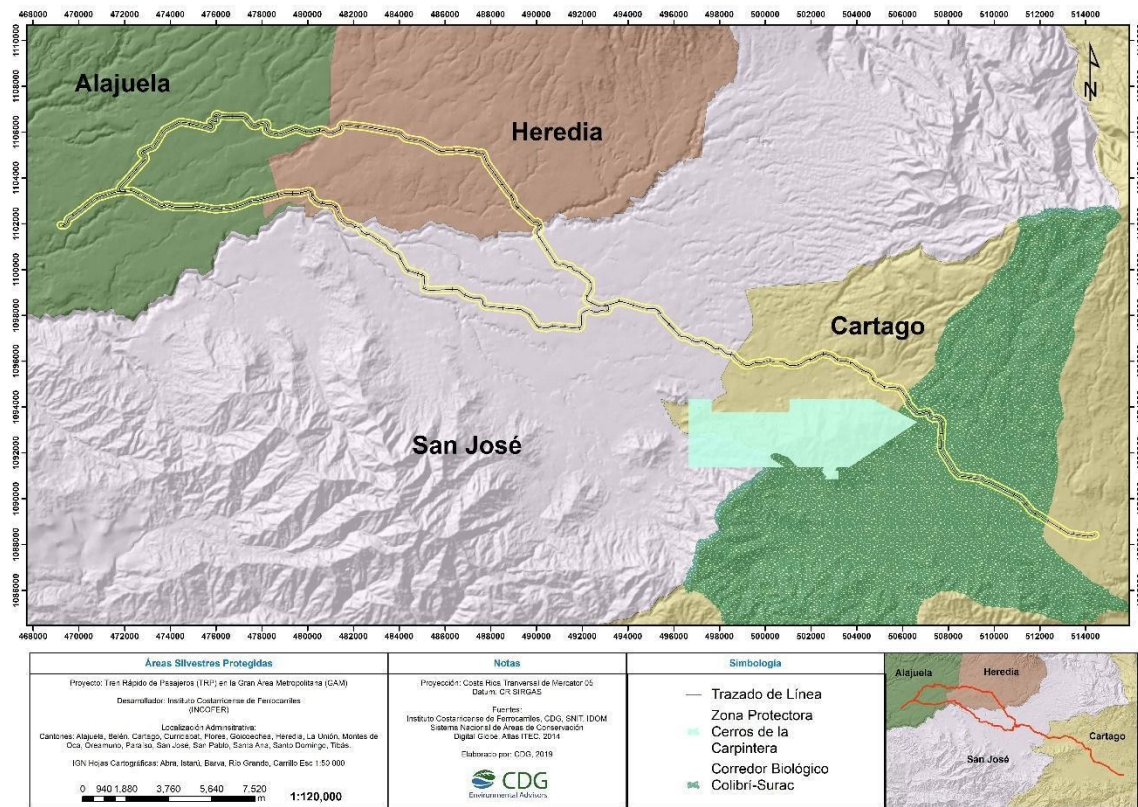


Figure 5. Location of the Cerros la Carpintera Protective Zone and COBRI-SURAC Biological Corridor with respect to the AP, National Geographical Institute (IGN); Atlas of Costa Rica, 2014.

In general, it can be said that the project is located in the living areas called Pre-mountain Wet Forest (bh-P), Very Humid Pre-mountain (bmb-P, Very Wet Mountain Low Forest (bh- MB) and Wet Forest Mount Low (bmh-MB). The average annual precipitation varies between 1200 and 4000 mm. The bh-P comprises large area of Central Valley, is an area of extensive areas of volcanic and fertile soils. The bmb-P presents a wide variety of edaphic conditions, the bh-MB is located between the vicinity of Zarcero and Ochomogo, in its natural condition the forest of this area of life is low height, with two strata, little dense, with abundance of epiphytes, always green In the bmh-MB is very characteristic the presence of mist for long periods during the day and over the course of the year, the grounds of this area of life are mostly rugged topography, with exposed

slope winds (which bring a lot of moisture). This formation is located in the Cordillera de Talamanca, where the genus Quercus (with more than 10 species), Alnus acuminata (jaúl), Cornus disciflora (cried), Magnolia poasana (magnolia) dominates. A good example is the forests of Cerro de la Muerte. In the Guarco Valley rainfall is lower and the mists frequent, especially in the city of Cartago and surroundings. The annual rains are close to 1400mm, while in the foothills of the mountains surrounding the valley the precipitation is 2500 to 3000mm. The temperature ranges between 12 and 24 °C.

5.3.2. Natural associations present.

Along the existing railway track, as regards the right of way, what can be observed are altered areas as a result of the current use and maintenance of the tracks and, in addition, areas impacted by the same urban activity mainly and agricultural. Most of the right-to-track area crosses urban areas, some sections with scrub, wooded scrub, pasture areas, wooded pastures, ornamental trees of exotic species and others with native species; areas of

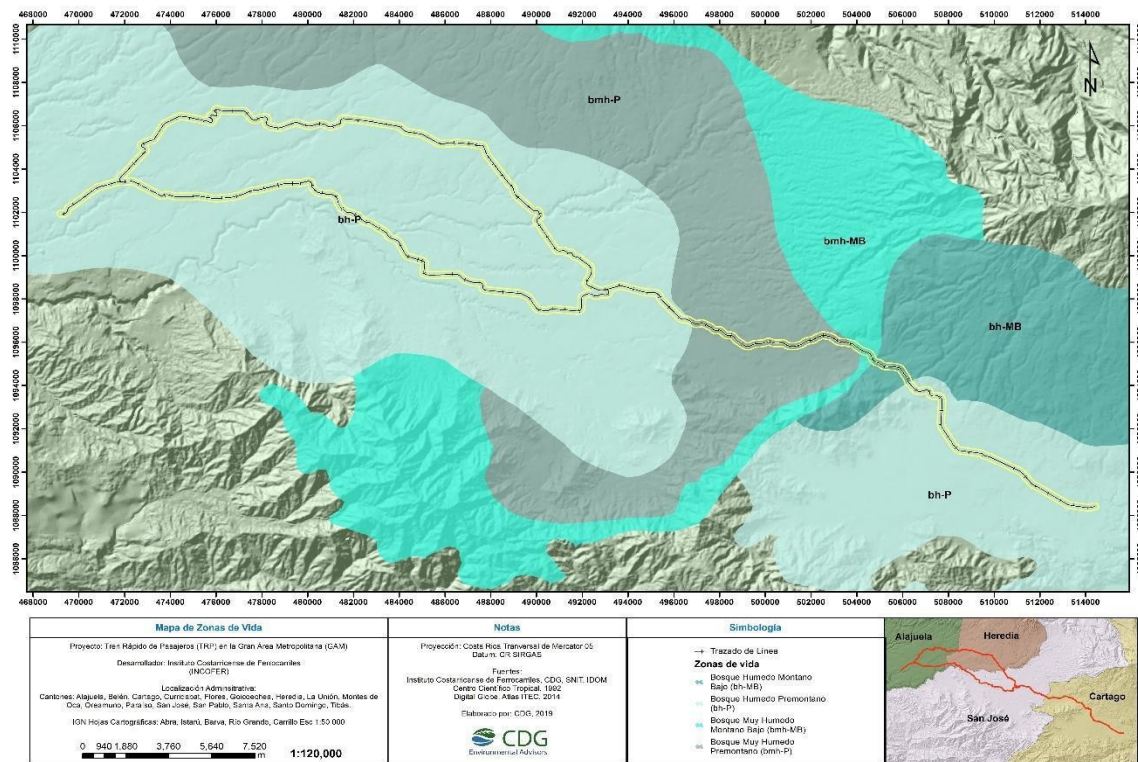


Figure 6. Living areas present on the TRP Project; Atlas of Costa Rica, 2014.

protection of streams and rivers; areas dedicated to agriculture, mainly coffee plantations and very few sections of the road have an important wooded coverage very isolated and fragmented. An important aspect of the project is the fact that when the different works are executed it will not be affecting or altering areas around or near the P.A., since work will be done only on the current right of way that has been modified for many years and in land according to land use, stipulated by the Municipalities, for the installation of the different temporary structures; so it is anticipated that the different plant associations or the scarce forest coverages that are nearby will not be changed or altered by the influence of the project.

5.3.3. Current Plant Coverage by Natural Association

The railway line for intervening within the Rapid Passenger Train project, which includes from Parade de Cartago to Alajuela Plums, and with a length of 84,85 linear kilometers, the following uses can currently be found:

- (1) Scrub zones: represents a low percentage of the project's surface and is mainly seen in the Paraiso – Atlantico section. The Atlántico– Alajuela and Atlantico – Ciruelas sections only present these environments in areas of protection of streams and rivers. It is characterized by narrow stripes with shrubs, as well as grasses or pastures by some sections. These may be extension of redoubts of the same coverage outside the project area or because they are unique swathes of the current right-of-way area for lack of maintenance, and where there is no connection to other areas mainly in some protection areas cracks and rivers. Species such as Guarumo (*Cecropia* sp), Heliconesacea, musaceae (Yute), some poaecea (Bamboo) and grasses can be seen, among others.
- (2) Areas of wooded scrub: This type of coverage represents a low percentage of the area of the right of way, noted mainly in the Paráiso-Atlantico section. The Atlantico– Alajuela and Atlantico–Ciruelas sections only present these environments in areas of protection of streams and rivers, this is because the railway runs through the main urban centers of the Central Valley. It can be seen in slope areas or in depressions (track fill areas). It is also common in continuous areas to productive farms where it has stopped giving it the corresponding maintenance but mainly in areas of protection of streams and rivers. The species identified in this category are characterized by pioneering species, indicators of altered areas and in recovery. Some of them are: Laurel (*Cordia alliodora*), Balsa (*Ochroma pyramidale*), Giant pore (*Erythrina poeppigiana*), among others, in different succession states own altered areas.
- (3) Waterway Protection Zones: These zones constitute 50 sites between streams and rivers that are influenced by the current railway. In all, a modification of the channel has been presented, due to the current structure of the bridge during their respective construction processes in previous years; and subsequent processes for maintenance. Areas of protection can be observed with bush species and pastures, areas with only pastures, in other cases surfaces with tree species of different vegetation and others totally discovered of vegetation.
- (4) Urban, commercial and residential area: these areas represent the highest percentage in the AP. They have surfaces covered, in some cases, of fruit trees, ornamental trees and palms, surfaces with grasses trimmed in a green area way, and predominant areas of parking of restaurants, general trade, highways, urban centers and housing. There are even buildings on the right-of-way.



Figure 5. Area of scrub along Paraiso-Atlantico stretch



Figure 6. Areas of wooded scrub (left: Paraiso-Atlantico stretch) (right: Atlantico-Ciruelas stretch).



Figure 7. Area of protections (left: channels with pastures Atlantico-Alajuela section; right: waterways with pastures, Paraiso-Atlantico section)



Figure 8. Urban, commercial and residential areas along the railway line (left: Stretch Atlantico-Ciruelas. April 2019; right: Paraíso-Atlantico stretch)

5.3.4. Indicative Species by Natural Ecosystem

Exotic forest species such as eucalyptus sp and cypress (*Cupressus lusitanica*) can be found in the surrounding areas near the Project. There are also small and fragmented blocks of native species such as The Sabana Oak (*Tabebuia rosea*), Gavilán (*Pentaclethra macroloba*), Laurel (*Cordia alliodora*) Balsa (*Ochroma pyramidale*), Espavel (*Anacardium excelsum*), among others. Many of the species present in the project area correspond to fruit species, between exotic and native, such as Oranges (*Citrus sinensis*), Lemon (*Citrus* sp), Bread fruit (*Artocarpus altilis*), Guava (*Psidium guajaba*), and Cocotero (*Cocos nucifera*); ornamental species such as Pride of India (*Lagerstroemia speciosa*), Laurel of India (*Ficus benjamina*), Flame of the Forest (*Spathodea campanulata*), among others. In the surrounding agricultural areas, you can see coffee crops mainly and to a lesser extent vegetable.



Figure 9. Ornamental planting area of Eucalyptus (left) and native agricultural species (right) along Paraíso-Atlantico stretch.

Floristic composition. Based on a preliminary study conducted in recent weeks, in areas with presence of secondary forest and areas in regeneration, it is possible to determine that the species present in general are typical of the Pre-mountain Wet Forest (bh-P), Very Wet Forest Pre-mountain (bmb-P, Very Wet Mountain Low Forest (bh-MB) and Low Montane Wet Forest (bmb-MB) of Costa Rica, where there is a dominance of fast-growing colonizing species and remnant species at hard-to-reach sites or by conditions Weather.

Flora. Table 7 below shows the species of flora found within the PA.

Table 7. List of plant species observed in the project area.

Species	Vernacular	Botanical family	Habit	Status
<i>Bambusa vulgaris</i>	Bamboo	Poaceae	Woody	To
<i>Cocos nucifera</i>	Coconut	Arecaceae	Palm	To
<i>Cupressus lusitanica</i>	Cypress	Cupressaceae	Tree	I
<i>Anacardium</i>	Espavel	Anacardiaceae	Tree	Is
<i>Eucalyptus deglupta</i>	Rainbow	Myrtaceae	Tree	I
<i>Pentaclethra</i>	Sparrowhawk	Fabaceae	Tree	Is
<i>Cecropia obtusifolia</i>	Guarumo	Urticaceae	Tree	To

<i>Ficus sp</i>	Higuerón	Moraceae	Tree	Is
<i>Cordia alliodora</i>	laurel	Boraginaceae	Tree	To
<i>Ficus benjamina</i>	Laurel of India	Moraceae	Tree	I
<i>Citrus sp</i>	Lemon	Rutaceae	Tree	I
<i>Spathodea</i>	Forest Flame	Bignonaceae	Tree	I
<i>Cojoba arborea</i>	Parrot	Fabaceae	Tree	To
<i>Gliricidia sepium</i>	Black Wood	Fabaceae	Tree	Ma
<i>Citrus sp</i>	Orange	Rutaceae	Tree	I
<i>Lagerstroemia</i>	Pride of India	Lythraceae	Tree	I
<i>Erythrina</i>	Pore	Fabaceae	Tree	I
<i>Tabebuia rosea</i>	Savannah oak	Bignonaceae	Tree	Is
<i>Zygia longifolia</i>	Horse Zota	Fabaceae	Tree	To
<i>Ochroma</i>	balsa	Malvaceae	Tree	Is
<i>Wagnerian Heliconia</i>	Platanilla	Heliconaceae	Grass	To
<i>Coffea sp.</i>	Coffee	Rubiaceae	Arbusto	I

Source: Own elaboration with field observation, 2019. A: Abundant; MA: very abundant; ES: Scarce; I: introduced.

Fauna. Being a railway and being that most of the PA is urban area, where most of the vegetation along the route are pastures and thickened isolated trees, the fauna that has been identified in the area, is mainly passing. Flying fauna is relatively common in any area with and without project

and with respect to mammal species, many are related to patches of vegetation surrounding the DIA. During the visit a variety of animal species were found which are found in the Table 8 below.

Table 8. List of fauna species displayed and reported in the project area and areas of influence of the project, CDG Environmental Advisors, May 2019

Class	Family	Scientific name	Common name	Habitat	IUCN / CITES	State	Place Obs.	Notes of environments Characteristic
Amphibia	Hylidae	<i>Agalychnis callidryas</i>	Red-eyed frog	BHP, BMHP	IUCN-CITES	Lc	aid	Ditch with water
	Bufoidea	<i>Rhinella horribilis</i>	Giant Toad	BHP, BMHP	IUCN	Lc	aid	Urban, grassland
	Centrolenidae	<i>Hyalinobatrachium fleischmanni</i>	Fleischmann Glass Frog	BHP, BMHP	IUCN	Lc	aid	River Basin
	Eleutherodactylidae	<i>Diasporus diastema</i>	Frog Bell	BHP, BMHP	IUCN	Lc	aid	Wooded scrub
Mammalia	Procyonidae	<i>Procyon lotor</i>	Raccoon	BHP, BMHMB, BMHP, BHMB	IUCN	Lc	aid	River basin, urban
	Muridae	<i>Rattus rattus</i>	House Rat	Bhp	IUCN	Lc	aid	Urban
	Didelphidae	<i>Didelphis marsupialis</i>	Furry Fox	BHP, BMHP	IUCN	Lc	aid	Wooded scrub
	Bradypodidae	<i>Bradypus variegatus</i>	3 toed sloth	Bhp	IUCN	Lc	aid	Wooded scrub
	Sciuridae	<i>Sciurus variegatoides</i>	Squirrel	Bhp	IUCN	Lc	aid	Wooded scrub
Reptilia	Boidae	<i>Boa imperator</i>	Boa	Bhp	IUCN	Lc	aid	Wooded scrub
	Teiidae	<i>Festive Ameiva</i>	Chisbala	BHP, BMHP	IUCN	Lc	aid	Wooded scrub
	Viperidae	<i>Bothrops asper</i>	Fer de lance	Bhp	IUCN	Lc	aid	Scrub
Birds	Cathartiformes	<i>Coragyps atratus</i>	Black buzzard	Bhp	IUCN	Lc	aid	Urban, grassland

Class	Family	Scientific name	Common name	Habitat	IUCN / CITES	State	Place Obs.	Notes of environments Characteristic
	Thraupidae	<i>Thraupis episcopus</i>	Viudita	BHP, BMHMB, BMHP, BHMB	IUCN	Lc	aid	Urban
	Psittacidae	<i>Psittacara finschi</i>	Red parrot	Bhp	IUCN	Lc	aid	Wooded, urban scrub
	Tyrannidae	<i>Pitangus sulphuratus</i>	Large bienteveo	BHP, BMHMB, BMHP, BHMB	IUCN	Lc	aid	Wooded, urban scrub
	Turdidae	<i>Turdus grayi</i>	Yigüirro	Bhp				Urban
	Icteridae	<i>Quiscalus mexicanus</i>	Grackle	BHP, BMHMB, BMHP, BHMB	IUCN	Lc	aid	Urban

AP: Project Area; AID: Direct Influence Area; LC: minor concern; NT: almost threatened; LR/LC: Low risk/minor concern; LR/NT: Low risk-minor concern; A-I: Appendix I CITES; A-II: Appendix II CITES.

5.3.5. Endemic Species, Threatened and Endangered Populations.

None of the observed tree species are on the list of endangered species according to Decree 25700-MINAE for Costa Rica. With respect to the IUCN and CITES species list, none of the above species are not included either. There are rather introduced species such as Eucalyptus, Cypress, Indian Laurel, Pride of India, Forest Flame, various citrus, among others. Fauna. Of the observed and registered species of the AID it can be concluded that none is under threat or danger of extinction, with respect to the list of species of the IUCN and CITES. Only the red-eyed frog (*Agalychnis callidryas*) is inside Appendix II, according to CITES. However, there are a number of species that frequent the passage on the current road or AP that may be affected, so the corresponding mitigation measures should be proposed, such as wildlife crossings.

5.3.6. Ecosystem Fragility

The area of the project is characterized, for the most part, by having little plant cover, which is mainly composed of wooded pastures, scrub and wooded areas of various capacity only in areas of protection of rivers and ravines. These areas of protection of channels are the fragile ecosystems identified. However, it should be remembered that areas of protection for streams and rivers are already involved by the existence of the current bridges.

5.4 Social Environment

5.4.1. Geography

The Rapid Passenger Train (TRP) project is located in the Greater Metropolitan Area (GAM) of Costa Rica. This area engulfs four of the country's seven provinces, namely: San José, Alajuela, Cartago and Heredia, and has approximately 3.7 million population as of 2019 or about 74% of the country's population. The train service will pass through 15 counties and 45 urban districts (Table 9).

Table 9. Administrative regions to be traversed by the TRP train service.

Provincial head	County	Direct influence by district
San Jose	San Jose	Carmen, Hospital, Catedral, Uruca, Mata Redonda, Pavas.
	Tibás	San Juan, Cinco Esquinas, Colima.
	Montes de Oca	San Pedro.
	Curridabat	Curridabat, Granadilla, Sanchez.
	Goicoechea	San Francisco, Calle Blancos.
Alajuela	Alajuela	Alajuela, San José, San Antonio, Guácima, San Rafael, Río Segundo, Desamparados, Turúcares.
Cartago	Cartago	Eastern, Western, Carmen, San Nicolás.
	Paraíso	Paraíso, Llanos de Santa Lucia.
	The Union	Tres Ríos, San Juan, San Rafael, Concepción, Dulce Nombre.
	Oreamuno	San Rafael.
Heredia	Heredia	Here, Mercedes, San Francisco.
	Santo Domingo	Santa Rosa.
	Belén	San Antonio, Rivera, Asunción.
	Flores	St. Joaquin, Llorente.
	San Pablo	Rincón of Sabanilla.
4	15	45
TOTAL		

Source: National Institute of Statistics and Census (INEC), June 2019

The area, also called the Central Valley, is the center of commerce, industry and services. The train route pass through commercial establishments, warehouses, and industries including wood processing, stone extraction cuts, workshops for machinery maintenance weight and food processing (Figure 8.1).

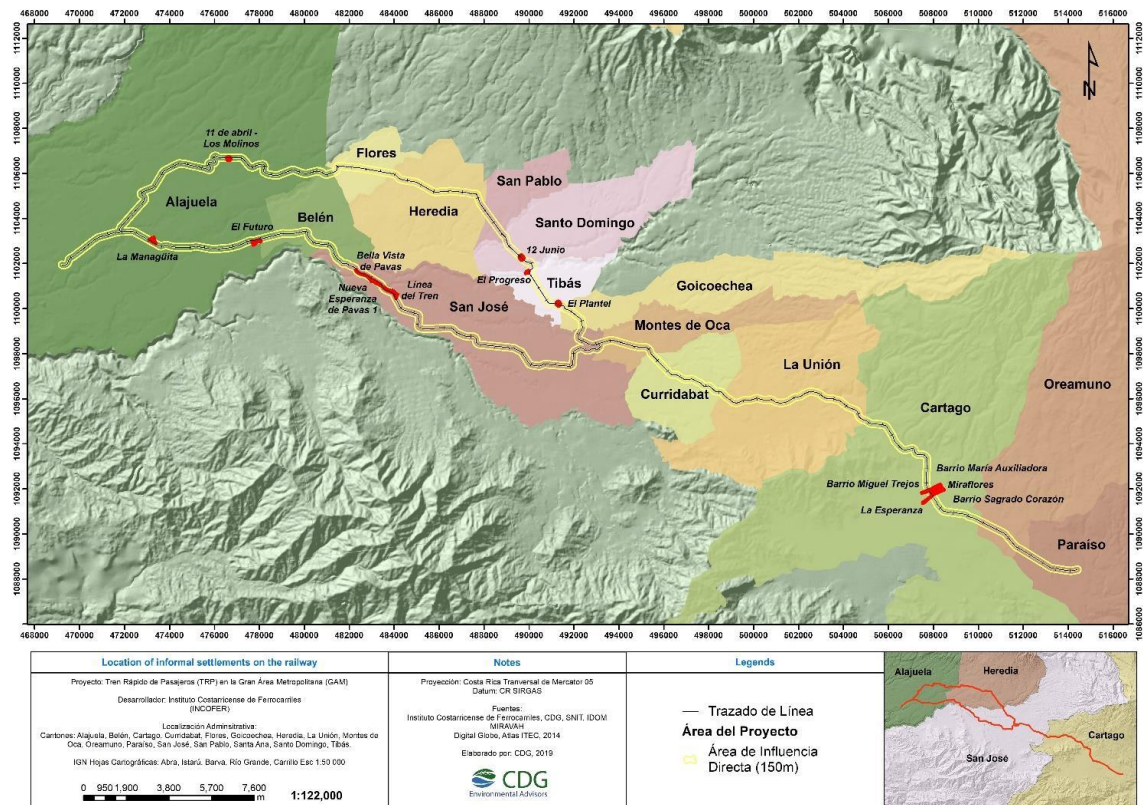


Figure 10. Location of the main industrial, commercial and services infrastructure, TRP Project; Atlas of Costa Rica, 2014

The train route is relatively flat terrain and in the past had been exploited for agriculture due to its fertile soil but currently land use is basically urban. There are only a few agricultural areas left such as the county of Paraiso, Alajuela, and Bethlehem in Heredia where the land is mainly use for pasture.

5.4.2 Demography

According to INEC projections for 2019, Costa Rica has a total population of 5,057,999 inhabitants; of this total population 3 721 758 people, reside in the Greater Metropolitan Area, area of direct impact (TRP), which distributed by province and descending order are located as follows: San José 1 648 561 inhabitants, Alajuela 1 016 421 inhabitants, Cartago 537 606 inhabitants and Heredia 519 170 inhabitants. Table 10 shows the distribution of the population by province and district.

Table 10. Population distribution of the GAM by province and district

Province	Total population by province	County	Total population per county	Population of direct incidence	
				District	Total population by district
San Jose	1 648 561	San Jose	344 851	Carmen	3 023
				Hospital	23 490
				Catedral	15 517
				Uruca	41 169
				Mata Rendonda	10 025
				Pavas	86 968

		Goicoechea	137 328	San Francisco	2 375
				White Street	22 904
		Tibás	84 215	san juan	25 955
				Cinco Esquinas	8 308
				Colima	17 656
		Montes de Oca	62 310	San Pedro	29 064
		Curridabat	78 961	Curridabat	32 567
				granadilla	18 604
				Sánchez	6 673
		Alajuela	1 016 421	Alajuela	310 248
San Jose	50 654				
San Antonio	30 356				
Guácima	25,425				
San Rafael	32 808				
Rio Segundo	13 055				
Desamparados	32 241				
Turrúcares	9 134				
Cartago	537 606	Cartago	162 944	oriental	12 402
				occidental	10 394
				Carmen	19 062
				Saint Nicholas	29 130
		Paraíso	62 480	Paraíso	21 369
				Llanos de Santa	18 943
		La Union	111 369	Tres Ríos	9 331
				san juan	15 366
San Rafael	15 787				

				Conception	18 667
				Dulce Nombre	8 947
		Oreamuno	49 604	San Rafael	28 942
Heredia	519 170	Heredia	141 683	Heredia	19 143
				mercedes	29 383
				San Francisco	57 879
		santo domingo	48 581	Santa Rosa	8 968
		Belén	26 237	San Antonio	11 479
				Rivera	7 488
				asuncion	7 270
		Flores	24 603	San Joaquin	8 248
				Llorente	11 201
St Paul's	31,000	Rincón de	9 731		
Total	3 721 758	Total	1 676 414	Total	964 986

Source: INEC - Population projections as of June 30, 2019.

Sex and dependency ratios. The 2011 census data show that there are significantly more women than men in the population and this particularly more pronounced in San Jose. In terms of dependency, the working age population (i.e., 15 to 65 years of age) is also generally less than 50% and lower than the national average, except for Alajuela which is about one percentage point higher than the national ratio (Table 11).

Table 11. Demographic characteristics of the four provinces comprising the GAM

Demographic characteristics and Geographical	Country	Province			
	Costa Rica	San Jose	Alajuela	Cartago	Heredia
Total population	4,301,712	1,404,242	848,146	490,903	433,677
Surface area (km²)	51,100	4,966	9,758	3,125	2,657
Population density <i>People per km²</i>	84	283	87	157	163
Percentage of urban population <i>People living in urban area per 100</i>	72.8	86.4	60.7	82.5	86.0
Ratio men-female <i>men for every 100 women</i>	95.9	91.6	98.5	96.3	95.0
Demographic dependency ratio <i>Dependent persons (under 15 years of age or 65 and older) per 100 people of productive age (15 to 64 years)</i>	47.2	44.4	48.1	45.2	42.9

Source: INEC-Census 2011

Indigenous People. Most of Costa Rica's indigenous peoples live in the isolated stretches of jungle near the Panamanian border in the south of the country. It is important to note that the TRP project will not affect any indigenous community territory/reserve. However, there are informal settlements along the railway which may harbor small communities of migrant indigenous people. This needs to be checked through a more focused study of the informal settlements.

5.4.3. Socioeconomic Conditions.

Income and Poverty. Income in the GAM region is typically 15-17% higher than the rest of the country. In 2019, the national average per capita household income was 376,333 Colones while the Central region where the GAM is located, it is 440, 371 Colones, although for year 2020 it is now down to 326,483 colones and 376,794 colones, respectively (INEC, 2020). Likewise, poverty rates are lower in the central region than in the rest of the country. In 2019, the national poverty incidence was 21% while in GAM region it is only 17% although with the pandemic, it is now close to 26% and 24% for the overall national average and for the Central Region respectively.

Employment. Workforce participation in Costa Rica among 15 years and older population is about 53.5% and about the same level can be observed in Alajuela and Cartago provinces. As expected labor force participation is significantly higher in the highly urbanized provinces of San Jose (56%) and Heredia (57.3%). Labor participation among women is these provinces (Table 12).

Table 12. Employment in GAM

Economical features	Country	Province			
	Costa Rica	San Jose	Alajuela	Cartago	Heredia
People outside the workforce (15 years and older)	46.5	44.0	47.1	46.6	42.7
Net participation rate	53.5	56.0	52.9	53.4	57.3
<i>People in the workforce (occupied and unemployed) for every 100 people aged 15 and over</i>					
Men	72.1	72.7	73.4	73.2	73.7
Women	36.1	41.3	33.1	34.8	42.1
Percentage of uninsured occupied population	14.5	13.2	17.2	14.1	10.8

Employment by sector. In terms of distribution of workers by sector, GAM is typical of highly urbanized area where the services sector absorbs the largest share of the labor force. San Jose services sector employs more than 80% of its labor force, Heredia about 76%, and Alajuela about 68%. In most provinces of GAM, only very small proportion of labor remained employed in the agriculture sector. Only Cartago appears to have about the same sectoral labor distribution as the national average (Table 13).

Table 13. Employment by sector in GAM Provinces

Sector	Costa Rica (%)	San Jose (%)	Alajuela (%)	Cartago (%)	Heredia (%)
Agriculture	13.7	0.6	5.8	10.1	1.2
Industry	18.0	18.9	26.9	23.3	23.0
Services	68.2	80.4	67.4	66.5	75.8

Housing conditions. The average occupant per home for the provinces of San José and Heredia is 3.5 people while for Cartago and Alajuela they are 3.7 and 3.6 inhabitants, respectively. Regarding

the conditions of the infrastructure of these homes, it was found that the province of Heredia has the highest percentage of homes in good condition (73.9%), followed by the province of Cartago with (70.9%). However, overcrowding which is defined as more than 3 people sharing a bedroom occurs in these provinces. According to INECT about 3.5% to 4.9% of the homes in the region experience overcrowding. There is also an increasing trend of more than one household sharing the same residential dwelling. The percentage of households sharing dwellings are highest in Heredia (9.3%) while the rest of the provinces the percentage ranged from 7.3% Cartago to 7.7% in Alajuela. San Jose has 7.6%.

Table 14. Housing Conditions in GAM

Housing	Country	Province			
	Costa Rica	San Jose	Alajuela	Cartago	Heredia
Occupied individual homes	1,211,964	400,961	236,927	130,464	122,410
Average occupants <i>Average number of people per individual occupied housing</i>	3.5	3.5	3.6	3.7	3.5
Percentage of homes in good condition	63.7	67.4	64.1	70.9	73.9
Percentage of overcrowded homes <i>Homes with more than 3 people per bedroom for every hundred occupied dwellings</i>	5.2	4.6	4.9	3.5	3.9

Source: INEC-Census 2011.

Education. On the issue of education and literacy, Costa Rica retains a fairly favorable literacy rate of 97.6% and these rates are higher in the GAM region. In San José has literacy rate of 98.5%, Heredia 98.4%, Cartago 97.9% and Alajuela 97%. The average number of years of schooling is also high compared to the national average. The average number of years of schooling is 9.8 years in Heredia, 9.4 years in San José, 8.4 years in Carthage and 7.9 years in Alajuela. The percentage of the population attending regular education is summarized in Table 15.

Table 15. Attendance to school of school-age population

EDUCATIONAL FEATURES	Costa Rica	San Jose	Alajuela	Cartago	Heredia
Percentage of regular education attendance	32.9%				
Under 5 years old	13.7%	16.4%	12.2%	18.3%	18.2%
5 to 17 years old	87.6%	89.0%	87.4%	88.7%	89.7%
18 to 24 years old	44.1%	47.9%	41.9%	47.8%	49.9%
25 and older	8.2%	9.2%	7.2%	8.6%	9.3%

Source: INEC-Census 2011.

Available basic services. As for access to basic services, according to the national census reveal that the four provincial heads through which the Rapid Passenger Train passed have parameters higher than the national average, relative to landline, cell phone, computer, internet, electricity, sanitary services and water. In health services San José is the lowest percentage with 96.6%, in the other indices the county of Alajuela is the one that reports the lowest percentage in relation to San José, Heredia and Cartago, but never below the national average, as shown in the following figure:

Informal settlements. Informal settlements are residential areas in which the inhabitants do not hold the right of tenure over the land or dwellings in which they live, under the modalities ranging from the illegal occupation of a home up to informal rent. Here, neighborhoods often lack basic services and urban infrastructure, and homes may not comply with regulations and are often geographically and environmentally located in hazardous areas. Slums are the most deprived and excluded informal settlements and are characterized by poverty and large agglomerations of shabby homes, usually located in the most dangerous lands. In addition to the instability of the right of tenure, the inhabitants of the neighborhoods do not have basic infrastructure and services, public space and green areas, and are constantly exposed to eviction, disease and violence. Based on the data from MIVAH (2011-2012), there are a total of 20 informal settlements along the railway in the four provinces under study. Most of these settlements are in San Jose and Cartago sections. As shown in Table 16, about 9 of these informal settlements have potential conflict with the TRP layout.

Table 16. Informal settlements on the railway, according to province, county and district, MIVAH 2011-2012.

Province	County	District	Informal Name	MIVAH name	Initial settlers	Current families	Potential conflict with railway
ALAJUELA	Alajuela	Alajuela	Precario 11 de Abril, Alajuela	Precario 11 de Abril, Alajuela	10	14	NO
		Gucima	La Managüita	La Managüita	N/R	N/R	NO
	San Rafael	San Rafael	Futurito	Futurito	168	49	NO
CARTAGO	Cartago	San Nicolas	La Esperanza	La Esperanza	N/R	39	NO
			Barrio Miguel Trejos	Barrio Miguel Trejos	N/R	30	NO
			Maria Auxiliadora	Barrio Maria Auxiliadora-Diques Norte	680	200	NO
		El Carmen	Barrio Nuevo los Diques	Barrio Nuevo-Diques Norte	200	155	NO
			Barrio Linda Vista	Linda Vista-Diques Norte	N/R	30	NO
			B° Corazón de Jesús or Sta Eduvigis	Santa Eduvigis_Elena_Sagrado Corazon	26	100	NO
			Miraflores-Higueron Diques	Miraflores - Higueron Diques Norte	35	120	NO
SAN JOSE	San José	Pavas	Bella Vista	Bella Vista de Pavas	60	110	YES
			Nueva Esperanza 1	Metropolis II	N/R	N/R	YES
			Nueva Esperanza 2	Nueva Esperanza de Pavas	30	56	YES
			Cristal Antes Línea Del Tren	Línea del Tren	N/R	50	YES
			Santa Fe	Línea del Tren	N/R	N/R	YES
			Bendicion 1	Bendicion 1	N/R	N/R	YES
	Bendicion 2	Bendicion 2	N/R	N/R	YES		
	Tibas	León XIII	El Progreso	El Progreso	N/R	N/R	NO
		Cinco Esquinas	El Plantel	El Plantel	N/R	N/R	YES
HEREDIA	San Domingo	Santa Rosa	Precario 12 de junio (previously Santa Rosa)	Santa Rosa	125	10	YES

N/R= information not registered.

Source: Ministry of Housing and Human Settlements (MIVAH), 2011-2012.

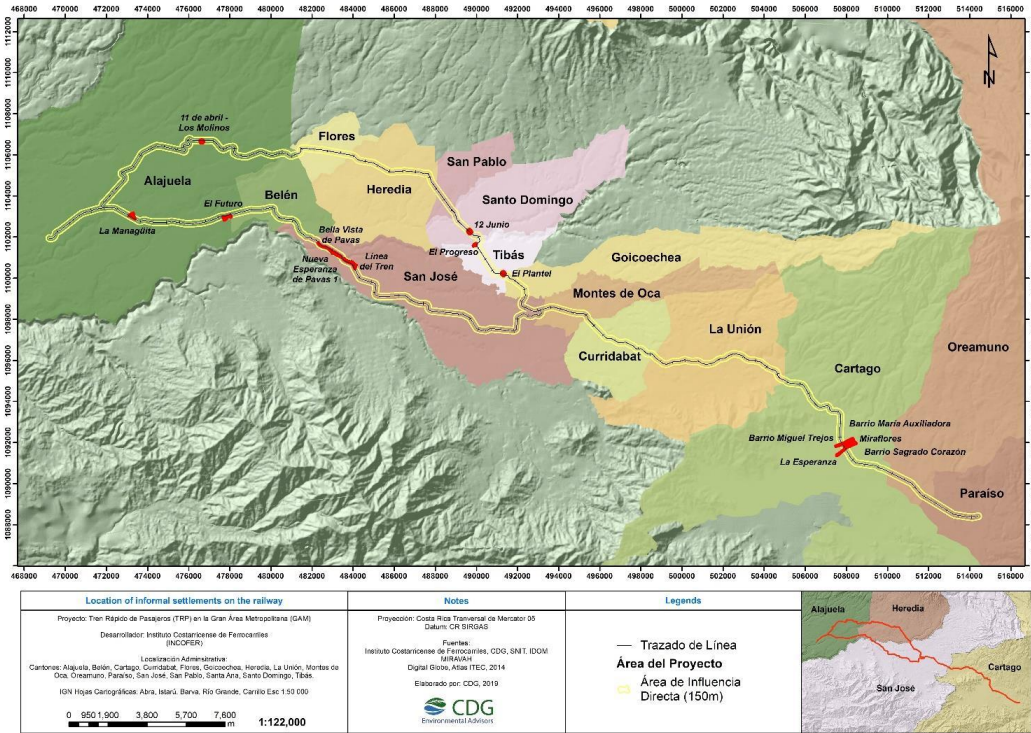
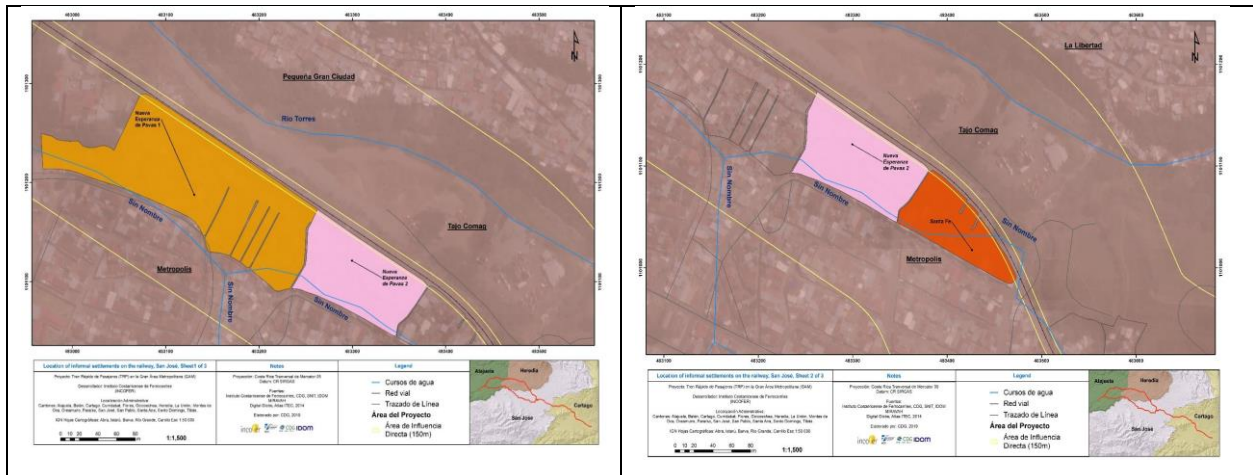


Figure 11. Locations of informal settlements along the entire stretch of the railway alignment



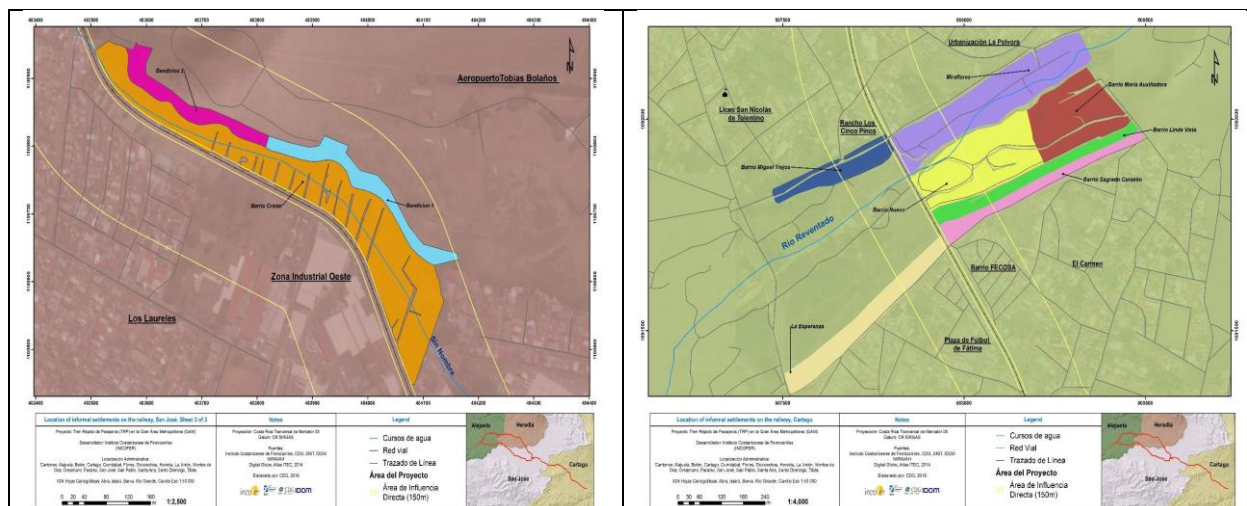


Figure 12. Location and extent of some informal settlements along of the existing right-of-way of the TRP in some sections in San Jose and Cartago (source: MIVAH 2011-12)

People in the informal settlements along the railway line tend to lack safety consciousness in regard to the hazard the train poses to them and their vulnerable household members such as the children, elderlies and PWDs. Among the safety issues are:

- Use of informal pedestrian crossings;
- Absence or inadequate pedestrian pathways parallel to the railway;
- Inappropriate passages for motorcycles and bicycles;
- Lack of maintenance and inadequate lighting;
- Animal impact incidents which tend to occur at a higher rate in informal human settlements.

As indicated previously, this study corresponds to preliminary development stage, so it is too soon to confirm or dismiss which informal settlements represent potential socioeconomic conflicts with the railway. The social dynamic is very complex and until a more definitive intervention process can be carried out, with direct communication and mediation with the inhabitants of each settlement, potential conflicts with the TRP project cannot be fully discarded. However, by assessing the size of the settlements, the proximity to the railway, social vulnerability indicators and the current experiences of INCOFER, it is possible to identify the primary sources of potential conflict with the railway, placing emphasis on those settlements located in San Jose, primarily in the central county and in Tibás. The following informal settlement areas are likely to conflict with the land development of the project:

- (1) Bella Vista - This settlement is situated in an irregular terrain adjacent to a quarry site, which generally unsuitable for construction. The land is owned by the Municipality.
- (2) Nueva Esperanza 1 (Metrópolis II) and Nueva Esperanza 2 - These settlements have a lot of shanties. The terrain is characterized by moderate to steep slopes towards the river. The terrain does not allow for further expansion. The land belongs to the Municipality and also public lands in the river protection areas.

- (3) El Plantel - This settlement is in the county of Tibas, district of Cinco Esquinas. The terrain is mostly flat, with some flooding hazard near the creek called Quebrada Rivera. The land belongs to the Municipality of Tibas and the terrain does not allow for expansion.



Figure 13. Informal settlements in Alajuela (left) and Pavas, San Jose (right).



Figure 14. Informal pedestrian crossings in Alajuela (left) and Cartago (right)

Women-headed households. It is noted that women-headed households are increasing in number in GAM. In San Jose and Heredia women-led households reaches to 34.6% and 30%, respectively. This has been attributed partly to the fact that women tend to have higher life expectancy than men and also because widows are not getting re-married. However, others attributed this to increasing rate of divorces, male abandonment and pregnancies of younger women who tend to remain single or engaged in unstable marriage which often ends up in separation. This may also be due to increase in women's schooling and labor participation, which may have facilitated separation or divorces of unsatisfactory marital unions (Oliveira et al., 1999; García y Rojas, 2002).

Population with disabilities. Another important indicator of highlighting in this study is that of the population with disabilities; because with the development of time and knowledge, the focus on disability has been transformed, from an assistential model, to a more comprehensive, grounded in the promotion of human rights and citizen participation of people with disability. In this sense, it is clear that disability, being a human condition that can be of multi-causal origin either by genetic condition, poverty, malnutrition and inadequate habits of health and hygiene, occupational disease or accident, sports, recreational and environmental pollution, political, social and structural violence etc. In Costa Rica it is discriminatory that historically the state circumscribes the actions dedicated to this population to the areas of health and special education, today there is a paradigm shift that leads to the social inclusion of this population in all areas and areas of life (including access to means of transport). Continuing with the provinces subject to study, according to the INEC for the year 2011 the province of San José had a total of 11.1% of its population with some type of disability, Heredia added 10%, followed by Alajuela with 9.9% and Cartago 9.1% of people with disabilities (table 8.5).

Table 17. Proportions in populations with at least one disability

County	Disability indicators according to county, 2011 Census.					
	Percentage of population with at least one disability	Percentage of men with at least one disability	Percentage of women with at least one disability	Population 0 to 17 years old with at least one disability	Population aged 18 to 64 with at least one disability	Population age 65 and older with at least one disability
Costa Rica	10.5					
San Jose - Province	11.1					
San Jose	12.3	11.2	13.3	4.5	11.4	39.6
Goicoechea	11.7	10.8	12.5	4.4	11.0	39.0
Tibás - County	11.5	10.4	12.4	3.8	10.1	36.9
Montes de Oca	11.1	10.5	11.6	3.7	9.6	34.6
Curridabat	9.5	9.0	9.9	3.4	8.8	33.2
Alajuela - Province	9.9					
Alajuela	9.6	9.5	9.8	3.3	9.2	38.8
Cartago - Province	9.1					
Cartago	8.6	8.5	8.7	3.4	7.9	34.3
Paraiso	8.0	7.9	8.2	3.5	7.7	32.9
La Union	9.4	8.9	9.9	3.9	9.6	35.6
Oreamuno	8.3	8.2	8.4	3.6	7.9	35.5
Heredia-Province	10.0					
Heredia	10.5	10.0	11.0	3.7	10.1	38.5
santo domingo	9.8	9.2	10.4	3.0	8.9	34.4
Belén	8.8	9.0	8.7	2.5	8.0	32.6
Flores	9.4	9.2	9.6	3.7	8.9	34.4
San Pablo	11.0	10.2	11.7	4.2	10.6	39.2

Source: INEC-Census2011.

5.5. Other Prevailing Issues

Roads are not safe in Costa Rica, both in design and in the implementation of traffic rules. Annual rate of road fatalities in Costa Rica is high (estimated by WHO at about 16.7 per 100,000 in 2016) in which there is an exceptionally high percentage (about 60%) of pedestrian. There were 12,180 fatalities in 2016 or about 399 per 100,000 population. Pedestrians alone make up a third of total road traffic injuries, a much higher figure than is generally prevalent in the region. The

problem seems to be due to lack of enforcement of traffic rules, inadequate pedestrian footpaths and crossings, poor road conditions and inadequate or poorly maintained road signs. These problems are based on the recommended countermeasures to reduce fatalities identified during 2009 International Road Assessment Program, (IRF, 2012).

Fire safety of buildings remain a concern. After the catastrophic hospital fire in 2005, Costa Rica officially adopted the National Fire Protection Association (NFPA) codes. However, compliance among establishments reportedly remains weak due to the perception of the cost involved (Andrews et al, 2019)

Seismic hazard is high in the region. Being located close to the intersection of four major tectonic plates (i.e., the Caribbean Plate, the South American Plate, the Cocos plate and the Nazca plate), the Costa Rica is particularly prone to strong earthquakes. There have been at least four earthquakes in Costa Rica of magnitude of over 6.0 since 2009. The Costa Rican Seismic Code-1974 (CSCR-74) which was adopted in 1974 has provided the structural standards of public buildings and infrastructure in Costa Rica. The code is maintained and periodically updated by the Costa Rican Permanent Seismic Code Committee, the country’s professional group legally responsible for the drafting and dissemination of its Seismic Code, which also provides technical advice on matters related to earthquake and earthquake damage prevention (Gutierrez, 2012).

6. ASSESSMENT SOCIAL AND ENVIRONMENTAL RISKS AND IMPACTS²

6.1. Project Activities that Affect the Environment

8 describes the different impact-generating activities of the Project, and the potential effects they would have on the physical, social, and biological environment.

Table 18. Project activities that affect the physical, social and biological environment in the project influence area

Right-of-Way Recovery and Acquisition of Additional Land	Since most of the works will take place within the existing right of way, the need to acquire terrain via expropriation is limited to isolated cases, such as areas for yards and stations, or specific sectors where the space is required due to engineering elements. Component 2 would also need additional lands and rights of way for parking areas, walkways and bicycle lanes. Technical and design measures will be implemented to minimize expropriations in residential and commercial areas.
Vegetation Removal	It corresponds to the elimination of plant cover, mainly and not woody that grows along the right of the railway route. This cleanup is carried out, in order to free up the space to initiate the activities of earthmoving and relocation of existing basic services. Direct impacts are generated on the fauna due to disruption of its habitat. On the other hand, it also generates positive impacts by generating temporary sources of employment, which generates a benefit in the local economy, the social welfare for the income received.
Earthworks	It corresponds to the removal of the organic layer from the soil, the removal of low-quality soil and replacement of it with another quality material that allows the stability of the structures that will support the different layers of the railway, bridge structures, bases of uneven steps, and other structures. Direct soil involvement is perhaps the greatest impact caused by this activity, as well as the generation of dust or particles into the air. In addition, consideration should be given to the noise produced by machinery and the constant movement of wagons, graders, tractors, compactors, backhoes, excavators, among others; that have a greater impact, in magnitude and extent, on the biota and the landscape. In

² Database on Preliminary Environment Study and Baseline Study.

	<p>addition, mishandling could lead to contamination of water sources within the AP, and these movements can – by altering the structure of the terrain – affect the drainage capacity of the soil. Air may be temporarily affected by the generation of dust and by the combustion of hydrocarbons by engines of the machinery used, which would depend on the quantity and mechanical condition of the same. The generation of labor and the impact on the local economy by possible recruitment of staff and by the increase of commercial activities, are positive factors that must be considered.</p>
Temporary Facilities	<p>It corresponds to the enabling of selected sites outside the right of way, such as camps, areas for the deposit of organic waste material resulting from the movement of earth (composites), warehouses of materials and machinery, location of offices of the Construction personnel, Prefabricated plants, Concrete and asphalt mixing plants. Enabling these sites requires the removal of the plant layer, compaction and baling of often undeveloped areas. These temporary works can cause alterations during the project implementation phase, affect infiltration and surface runoff regimes, as well as alter ecological processes and landscape disturbance. On the other hand, it would generate benefits to the local economy, due to the rent or rental of land for the period of execution of the work and social welfare in case the structures installed on communal and municipal lands are donated.</p>
Transport of Materials and Equipment	<p>It corresponds to the transport of equipment and materials in the project area, which must be done in containers, wagons or heavy platform trucks. These vehicles will generate gas emissions into the atmosphere. The frequency of transport in and out of the AP is high, which can affect the inhabitants of the neighboring communities, by the noise that is generated and the possibility of traffic accidents. In addition, it could generate particulate matter in the area or deterioration of the public road.</p>
Civil Works and Demolition of Structures	<p>It consists in the expansion and modernization of the railway on the existing right of road, the expansion and rehabilitation of bridges, construction of uneven crossings, accesses, stations and other infrastructure described. This activity involves more unskilled, semi-skilled and skilled labor, which could be supplied by neighboring communities, which favors the economy of a large extent of GAM. There could also be a temporary increase in local trade in goods and services on labor fronts, contributing directly to an increase in social welfare. An impact is foreseen to the ground, because of the activities that this activity entails in addition to the waterproofing that a structure causes to the ground in any type of project. Mishandling could lead to contamination of ravines, rivers, wells, running through or relatively close to the site. The construction of new civil works in this project could generate an even greater impact of the existing one, on the landscape and local fauna, because there is an increase in the area built so that the obstacles that would hinder the passage of species would be increased animals from one sector to another.</p>
Operation and Maintenance of the New Train Service	<p>It corresponds to the start-up and operation of the Project. The TRP operation will generate direct jobs, albeit possibly in less than the construction phase, but with better wage projection and stability over time. There may be affectations to wildlife and landscape due to the increase in the frequency of service. There will also be positive impacts such as direct and indirect contributions to the local economy, improvements in competitiveness at the GAM and country level, reduction of vehicle flow, improvements to air quality by replacing a diesel train with an electric service.</p>
Solid waste generation	<p>Solid waste of domestic and industrial origin if not handled well can cause significant associated negative impacts as it includes landscape impact, odor involvement (air quality), potential risk of generating pests, leachate involvement, obstruction of public roads, among others.</p>
Wastewater generation	<p>Liquid waste that is foreseen in both the construction and operational stages are mainly ordinary, mishandling would involve contamination to water bodies and risks to human health.</p>

6.2 Effects of Project Activities to Environmental and Social Compartments

The environmental compartments that can potentially be impacted by the project are described as follows.

Table 19. Environmental components that are affected by the project activities

Surface and groundwater	Surface water could be affected by sedimentation and waste generation processes at all stages of the project. There are rivers, permanent and intermittent ravines and areas of poor drainage that can be directly affected, as well as runoff or erosion. Groundwater may be affected by leaching of some kind of waste; precautions should be established in the different plants installed. They can also be affected by alterations in the drainage capacity of the terrain.
Air quality	The generation of emissions and particulate matter that could affect air quality would be timely and temporary during the construction phase of the Project only, mainly due to tree cutting, earth movement, and constructions of the various Structures. In addition, it can be affected by the transit of vehicles in the transfer of materials and personnel, preparation of the asphalt mixture, among others.
Noise Level	There will be increased impact during the construction phase due to the use of equipment for tree cutting, heavy machinery for ground leveling, bridge rehabilitation, overpassing, stations and other structures; then for transporting material and equipment to the job site. During the operational phase, the typical noises of activities such as these are foreseen.
Soil	The soil will be mainly affected by the movement of land, compaction of bridge bases and subbases, new railway rails and by rehabilitating, opening drains, circulation of heavy machinery and ordinary solid waste.
Flora	There is no need to remove vegetation significantly, as the right of way is still tree-free today. When it is necessary to cut down trees, it will be done by processing all the respective permits as set out in the regulations. Most sectors of the AP, are devoid of trees, are areas with pastures and scrub.
Fauna	It is disturbed and/or driven away by noise and short ground and land movement. There is potential for habitat fractionation and the increased frequency of service may represent a barrier or threat to wildlife that circumstantially passes through the area.
Employment	There will be a positive impact from direct and indirect jobs during the construction and operation of the Project.
Local Economy	During construction, impact it will generate is the increase in job opportunities, payment of taxes, real estate rent, consumption of goods and inputs. In addition, engineers, technicians, and other project workers, during project installation, will need to meet some needs that arise. This situation will be beneficial for the local population as they will have the opportunity to meet the demands of inputs and/or services. The economic driver effect of this project is significant and regional in scope throughout GAM.
Landscape	The project will impose an alteration of the current landscape during construction, as it involves a large-scale work and important earth movements on the current right of way. In the operational phase, the Project could become a positive and modern element of the urban landscape.
Welfare	It corresponds to the level of social well-being and quality of life of the people who inhabit the communities of most GAM counties, not just those located in the AID. The project can have a positive impact on people's economic competitiveness and quality of life by reducing vehicle congestion. For employment purposes, it can be an important source of work for labor at different levels of training. On the other hand, constructive activities can cause disruption to the daily activities of the inhabitants and users, inconvenient that must be compensated with efficient mechanisms of traffic regulation on each front of work.
Health and Safety	Exposure of people to health and safety risks during construction and during operations phase of the project

6.3 Assessment of Project Impacts to Environmental Components

A modified Leofold matrix was constructed to determine which environmental elements are mostly negatively impacted and from which project activities mostly cause the impacts. Interactions with between project activities and environmental components were rated on a scale of negative 10 to positive 10, with -10 representing the worst impacts and +10 representing the highest positive impact. The result of the scoring reveals that the highest net negative effect would be in the

biological environment while the highest net positive impact would be felt in the economy (Table 20). At present, without mitigation, the overall project's effect on the human welfare is slightly negative with a net total score of -2. The negative effects would come mostly from the civil works activities, followed by the right-of-way recovery and additional land acquisition (i.e., expropriation which would cause involuntary resettlement), while the positive effects would come mostly mainly from the operation and maintenance of the modern train service.

Table 20. Leopold Matrix on the effects of main project activities to the environmental components

Project Activities	Environmental Components											Total
	Surf. Water	Grnd. Water	Soil	Air	Noise	Bio.	Emp.	H.S.	Econ	Welfare	Land scape	
ROW/Land Acquisition	0	0	0	0	0	0	-1	0	-1	-10	3	-9
Vegetation Removal	-1	-1	-1	0	0	-3	2	0	1	-1	-3	-7
Earth works	-2	-1	-2	-2	-1	-1	2	1	1	0	-2	-7
Temp. Facilities	-2	-2	-1	-1	-1	-1	3	0	2	0	-1	-4
Transport of Mat./ Eqpt.	0	0	-2	-2	-3	0	1	-2	2	0	0	-6
Civil Works/ Demolition	-2	-1	-3	-3	-3	-2	5	-5	5	-1	-2	-12
O&M of Train System	0	0	0	5	-1	-2	5	-2	10	10	3	28
Solid waste generation	-1	-1	-1	0	0	-1	1	-2	0	0	0	-5
Wastewater generation	-2	-1	-1	-1	0	-1	1	-1	0	0	-1	-7
Total	-10	-7	-11	-4	-9	-11	19	-11	20	-2	-3	-29

Impacts Scale:
 Negative Impacts: -1 to -10
 No impact: 0
 Positive impacts: +1 to +10

6.4 Positive Impacts and Suggested Enhancement Measures

The modern train system is expected to help ease daily road congestion which is costing the country about 3.8% of its GDP. Most people in the GAM travel are commuters. Approximately, 1.5 million people move to work from one county to another daily. Of these, 34% use buses to commute to work and 33% use private vehicles. This causes high level of road congestion. Costa Rica is one of the Latin American countries with the most vehicles per thousand inhabitants (231 units), ranking 3rd below Argentina (315) and Mexico (278). The economic cost of this daily congestion is estimated at 3.8% of the GDP, in travel time and loss of productivity.

The project once operational will alleviate road congestion in the most populated areas of the of the country and will contribute to the reduction of carbon emission and air pollutants. The transport sector in Costa Rica is responsible for about 66% of hydrocarbon consumption and 54% of carbon emissions in the country. The expanded capacity of the train service will likely reduce the number of vehicles in the road at any one time which in turn reduce total road emissions. Also, for road-based vehicles, less congestion will mean less idling in traffic and lower fuel consumption

per actual distance covered, further lowering total road emissions. Hence with the project will not only contribute to the country's goal of becoming carbon neutral but also contribute to improved air quality.

The train system will benefit all socioeconomic strata of the population including the poor and the vulnerable sector and thus help improved social equality. The target population is the GAM inhabitants that already uses public transport and that will have, in addition to traditional means such as buses and taxis, a complementary and integrated system with these other means of transport to properly complete their journey from the source to the final destination. This population belongs to all socioeconomic strata including those most vulnerable such as the elderly and people with disabilities.

Improvement of land use and reduction of urban blight. The TRP will be mainly located on an existing right of way (which is in some section has been in existence for more than 100 years). Hence, the project is generally consistent with the existing land use of the area, which is mostly urban.

6.4 Potential Negative Impacts and Risks and Suggested Management Measures

Impacts associated with right-of-way recovery and acquisition of additional lands for additional right of way and as sites for other projects facilities. The project will require additional right of way due to the possible expansion of the tracks in some segments and also to provide sites for the expanded stations, parking areas, and right of way for the bicycle lanes, etc. Also, in some segments of the alignment, the existing right of way has been encroached into by construction works, mainly residences. The design and planning of the TRP will be done by seeking the minimum possible impact to these residences, either with overpasses, via board level that allows sharing, or limiting the single-track layout to limit interactions. However, in some sectors it will be necessary to recover the right of way and relocate people. The recover and acquisition of additional right-of-way and sites for the projects other facilities will result in: (a) loss of land; (b) displacement of homes; (c) loss of non-land assets such as residential house, structures other the house, home gardens, trees and crops; (d) permanent loss or disruption of businesses and/or livelihood sources. The affected persons could either be legal owners or informal settlers/occupants. These loses are likely to be involuntary as the mode of land acquisition is through expropriation or done under the threat of expropriation or for informal settlers, the threat of forced evictions. The ESIA should include sufficiently detailed social surveys of the settlements and population in the areas expected to be acquired or recovered. The data from these surveys will be used to strategize and conceptualize the Resettlement Action Plans which will be drafted with the affected population when the additional land requirements of the project have been firmed up and the detailed engineering designs have been completed.

Impacts associated with migrant influx during construction. During construction, the population in the communities may increase due to the influx of labor and other people seeking work and economic opportunities. This could (e) put pressure on the local housing spaces and services raising local prices; (f) increase incidence of disease or risk of reemergence of latent diseases; and, (g) increase in criminality including gender-based violence. It is expected that much of the migrant population will get absorbed in the communities of informal settlers along the right-of-way, making these impacts potentially more socially disruptive. The detailed ESIA should assess the

expected peak number of migrants into the communities and determine if these can be accommodated in the communities, otherwise contractors should be required to provide living quarters and camp facilities for their workers, preferably away from the communities.

Risks associated with the hiring of contractual laborers and staff. The construction activities will involve hiring of large number of contracted workers by contractors and other temporary workers hired by the concessioner. There is therefore: (h) a risk of non-observance of basic workers' rights, particularly among the contracted laborers and staff; (i) the risk of non-compliance with occupational health and safety standards in the construction sites. The project should not rely on the government to inspect and enforce labor and working condition standards as the construction site will probably not be covered by government inspections. The project should set up its own workplace monitoring and audit system. The ESIA should develop as part of the ESMP labor and working conditions clauses to be incorporated into contractors' contracts. A Labor and Working Conditions Audit protocols covering basic workers' rights and OSH should be developed based on these clauses.

Impacts on patches of natural habitats. The upgrading of the railroad tracks and construction of expanded/enhanced stations will entail temporary and permanent loss of wooded/vegetated areas where there are small communities of organisms, small reptiles, mammals, birds and insects may have thrived for many years. This may be likely to be present near water source such as at the approach of, or under the bridges. The ESIA should survey carefully survey these areas if they serve as critical nodes of network of thickets or crossing points for terrestrial wildlife, given the railway. Alternatively, these areas could be retained as small green spaces/parks and integrated into the non-motorized transport trails and bicycle lanes under Component 2.

Exposure of local residents to construction hazards, including construction traffic. The construction excavation, presence of uncollected debris, stock file of materials and boulders, as well as the traffic of heavy equipment within the construction sites and routes would pose safety (accident) hazards to the public especially local residents. Contractors should be required to keep the construction area secure by fencing off or installing signages and barriers around these dangerous areas while continually providing safe and well-lighted passageways and road crossings for the public. Contractors should also be required to install necessary traffic signs and traffic personnel on busy sections of the construction routes.

Nuisance from construction dusts and noise and vibrations. The areas along the existing railroad alignment are mostly densely populated. Construction activities are likely to generate dusts, noise and vibrations. This would pose nuisance and health hazards to residents and establishments along the project alignment. When demolishing concrete or brick structures, contractors should suppress dusts by wet cutting or by frequently wetting structures during demolition works and construction works should be restricted to normal waking hours. Workers doing the demolition should wear N95 masks and ear plugs.

Pollution from workers' camp domestic effluents and wastes. Workers' camp will produce domestic wastes and septage. Effluents should be properly confined for natural treatment in adequate septic tanks or settling ponds. Solid wastes should be regularly collected and disposed of in accordance with municipal solid waste management system.

Pollution and contamination from construction wastes and spillages. Construction wastes, including demolished concrete, discarded materials, excess soil materials, and other debris, should be regularly collected and disposed of properly. Hazardous materials such as iron bars, broken glass, sharp objects should be disposed of properly according to regulations and GIIP. The contractor should arrange with local authorities for a suitable disposal area/site for its construction wastes.

Impacts associated with borrow pits, quarries and spoil disposal sites. There may be sections of the existing tracks, including approaches to bridges that would need additional embankment materials for which the contractor would need to source suitable materials and disposal sites for unusable topsoil organic materials. Borrow pits, quarries and spoil disposal sites could destroy the landscape, become breeding places for mosquitoes and vermin, pose safety hazards to humans and animals, or render the land unusable for other purpose. Contractors should be required to restore lands use as borrow pits, quarries and disposal sites.

Cultural heritage impacts. change find procedures. The entire stretch of the old railway could be dotted with structures of cultural, historical or religious significance. The expansion of the tracks, train stations and construction of other facilities could displace or destroy or render these structures inaccessible. The concessioner and INCOFER should identify these structures and consult the National Museum and interested communities as to their significance and preservation. Those that are deemed worth conserving should be avoided through design and/or realignment of tracks.

Possible poor accessibility of the train service by certain groups. The train service may lack accessibility features and facilities for PWDs, elderly, children, pregnant women and nursing mothers. In designing the stations, the project should apply the concept of universal access, that is, people with different ways of moving (children, young people, the older, people with disabilities, people carrying babies, pregnant women, etc.) should as much as possible be granted the same comfort, safety, ease of access when taking the train system.

Fire hazards in the train system. The train system should be designed and equipped in accordance with the relevant national codes and GIIP on fire safety in trains.

Seismic hazards for train stations and vertical structures. The project lies in an earthquake prone region. Earthquake risk will be particularly high in the stations and in elevated sections of the LRT. The stations, bridges or elevated tracks should be designed in accordance with Costa Rica's building code and GIIP given the tectonic profile of the project area.

7. ENVIRONMENTAL AND SOCIAL MANAGEMENT/ESS COMPLIANCE PLAN

7.1 Management Measures

Conduct of Detailed ESIA. The project is a major undertaking, covering a long corridor of mostly commercial industrial urban lands as well as small patches of natural environments. There is a need for a more detailed study of its impacts and risks. The detailed study will be conducted by the concessioner simultaneously with the preparation of detailed engineering design. This will allow impacts and risks to be considered in the final alignment and design of the project's facilities. There will be a sharing of information and study findings and close coordination between the design and

the ESIA teams. The ESIA team will document all design features/measures that were adopted due to environmental and social risk and impact considerations and include these in the ESIA report. The scope of the ESIA study shall include aspects relating to ESS Standards. The ESIA should include not just the LRT component but also the Component 2. Table 21 below lists the relevant items to be included in the ESIA in addition to those that will be required by SETENA.

Table 21. Items to be included in the detailed ESIA in addition to the standard scope of ESIA and SETENA requirements

GCF ESS Standard	Baseline Information	Impacts and Risk Assessment	Management Plan
ESS2 (Labor and Working Conditions)	Labor profile; Labor management practices; Prevailing labor issues in the project area/region; OSH practices of contractors/construction companies in the area	Risk of non-observance of basic labor rights; Ethnic and gender discrimination; Child labor; Opportunity for PWD workers; Risk of non-compliance with the OSH Standards	Development of Labor (HR) Management Plan; Contractors Labor Management Guidelines. OSH Compliance Plan.
ESS3 (Resource Efficiency and Pollution Control)	Air quality and water quality profiles in the project area, including ambient noise; Prevailing pollution issues; Energy conservation programs and practices; Water conservation practices and programs; Waste minimization and recycling programs.	Potential impacts of construction to air quality (including noise) and water quality in the area during construction and during operation; Fossil fuel savings and GHG emission savings due to operation of LRT; Impact on water availability in the area.	Air quality enhancement measures; Water quality enhancement measures; Noise reduction measures such as green belting around stations, etc. Restriction of construction activities during daytime.
ESS4 (Community Health and Safety)	Health profile of communities along the alignment of the project; Usual safety issues in construction sites in the region; Traffic accidents and road/traffic (pedestrian) safety issues; Accessibility issues of public transport, particularly for children, PWD, and the elderly. Prevalence of transmissible diseases; Vector-borne diseases (Dengue, Malaria) in communities along the alignment.	Assess the possible exposure of the local residents/communities to construction safety hazards, including construction traffic; disease outbreak due to influx of workers; increase criminality; Gender-based violence; etc. during construction. Assess the impacts of the project once operational in terms of access to safe and convenient public transport, PWD, children and elderly.	Develop/identify community health and safety measures for the contractors to adopt and to include in the contractors' contract, including adoption of code of conduct for workers, construction traffic management,. Discuss and agree with the Engineering team for any design measures to be adopted to enhance health and safety and accessibility of the train system. Describe any design measures agreed in the ESMP.
ESS5 (Land Acquisition and Involuntary Resettlement)	Survey of the settlements, socio-economic and housing situations along the proposed sites and rights-of-way of railway and the project facilities. Issues about informal settlers, identify groups. Business	Assess the extent of new land acquisition and right-of-way recoveries (i.e., how much of the ROW should be cleared from encroachers). Assess the extent of physical displacements	The ESMP shall refer to the development and implementation of Resettlement Plans (RPs) in accordance with the RPF. Specify the strategies (e.g., whether to develop

GCF ESS Standard	Baseline Information	Impacts and Risk Assessment	Management Plan
	establishments and livelihood activities along the right of ways and proposed sites of other facilities. Right of way encroachments.	(i.e., about how many people, what are their socioeconomic circumstances) including informal settlers and encroachers. Assess the extent of economic displacement (i.e., businesses and livelihood activities permanently or temporarily) lost or disrupted.	separate RAPs per community or segment of the right-of-way), the parameters, entitlements/compensations of the displaced people, including informal settlers, other policies such as special treatments, assistance for IP families, PWDs and other vulnerable groups, for the development of the RPs.
ESS6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources	Biological profile of the railway alignment and vicinities, especially under the bridges over water channel crossings, and the proposed sites of projects facilities, the proposed alignment of non-motorized transport component, bicycle lanes, parking areas, etc., Note any segments with significant natural vegetations, wooded areas and presence of wildlife.	Assess the impacts of the right-of-way expansion and sites of project facilities on vegetations, wildlife, etc., particularly on water channel crossings.	Identify alternative routes and locations of facilities that avoid or minimize cutting of trees, or displacement of natural vegetations or green areas. Identify measures to enhance existing green, possibility of maintaining wildlife crossings under the approach of bridges and other areas along the project alignment and vicinities, to be integrated with the NMT trails and bicycle lanes and walkways.
ESS7 (Indigenous People)	Determine presence and absence of colonies or communities of indigenous people groups along and in the vicinity of the railway alignments. Clearly indicate presence or absence of indigenous groups in the project areas, in the baseline profile.	If indigenous are present as communities (formal or informal) along the project alignment, assess the impacts of the project to these communities. Conduct consultations with the groups.	If IP communities are present and negative project impacts on their socioeconomic situations are significant, the ESMP should include a separate Development Plan to be developed that would address those impacts, to be developed in consultation with them.
ESS8 (Cultural Heritage)	Identify and inventory all structures and sites with cultural and religious significance, including officially declared cultural heritage structures or sites. Identify areas along the right-of-way and proposed sites of project facilities with high potentials for presence of buried archaeological objects.	Assess any impacts of the project on these structures or sites. Assess the possibility of chance archaeological finds during constructions.	If structures of cultural or religious significance will be affected, the ESMP should include a Cultural Heritage Plan to be developed in consultation with the National Museum and the communities to which the cultural heritage site or structure is associated with. If the chances of encountering archaeological artifacts are high, develop a chance find

GCF ESS Standard	Baseline Information	Impacts and Risk Assessment	Management Plan
			procedure based on current laws and regulations.
Stakeholder Engagement Plan	Initial Stakeholder Engagement Plan shall be prepared at the inception of the ESIA Study. This plan shall list key stakeholders of the project. During the baseline study the ESIA team shall conduct consultations with various stakeholders of the project, most especially the communities along the railway corridor		The Stakeholder Plan shall be updated to include a summary of the engagement process conducted during the ESIA study and the plan to engage the stakeholders during construction phase.
Grievance Redress Mechanism			A project-level Grievance Redress Mechanism (GRM) shall be developed as part of the ESMP.

It should be noted that the ESIA to be conducted shall cover all project components as described in the Project Description and not just the LRT component.

Preparation of Stakeholder Engagement Plan (SEP). The INCOFER and Concessioner shall, as part of the ESIA report, prepare a Stakeholder Engagement Plan (SEP). At the inception of the ESIA study, INCOFER and the Concessioner shall identify the key stakeholders and prepare and implement a plan to engage or consult them throughout the ESIA process. At the completion of the ESIA study, the ESIA team shall, as part of the ESMP draft the SEP containing the summary of the consultations and meetings held during the conduct of the ESIA study plus the plan for the continued engagement of the stakeholders during the construction phase. Annex 5 provides for Information Disclosure, Stakeholder Engagement, and Grievance Redress Policy Framework.

Grievance Redress Mechanism (GRM). Also, as part of the ESMP the ESIA team shall develop/design a project-level GRM that would also accommodate grievances related to the implementation of the RPF.

Preparation of Resettlement Plans. A separate Resettlement Policy Framework (RPF) has been prepared as part of this ESMF to address the involuntary resettlement impacts of right-of-way recovery and additional land acquisition (Annex 1). The RPF sets out the guidelines, principles, scope and general steps in the preparation and implementation of the resettlement plans. Along with the ESIA, INCOFER will undertake the acquisition of right-of-way and additional lands for the project and as the lead government agency will also be responsible for the preparation and implementation of resettlement plans (RP) for the people affected in accordance with the RPF. There will be a sharing of information and study findings and close coordination between the engineering design team, the ESIA team and the RP preparation teams. The ESIA team will document all design features/measures that were adopted due to environmental and social risk and impact considerations and include these in the ESIA report. Also, alongside this, INCOFER will undertake the acquisition of right-of-way and additional lands for the project and as the lead

government agency will also be responsible for the preparation and implementation of resettlement plans (RP) for the people affected and/or displaced by the land acquisition.

Protecting the environmental components from the effects of project activities. There are measures that can be applied to each specific project activity that would enhance positive impacts. Likewise, there are small measures that can be applied during the conduct of specific activities that would prevent, reduce or mitigate negative impacts to the environmental components. For example, during demolition of concrete structure, frequent spraying of water to the structure being demolished and the vicinity to protect ambient air from suspended particulates. Annex 2 lists the enhancement, preventive and mitigative measures for each environmental component during construction, while Annex 3 lists while the measures that can be adopted during operations of the train system. These lists can be further refined and enhanced based on the results of the detailed ESIA or may be developed into Environmental Guidelines to guide activities during construction and operations phase. Annex 4 provides for the cultural heritage policy framework that serves as guide in protecting the adverse impacts of the project on Cultural Heritage (in particular related to Critical Cultural Heritage).

7.2 Schedule of Activities

Table 22 below outlines the main ESS Safeguard activities of linked with the stages of project development and milestones.

Table 22. Approximate timeframe of this environmental and social management planning and implementation activities

Activity/*Milestone	Ist Q	2nd Q	3rd Q	4th Q	5th Q
(1) Recruitment/ Appointment of Lead Safeguards Advisor and Resettlement Advisor at INCOFER	x				
*Concessioner Engaged	x				
(2) Conduct of detailed ESIA and application of Environmental Viability certificate at SETENA	x	x	x		
(3) Implementation of the Resettlement Policy Framework (RPF)	x	x	x	x	x
(a) Eminent domain land acquisition (expropriation)			x	x	x
(b) Preparation of RPs in accordance with the RPF**	x	x	x	x	x
*Environmental Viability issued			x		
(4) Setting up of the project level Grievance Redress Mechanism (GRM) and dissemination of the CABEI level GRM.				x	x
(5) Implementation and Updating of the Stakeholder Engagement Plan (SEP)					x
(6) Implementation of RPs that have been completed			x	x	x
* Start of Construction				x	x
(7) Implementation of the detailed ESIA's Environmental and Social Management Plan (ESMP)				x	x
(8) Monitoring and Reporting	x	x	x	x	x

*The RP preparation will draw from preliminary results of the social survey to be conducted as part of the ESIA. Therefore, it is important the ESIA social survey should be undertaken early in the study.

7.3 Institutional Arrangement and Capacity Building

INCOFER, as the Executing Entity, shall be responsible for the implementation of this ESMF while CABEI will provide the first level oversight. INCOFER shall hire or designate from its existing staff one (1) Lead Safeguards Advisor (LSA) who shall take the lead in implementing the provisions of this ESMF, and one (1) Involuntary Resettlement Advisor (IRA) who will be take the lead in the ROW recovery and eminent domain land acquisition as well as the implementation of the Resettlement Policy Framework (RPF), particularly the preparation and implementation of the RPs. In so far as can be permitted under Costa Rica's laws, the winning Concessioner will be in charge of conducting the ESIA and the application for Environmental Viability. As such, the Concessioner will be responsible for complying with the requirements of SETENA.

7.4 Compliance Monitoring

During pre-construction (i.e., the preparation of Detailed Engineering and detailed ESIA), INCOFER shall submit information to the CABEI regarding the status of the implementation ESMF requirements, namely:

- (1) Overall Status of the ESMF implementation (based on the Gantt Chart above), including issues and constraints encountered, and proposed actions.
- (1) Status of the Conduct of the detailed ESIA
- (2) Status of ROW recovery and Eminent Domain land acquisition and the preparation of Resettlement Action Plan Plan/s (RAP/s).
- (3) Status of the implementation and update of the Stakeholder Engagement Plan (SEP)

As soon as the ESIA is completed and approved by SETENA, INCOFER shall submit a copy of the approved ESIA to CABEI which in turn will share an electronic copy to the GCF.

During construction monitoring GCF will review and may suggest corrective and enhancement measures to ensure compliance with standards.

During construction, the INCOFER will submit to CABEI a quarterly report on status of the following:

- (1) Status of the Overall ESMF implementation
- (2) Status of RPs Preparation and implementation
- (3) Status of detailed ESIA's ESMP implementation
- (4) Status of the SEP implementation

All reports shall include issues and constraints encountered and proposed corrective actions.

7.5 Cost Estimates

The cost of the implementation of this ESMF and the environmental and social management plans are estimated in Table 23 below.

Table 23. Cost estimate of the implementation of the ESMF

Activity	Particulars	Cost Estimate
Hiring of Lead Safeguard Advisor and Resettlement Advisor	2 staff at for five 1 year	\$70,000
Seminar and Coordination Meetings and Conferences	Weekly coordination meetings at \$1,000 per meeting	\$48,000
Preparation of the ESIA with SEP and GRM	Contract out to a firm	\$100,000
Preparation of the Resettlement Plans	3 Resettlement Plans at \$40,000 each	\$120,000
Monitoring of Progress	Four field visits at \$2000 per visit	\$8,0000
Total		\$418,000.00

Table 24 below provides a preliminary cost estimates of the implementation of the Environmental and Social Management Plan (ESMP). These cost estimates assume that the project will be divided into three sectors and construction period will last up to 5 years. The operations period considered is 3 years. These estimates will be revised based on the results of the detailed ESIA as well as the Resettlement Plans.

Table 24. Preliminary cost estimates of the implementation of environmental and social management measures during construction and up to three years of operation of the train system.

Activity	Particulars	Responsible	Freq.	Timing
Forestry inventory and tree cutting process	Inventory 20.000 Execution 50.000	INCOFER, Concessionaire, Environmental Regent, Forestry Regent	Weekly	Design and Construction
Waste management and collection	Plan design and update 10.000 Monitoring 50.000	INCOFER, Concessionaire, Environmental Regent	Weekly	Construction and Operation
Wildlife crossings	Assessment and design 50.000 (once per section) Monitoring 72.000	INCOFER, Concessionaire, Environmental Regent	Monthly	Construction and Operation
Wildlife rescue	Plan design and update 10.000 Monitoring and rescue 50.000	INCOFER, Concessionaire, Environmental Regent	On demand	Construction and Operation
Archaeology and cultural heritage	Inventory 30.000 (once per section) Monitoring 36.000 Rescue 40.000 (once)	INCOFER, Concessionaire, Environmental Regent, National Museum	Weekly	Design and Construction
Water quality monitoring	60.000 (personnel, laboratory testing)	INCOFER, Concessionaire, Environmental Regent	Monthly	Construction and Operation
Dust control	100.000	INCOFER, Concessionaire, Environmental Regent	Daily	Construction
Mud control	75.000	INCOFER, Concessionaire, Environmental Regent	Daily	Construction
Traffic Control	30.000	INCOFER, Concessionaire	Daily	Construction
Chemical and hazardous substance management	Plan design and update 15.000 Monitoring 72.000	INCOFER, Concessionaire	Weekly	Construction and Operation
Liquid waste management	250.000 (equipment rental and maintenance)	INCOFER, Concessionaire, Environmental Regent	Weekly/demand	Construction
Community relations	Plan design and update 10.000 Monitoring 48.000	INCOFER, Concessionaire, Environmental Regent	Monthly	Design, Construction and Operation
Noise level monitoring	50.000	INCOFER, Concessionaire, Environmental Regent	Weekly	Construction and Operation

Activity	Particulars	Responsible	Freq.	Timing
Forestry compensation plan	Planting and maintenance of green areas 50.000	INCOFER, Concessionaire, Environmental Regent, Forestry Regent	Monthly	Operation
Emergency Response Plan	Plan design and update 15.000 Monitoring 48.000 Equipment 75.000	INCOFER, Concessionaire, Environmental Regent, Emergency Brigade	Monthly	Design, Construction and Operation
Occupational Health and Safety Plan	Plan design and update 15.000 Equipment 175.000 Monitoring 72.000	INCOFER, Concessionaire, Environmental Regent, Occupational Safety Council	Weekly	Construction and Operation
ESTIMATED TOTAL	\$9.100.000*			

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ANNEX 1: RESETTLEMENT POLICY FRAMEWORK

A. Background

1. CABEI, as an accredited entity of GCF, provides ample recognition that land acquisition and land use restrictions due to projects and subprojects can have adverse impacts on land users and communities. The GCF interim safeguards, particularly the IFC Performance Standard 5 (IFC PS5) sets the standards for addressing and mitigating risks resulting from involuntary resettlement, including any case of involuntary land taking. “Involuntary resettlement” as used in this document shall refer to physical displacement (relocation or loss of shelter) and economic displacement, including loss of assets or restriction of access to assets that lead to loss of income, as directly or indirectly affected by project activities. Involuntary resettlement arises when persons or communities do not have the right to refuse or object land acquisition or restrictions on land use that result in physical or economic displacement. This occurs in cases of (i) lawful expropriation, or temporary or permanent restrictions on land use, and (ii) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller failed.

2. The proposed TRP project will require additional land for the expansion tracks, stations and the construction of other facilities, including the Integration of None-Motorized Transport component such as the 16km bicycle lanes, parking space and walkways. In order to provide these lands, the government represented by INCOFER, will need to recover Railroad ROWs that have been encroached by residential buildings and establishments as well as acquire additional lands through expropriation. This would inevitably result in physical and/or economic displacements of residents and businesses in the affected areas. Affected people would need to be compensated according to the Costa Rica law and resettled. This would require the preparation and implementation of Resettlement Plans (RPs).

3. This Resettlement Policy Framework (RPF) provides guidance for the preparation of Resettlement Plans for affected communities along the 84-km railway alignment. This RPF is part of the overall Environmental and Social Management Framework (ESMF) for the Project.

B. Objectives of Resettlement Policy

4. The overall objectives of the safeguards on involuntary resettlement are the following: involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs; where it is not feasible to avoid resettlement, resettlement activities should be designed and executed as part of a sustainable development program, e.g., providing sufficient resources to enable the persons displaced by the project to share in project benefits. Persons displaced by the project should be meaningfully consulted and be given the opportunity to participate in the planning and implementation of resettlement programs; and displaced persons should receive assistance in their efforts to improve their livelihoods and living standards, or at least to restore them, in real terms, to pre-displacement levels, or to levels prevailing prior to the project commencement, whichever is higher.

C. Costa Rica's laws on involuntary land acquisition and resettlement vis-à-vis the objectives and requirements of ESS5

5. For the purpose of this RPF, all land acquisitions for the project, except those that are negotiated by the Concessioner for temporary use only, shall be considered involuntary, even if in some cases, the owner may opt to "voluntarily" sell his property to the project. Here, any "voluntary" transaction is meaningless as the seller actually has no option to refuse. Both parties are aware that government can always use its power to expropriate the property.

6. The Constitution of Costa Rica allows expropriation of private property for use in projects of public interest. The current laws governing expropriation of land for public use is Law No. 9286 (the Expropriation Law). Other laws may be relevant such as laws on slum clearance or improvements and squatter's rights law in the light of the presence of the presence of informal settlers along the railway alignment. INCOFER and the Concessioner shall undertake a review of these laws in terms of: (i) the processes and procedures involved in the acquisition of the lands; (ii) the institutions or government agencies involved; (iii) the entitlements of the owners and affected persons; and (iv) the gaps with respect to the objectives and requirements of the GCF's ESS5 or the IFC's PS5.

7. In drafting the Resettlement Plan or Plans, INCOFER and the Concessioner shall as much as possible follow the government's established procedures and requirements in land acquisition but shall add up gap-filling measures in order to meet the objectives and requirements of the ESS5. These gap filling measures shall include but will not be limited to the following:

- (i) Compensation entitlements to informal settlers for any structure and land improvements they built on the land they occupy;
- (ii) Provision of option for displaced homeowners to avail of replacement housing in the chosen resettlement site, as alternative to cash compensation;
- (iii) The valuation of lost assets shall be based on current market value or replacement cost without deduction for depreciation;
- (iv) The process of the preparation and implementation of the RPs shall be participatory, i.e., the affected persons shall be consulted throughout the process.

E. Eligibility Criteria for Affected Persons and Cut-off dates for coverage of Compensation

8. For the purposes of this framework, the following would qualify as Project-Affected Persons (PAPs) and are eligible to receive compensation and/or resettlement assistance:

- Persons or households who would lose their homes and hence would need to relocate to another place as a result of project activities;
- Persons or households who would lose lands and other valuable assets as a result of project activities;
- Persons or households whose business, income or livelihood sources are lost, restricted or disrupted as a result of project activities; and/or,
- Any other person who can prove and establish any loss or damage to his/her valuable assets or damage as a result of the project activities, to the satisfaction of INCOFER and agreed with CABEI.

Note that PAPs may include:

- Those with full ownership titles to the land they occupy;
- Those with usufruct rights or other imperfect rights to the lands they occupy; and,
- Those with no legal claim to the land they occupy;

- Tenants of the affected properties.

9. The cut-off date for eligibility of any structure or land improvements for compensation and/or resettlement assistance is the last day of the census/inventory of assets. Any land improvements that were installed or created after the cut-off date will not be eligible for compensation. The affected people / communities will be informed of the cut-off date through the responsible agencies, community elders and leaders. The cut-off date will be valid for only two months. If within two months the property is not taken or paid for by the project and the property remains in the possession of the PAP, the property would need to be resurveyed/inventoried to include any new structure or land improvements on the property and a new cut-off date will be established.

F. Types of Project-Affected People (PAP) and their Entitlements³

10. Resettlement Plans prepared under this RPF shall develop an entitlement matrix based on the categories of tenure and rights and their potential losses of the project-affected people (PAPs) on the ground. The following entitlement matrix may be adopted and further developed based on the actual socioeconomic situations of the PAPs.

PAP category	Option	Lost Assets		Home/Place to Live	Business/Livelihood
		Land	Structures, Non-land assets		
1. Titled Residents	Option 1	Cash compensation equivalent to the full market value of land	Cash compensation equivalent to replacement cost or market value	Disturbance allowance Relocation assistance	Compensation for lost income
	Option 2	Replacement Lot in Resettlement Site +cash for any difference from the value of the loss lot and the lot in the resettlement site	Housing unit at Resettlement site +cash for any difference in value of the original house and the new house in the resettlement site	-Disturbance allowance -Relocation assistance package (which may include livelihood development)	Compensation for discounted stream of lost incomes
2. Titled landowners - Non-Resident		Full market value of land	Full replacement cost value	N/A	Compensation for discounted stream of lost incomes
3. Informal settlers/squatters with no legal claim to land*.		N/A	Full replacement costs value	-Disturbance allowance -Relocation assistance Package	Compensation for discounted stream of lost incomes
4. Occupants with usufruct or other rights to land		Cash compensation of equivalent to the value of the right	Full replacement cost value	-Disturbance allowance -Relocation assistance Package	Compensation for discounted stream of lost incomes

³ These entitlements/compensations will be applicable in accordance with the possibilities of the Costa Rica laws and regulation system.

5. Tenants		N/A	N/A	-Disturbance allowance	Compensation for lost incomes during transfer
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*Some squatters may have some legal claims to land.

11. The Entitlement Matrix shall be the main focus of consultations/negotiations with the PAPs. Note that residents who would lose their abode shall be given compensation package options, one of which would be a government developed housing accommodation in a chosen resettlement site.

12. The vulnerable persons, households or groups shall be provided additional special assistance over and above their entitlements based on their needs and circumstances.

13. Disturbance allowance are compensations for the disruptions of the lives of the affected people during relocation to their new homes. For PAPs who have opted to relocate to government housing project, this may also include transitional assistance or temporary rentals pending completion of their housing units in the relocation sites.

14. Relocation assistance may include livelihood development program in the new resettlement communities. For renters/tenants, relocation assistance this may also involve assistance in finding a new place to move into.

15. For loss/disruptions of businesses or livelihood as a result of relocation or loss of access to vending sites, shops, this has to be determined based on previous streams of incomes and up to a reasonable period when the PAP would have reestablished his business or livelihood source in his new location.

16. Valuation of losses. Valuation of losses shall be based on the current market value of the assets, or in the case of structures and land improvements its replacement costs, calculated as the total cost of constructing the same structure/land improvements given current market price of materials and labor, without depreciation. In the case of crops the valuation shall be based on the projected value of the harvest of standing crops. In the case of trees and perennials, the valuation shall be based on the future values of harvests from the trees or perennial crops. The determination of the compensation shall be undertaken by a Valuation Committee to be organized and identified in the RP, based on the modes and standards provided by law and in compliance with this RPF, and agreed during consultations.

G. Preparation of the Resettlement Plans (RPs)

17. The RPs should be prepared alongside the conduct of the ESIA by the Concessioner and shall be sharing data during the course of the study and development of the plan.

18. Upon the engagement of the Concessioner, the Involuntary Resettlement Specialist/Advisor of INCOFER shall organize an RP Preparation Team in accordance with Paragraphs 25-26 of this RPF.

19. The ESIA Team shall conduct a sufficiently detailed socio-economic survey of the prospected areas to be acquired or recovered. Preliminary results of the survey shall be shared with the RP

preparation teams. The following information to be gathered in the survey shall be used in the drafting of the RPs:

- Assessment of the temporary and permanent impacts of land acquisition or expropriation, the approximate total area of land to be acquired, their location along the stretch of the alignment, settlement patterns, their current land uses, the number of land parcels to be affected and the approximate number of persons and households affected.
- Socioeconomic situations of affected households such as household size, income levels, livelihood sources and general standard of living, land tenure status and housing units.

20. Depending upon the extent of the involuntary resettlement impacts, i.e., the estimated number of PAPs and their locations/concentrations along the 84-km stretch of the railway route, the RP preparation Team may decide to divide the railway stretch into segments to be subject to separate RPs. This will facilitate consultations of PAPs and independent completion of RPs per segments.

21. Initial draft RPs shall be prepared following indicative contents provided in Paragraph 28, including a draft Entitlement Matrix. The initial draft will be the basis of consultations with the RPs, to among other finalize the entitlements and agree on the types and modes of compensation and assistance. The entitlement matrix will be finalized based on the results of the consultations.

22. A Valuation Committee shall be formed in every community, composed of local officials, or in accordance with the law and local ordinances. The Team and the PAPs shall agree on the valuation standards to be applied for losses that are eligible for compensation as reflected in the Entitlement Matrix.

23. When the detailed engineering becomes available and the exact areas to be acquired are clearly delineated, a detailed survey and inventory of the affected lands, the structures and other land improvements therein and their owners shall be undertaken. During these surveys, initial estimates of the values of the properties shall be determined using standards as agreed with the PAP and the Valuation Committee.

H. Institutional Arrangements

24. The requirements of involuntary land acquisition under this RPF will be implemented by INCOFER/Concessionaire (through the competent national institutions). CABEI will monitor the progress of the implementation of this RPF, through periodic visits and reviews of the quarterly reports submitted by INCOFER.

25. As provided in the ESMF, INCOFER shall hire or designate from its staff an Involuntary Resettlement Advisor who shall take the lead in implementing this RPF.

26. The Involuntary Resettlement Advisor will organize Resettlement Team composed of staff from INCOFER and the Concessioner and relevant government institution. The preparation of the RP may be contracted out to a consulting group which would be closely supervised and managed by the RP Preparation Team.

27. As reflected in the ESMF, the Involuntary Resettlement Advisor will prepare information on the progress of the RP preparation and implementation to be submitted to CABEI. Draft RPs should also be submitted to CABEI for comments..

I. Indicative Contents of the Final Resettlement Plan

28. The Resettlement Plan shall have the following elements:

- (1) Description of the project and the activities that give rise to the displacement impacts
- (2) Description of potential impacts - the area to be acquired, the scope and scale of the land acquisition, land use restrictions if any, the approximate number of people or household to be affected, the alternatives considered to avoid or minimize displacement and why those were rejected.
- (3) The main objectives of the resettlement program
- (4) Socioeconomic profile of the affected population, describing the characteristics of displaced households, their land tenure status, their income levels, livelihood sources and standards of living, presence of vulnerable groups or persons whom special provisions maybe made.
- (5) Legal framework and institutional framework- description of the laws, regulations and procedures of the eminent domain land acquisition, the agencies responsible and their institutional capacities. Identify any gaps with respect to the objectives and requirements of GCF's ESS5 and the mechanisms adopted to fill in those gaps.
- (6) Eligibility and entitlements - (i) definition of displaced persons and criteria for determining their eligibility for compensation and other resettlement assistance; (ii) categories of displaced or affected persons/households in terms of tenurial status to the land, the assets to be lost/affected; (iii) the entitlements per category of displaced persons/households based on the country's law and ESS5 and any special or additional assistance to be extended to vulnerable groups or persons, summarized in a matrix format; (iv) the cut-off date for eligibility or inclusion for compensation of new structures and land improvements.
- (7) Valuation of and compensation for losses - the methodology to be used in valuing losses to determine their replacement cost; and a description of the proposed types and levels of compensation for land, natural resources and other assets under local law and such supplementary measures as are necessary to achieve replacement cost for them; establishment of the cut-off date.
- (8) Community participation - the involvement of displaced persons (including host communities, where relevant), summary of their views and concerns and how these were addressed in the RP.
- (9) Implementation schedule - identification of the remaining steps and milestones in the implementation/execution of the RP and the schedule providing anticipated dates for displacement, payment of compensation, construction of replacement housing units, actual transfer, the initiation of livelihood program. The schedule should indicate how the resettlement activities are linked to the implementation of the overall project.
- (10) Costs and budget . Tables showing categorized cost estimates for all resettlement activities, including allowances for inflation, population growth, and other contingencies; timetables for expenditures; sources of funds; and arrangements for timely flow of funds, and funding for resettlement, if any, in areas outside the jurisdiction of the implementing agencies .
- (11) Grievance redress mechanism. The plan describes affordable and accessible procedures for third-party settlement of disputes arising from displacement or resettlement; such

grievance mechanisms should take into account the availability of judicial recourse and community and traditional dispute settlement mechanisms .

- (12) Monitoring and evaluation. Arrangements for monitoring of displacement and resettlement activities by the implementing agency, supplemented by third-party monitors as considered appropriate.

ANNEX 2. PRELIMINARY MITIGATION AND ENHANCEMENT MEASURES OF THE PROJECT'S ENVIRONMENTAL COMPARTMENTS DURING CONSTRUCTION

<i>1. Air quality</i>
Air quality may be mainly affected by the introduction or enabling of new temporary structures. This can have a direct effect on the generation of suspended particles or dust, odors, as well as emissions from machinery and heavy vehicles inside during the execution of the works. This could cause discomfort for neighbors, or health problems among workers from direct and continuous inhalation of emissions.
Preventive and Mitigative Measures:
✓ Establish manuals for the safe operation of the different equipment and machinery used in excavation, material transfer and construction, being mandatory compliance of the operators to ensure the good use and condition of these.
✓ Establish working schedules and alternate tasks in the use of heavy machinery according to the section of the layout and according to the work, in order not to hinder the movement of vehicles on related routes and trying to alter as little as possible the quality of life of the local populations.
✓ Wet work surfaces by tank or manual spray system to prevent clouds of dust from rising from work areas and access streets during periods of dry or rainy season in the area. Intensify these tasks in accordance with wind conditions, solar radiation and proximity to agricultural, commercial or industrial production areas, as well as population centers or housing.
✓ Regulate the speed of wagons and other heavy equipment in the work areas, at speeds that do not favor the lifting of dust curtains.
✓ Quickly remove the leftover materials resulting from earth movements or the construction of the different works of the Project.
✓ Temporarily cover with some type of material that retains or decreases dust particles from materials or mounds of earth that are more than one day in the same location.
✓ Store dusty or fine grain volumetry materials in ideal places that prevent air pollution or are easily dispersed.
✓ Protect by means of plastics the stacks of ground debris, in order to prevent them from serving as a source of air pollution inside the AP and its AID.
✓ Cover the load of the wagons with tarpaulins or some other cover, to avoid the generation of dust.
✓ To define adequate maintenance and adjustment, so that the machinery meets the requirements established by the current legislation (Vehicle Technical Review) and that, in this way, the minimum impact on the air is guaranteed.
✓ Vehicles and machinery with anomalies at the gas outlet must be removed from the Project area and repaired at a suitable site.

✓ Solid waste is recycled and stored in suitable places for later collection, thus avoiding the generation of odors.
✓ Avoid burning garbage or debris.
✓ Ensure the good use and maintenance of sanitary cabins, performing a proper periodic cleaning and labeling the measures that users must comply with.
✓ Asphalt, concrete, crushers, workshops, service yards and other related facilities shall be established in areas removed from residential centers and according to the regulatory plans of each municipality as established by national regulations; In addition, material deposits must be covered. Waste and waste derived from these works shall be deposited in containers or in the properly identified sewage system and intended for this purpose for proper treatment.
✓ Employees should wear personal protective equipment for work or occasions that require protection to avoid respiratory conditions or eye conditions from any dust or particulate matter.
✓ Coordinate with the competent authorities or assign qualified personnel for transit regulation tasks during the execution of the different construction activities and transfer of materials to the AP.
✓ Establish efficient communication mechanisms for road users and inform them of possible temporary closures as works progress so that they take alternate routes and avoid unnecessary agglomerations on the different fronts of execution of works

2. Surface and Groundwater
There could be a direct impact in water sources near the project area, due to the earthworks, installation of temporary facilities, generation of wastewater and general construction activities.
The machinery in the project area and other defined project sites could be a cause of pollution, due to spillage of paint, emulsions, asphalt mixes, concrete mixes, fuels or oils, all of which could infiltrate into the soil or be carried away by stormwater. Earthworks also leave exposed soil that could be carried off to nearby water bodies. If solid wastes and wastewaters are not properly managed, they could also generate a negative impact due to accidental leachate release or elevated levels of certain pollutants.
Preventive and mitigative measures:
✓ Protect existing plant cover that does not need to be removed, where possible, in areas of the right of way where bridges, drains and other infrastructure go to conserve water bodies.
✓ Establish devices to capture sediments, whether through meshes, mesh pits, sediment trap drainage channels, settling dams, or some other means, in work areas before runoff water reaches bodies of water. At this point, a periodic maintenance system of these devices should be in place to prevent sediment saturation, while depositing them at the points intended for these types of materials or waste.
✓ Establish protective ditches at the base of the slopes, in order to contain and direct sediments arising from runoff erosion into sediment traps. These can be located in the middle of the slope cut, when these are in the form of terraces, such as at the top and its base.

<p>✓ Use machinery in good condition to prevent spills of oil, fuel or some other polluting material.</p>
<p>✓ Placement of containment structures such as buttresses, retaining walls, gabions and rock counterweights, as well as placing at the exit of the sewer or laundry to contain the deposition of solid waste.</p>
<p>✓ Establish a preventive maintenance program for machinery outside the project's work areas and away from water bodies.</p>
<p>✓ Fueling only machinery that cannot be removed from the AP and by appropriate devices that do not risk spillage or that meet the safety of personnel.</p>
<p>✓ Perform repairs in a waterproofed shed near the AP or locate suitable areas for a maintenance workshop near the project.</p>
<p>✓ Establish a spill emergency care program.</p>
<p>✓ Keep track of the use and maintenance of mobile latrines, septic tanks, treatment or pumping plants of treated water for reuse, as well as protocols for the transfer of waste by the use of these devices.</p>
<p>✓ Have staff, containers and containers for the collection of ordinary and special solid waste, if any; the latter must be properly labeled. As far as possible, the classification of waste shall be promoted in order to promote its reuse, recycling and its differential handling and disposition depending on its nature and degree of danger.</p>
<p>✓ Avoid the development of the activity of earth movements during periods of heavy rain, in order to minimize the hauling of sediments from the work areas to the receiving channels.</p>
<p>✓ Have efficient control of solid waste collection in the drainages of the site, as well as the bodies of water, in order to keep free of any waste material or waste, product of construction activity and formation of the track, bridges, or any structure of the project.</p>
<p>✓ Implement measures for the management of solid and liquid waste according to a Structured Waste Management Plan in each of the activities involved in the project.</p>
<p>✓ Use water-efficient equipment and devices, both in the construction of bridges, sidewalks, bus bays, cycleways, pedestrian bridges, plant processes and dust mitigation tasks, to prevent leakage and water loss.</p>
<p>✓ Do not use water from surface bodies of water to mitigate dust or for construction, unless appropriate use of the resource is available.</p>
<p>✓ Machinery and equipment operators shall carry out their cleaning and maintenance work in areas or sites away from the bed of surface currents, in places properly established for these tasks and where an appropriate system is available for the treatment of grey water.</p>
<p>✓ Waterproof vulnerable areas, areas for solid waste deposits, material warehouse floors and fuel management areas, in order to avoid possible leaks in the soil with the consequent contamination of the bodies of water.</p>
<p>✓ In the case of storage and use of fuels and chemical materials, the different areas where their handling and use is available should be labeled warning of the risks and precautionary measures to be implemented.</p>
<p>✓ Wineries or areas of chemical materials and flammable substances shall be located in waterproofed areas with double containment systems; under the authorization of MINAE and duly closed, labeled and restricted access as required by national law.</p>

<p>✓ Asphalt, concrete, crushers, workshops, service yards and other related facilities shall be established in areas outside natural drains as established by national regulations; In addition, material deposits must be covered. Waste and waste derived from these works shall be deposited in containers or in the properly identified sewage system and intended for this purpose for proper treatment.</p>
<p>✓ Avoid contamination of water with concrete products during the construction of bridges or other structures. This can be implemented by preparing the mixture or concrete product outside the drainage areas or the crack or river protection areas; or by efficiently using equipment that prevents contamination of water sources or drainage channels.</p>
<p>✓ Avoid minor or unnecessary hydrological modifications and occasional contamination episodes. This requires delimitation of work areas, establishment of environmental safety standards, clear drainage design and seeking as little disruption as possible according to quality standards and national regulations for such works.</p>
<p>✓ Establish efficient wastewater collection and treatment mechanisms at each of the sites established for camps, material and machinery holds, prefabricated plants, concrete and asphalt mixing plants.</p>
<p>✓ Prohibit washing equipment or machinery in surface water sources or bodies such as ravines, rivers or lagoons.</p>
<p>✓ Prohibit direct discharge of wastewater that occurs in temporary buildings, or that are moved in different equipment and machinery, directly into municipal sewer systems, public or private drains, and bodies of water without prior treatment that complies with national regulations.</p>
<p>✓ Prevent the obstruction of waterways with debris or excess material from the earthworks, unless it is part of the process to reinforce and/or build bridges, and always under proper environmental supervision.</p>

<p>3. Soils</p>
<p>Impacts on the soil are generated primarily during earthworks, the installation of temporary facilities, transportation of materials and equipment, generation of wastewater aEvidently the soil conditions vary because of the earthworks and the ground leveling activities for dump sites, access ways to material deposits, and installation of temporary facilities and material warehouses. Generation of solid waste and wastewater could result in accidental release of leachates or other pollutants. Permanent structures such as bridges, service roads, over/underpasses, among others, create conditions of ground impermeability.</p>
<p>Corrective measures:</p>
<p>✓ Earth movement work shall, as far as possible, be carried out in the driest periods or periods of the day that there is no rainfall.</p>
<p>✓ Ground movements shall be made only according to the technical criteria established in the design of the project and approved by the national authorities. Unnecessary or outside earth movements are not permitted in the design of the work.</p>
<p>✓ The removal of solid or leftover waste should be coordinated with the progress of excavation and construction work, with the aim of reducing dust or the drag of sediments by rain.</p>

<p>✓ Excavation and filling shall be carried out only within the surfaces belonging to the right of way and in accordance with the designs of the project.</p>
<p>✓ Drainage systems shall be installed in accordance with the designs of the project, as soon as possible, and prior to the execution of the fillings in order to avoid excess moisture and to reduce erosion.</p>
<p>✓ Emphasis is placed on the construction of energy dispensers in pipe outlets, ditches, drainage sewers or so on to reduce land undermining.</p>
<p>✓ Erosion-resistant materials are used in the different road structures to prevent undermining.</p>
<p>✓ An appropriate cut of the slopes is maintained, with the required angle that prevents the collapse of the slopes. It follows the technical aspects of the design of the project, seeking cuts on terraces and with the angles appropriate to the floor type of the AP.</p>
<p>✓ Build temporary cobbled bowls on the slopes, in order to reduce material, drag and erosion.</p>
<p>✓ Separate the fertile or organic layer from the soil so that it can then be used, either within the same project or outside it, in soil restoration work. Specific sites for the deposition of these materials will be available for this measure but complying with dust and erosion control measures (plastic or other material covers).</p>
<p>✓ Green hedges are used as far as possible for slope containment. systems are installed to reduce runoff erosion.</p>
<p>✓ Appropriate drainage and solid waste management.</p>
<p>✓ Containment systems for slopes or slope exposed surfaces, by geotextiles or other material that prevent direct exposure to rain dripping or wind are installed.</p>
<p>✓ Leftovers from the asphalt mixture must be collected and sent in dump trucks to the asphalt plant for recycling or final disposal.</p>
<p>✓ Soils intended for decompressions must be suitable for topography, drainage, texture, and so on, for the deposition of these materials and in accordance with the regulatory plan of each municipality.</p>
<p>✓ Equipment and machinery in good condition should be used to prevent oil spills.</p>

<p>4. Fauna</p>
<p>During the execution of the work there could be an indirect impact on the fauna of the area, due to the construction of civil works.</p> <p>The work of shaping the construction spaces of civil works, the extension of lines and bridges, the construction of entrances, drainage and other complementary works, are elements that could cause various impacts during the construction phase. The effects temporarily, the result of habitat fragmentation, could manifest as the loss of food, shelter and nesting sources of some species of birds, reptiles and mammals.</p>
<p>Preventive and mitigative measures:</p>
<p>✓ To make a gradual advance and by sections of the construction of the different structures of the work, which allows the migration of the existing fauna to areas conducive to the surrounding areas.</p>

<p>✓ Promote connectivity between protection zones in the way of corridors, either through artificial or natural wildlife crossings, where species can move through different zones. This is particularly important in the area where the project is located within the COBRI- SURAC Biological Corridor.</p>
<p>✓ Keep mobile latrines in good condition to prevent spillage of sewage and odors, away from drains or bodies of water.</p>
<p>✓ Maintain artificial coverings such as plastics or textiles on temporary deposits of solid waste to prevent leachate spillage or exposure of hazardous materials that are at risk to animals.</p>
<p>✓ Establish maintenance protocols for wastewater tanks or containers containing solid waste, to ensure the non-exit of leachates that harm aquatic life or existing animals.</p>
<p>✓ Maintain solid waste either organic or as a result of construction activity, in containers properly designated, labeled and with an airtight lid; pose a risk to existing wildlife.</p>
<p>✓ Establish protocols for the initiation of land movement or construction work, where prior verification of the non-presence of animals on work fronts or in the areas of opening of works is made to avoid damage or mortality. This protocol should include measures for the relocation of fauna that may be found on the frontlines.</p>

<p>5. Flora</p>
<p>The execution of the work could have a direct impact on the existing flora, due to the elimination of vegetation, and the enabling of temporary buildings. Constructive work entails a series of activities within the PA, including the elimination of vegetation, which occurs in a specific area (no trees are observed on the right of way, the need for short is limited) and with a non-cumulative effect, but with the time can be recovered. In the other works, such as the building of temporary works, it is considered moderate, depending on the conditions of coverage presented by the land selected for such works. The impact generated will require corrective measures that provide the restoration of altered spaces; otherwise, it could create an imbalance to the environment of the project.</p>
<p>Preventive and mitigative measures:</p>
<p>✓ In the event that trees need to be cut, carry out all the legal procedures required for the project to comply with current regulations and under the consent of the state authorities.</p>
<p>✓ Advise of long-experienced forestry professionals, who guarantee an efficient process, both in the census of the existing forest mass and in the respective short permit procedures.</p>
<p>✓ The work of eliminating plant cover will be done mechanically and manually, no such work may be carried out through the use of agrochemicals or through controlled burning practices.</p>
<p>✓ For the elimination of trees in areas of protection of public domain channels, the respective permits of the Ministry of Environment and Energy and the Declaration of National Convenience of the Project must be available.</p>
<p>✓ Carry out the cutting of the trees with the supervision of forest engineers and complying with all the safety measures established for this type of operation.</p>

<p>✓ At the limits of the protection areas of rivers and ravines or at the limits of the right of way where it is not clearly displayed, the trees to be cut should be delimited with colored ribbons or paint so that it differs from those that are not to be cut.</p>
<p>✓ The limits of the area of removal of the plant cover should be clearly indicated in the field, using visible signals (colored or other ribbons), which allow to verify the limits of the cutting area. This protects the areas adjacent to the project by preventing machinery from entering those sites.</p>
<p>✓ Restore, as far as possible, the plant cover removed in some surrounding areas of the AP, through reforestation with native species to maintain ecological balance.</p>
<p>✓ Develop dismantling activities only at those strictly necessary sites (construction footprint).</p>
<p>✓ Promote as far as possible, the development and protection of the native species of the area, as part of the actions of protection and environmental development of the green areas located within the AP.</p>
<p>✓ Nonusable waste arising from the tree cutting process shall be removed from the right of way and deposited in areas clearly established for the treatment of such types of organic waste.</p>
<p>✓ Waste derived from tree cutting will not be burned in any of the cases, except with the authorization of the Ministry of Health.</p>
<p>roject because of the ecological importance of plant cover.</p>
<p>✓ Establish and execute an arborization plan with native or native species with the aim of recovering the intervened areas, especially areas of protection of rivers and streams, giving a landscape sense to the stretches that allow a more organized arborization.</p>
<p>✓ The timbers resulting from the processes of disposal of plant cover will be destined for schools as stipulated by national legislation, the mechanisms used for the delivery of such goods will be carried out in a transparent manner by the competent authorities and reported by the national written and oral media.</p>

<i>6. Heritage</i>
<p>The project contemplates the restoration and maintenance of certain structured considered to be physical heritage, according to the Cultural Heritage Research and Conservation Center of the Ministry of Culture and Youth.</p>
<p>Enhancing Measures:</p>
<p>✓ Coordinate with Cultural Heritage Research and Conservation Center and other authorities for the design and preparation of blueprints, so that the renovation and maintenance of buildings is performed according to technical guidelines and other applicable norms.</p>
<p>✓ In case of doubt on the possible affectation to cultural heritage, prior consultation with the pertinent authorities must be carried out before proceeding with the works.</p>
<p>Comply with all recommendations of the restoration plan and submit the progress reports in the established period.</p>

<i>7. Landscape</i>

<p>The possible impacts that the landscape could experience would be due to vegetation removal, land movement, enabling temporary buildings, generating solid waste, and building civil works.</p> <p>The landscape is irretrievably impacted, as it is intended to expand and rehabilitate a railway infrastructure project; however, by mainly affecting the existing right of way, it is expected to be moderately impacted. Given this, it is recommended:</p>
<p>Corrective measures:</p>
<p>✓ Recover, as far as possible, plant cover along the right of way and in the protection areas of the water bodies.</p>
<p>✓ Plan the work in such a way that the coverage presents in the AP and in the vicinity of the borders, serves as a buffer barrier to the landscape effects of the project.</p>
<p>✓ Sow native species of the area in areas that do not intervene with the project to mitigate the visual impact. Exotic species should not be introduced in order to preserve the biological quality of natural ecosystems.</p>
<p>✓ Perform ordered earth movements, in accordance with ground conditions and following technical guidelines to ensure stable slopes.</p>
<p>✓ Make earth movements only in the necessary sites and in the necessary quantities, without exceeding the dimensions stipulated by the designs of the work.</p>

<p><i>8. Employment, local economy and social welfare.</i></p>
<p>The potential positive impacts that the project could generate during the construction phase are on the part of increasing employment, improving the local economy and social welfare, the product of the activities of the elimination of vegetation, movement of enabling temporary buildings, generating wastewater, generating solid waste and building civil works.</p>
<p>Enhancing measures:</p>
<p>✓ Hire staff from neighboring communities for different construction sites, vegetation removal, land movement, temporary building clearance and construction maintenance.</p>
<p>✓ Non-area project workers demand services such as food, lodging and recreation.</p>
<p>✓ Workers and local commerce in general receive economic income from services provided in accordance with national legislation and for the rental of real estate for the installation of temporary structures.</p>
<p>✓ Communicate any utility interference at least three days in advance.</p>
<p>✓ To pay attention to any complaint or discontent that the project's neighbors may have.</p>
<p>✓ Establish close coordination with local authorities such as Municipalities, the Fire Brigade, the Red Cross, the police authorities, the regional offices of the Ministry of the Environment and the Ministry of Health, as well as A and A, ICE, ESPH, JASEC, Local Emergency Commission and other community groups and NGOs, which could eventually provide some collaboration, when the development of the project could affect basic services or any of its components poses some unplanned risk.</p>
<p>✓ Demarcate well the areas of work, maintain the safety and prohibition measures of entry to individuals, maintain the order of the vehicle flow during construction work.</p>
<p>✓ Do not invade, or cause damage to the private land of the neighbors or communal, municipal or State properties during any constructive or logistical activity.</p>

✓ Report alternative transport measures for current urban train users when there is a temporary suspension of service by construction activity.
✓ Communicate to the public about the location of work fronts or partial closures through oral and written means.
✓ Maintain good design of the works to allow entry to private, communal, state property; ensuring the safety of all users.
✓ Training of personnel in the different technical and operational areas.

ANNEX 3. PRELIMINARY MITIGATION AND ENHANCEMENT MEASURES OF THE PROJECT'S ENVIRONMENTAL COMPARTMENTS DURING OPERATIONS OF TRAIN SYSTEM

1. Heritage
The project contemplates the restoration and maintenance of certain structured considered to be physical heritage, according to the Cultural Heritage Research and Conservation Center of the Ministry of Culture and Youth.
Enhancing measures:
✓ Promote and facilitate public access to heritage sites, as long as it is safe and convenient, to establish links between the community and its history and culture.
✓ If the heritage site is used for commercial purposes by any dimension of the project, public compensation measures must be implemented for said use, both in tangible (economic income) and intangible (education and awareness) terms.
✓ Maintain active supervision of all heritage sites, so that the operation and maintenance is carried out under a continuous improvement approach.

2. Landscape
The maintenance and operation of the train system can generate impacts on the landscape due to the permanent transformation of certain areas and the considerable increase in the frequency of service.
Corrective measures:
✓ With more lighting at intersections, stations, catenaries and other structures, the landscape will certainly be affected, although in the face of consultations some people perceive change as neutral or positive. As a mitigation, elements of landscape design can be incorporated through a joint work of architecture and the advice of professionals who can recommend the right species according to the ecological and aesthetic need.
Employment, local economy and social wellbeing.
The potential positive impacts the project could experience on the employment, local economy and social welfare part would be due to the operation and maintenance of the project, wastewater generation, and solid waste generation.
Enhancing measures:
✓ Maintain well signposted the different intersections and routes to ensure the safety of users and avoid conflicts or accidents with vehicles and pedestrians.

<ul style="list-style-type: none"> ✓ Keep the lighting system in good condition at junctions and intersections, such as in safety bays to avoid traffic accidents and problems of citizen insecurity.
<ul style="list-style-type: none"> ✓ Carry out the proper maintenance of the works, in time of care and the quality of the work to ensure the fluidity of the new transport service.
<ul style="list-style-type: none"> ✓ Explore potential productive linkages with other commercial or industrial activities near the TRP stations, to strengthen the links with the community and expand the benefits of the project beyond public transport.
<ul style="list-style-type: none"> ✓ Implement an outreach program for new job opportunities, so that they are communicated in an inclusive manner, taking into account women, disabled people and other vulnerable groups.
<ul style="list-style-type: none"> ✓ Provided that the requirements for the position are met, prioritize the hiring of inhabitants from the communities located in the TRP influence areas.
<ul style="list-style-type: none"> ✓ For engineers and operators in charge of the rolling equipment, implement IFC protocols regarding rest and electric safety, to ensure that the operation and maintenance of the TRP is carried in a safe and secure manner.

<p>3. Fauna</p>
<p>The operational phase of the work could have an indirect impact on the fauna of the area, mainly due to the operation of the new train system, and in a more minor way, due to the activities and constant movements that are carried out in the maintenance work, that can scare away some species of birds, reptiles and mammals or generate a broader physical barrier that prevents the passage from one sector to another if corrective action is taken.</p> <p>The fauna can be affected and driven away, due to the increase in the frequency of rail traffic. However, it should be reiterated that the project is built on an existing right of way, in some cases for more than 100 years, this being an already impacted area. The additional impact expected would be mild or low with respect to current conditions.</p> <p>On the other hand, without adequate management of surface water discharges, it would create problems in the quality of the environment for some animals.</p>
<p>Corrective measures:</p>
<ul style="list-style-type: none"> ✓ Properly maintain equipment, auxiliary plants (if used), maintenance equipment for green areas and personnel transfer equipment so that they do not emit excessive noise during their operation.
<ul style="list-style-type: none"> ✓ Give proper maintenance to wildlife passage or artificial connectivity structures at critical points identified by wildlife specialists.
<ul style="list-style-type: none"> ✓ Ensure the proper functioning of established fauna crossing structures that allow better mobilization of the fauna species of the area.
<ul style="list-style-type: none"> ✓ Avoid the use of loudspeakers or high-volume hearing media that can scare away local wildlife species.
<ul style="list-style-type: none"> ✓ Establish mechanisms for the care of injured animals or facilitate specialized animal rescue institutions to assist cases of injured animals through coordination with national authorities.
<ul style="list-style-type: none"> ✓ Signal areas or hotspots of wildlife passage using INCOFER-approved devices so that drivers are aware and more attentive to a potential collision with an animal.

4. Soil

Mainly the maintenance of the different works and the areas of the right of way, could generate a negative impact on the ground if not implemented properly. The renovation of the infrastructure also causes waterproofness on the ground.

Corrective measures:

✓ Solid waste should be disposed of in the same work site on a temporary basis, while placed in containers or on equipment arranged for such purposes.

✓ Avoid equipment and machinery maintenance activities within road areas that may generate hydrocarbon or fuel spillage.

✓ Use equipment in good condition and with proper mechanical maintenance.

✓ Train operational personnel for the good use of equipment and for efficient work in maintenance work.

✓ Recycle or reuse solid waste generated by maintenance activity or give them adequate treatment to deposit it at authorized sites.

✓ Avoid solid waste clusters on the right of track for periods longer than 24 hours. Waste from maintenance work must be collected immediately for transfer to authorized facilities.

✓ Avoid deposition of toxic or polluting materials over green areas or drainage.

5. Air Quality

A significant positive impact on air quality is expected by the replacement of diesel trains and locomotives with state-of-the-art electrical equipment. A reduction in the movement of private vehicles is also anticipated, by the implementation of a modern and efficient mass transport system, which will contribute to the reduction of greenhouse gas emissions. There will also be a decrease in noise levels, both from the one emitted by the rolling equipment in its operation, and by the virtually total elimination of the use of the train horn.

Enhancing measures:

✓ Generate a communication strategy to disclose the potential for reducing polluting emissions by switching from a diesel train to an electric system and the benefits that this brings to human health and well-being.

✓ Implement a protocol that promotes and facilitates intermodal transport, taking advantage of connections with various bus lines.

✓ Dialogue with owners of land or other properties near the stations to develop parking facilities for cars, motorcycles and bicycles, serving the population that uses individual means of transport. The purpose is to align incentives for more people to use the mass transit system and reduce the use of their particular vehicles.

✓ Maintain effective means of communication for citizens and train users, in case maintenance fronts are met and alternative transportation options are required.

ANNEX 4: CULTURAL HERITAGE POLICY FRAMEWORK

Cultural Heritage, including tangible and intangible cultural resources, must be protected from the adverse impacts of the Project and its preservation must be supported, in line with IFC Performance Standard 8 (IFC PS8) on Cultural Heritage (in particular related to Critical Cultural Heritage).

4.1. INTRODUCTION

This Cultural Heritage Framework (CHF) establish the general guidelines and requirements to be met by INCOFER/Concessionaire to manage architectural heritage and fortuitous findings related to cultural heritage during activities in facilities belonging to INCOFER. Also, this procedure is established in order to comply with the requirements of SETENA and the National Cultural Heritage Center.

GCF and CABEI, as an accredited entity, provide ample recognition of the Cultural Heritage and establishes the protection of cultural heritage as a management priority.

The GCF interim safeguards, particularly the IFC PS8 sets the standards for addressing and mitigating risks resulting from manage architectural heritage (the built heritage refers to single or groups of architectural works in their urban or rural setting as evidence of a particular civilization, a significant development or a historic event. This includes groups of buildings, structures and open spaces constituting past or contemporary human settlements that are recognized as cohesive and valuable from an architectural, aesthetic, spiritual or sociocultural perspective) and fortuitous findings related to cultural heritage (for the purposes of this framework, a fortuitous finding is defined as the unplanned discovery of any structure, material or vestige that could be considered as part of the archaeological or paleontological heritage).

4.2. OBJECTIVES

The overall objectives of the safeguards on Cultural Heritage are the following:

- To protect cultural heritage from the adverse impacts of project activities and support its preservation.
- To address cultural heritage as an integral aspect of sustainable development.
- To promote meaningful communication with stakeholders regarding cultural heritage and/or to promote the equitable sharing of benefits from the use of cultural heritage, in case of it be required and applicable.

4.3. REQUIREMENTS

The requirements under this Cultural Heritage Policy Framework (CGF) will be implemented by Concessionaire. CABEI will bring follow up to the CGF, through the monitoring of the CABEI's ESAP⁴:

⁴ ESAP, Principle 7, Cultural Heritage

- The Project Environmental and Social Impact Assessment (ESIA) and the Environmental and Social Management Plan (ESMP), will consider direct, indirect and cumulative project-specific risks and impacts on cultural heritage. Through the ESIA assessment, the INCOFER/Concessionaire will determine the potential risks and impacts of the proposed activities of the project on cultural heritage and the applicability of regional or international cultural heritage regulations to the project.
- INCOFER/Concessionaire will avoid impacts on cultural heritage. When avoidance of impacts is not possible, the Concessionaire will identify and implement measures to address impacts on cultural heritage in accordance with the mitigation hierarchy (considering principles and requirements of IFC PS8 to mitigate adverse social and economic impacts due to Cultural Heritage).
- Where necessary due to the potential risks and impacts of a project, the ESIA will involve the participation of cultural heritage experts. If the environmental and social assessment determines that the project may, at any time during the project life cycle, have significant potential risks and impacts on cultural heritage, Concessionaire will engage cultural heritage experts to assist in the identification, valuation assessment and protection of cultural heritage.
- Concessionaire will implement recognized practices for field-based study, documentation and protection of cultural heritage in connection with the project, including by contractors and other third parties.
- As part of the ESIA, the INCOFER/Concessionaire will determine the presence of all listed legally protected cultural heritage areas (including built heritage) affected by the project and implement additional protocols, as appropriate, to promote and enhance the conservation aims of the protected area in coordination with the national cultural heritage authority.
- A chance finds procedure (fortuitous findings procedure related to cultural heritage) is a project-specific procedure which will be followed if previously unknown cultural heritage is encountered during project activities. It will be included in all contracts relating to construction of the project, including excavations, demolition, movement of earth, flooding or other changes in the physical environment. The chance finds procedure will set out how chance finds associated with the project will be managed. The procedure will include a requirement to notify relevant authorities of found objects or sites by cultural heritage experts; to fence-off the area of finds or sites to avoid further disturbance; to conduct an assessment of found objects or sites by cultural heritage experts; to identify and implement actions consistent with the requirements of this ESS and national law; and to train project personnel and project workers on chance find procedures (INCOFER/Concessionaire will take the necessary actions to safeguard the finding until the technical inspection by experts from the National Cultural Heritage Center).
- Concessionaire will identify stakeholders that are relevant for the cultural heritage that is known to exist or is likely to be encountered during the project life cycle.
- Concessionaire will design and implement the Project Cultural Heritage Management Plan. It will include managing and Preserving the Historical Cultural Architectural Heritage and Archeological Resources Management, as it corresponds in case of findings with an implementation timeline and an estimate of resource needs for each mitigation measure. This may be developed as a stand-alone document or, depending on the nature and the scale of the risks and impacts of the project, as part of the ESMP.

- INCOFER/Concessionaire, in consultation with the Bank and cultural heritage experts, could determine whether disclosure of information regarding cultural heritage would compromise or jeopardize the safety or integrity of the cultural heritage or would endanger sources of information. In such cases, sensitive information may be omitted from public disclosure (the Concessionaire will put in place measures to maintain confidentiality).

4.4. INDICATIVE OUTLINE AND PROVISIONS FOR SPECIFIC TYPES OF CULTURAL HERITAGE:

a. Archaeological sites and material:

- Where there is evidence or high probability of past human activity in the area of the project, the Concessionaire will conduct desk-based research and field surveys to document, map and investigate archaeological remains. The Concessionaire will document the location and characteristics of archaeological sites and materials discovered during the project life cycle and provide such documentation to the national cultural heritage authorities.
- Concessionaire will determine, in consultation with cultural heritage experts, whether archaeological material discovered during the project life cycle requires: (a) documentation only; (b) excavation and documentation; or (c) conservation in place and will manage the archaeological material accordingly. The Concessionaire will determine ownership and custodial responsibility for archaeological material in accordance with national law, and until such time as custody has been transferred, will arrange for identification and conservation to enable future study and analysis.
- INCOFER/Concessionaire will support the inclusion and cooperation of the various stakeholders through a dialogue with the appropriate authorities, including the relevant national regulatory authorities entrusted with the protection of cultural heritage, to establish the most effective means for addressing the views and concerns of the stakeholders and involving them in the protection and management of the cultural heritage.

b. Architectural Heritage:

- Concessionaire will identify appropriate mitigation measures to address the impacts on Built Heritage, which may include (a) documentation and (b) conservation or rehabilitation in situ. During any rehabilitation or restoration of cultural heritage structures,
- Concessionaire will maintain the authenticity of form, construction materials and techniques of the structure(s).
- Concessionaire will preserve the physical and visual context of individual or groups of historic structures by considering the appropriateness and effect of project infrastructure proposed for location within the range of sight, according with the instructions of the national cultural heritage authorities.

4.5. COUNTRY LAWS AND POLICIES RELATED TO CULTURAL HERITAGE

INCOFER/Concessionaire will assess Costa Rica laws and policies related to Cultural Heritage (Constitution of the Republic of Costa Rica, Law 6703/1981, and Law 7555/1995).

A comparison and gaps assessment between the laws and policies and the GCF safeguards standards relevant to Cultural Heritage will identify any gaps in the policies and requirements and the gap filling measures that will be implemented by the Project. The comparison also identifies the most stringent measures and approaches that may be adopted by the Project.

The process of Cultural Heritage should comply with the relevant national regulations as well as principles and requirements of the GCF interim IFC PS8.

4.6. REQUIRED INFORMATION ON CULTURAL HERITAGE

INCOFER will provide information on Cultural Heritage according with the CABEI's ESAP and the details indicated as part of the ESIA. The assessment or due diligence by CABEI will review the information and determine options and remedies if there are any circumstances that would impede conformance with the ESS standards.

4.7. VERIFICATION

CABEI will monitor and verify the implementation of the Cultural Heritage for compliance with this framework and alignment with the GCF safeguards, through its own. This process will audit the documentation and establishing supervision in situ to verify both the process and the outcomes. Any discrepancies will be recorded as a grievance for resolution through that process.

4.8. BUDGET, TIMETABLE, MONITORING AND EVALUATION

The measures that make up the Project Cultural Heritage Management Plan (according with the CABEI's ESAP) should establish their objectives, activities, who is responsible for them, the schedule and budget for their implementation, the source and allocation of resources, and the monitoring and evaluation indicators.

The timetable for the development of the measures must be articulated with the project schedule, so that the measures are applied before any impact is manifested and considering the consultation mechanisms according with the objectives, scope and schedule of the Plan.

ANNEX 5. INFORMATION DISCLOSURE, STAKEHOLDER ENGAGEMENT, AND GRIEVANCE REDRESS POLICY FRAMEWORK

ESIA will include a detail Stakeholder Engagement and Disclosure Plan and Grievance Redress Mechanism in compliance with IFC Performance Standard (IFC PS1).

INCOFER/Concessionaire will define clear roles, responsibilities and authority as well as designate specific personnel to be responsible for the implementation and monitoring of stakeholder engagement activities, information disclosure and implementation of the grievance mechanism, in compliance with the ESAP⁵.

5.1 INTRODUCTION

Information disclosure and stakeholder engagement is an inclusive process conducted throughout the project life cycle. Where properly designed and implemented, it supports the development of strong, constructive and responsive relationships that are important for successful management of the project's environmental and social risks. Stakeholder engagement is most effective when initiated at an early stage of the project development process and is an integral part of early project decisions and the assessment, management and monitoring of the project's environmental and social risks and impacts.

Also, under a compliance framework of national and international regulations and standards, should be generate a mechanism for addressing all petitions, grievances, complaints or suggestions that workers (either direct or hired by third parties) and interested parties might have the project.

5.2 STAKEHOLDER ENGAGEMENT AND INFORMATION DISCLOSURE:

Community and stakeholder engagement are a key component of the Project. Stakeholders are defined as groups or individuals who are directly and/or indirectly affected by a project, who have or may have interest in it, or may influence it in a positive or a negative way. As such, stakeholders can be local communities, individuals, their representatives, governmental bodies, civil society organizations, etc. The approach to stakeholder engagement for the Project is based on IFC PS1 and IFC Stakeholder Engagement Handbook⁶

Stakeholder meetings were carried out during the development of technical feasibility studies phase. INCOFER were held meetings with representatives of the fifteen municipalities located throughout the area of influence of the Project to discuss issues such as intermodal integration, Transport-Oriented Development - TOD, non-motorized transport infrastructure, real estate development, right of way, among others. Similarly, the creation of the Multilevel Technical Table as coordination and participation mechanisms to promote Transport-Oriented Development (TOD) and thus enhance the demand for the TRP and promote centralities with access to efficient public

⁵ ESAP, Principle 3, Effects in Surrounding Communities

⁶ https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_handbook_stakeholderengagement_wci_1319577185063

transport, involving different actors and stakeholders from both national and municipal government, civil society, academia and international cooperation agencies, among others⁷.

As part of the field work a series of activities will be carried out, which also include the application of data and opinion collection tools, consisting of different interview formats, aimed at different types of actors, and designed to collect key information and opinions, according to the different areas of interest.

Activities to be carried out as part of stakeholder engagement throughout the pre-construction phase will include, but are not limited to:

- a) Informative assembly
- b) Participatory assembly
- c) Opinion interviews

During the construction phase, the stakeholder map and their contact information must be updated.

5.3 GRIEVANCE REDRESS MECHANISMS:

An environmental and social grievance mechanism is an out-of-court recourse mechanism that allows any person or group of persons affected by the environmental and social impacts of a project to submit a complaint. Purpose of such mechanisms, as per GCF Policy is to provide room for grievance and redress and facilitate resolution of grievances about the environmental and social impacts of the Project. The approach to grievance redress mechanisms for the Project is based on IFC Performance Standard (PS1).

The Concessionaire should design a grievance mechanism to receive and facilitate concern or conflict resolution as the case may be, in relation with environmental and social risks and impacts of the project. Grievance mechanisms must be tailored to the level of project environmental and risks and impacts, with the purpose of resolving concerns or conflicts through an understandable and transparent consultative process consistent with project and/or local context. This mechanism should be socialized to workers and interested parties and they should be provided with ease of access to it.

The grievance mechanism may include:

- a) Different ways in which users can submit their grievances, which may include submissions in person, by phone, text message, mail, e-mail or via a web site;
- b) A log where grievances are registered in writing and maintained as a database;
- c) Procedures setting out the length of time users can expect to wait for acknowledgement, response and resolution of their grievances (the mechanism should count on an appropriate management level and be developed to address complaints quickly, using a comprehensive process that provides timely feedback to interested parties, without any retaliation);
- d) Transparency about the grievance procedure, governing structure and decision makers; and
- e) An appeals process (including legal or administrative resources which might be available according to legislation or to existing arbitration procedures) to which unsatisfied grievances may be referred when resolution of grievance has not been achieved.

⁷ For details see Annex 7 Funding Proposal.

INCOFER may provide mediation as an option where users are not satisfied with the proposed resolution.

5.4 INDICATIVE OUTLINE FOR THE STAKEHOLDER ENGAGEMENT PLAN AND GRIEVANCE MECHANISM:

1. Introduction
 - 1.1. Project presentation
 - 1.2. Project context
 - 1.3. Principles of stakeholder engagement related to the project
2. Applicable regulations related to stakeholder engagement
 - 2.1. Applicable national regulations and related requirements
 - 2.2. Applicable international standards and related requirements
 - 2.3. Other applicable standards
3. Analysis of project stakeholders
 - 3.1. Approach to stakeholder's identification
 - 3.2. Definition and proposed approach to groups of stakeholders
4. Activities related to stakeholder engagement
 - 4.1. Communications and information disclosure for the project and related studies
 - 4.2. Consultation activities carried out to date
 - 4.3. Activities and monitoring indicators for stakeholder engagement
5. Grievance redress mechanism
 - 5.1. Principles
 - 5.2. Procedure
6. Monitoring and reporting for stakeholder engagement activities
 - 6.1. Monitoring
 - 6.2. Reporting of activities
 - 6.3. Annual reporting
7. Appendixes
 - 7.1. List of stakeholders
 - 7.2. Communications and information disclosure scheme
 - 7.3. Grievance redress scheme

Also, the Concessionaire should design a worker's grievance mechanism in compliance with IFC Performance Standard (IFC PS2) for the purposes of addressing all petitions, grievances, complaints or suggestions) that workers might have, either direct or hired by third parties. This mechanism will be socialized to workers from the moment of hiring and they will be provided with

ease of access to it. The mechanism will count on an appropriate management level and will be developed to address complaints quickly, using a comprehensive and transparent process that provides timely feedback to interested parties, without any retaliation. It will also allow Anonymous submittal and addressing of complains. This mechanism will not prevent access to other legal or administrative resources which might be available according to legislation or to existing arbitration procedures, nor the substitution of complaint addressing mechanisms established by collective agreements.

5.5 STANDARD CODE OF CONDUCT FOR WORKERS

Concessionaire will define a Code of Conduct for Workers as part of the measures to deal with the environmental and social risks related to the project. The Code of Conduct must be applied to all personnel at the managerial, administrative or technical level, workers and other employees at the Construction Site or other places where the Works are being carried out. It also applies to the personnel of each subcontractor and to any other personnel who support the execution of the Works.

The Code of Conduct shall identify the behavior required by all Contractor Personnel, in order not to tolerate unsafe, offensive, abusive or violent behavior and where all persons should feel comfortable raising problems or concerns without fear of retaliation.