Meeting of the Board
28 June – 1 July 2021
Virtual meeting
Provisional agenda item 11

GCF/B.29/02/Add.02

7 June 2021

Consideration of funding proposals - Addendum II

Funding proposal package for FP166

Summary

This addendum contains the following seven parts:

a) A funding proposal titled "Light Rail Transit for the Greater Metropolitan Area (GAM)";
b) No-objection letter issued by the national designated authority(ies) or focal point(s);
c) Environmental and social report(s) disclosure;
d) Secretariat's assessment;
e) Independent Technical Advisory Panel's assessment;
f) Response from the accredited entity to the independent Technical Advisory Panel's assessment; and
g) Gender documentation.

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Funding Proposal

Project/Programme title:	**Light Rail Transit for the Greater Metropolitan Area (GAM)**
Country(ies):	Costa Rica
Accredited Entity:	Central American Bank for Economic Integration (CABEI)
Date of first submission:	2020/12/09
Date of current submission	2021/05/31
Version number	V.15

Contents

Please submit the completed proposal to:
fundingproposal@gcfund.org
Please use the following name convention for the file name:
"FP-CABEI-Costa Rica-2021-05-31"

A. PROJECT/PROGRAMME SUMMARY

A.1. Project or programme	Project	**A.2. Public or private sector**	Public
A.3. Request for Proposals (RFP)	Not applicable		
A.4. Result area(s)	Mitigation: Reduced emissions from: ☐ Energy access and power generation: ☒ Low-emission transport: ☐ Buildings, cities, industries and appliances: ☐ Forestry and land use: Adaptation: Increased resilience of: ☐ Most vulnerable people, communities and regions: ☐ Health and well-being, and food and water security: ☐ Infrastructure and built environment: ☐ Ecosystem and ecosystem services:	GCF contribution: 100%	
A.5. Expected mitigation impact	***7,622,805 tCO2e***	**A.6. Expected adaptation impact**	*Indicate total number of direct and indirect beneficiaries* *Indicate % of population*
A.7. Total financing (GCF + co-finance)	1,873,300,000 USD	**A.9. Project size**	Large (Over USD 250 million)
A.8. Total GCF funding requested	271,300,000 USD		
A.10. Financial instrument(s) requested for the GCF funding	☒ Grant 21,300,000 ☒ Loan 250,000,000 ☐ Guarantee Enter number ☐ Equity Enter number ☐ Results-based payment Enter number		
A.11. Implementation period	6 years	**A.12. Total lifespan**	44 years
A.13. Expected date of AE internal approval	*10/30/2019*	**A.14. ESS category**	A
A.15. Has this FP been submitted as a CN before?	Yes ☒ No ☐	**A.16. Has Readiness or PPF support been used to prepare this FP?**	Yes ☒ No ☐
A.17. Is this FP included in the entity work programme?	Yes ☐ No ☒	**A.18. Is this FP included in the country programme?**	Yes ☐ No ☒

A.19. Complementarity and coherence	Yes ☐ No ☒
A.20. Executing Entity information	The executing entity is the "Instituto Costarricense de Ferrocarriles" (INCOFER) created by the law Nº 7001, dated September 19th of 1985 in Costa Rica. Costa Rica's state-owned rail authority INCOFER is an independent statutory corporation established to operate the country's railway network. The Ministry of Finance (MOF) is the loan recipient and thus the Government of Costa Rica, represented by the MOF is also executing entity.

A.21. Executive summary (max. 750 words, approximately 1.5 pages)

In 2015 Costa Rica had total GHG emissions of 10.9 $MtCO_{2e}$ of which the transport sector contributed 51%. Emissions of the transport sector are projected to increase until 2050 by 44% without mitigation measures. The public transport share has declined in the last decade from 64% to 41% whilst private car and ride-hailing services have increased. This is also linked to an inefficient public transport system. Consequences are increasing air pollution, congestion and accidentality. Alone congestion costs are estimated at 4% of the GDP in 2018. Non-Motorized Transport (NMT) only plays a marginal role with the lack of cycling infrastructure and the associated safety concerns being cited as main reason. Barriers towards a new transport system are primarily of financial nature plus limited experience with NMT and measures to improve last-mile connectivity and accessibility of stations. Costa Rica is in a critical situation of public finances and requires support to stem a significant long-term investment to structurally change its transportation system.

The project is a modern, fast, convenient, safe, and environmentally sound electric Light Rail Transit (LRT) along the central East-West axle of the larger urban zone of San José with 85 km of double tracks on 5 lines transporting annually 63 million passengers and benefitting around 2.7 million inhabitants or 52% of Costa Rica's population. Bus passengers could save 66% of trip time. The LRT will use the existing right-of-way of the old, low capacity single track diesel train and replace it with an environmentally friendly, high capacity LRT. Its design incorporates best practices for a climate resilient infrastructure. Modern principles of urban development are applied including integration with the existing bus-based public transport system, NMT and improved LRT connectivity and accessibility. The LRT is integrated with 16 km of new segregated cycle lanes resulting in 36,000 additional cycling and micro-mobility trips per day linked together with improved pedestrian walkways. In the vicinity of 6 stations components to increase last-mile connectivity and accessibility are included as well as revitalization of urban spaces and connection of residents living area with workplaces, commerce and services thereby reducing the dependence on passenger cars and providing for a better quality of life and environmentally sustainable neighbourhoods. The project is an urban development project transforming urban mobility into an ultra-low emission system. The LRT is the backbone that integrates all types of public transport with NMT and functions as a trigger to a paradigm shift in urban transportation. Fostering of public transport and electrifying the transport sector are the main strategies to achieve the ambitious target of Costa Rica of decarbonization. The LRT also contributes significantly to multiple SDG targets, especially "good health and well being", "sustainable cities and communities" and "climate action" whilst also providing for new jobs during construction and operations.

The total investment cost is 1.8733 billion USD (of which the LRT 1.852 billion, NMT/connectivity interventions 20 MUSD and capacity building, gender and monitoring 1.3 MUSD) with an EIRR of 26% resultant of time savings, lower vehicle operating costs, less accidentality and nearly 700 MUSD worth of emission reductions. The LRT recovers 40% of its total cost with fare-box revenues whilst the remaining part is based on public funding, which is common for urban public transport and which is justified due to the large societal benefits reflected in the EIRR. Implementation shall be through a Public Private Partnership (PPP) under a 35-year concession (design, build, operate, maintain and transfer contract). The government uses the CABEI and GCF loan of together 550 MUSD as anchor payment for the PPP. The Government of Costa Rica is the beneficiary of the grant and the concessional loan of the GCF. The private concessionaire receives a one-off payment of 550 MUSD (in 2 tranches) against delivery the LRT lines. The Special Purpose Vehicle (SPV) created by the concessionaire does not receive a loan or an equity investment from the Government of Costa Rica but a payment for compliance with the concession contract. The GCF finance and its concessionality do not influence in any manner the profitability of the private concessionaire as it is a fixed payment

of 550 MUSD followed by annual payments for services. The GCF contribution and its concessionality fully flow to the government and reduce the financial burden only of the Government of Costa Rica and not of the private SPV/concessionaire. GCF involvement is 250 MUSD of loans for the LRT, and 21.3 MUSD grants for investments in NMT and connectivity components as well as capacity building, monitoring and gender specific action measures. The total leverage ratio is 5.9 and the private sector leverage ratio 4.8 i.e. the project successfully pulls-in private capital.

The project reduces directly through mode shift and more efficient transportation 7.62 million tons of CO_2 during its lifespan with a GCF cost per ton of CO_2 removed of 36 USD. Costa Rica produces more than 98% of electricity by renewable sources and has surplus capacity. The carbon grid factor is 0.015 $kgCO_{2e}$/kWh. The project additionally improves significantly urban air quality, reduces accidentality, reduces by 30-60% trip time, reduces gender inequality and has positive societal and economic benefits.

The project allows for a paradigm shift towards a sustainable low carbon urban transport system going beyond a stand-alone train by including measures of NMT and connectivity/accessibility measures with long-term behavioural change impacts. In absence of the GCF financing these components would not have been included in the project. The LRT is a key component to reduce urban transport emissions and is a core element of Costa Rica's national decarbonization plan with the goal of net zero emissions in 2050. It is a core component of the Post-COVID19 Green recovery Plan of Costa Rica which focuses on profitable resilient public transport infrastructure with short-term jobs and long-term social and economic benefits achieving a transformational change to a greener economy.

Abbreviations

AE	Accredited Entity
AMA	Accreditation Master Agreement
BAU	Business as Usual
BRT	Bus Rapid Transit
BUR	Biennial Update Report
CABEI	Central American Bank for Economic Integration
CAPEX	Capital Expenditure
CDM	Clean Development Mechanism
CNC	National Concessions Council
EE	Executing Entity
EIRR	Economic Internal Rate of Return
GAM	Gran Area Metropolitana (larger urban zone of San Jose)
GCF	Green Climate Fund
GHG	Greenhouse Gases
GIZ	German Cooperation
IADB	Inter-American Development Bank
INCOFER	Instituto Costarricense de Ferrocarriles
LRT	Light Rail Transit
MINAE	Ministry of Environment and Energy
MOF	Ministry of Finance
MOPT	Ministry of Public Works and Transport
NDC	Nationally Determined Contributions
NMT	Non-Motorized Transport
OPEX	Operational Expenditures
PF	Public Financing
PPF	Project Preparation Facility
PPP	Public Private Partnership
PRI	Involuntary Resettlement Plan
SD	Sustainable Development
SDG	Sustainable Development Goals
SETENA	National Environmental Technical Secretariat
SPV	Special Purpose Vehicle
TOD	Transit Oriented Development
USOC	Credit Operations Supervision Area
VfM	Value for Money
WHO	World Health Organization

PROJECT/PROGRAMME INFORMATION

B.1. Climate context (max. 1000 words, approximately 2 pages)

Context Climate Change

In 2015 Costa Rica had emissions of 10.9 $MtCO_{2e}$ of which the transport sector contributed 51%. Emissions of the transport sector will increase under the BAU scenario by 44% whilst under a mitigation scenario they are projected to drop by 65% by 2050, compared to 2015 (MINAE, 2019). Fostering of public transport and electrifying the transport sector are the main strategies to achieve this ambitious target. The Light Rail Transit (LRT) is a key component to reduce urban transport emissions and is prominently listed in relevant climate change publications of Costa Rica including the 2nd BUR (MINAE, 2019) or the National Decarbonization Plan (Government of Costa Rica, 2019).

Costa Rica has a long tradition in being on the forefront of combating climate change. In its Nationally Determined Contribution, Costa Rica reaffirmed its aspiration of becoming a Carbon Neutral economy and aims for a decarbonized economy with net-zero emissions in 2050 (Government of Costa Rica, 2019). Costa Rica has received from UNEP the 2019 Champions of the Earth award for its commitment to ambitious policies to combat climate change[1].

The Costa Rican electricity system is one of the few decarbonized systems in the world: Since 2015, Costa Rica has always had >98% of renewable energy production[2]. Planned energy expansions will diversify renewable energy sources even more (ICE, 2019). The train will consume annually less than 1% of energy generation. Electrification of the transport sector is a strategy to reduce drastically the carbon footprint of the country.

Context Urban Transport in San Jose

Costa Rica is one of the countries with the highest vehicle shares per 1,000 inhabitants in Latin America (PEN-CONARE, 2018). The larger urban zone of San Jose called GAM ("Gran Area Metropolitana") has 3% of the national territory and 52% of the country's population - an estimated 2.7 million people live 2020 in this area (INEC, 2011). The mode share of motorized trips is 42% cars, 41% buses, 9% taxis, 7% motorcycles and less than 1% by a very old and partially rehabilitated diesel train (MINAE, 2017). The public transport share has decreased dramatically from 64% in 2007 to 41% in 2017 whilst private car usage increased in the same period from 31% to 42% (L.C.R. Logistica S.A., 2007). The GDP per capita of Costa Rica nearly doubled in this period (average annual increase of close to 7%[3] The GDP per capita in that period nearly doubled with a CAGR of 7% and the passenger car fleet grew by annually 4% (PEN-CONARE, 2018). The bus-based public transport system lacks convenience and attractiveness and is thus used as last resort in absence of finance to purchase a private car or use taxi/ride hailing services. Non-Motorized Transport (NMT) has increased in importance but is still marginal. Lack of cycling infrastructure and safety issues have been identified as the main causes for the low NMT share (PEN-CONARE, 2018, p. 238). Congestion in the city has increased significantly and vehicle operating speeds have dropped to 14-15 km/h. Congestion costs for the GAM in the year 2018 were estimated at 3.8% of GDP (PEN-CONARE, 2018, p. 229). Public transport is dominated by a large number of privately-operated bus operators. A bus trip has on average a 70% longer duration than a car trip (Government of Costa Rica, 2019), also due to route structuring which requires for over 40% of bus users at least one transfer (PEN-CONARE, 2018, p. 238).

The National University of Costa Rica, engaged in air quality monitoring since more than 2 decades, estimates that vehicles are responsible for 65% of air pollution. $PM_{2.5}$ levels monitored in the GAM surpass widely the air quality guideline value of the WHO (PEN-CONARE, 2018, p. 243). $PM_{2.5}$ and NO_x are today the air pollutants which cause the most health problems. The GHG emissions of the transport sector of the GAM are estimated at 1.9 million tCO_2 for 2014 (equivalent to 35% of total transport emissions of Costa Rica) and are projected to increase 60% under a BAU scenario by 2030 (Grutter Consulting, 2016).

[1] https://www.unenvironment.org/news-and-stories/press-release/costa-rica-named-un-champion-earth-pioneering-role-fighting-climate
[2] See annual SEN reports of ICE
[3] GDP per capita (current US$) - Costa Rica | Data (worldbank.org)

Baseline

The baseline scenario is a continuation of the current bus-based public transport, a marginal share of rail passengers (<1% of trips) and basically private means of transit. The observed trend is towards usage of private means of mobility plus ride-hailing services. This results in higher transport emissions, increased congestion levels, more time spent on trips and a reduced quality of life of city dwellers. The bus-based transit network lacks convenience for users. Multiple bus re-organization and bus re-structuring projects have been designed in the last decades without being implemented. Private bus operators are locked in a competitive position, cannot agree on common approaches and resist changes in their modus of operations. Under a BAU Scenario GHG emissions from the transport sector will continue to increase strongly in the GAM (Grutter Consulting, 2016) as well as at the national level (MINAE, 2019).

Mass Public Transport in the GAM

Costa Rica has made numerous studies over the last 3 decades on new mas public transport systems (see for a review e.g. (MINAE, 2017b)). This sustainable urban transport plan financed by the IDB and the GEF came to the conclusion that an integrated transport system with a LRT combined with a bus-based system based on re-organized routes and a sectorization of routes is the most effective option. In contrast to other cities the GAM already has a train, which is completely outdated whilst still having the right of way and the space (which is not sufficient for a BRT or bus based system). This allows that the CAPEX is 50% lower than the average of other comparable LRTs (see table 1) and an investment at par with a high-quality BRT (based on ITDP data) whilst being more convenient, faster, more sustainable and with far less follow-up investments.

Related Projects and Proposals

Related transport projects and initiatives are:

- Modernization of the bus system focusing on route re-structuring, improved access, transfer stations, integrated electronic ticketing and the promotion of inter-modality. The IDB supported project forms together with the LRT the backbone of an integrated urban public transport system for the GAM.
- National plan for electrification of transport (MINAE, 2019) with financial incentives for the import of electric vehicles, focusing on private cars.
- Various municipalities are developing project ideas for Transit Oriented Development (TOD) and for NMT supported with technical assistance by the GIZ. The GEF 7 project "Transition to an Urban Green Economy and Delivery of Global Environmental Benefits" starting in 2021 and administered by the UNDP is complimentary to the GCF project and will work on improvements to the legal framework and on infrastructure investments for zero emission mobility. The synergy generated between the two projects will enable the investment in the infrastructure proposed under the GCF to be made more expeditiously, as legal and institutional barriers will be removed with the GEF project. GCF interventions proposed in this project are thus strongly complimentary to existing initiatives in TOD and NMT and complement them with investive measures.
- Costa Rica is at the moment involved in the following projects with the GCF: FP097 (Multiple Countries: Productive Investment Initiative for Adaptation to Climate Change (CAMBio II)), FP144 (Costa Rica REDD-plus Results-Based Payments for 2014 and 2015), FP151 (Multiple Countries: Global Subnational Climate Fund (SnCF-Global) – Technical Assistance (TA) Facility), FP152 (Multiple Countries: Global Subnational Climate Fund (SnCF-Global) – Equity) The present project received PPF support from the GCF.

B.2. Theory of change (max. 1000 words, approximately 2 pages plus diagram)

Climate Problem

Costa Rica wants to achieve net-zero emissions in 2050. The transport sector is the largest source of GHG emissions in the country. Implementing a low-carbon sustainable urban transport system is a condition for achieving the climate targets as expressed in the NDC. The climate problem can be summarized in: (i) A fossil-based public transport system based on diesel buses with high emissions (ii) lack of a convenient public transport offer in accordance with client's demands resulting in a mode-shift towards private means of transport and ride-hailing services with high emissions.

Paradigm Shift

The major barrier towards achieving a modern, multi-modal low-carbon public transport system is that this requires a comprehensive and systemic change. The traditional public transport system is locked into offering low-cost, low quality services which result in decreasing passenger numbers. Singular interventions will not be sufficient to get out of this negative spiral. The experience of other countries in Latin America, e.g. Colombia, which had comparable problems of public transit in the past, is that new transport systems and comprehensive changes are required to get out of this lock-in. A paradigm shift is required towards offering the passenger a more convenient system which is fast, safe, reliable, comfortable, of universal access, green, modern and at a reasonable cost. Such a paradigm change requires a significant and visible shift towards a new public transport system. Without this no mode shift from private means of transport to public transport will occur. Rail-based mass transit is targeted by the project due to offering a systemic change, its high-mitigation potential, and a high Economic Internal Rate of Return (EIRR). NMT and connectivity measures are targeted due to their high-mitigation impact and the long-term behavioural change potential which allows to shift towards a low-carbon sustainable transportation system.

The transportation sector is transformed to a sustainable low-carbon system with a dominance of public transportation and NMT. The investment in infrastructure is a core element of the Green Recovery Plan of Costa Rica established due to the COVID-19 crisis as a vehicle to transform the society by investing in profitable infrastructure which creates economic, environmental and social benefits, short-term jobs and a long-term greening of the economy. It allows Costa Rica to achieve its target of decarbonization and net zero emissions by 2050 and contributes significantly to multiple SDG targets.

Goal Statement

If a low-carbon sustainable transport system is implemented then Costa Rica can aspire to fulfil its target of net-zero emissions in 2050 because mobility emissions of the country are reduced significantly.

The sustainable transport system reduces GHG emissions and contributes towards sustainable development through reduced local pollutants, green job creation, reduced accidentality and reduced economic costs created by congestion and long trip times, air pollution and accidentality. Direct impacts are a CO_2 emission reductions of 7.6 $MtCO_{2e}$ and a reduction of 295 $tPM_{2.5}$, 12,000 tNO_x and 56 tSO_2.

Project Outcomes

The project outcomes are (i) increased usage of a sustainable low-emission urban transport system; (ii) an increased capacity of stakeholders to replicate successfully NMT and connectivity interventions; (iii) reduced economic costs of mobility and air pollution and (iv) reduced dependency on fossil fuel imports.

Project Results

Project results are (i) mode shift towards LRT; (ii) mode shift towards cycling; (iii) mode shift towards low-carbon transport at intervention stations; (iv) trip time savings; (v) reduced transport accidentality. Mode shift occurs due to the convenience of the LRT and the NMT. The LRT reduces trip times for car and conventional bus users by 30-60% and offers safe as well as inter-connected services. The current bus system will be integrated in the rail system and allows for seamless connections and avoidance of duplicated routes. Improved pedestrian and cycling facilities increase the safety and convenience of using bicycles and other micro-mobility means. This combined with NMT promotion activities result in increased usage on NMT. Measures at selected LRT stations improve connectivity, accessibility and attractiveness of stations resulting in overall reduced GHG transport emissions of residents living in the catchment area. LRT also results in reduced transport accidentality.

Project Activities

Project activities are (i) identify and engage the concessionaire; (ii) design, build and operate the LRT; (iii) design, build and operate cycling lanes; (iv) design and build connectivity measures at selected stations; (v) realize NMT promotion measures; (vi) monitor project outputs, results, outcomes and impacts; (vii) provide capacity building, training and outreach; (viii) implement the gender action plan. The NMT interventions result in 16km of new cycle lanes with nearly 36,000 daily trips and connectivity interventions along 6 LRT stations with a total impacted population of 140,000 persons. The investment in the LRT results in 5 new rail lanes, 85 km of tracks and 46 stations integrated into the public transport system of the GAM. This forms the base for the targeted mode shift towards the LRT and NMT and towards reducing trip times, emissions, and accidentality. The shift to LRT is expected to derive

from convenience of the system to users: (i) the LRT is faster than current public transport and faster than private means of transport; (ii) the LRT results in a lower transport trip cost for users (ticket plus time cost) than using private means of transport; (iii) the LRT is inter-connected and allows to reach the final destination based on NMT plus public transport without large complex connections. The shift to NMT and the resultant behavioural change is expected to derive from (i) improved safety with bike lanes thereby removing the current main barrier of cycling mentioned by stakeholders; (ii) inter-connection with LRT including facilities to park bikes thus providing ease of use; (iii) integration with bike and scooter sharing facilities at main LRT stations; (iv) improved accessibility of LRT stations for pedestrians and improved connectivity for entire trips. Capacity Building, training, outreach, gender actions and project monitoring are essential to ensure an effective and efficient technology transfer, design and implementation of the investment measures and to allow for a replication and outspreading of activities especially in the area of NMT and improved public transport connectivity and accessibility. Capacity building and outreach include (i) realize publications on project components with a focus on NMT/connectivity; (ii) outreach events including workshops, training materials, webinairs, case studies. Gender actions include (i) social communication campaigns to identify sexual harassment practices and other types of violence in trains and at waiting stations; (ii) train of INCOFER staff on the new sexual harassment law; (iii) implement a rapid reporting system for cases of violence against women; (iv) establish a complaint mechanism for cases of violence against women that acts automatically; (v) implement an adequate lighting system that protects the safety of users; (vi) conduct a gender-sensitive evaluation at the user level to better understand the different needs and perspectives of women and men in terms of access to services and infrastructure; (vii) 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) attract women to the INCOFER workforce and offer equal conditions to men; (x) promote the hiring and provide spaces for women entrepreneurs to be part of the tertiary service providers that the train acquires; (xi) establish spaces for women to be promoted to decision-making positions within the activities relevant to the LRT.

Core Project Barriers

1. Lack of funds for public transport and NMT investments: Costa Rica is in a critical situation of public finances. Public transport and NMT infrastructure, as well as investments in improved connectivity are long-term investments with a positive economic rate of return without being financially profitable. Private investments for a Public-Private Partnership can however only be attracted if sufficient, low-risk public monies are available which ensure private investors of the financial viability of the project.

2. Funding barriers: Whilst “financing” refers to the capital to deliver the infrastructure the “funding” is the long-term revenue stream required to cover payment obligations, including debt service. The LRT, like most public transport systems, can only partially cover its funding necessities from farebox and ancillary revenues and requires transfers from the government’s budget. Other modes of transport including the current bus system do not pay for the usage of infrastructure and do not pay external costs related to accidentality, congestion, and pollution. The visibility of LRT funding is high compared with the non-visibility of massive societal subsidies (due to external costs) to the currently operating transportation modes including buses creating a political barrier to approve public transport investments.

3. Limited experience, information and knowledge on successful NMT and last-mile connectivity interventions: Less than 20km of non-integrated cycle lanes exist in the GAM. Experience lacks with cycle lanes, their linking with public transport and their impact. The same is true concerning connectivity/accessibility interventions. The impact of realized interventions is not monitored in a systematic manner. This results in limited knowledge on the interactions between a mass transit system and such interventions and the potential economic and environmental benefits of such interventions. This lack of experience and information again effectively results in a barrier towards approving new investment projects.

Core Project Risks

1. COVID-19 has impacted in the short-term public transport demand and might have positive or negative long-term impacts on the demand for NMT and PT. The train takes 5 years to construct before being operational. It is not deemed as probable that a sustained impact on preference or not for PT will influence the train or NMT.

2. Ineffective efforts to achieve gender equality is considered a risk which is tackled with the GAP.

3. Preference for private modes of transport i.e. residents do not change to new modes of transport such as the LRT and NMT. The bus system is not convenient and results in very high trip times. People thus basically use the bus

system if they lack financial resources to pay for a taxi or own a car. However, if a modern, convenient, safe and fast public transport system is available the people will use it. This has also been the experience in multiple other countries when establishing a well linked and fast mass transit system, especially if rail-based with full right-of-way and accordingly high travel speeds.

Assumptions

1/2. It is assumed that finance is available for the investment part of the project and that funding is available to pay the recurrent deficits of the system. The GCF plays a critical role in this assumption.

3. An important assumption is that the mode-shift primarily from cars and traditional buses to the LRT and NMT occurs. The new system offers compelling advantages such as a reduced trip time of 30-60% (resulting in 1-2 hours of more free time per day for an average resident), modern, convenient, safe and integrated transport at an affordable cost. Private vehicles are not only constantly stuck in congestion with low operating speeds but also suffer from driving restrictions based on the licence plate endings (currently during 2 days per week each car cannot circulate).

4.. Another assumption is that the LRT has lower emissions than the baseline transport system. This can clearly shown to be the case due also to the virtually 0-carbon grid factor of Costa Rica and the much higher energy efficiency of the LRT compared to buses, cars, taxis or motorcycles.

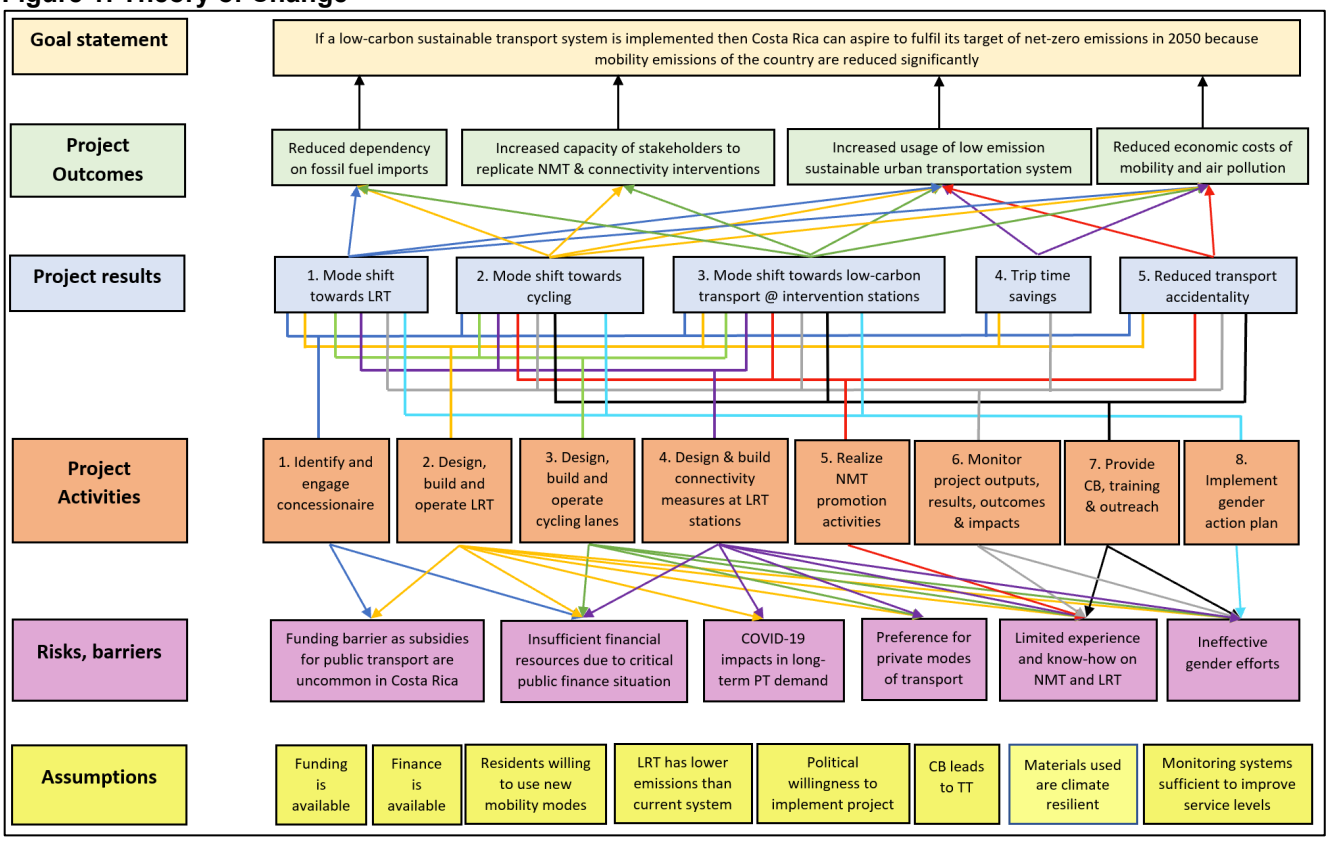
5. The project will only materialize if their is sufficient political willingness to finance and fund the project. Again the political willingness is linked to the finance conditions which are influenced decisively by the GCF contribution.

6. CB is effective and leads to successful technology transfer, a good design and implementation of investive measures

7. Monitoring systems are implemented well and are sufficient to identify service issues and facilitate the identification of solutions to remedy these.

8. Materials and construction methods used prove to be effective against climate impacts including high temperatures, thermal oscillations and hail damage and ensure protection against flooding.

Figure 1: Theory of Change



Note: Financing refers to capital availability for investment and funding to long-term availability of revenue streams to cover obligations incl. debt service

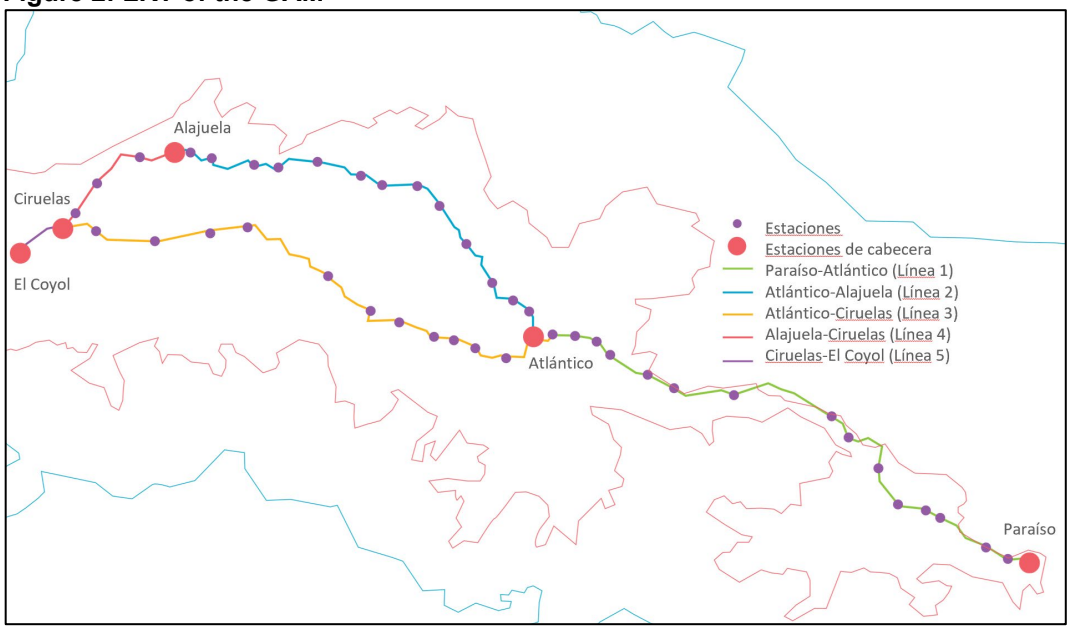
B.3. Project/programme description (max. 2000 words, approximately 4 pages)

Project Brief

The project is a modern, fast, convenient, safe, and environmentally sound LRT along the central East-West axle of the GAM[4] including 15 cantons and 4 provinces of Costa Rica. The LRT will transport annually on average 63 million passengers benefitting around 2.7 million inhabitants living in the capture area of the train, representing 52% of the total population of Costa Rica. The LRT will use the existing right-of-way of the national rail system between the cities of San José, Cartago, Alajuela and Heredia (all of which form part of the GAM). It replaces the old low capacity single track diesel train with a modern, environmentally friendly, high capacity LRT. The LRT consists of 5 double-track lines built predominantly at grade with exception of some fly-overs. The total length of the system is 84.8 km with 46 stations and the following lines[5]:

1. Line 1: from Paraiso to Atlántico with 16 stations and a length of 27.4 km;
2. Line 2 from Atlántico to Alajuela with 15 stations and a length of 21.6 km;
3. Line 3 from Atlántico to Ciruelas with 13 stations and a length of 25.4 km;
4. Line 4 (Alajuela to Ciruelas, 7.8 km, 5 stations) and 5 (Ciruelas to El Coyol, 2.7 km, 2 stations) are extensions of line 2 and 3.

Figure 2: LRT of the GAM



An old train operates partially on the proposed LRT route and the right-of-way exists on the entire tracks. The LRT is however an investment in a completely new LRT. It only uses the right of way of the existing rail track. New rail tracks are laid (double track instead of the prevailing single track), new bridges and fly overs are built (instead of at-level crossings), new trains, signalling systems and train control system are purchased, new stations are built and the LRT will be fully electrified whilst the current train runs on 1 track with outdated rails and old diesel engines. The system cannot be upgraded anymore besides what has already been done and requires a complete replacement. This results in a train with 20x carrying capacity, a higher speed, lower emissions and more convenience – in short a new rail system. The current rail system transported in 2019 i.e. prior COVID 9,800 passengers per day on average[6]. It realizes per track only between 5 and 12 services daily, with a 30 minute frequency between 5 and 9AM and 2 and 6PM due to infrastructure limitations. The current operating speed is on average below 20km/h. The project LRT will transport on average per working day over 200,000 passengers with 70 trains operating during peak hours at a 5-

[4] Information for section B3 is based on the feasibility study realized by IDOM. For the overview of feasibility documents see (IDOM, 2020) and for a synopsis see (Incofer, 2020).
[5] The sum of individual line length and number of stations is higher than the total as some tracks and stations are shared by different lines. See table 3 summary report (Incofer, 2020)
[6] INCOFER, Informe de estadisticas operativas 2019, p.15

minute and during off-peaks at a 15-minute interval between 5AM and 11PM on a continuous base. The current rail is clearly not a mass rapid transit (MRT) system. GIZ defines MRT as "It is designed to move large numbers of people at one time"[7] and "All forms of MRT operate with relatively high speed and passenger capacities, and the basic requirement of MRT in a developing city is that it carries large amounts of passengers, rapidly" (p.4) and "LRT and BRT systems typically operate at average speeds of between 20 and 30 km/h" (p.4.). ITDP defined rapid transit modes as "Rapid transit is a form of public transportation on a fixed route that includes features that dramatically improve the speed, capacity, reliability, and quality of the service."[8] The project LRT fully complies with this definition whilst the current rail system has low capacity, low speed, only operates during a few hours and has a low quality of service (convenience, reliability) and is thus not in line with a mass rapid transit system.

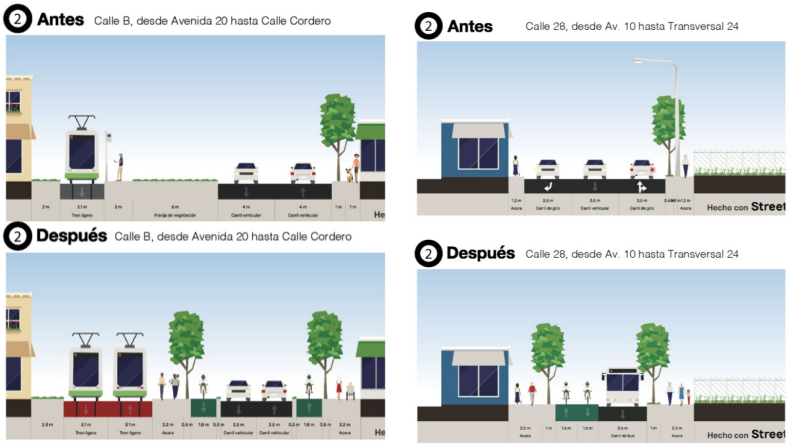
The LRT plans to transport initially more than 200,000 passengers daily with 70 trains operating during peak hours at a 5-minute and during off-peaks at a 15-minute interval[9]. The operating speed shall be 25 km/h in the urban centre, 50 km/h in peri-urban and 70 km/h in inter-urban areas. This is significantly higher than current bus and passenger car speeds. LRT passengers which in absence of the LRT would have used a bus save 66% of trip time (from currently more than 2 hours per average trip to 40 minutes) and baseline passenger car users save 24% of trip time. The expected mode shift from passenger cars, taxis including shared mobility (Uber is very large in the GAM), and the traditional bus system is basically due to time savings and having a safe and convenient transport system. The mode shift was modelled using a 4-stage travel demand modelling (IDOM, 2020). Private passenger car users not only face congestion resulting in slow average speeds and high trip times but also restrictions on car usage based on the licence plate ending (currently the vehicle cannot be used during 2 days per week). Buses are stuck in traffic just as cars so private car users currently have no incentive to switch to public transport – additionally the bus system is considered as unsafe, non-convenient and uncomfortable. The LRT with multiple connections offers a modern, convenient, safe, attractive and much quicker trip thus offering a very attractive option for car or taxi users to shift. For bus users the LRT not only offers a faster trip but also a more-connected trip as the bus lines as operating currently are non-connected and require transfers downtown with double or triple fare payment. The project contemplates direct integration with other transportation services: the feasibility studies have paid special attention to the generation of road-rail intermodal stations with the main intersection points of the rail corridor with the bus routes and future trunk lines located in the surroundings, thus promoting inter-modality with buses, cabs or non-motorized means such as bicycles, etc. The bus routes are currently being re-structured by the Ministry of Transport taking into account the LRT lines. No concessions will be given on routes which compete with LRT lines. The idea is to integrate the entire public transport system including the rail. This includes also in the medium-term fare integration. The current bus-based public transport system has no bus-only lanes and has for the GAM dozens of individual companies each of which operates a given route without fare integration, nor integration of routes or stops. This means that currently most passengers have to make 1-2 bus changes to reach their destination, thereby going mostly through central San Jose and losing lots of time for changes and for long trip distances due to non-connected routes. Due to the past experiences with bus restructuring programs, the project has made a conservative approach, and has modelled the demand, the costs and the impacts based on a scenario without integration beyond the current practice, limiting the project scope to the extent controllable within the single PPP transaction. Under this scenario modelled, the MOPT will, as mentioned, restructure the routes in the catchment area of the LRT to avoid competing services with the same origin and destination, thereby also avoiding that bus operators receive concessions which they cannot operate in a profitable manner. If a full integration and restructuring of the bus-system can be achieved, the the ridership of the LRT will be higher and also the emission reductions will be more than projected.

The project seeks to follow the principles of improved last-mile connectivity as well as Transit Oriented Development (TOD) by revitalization of urban spaces and connection of residents living area with workplaces, commerce and services thereby reducing the dependence on passenger cars and providing for a better quality of life and environmentally sustainable neighbourhoods. The LRT shall form an urban vertebral line within the GAM. Principles followed are (i) to create intermodal centres including NMT around stations, (ii) to densify and promote mixed land usage around stations, (iii) to ensure optimal and convenient pedestrian access, (iv) to prioritize NMT and public transport, and (v) to regenerate informal and precarious urban areas. The LRT shall attract new residential areas around its stations with the goal of doubling the current population density in urban areas and by increasing it by 20-25% in peripheral areas. NMT interventions include the construction of 16 km of segregated cycle lanes in the vicinity of LRT lines resulting in 36,000 additional cycling trips per day. These are used by bicycles as well as micro-mobility

[7] GIZ, 2005, Mass Transit Options, p.2
[8] 2.1 Defining Rapid Transit Modes (itdp.org)
[9] 8 additional trains are a reserve

vehicles such as electric scooters and allow for improved safety cited as a major reason for not using bicycles (see figure below for examples of project cycle-lanes). Specific NMT and improved connectivity and accessibility infrastructure projects are executed by the project with interventions along 6 rail stations and an impacted population living in the vicinity of the intervention areas of 140,000[10]. Minimum 10 stations are planned to be intermodal stations with seamless transfer to buses. The project also contemplates large-scale TOD interventions with private developers. Initial planning for such interventions has been realized for various stations[11]. These investments, made primarily by private developers, are not included in the project as they also still need to be detailed and agreed upon with the stakeholders.

Figure 3: Designed Project Cycle Lanes



Antes = current situation ; despues = with project situation; Source: (Grutter Consulting, 2020c)

Costa Rica has focused on the institutional and regulatory framework in order to improve the conditions of women, with the aim of having accelerated returns at social and economic levels. In the last issue of the Global Gender Gap Report, Costa Rica was ranked 13th out of 153 countries. Data on urban mobility in Costa Rica show that nearly 60% of public transport users are women. The public transportation system must guarantee safe spaces and participation of women. Violence against women is present in public spaces and the train does not escape from this reality. In order to avoid costs and economic losses, the project has designed activities that promote the training of the personnel that will allow them to identify the violence events and provide tools to facilitate the approach of the women to the specific services in case of an attack. The project will also implement communication tools and campaigns directed to men and women in order to prevent and attend to violence against women, establish a complaint mechanism and rapid reporting system for cases of violence against women, and implement adequate infrastructure elements such as good lighting at stations or panic buttons. To improve accessibility of women it is necessary to ensure that women can access different types of services, not only when using the train or waiting inside the stations, but also the connection with other types of multimodal transport and other public spaces. The infrastructure will include the necessary spaces to ensure women's comfort and take into account their mobility patterns (accompanied, with shopping carts, or multiple bags or packages, or strollers for children). To improve women participation the LRT will serve as a potential employer of women, not only within institutions such as the Incofer or the MOPT, but also by connecting women to employment or entrepreneurial opportunities, whether they serve as providers to the institution or are independent. On the other hand, it shall be ensured that women are involved in decision making and policy dialogue in order to ensure implementation of programs and policies that take into account their perspectives and views. Specific targets for women participation in workforce, board members and training programs have been designed for this purpose.

The LRT shall strengthen the resilience of the city's transport system to impacts of climate change, especially heat waves, hailstorms, downpours, floods, and changes in temperature and precipitation. The effects of climate parameters on various project components were considered at the structural, operational and functional level. The structural analysis refers to all physical components of the project, the operational analysis corresponds to all

[10] For a detailed assessment of the current NMT and TOD situation of Costa Rica see (Grutter Consulting, 2020b); For an assessment of best practices and international benchmarking in NMT and TOD see (Grutter Consulting, 2020a); The project interventions are detailed in (Grutter Consulting, 2020c).
[11] See for details (IDOM, 2020) (Annex 2)

processes that allow the generation of service and functional analysis is the ability of the system to provide service consistently. In order to achieve a disaggregated risk analysis, the risk analysis was carried out by sections of the LRT route.The risk evaluations done in the Climate Risk and Vulnerability Assessment (Grutter Consulting, 2020d) and (Grutter Consulting, 2020e) find that many of the risks in the LRT project area fall in low and medium risk categories with a few subset of risks that may give rise to potential high vulnerability if the effects of future climate change are more significant than anticipated (or modeled). The risks posed by these medium and low risk interactions can generally be considered within the design and normal operating conditions of a project. The risks to main LRT project components that warrant adaptation considerations are identified for the following LRT infrastructures: (a) drainages, longitudinal and transverse, (b) bridges, (c) slope instabilities and landslides, and (d) rail tracks. The Feasibility Study for the LRT project has carried out numerous investigations and notably the following reports were valuable for decisions on climate change adaptation measures for LRT infrastructural assets: (a) Volume 4 - Geology and Geotechnical, (b) Volume 5 – Hydrology and Drainage, (c) Volume 14 – Structures and (d) Volume 13 - Track Superstructures (all part of IDOM, 2020, Technical Feasibility Report). The construction and operation of the LRT will integrate adaptation measures for the protection of users and infrastructure such as usage of materials resistant to maximum temperatures, thermal oscillations and hail damage, protection against flooding of depots and the design of urban storm drainage systems that guarantee a storage and retention capacity of water in the rain peaks and its subsequent safe evacuation. As examples sizing of bridge structures will be based on a design return period of 500 years instead of the standard 100-200 years decreasing the flood risk from 39% (200-year period) to 18% (500-year period), usage of concrete plate or slab tracks instead of the ballast system improving also its useful life or realization of a geo-technical “slope stability” study during the design phase. An independent in-depth Climate Risk and Vulnerability Assessment showed that the LRT design is climate proof and incorporates all best practices for a climate resilient infrastructure[12]. The proposed NMT and connectivity interventions also include an increase in green areas and improved resilience of urban infrastructure.

The implementation planning foresees the issuance of the tender for the concession contract and detailed engineering design studies for 2021. The lines shall be constructed simultaneously resulting in a total construction time of 4 years. All lines shall be operational by end 2025.

Implementation shall be through a Public Private Partnership (PPP) with a special purpose vehicle (SPV) created by the Concessionaire for this effect. Compared to other LRT systems recently constructed the cost per km of the project is 45% lower (see table below), due inter alia to the existing right of way. The project will be able to recover through tariffs 65% of operational costs or 40% of total costs (IDOM, 2020). The remaining part is covered by governmental subsidies. Most urban rail systems worldwide are unable to cover their operating costs with farebox revenues, let alone capital expenditures (see e.g. (EY, 2014), (SYSTRA, 2016) or (World Bank, 2018)).

Table 1: Cost Comparison LRTs

LRT	Cost MUSD per km
Bursa Light Rail System, Turkey (8.9 km)	34
Average 5 LRTs in the USA	39
LRT Tunis, Tunisia (19.5 km)	34
LRT Sfax, Tunisia (49.8 km)	21
LRT Mexico City, Mexico (25 km)	28
Ayacucho, Colombia (4.2 km)	38
Avenida 80, Bogota, Colombia (13.5 km)	43
Cuenca, Ecuador (10.2 km)	30
Guatemala City, Guatemala (20.5 km)	31
Median value (average value)	**34 (33)**
LRT Costa Rica (84.9 km); excludes financing costs	**18**

Source: Annex 22: GHG and SD Impacts of LRT, sheet “cost LRTs other countries”

PPP Structure

The PPP is implemented through a SPV established and fully owned by the concessionaire. The government does not participate with equity or loans to the SPV but uses a forfeiting model and pays upon completed construction a fixed sum of 550 MUSD and with operations annual availability payments linked to performance criteria. This system

[12] See report 1 on climate risks and vulnerability (Grutter Consulting, 2020d) and the second report on climate adaptation options for the LRT (Grutter Consulting, 2020e).

is more attractive for investors and makes the system less prone to government interference. There has been a large increase in the number of urban rail projects worldwide with private participation since the early 2000s. The structuring as a public service concession has various advantages for the project such as:

- It provides security to potential concessionaires and investors as a concession contract has an existing legislation in Costa Rica (the legislation also allows concessions of already existing infrastructure), and processing the concession is a standard procedure.
- INCOFER realizes the bidding procedure directly without the participation or intervention of the National Council on Concessions (CNC).[13]

Factors driving countries towards PPP models include project implementing experience of the private partner for this type of project, Value for Money and the possibility to mobilize private financing to complement constrained public resources (World Bank, 2018).

The PPP is for a time period of 35 years fixed construction plus operations i.e. if the construction period takes longer than previewed the concessionary will have a shorter operational period to recover its investment. After this time period INCOFER decides if they want to manage the LRT and the SPV is dissolved or if a new contract is arranged. The SPV income is based on a fixed, regular availability payment realized by the government covering all expenses and costs with potential adjustments or deductions in case of non-compliance with agreed-upon service quality levels (condition criteria) and physical infrastructure availability (effective asset usability). Eventually, income derived from other commercial activities such as publicity and real-estate lease will be considered as complementary income. This means that the government assumes most of the demand and fare risk, with a final decision to be taken during the tender process. To achieve interest of private investors in such projects the government needs to either provide a fixed availability payment or guarantee a minimum ridership.

For the development of the project, **two transaction structures or business models** were analysed:

- Model PPDi - Payment by Availability and Transfer of Income: In this model the concessionaire's revenues are pre-determined in the concession contract as a fixed amount that covers the investment, operation and maintenance, and profitability. This value is covered by the tariff system revenues and the payment made by the State covering the differential between the defined fixed amount and the tariff revenues received (user tariff). In case of a surplus in the fare revenues from the system (user fee) these are for the State. The concessionaire's revenues are subject to possible deductions only in the case of service failures or lack of availability of infrastructure. One of the main advantages of this model is that, as it has no demand risk and is guaranteed by the National Government for the payment of the fixed amount established in the concession contract. It is attractive to financiers and concessionaires and is easy to bank and place in the market.

- PPDD Model - Pay per Availability with Demand Transfer: This model transfers part of the demand risk to the concessionaire. The concessionaire's revenues are determined by a fixed payment from the State and the system revenues (user tariff) that take into account a Minimum Revenue Guarantee (MGR) as defined in the concession contract. The payments made by the State as in the PDDi model will be subject to deductions or discounts for compliance with availability, quality and service levels. The Minimum Revenue Guarantee (MGR) seeks to mitigate the demand risk assumed by the private party and to cover the costs of investment, operation, maintenance and a minimum profitability that are considered below the market. One of the main advantages of this model is that the State's payments are stable since the demand risk is shared, which means a conservative fiscal scenario and less risk for the State in case the demand projections move away from the projections of the structuring (base scenario). So by assuming a higher risk the concessionaire has a higher rate of return.

The following table summarizes the main characteristics of the two transaction models.

[13] However, INCOFER will apply the same procedures as used by CNC i.e. contracting external persons for administration, monitoring etc.

Table 2: Summary Transaction Models

Parameter	Business model	
	PPDi	PPDD
Assumed expected IRR from private investor	10%	13.5%
Assigned demand risk	100% Public	Shared Public and Private
Guaranteed Minimum Income (GMI) demand	No	Yes
Surplus system tariff revenues	100% State	Shared Public and Private
Compliance with quality and operational performance indices	Yes	Yes
Projected annual payment government	96 MUSD	123 MUSD

Source: (IDOM, 2020)

In the PPDi model the government takes 100% of the demand risk. If demand falls by more than 37.5% with respect to the baseline scenario, the PPDi model is more costly for the government and reverse.Under the PPDi model, the payments made by the State are fixed for the concessionaire, regardless of fluctuations in demand. The PPDi model is a very attractive alternative for financiers and concessionaires, as it is easy to bank and place in the market, taking into account that the demand is not a risk attributed to the private party but 100% to the State and the resources to renumerate the concessionaire are fixed and guaranteed. The bidding process will potentially allow for the comparison of proposals under the two models proposed.

The **technical fare** is understood as the fare that allows the concessionaire to recover its investment, pay operation and maintenance costs and obtain profitability. This fare is calculated on the basis of revenues (CAPEX fare, OPEX fare and trip revenues) and passenger demand.

Under the PPDD model, the concessionaire receives three sources of income over the operation and maintenance period:

- Revenue per passenger carried: pay-as-you-go, there is a transfer of demand risk since fewer passengers carried means a lower demand payment to the concessionaire; however, a minimum value of demand revenue is guaranteed, i.e. the MGR demand.
- OPEX Tariff Revenue: revenue from the provision of the transport service, which is an availability payment calculated on the basis of annual OPEX costs. This revenue is affected by the optimal performance of the service.
- CAPEX Tariff revenues: revenues associated with the availability of the project covering investment and interest.

Under the PPDi model, the concessionaire receives two sources of revenue throughout the operation and maintenance period i) OPEX Fare Revenue and ii) CAPEX Fare Revenue; the demand risk under this model is assumed in its entirety by the State.

Once the total revenue is estimated for each model, during the operation and maintenance period of the project, it is divided into the total estimated demand for the base scenario and the Technical Tariff is obtained.

Which model to choose has not yet been finally decided as this is also discussed with the interested parties for the PPP.

PPP Advantages

Including the private sector makes the project less risky and reduces investment of the government. It also reduces the complexity for the government and puts this into hands of experienced private investors. Contacts with potentially interested investors have already been made e.g. from Korea or PR China and from more than 10 potential investors interest in participation has been signalled. Negotiations with possible investors with the tender document will allow to adjust the project also to the requirements of the private investor. Whilst the investment of 1.87 billion USD is large one also needs to take into account that Costa Rica is investing 4.6 billion USD in roads between 2019 and 2022 many of which also with PPPs[14].

[14] 5d6555428faa5_209 - MOPT.pdf (hacienda.go.cr)

Alternatives Assessed

Other mass transit options such as a Bus Rapid Transit (BRT) or exclusive bus lanes have been extensively studied for two decades[15], without any implementation success basically due to the complex legal and operational structure of the existing bus system and resistance to change of the more than 40 private operators. The currently followed public transport option is based on the LRT linked with a re-structuring of the bus-system (Grupo de Analisis sobre Sistemas de Transporte y Movilidad, 2018). This sustainable urban transport plan financed by the IDB and the GEF came to the conclusion that an integrated transport system with a LRT combined with a bus-based system based on re-organized routes and a sectorization of routes is the most effective option.

In contrast to other cities the GAM already has a train. The rails are still used over a large part of the system. The right of way and the space are available. This space is not sufficient for a BRT or bus based system. Whilst the current system is outdated and needs to be fully replaced it is based on the existing track and rights of way which drastically reduces investment costs as (i) land purchases are limited; (ii) earth movement is reduced; (iii) existing stations can be partially used and (iv) required services are in the immediate vicinity. It would not be possible to establish on the existing track a BRT due to lack of space.

Costa Rica therefore made various analysis (e.g. (IDB, 2015)) to assess how the existing system could be changed to a modern mass Rapid Transit System. The existing right of way and space allows that the CAPEX is 50% lower than the average of other comparable systems (see table 1). The average CAPEX of a gold standard BRT in developing countries is, based on ITDP[16], 18 MUSD per km (USD of 2020; 16.3 MUSD of 2013) equivalent to the LRT investment of Costa Rica. BRT investments have however a shorter lifespan: buses 10-12 years and roads 20 years whilst the LRT lifespan of rolling stock is 35 years and average infrastructure excl. rolling stock is of 50 years (IDOM, 2020). Thus with the same CAPEX you get a system with much lower future investments, higher speed, more convenience, lower accidentality, lower emissions and more attractive for customers. The decision for a LRT is thus clear as you can get with the same initial investment a better system with less follow-up investments.

Previous to the feasibility study realized by IDOM a study focusing on evaluating various construction options for the LRT including a system at grade, elevated and underground was realized (IDOM, 2018). The evaluation came to the conclusion that a construction at grade is the most appropriate solution taking into account financial and technical criteria.

For the operational implementation the alternatives of a PPP and of Public Financing (PF) were assessed, performing a value for money (VfM) analysis (IDOM, 2020). The VfM examined quantitative (project-level monetary) and qualitative (external monetary and non-monetary) factors. The values of the different risks where quantified based on the risk consequences (risk probability * risk event). A PPP results in a lower total net present cost than realizing the project through PF. The core advantages for Costa Rica in realizing the project as a PPP are more rigorous budget management, reduced government capital requirement freeing up resources which can be allocated for other vital investments, reduced risks and improved public sector efficiency.

Project Components

The project has the following components:

1. **LRT system** with a CAPEX of 1,852 MUSD including (IDOM, 2020):

- Infrastructure and systems worth 834 MUSD with the main elements being rail track, rail stations, electrification, signalling, train depot and workshops, communication systems and rehabilitation of affected services. This sub-component also includes 25 MUSD for urban integration, 13 MUSD for rehabilitation of historic patrimony and 4 MUSD for waste management;
- Rolling stock worth 452 MUSD for 78 trains @ 5.8 MUSD per unit;
- Financing charges during implementation estimated at 298 MUSD;

[15] Examples of non-implemented initiatives include: 1999 the Ministry of Transport made a bus route sectorization program which included trunk and feeder routes (Decree MOPT 28337 of 1999); the regional urban development program for the GAM (PRUGAM) realized in 2007 included a BRT; The national transport plan of Costa Rica 2011-2035 had a public transport restructuring plan with trunk and feeder routes (MOPT, 2011); 2013 a study financed by the IADB (EPYPSA-SIGMA GP, 2015) for urban public transport structuring again proposed a BRT.

[16] 2.2 Costs (itdp.org)

- Other costs of 268 MUSD including acquisition of land and buildings, design and implementation and indirect costs (administration, profit, contingency). This sub-component also includes 10 MUSD for environmental and social measures.

The GCF involvement in this component is 250 MUSD of loans.

Component 1 has the following activities and sub-activities:

- Identification and engagement of the private concessionaire which will then constitute a Special Purpose Vehicle (SPV) (i) tender for PPP launched; (ii) concession award
- LRT design build and ready to operate including as sub-activities (i) detailed engineering design of all LRT components; (ii) tendering and construction incl. equipment of LRT tracks, stations, depots and ancillary components; (iii) tendering, procurement and reception of rolling stock; (iv) EIA for LRT; (v) negotiation and approval of all permits required to build and operate the LRT; (vi) LRT constructed; (vii) stations constructed; (viii) depots constructed; (ix) trains purchased; (x) construction approved by INCOFER; (xi) operation permit issued by INCOFER

2. Urban integration with NMT and connectivity/accessibility components[17]: Cycle lanes are integrated in some areas to gain experience with such measures. Cycle lanes are based on segregated lanes following best international practices. The connectivity/accessibility measures include improvements in the surroundings of stations generating better quality of life for users and include pedestrianization, greening of spaces, multi-modal access, improved safety etc. GCF grants worth 20 MUSD are used for this component including:

- Cycle lanes: 16 km of segregated cycle lanes connecting LRT stations. At stations parking facilities for cyclists are established including mass parking stations for bikes with optimal lighting and safety measures. Along critical cycle lanes cameras are installed for improved safety (important e.g. to ensure higher female usage);
- Connectivity components at 6 LRT stations including improved walkways, pedestrianization, multi-modal integration with other modes of transport, improved accessibility 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:

- Design, build and ready to operate cycling lanes including (i) detailed engineering design of cycle lanes; (ii) tendering of construction of cycle lanes; (iii) cycling lanes constructed and operational
- Integrate, design, and build connectivity interventions at 6 LRT stations including (i) detailed engineering design of interventions; (ii) tendering of construction activities (iii) delivery of integrated stations
- NMT promotion activities including (i) detailed design of activities; (ii) identification and contracting of delivery institution; (iii) delivery of planned activities

3. Capacity building and gender measures: 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 behaviour and the monitoring of GHG and sustainable development impacts[18]. Data collection is based on surveys and automated systems. 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. The cost of this sub-component is 1 MUSD. For gender intervention as detailed in the gender action plan 0.3 MUSD are reserved (various gender specific investments are already included in the LRT as well as the NMT components)[19]. The GCF involvement in this component is 1.3 MUSD of grants.

[17] See for details (Grutter Consulting, 2020c)
[18] See for details of the monitoring approaches and surveys (Grutter Consulting, 2020f)
[19] See (Grutter Consulting, 2020g)

Component 3 has the following activities and sub-activities:

- Establish monitoring system and monitor impacts of LRT, last-mile connectivity and NMT intervention including (i) design institutional set-up within INCOFER for monitoring of impact; (ii) sub-contract surveys and other components of monitoring; (iii) realize and consolidate annual monitoring reports on impacts of LRT, NMT and last-mile connectivity components
- Deliver capacity building and outreach including (i) realize publications on project components with a focus on NMT/connectivity; (ii) realize outreach events
- Implement gender action plan including (i) establish social communication campaigns to identify sexual harassment practices and other types of violence in trains and at waiting stations; (ii) train INCOFER staff on the new sexual harassment law; (iii) implement a rapid reporting system for cases of violence against women; (iv) establish a complaint mechanism for cases of violence against women that acts automatically; (v) implement an adequate lighting system that protects the safety of users; (vi) conduct a gender-sensitive evaluation at the user level to better understand the different needs and perspectives of women and men in terms of access to services and infrastructure; (vii) 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) attract women to the INCOFER workforce and offer equal conditions to men; (x) promote the hiring and provide spaces for women entrepreneurs to be part of the tertiary service providers that the train acquires; (xi) establish spaces for women to be promoted to decision-making positions within the activities relevant to the LRT; (xii) documentation of activities and outreach.

B.4. Implementation arrangements (max. 1500 words, approximately 3 pages plus diagrams)

Overview

CABEI is the Accredited Entity (AE) of this project and is a lending agency. In accordance with the Accreditation Master Agreement (dated 06/09/2017), the GCF and the AE will enter into a funded activity agreement whereby the AE shall administer the GCF proceeds to be disbursed by the GCF for the implementation of the Project.

The executing entity are the Costa Rican Institute of Railways (INCOFER)[20] and the Government of Costa Rica acting through the Ministry of Finance (MOF) for the purposes of channelling GCF proceeds.. Costa Rica's state-owned rail authority INCOFER is an independent statutory corporation established to operate the country's railway network. INCOFER has administrative autonomy, legal personality and own assets.

The project implementation will be the responsibility of the Special Purpose Vehicle (SPV) established by the concessionary of the train with supervision by INCOFER. The concession contract is regulated by the Law No. 7762 of Public Works with Public Services Concession. The application of this model implies the granting by INCOFER (the Grantor) to a Private Developer (the Concessionaire) of a contract which includes the right to design, build, operate, maintain and commercially exploit the project and transfer it at the end of the 35-year concession period to INCOFER (DBOMT contract). INCOFER identifies and engages the concessionaire and supervises the execution of the contract thereafter. The concession contract includes the details of what the concessionaire needs to deliver in terms of the LRT (routes, train technology, capacity, construction principles) as well as NMT and integrated connectivity stations. INCOFER approves all detailed engineering designs, supervises implementation and issues the construction acceptance certificate and operation permit. Thereafter it supervises and controls implementation and defines if all concession conditions are met for the annual availability payments.

INCOFER has a preliminary list of interested concessionaires, which exceed 10 companies. Likewise, IDOM corroborated with these companies that the amount to be tendered and the size of the works is feasible.

[20] See loan contract Section 2.03 (CABEI, 2020)

CABEI

CABEI is a supranational development bank focused on Central America, founded in 1960. The Bank's objective is to promote the economic integration and the balanced economic and social development of the Central American region. Costa Rica is one of the founder members of CABEI. 2010 to 2018 CABEI approved in total projects worth 13 billion USD of which 3.3 billion USD in Costa Rica. CABEI holds the best credit rating in Latin America[21]. It has a total authorized capital of 7 billion USD, 11.6 billion of assets and a Return on Equity of 6.9% as of end 2019[22]. CABEI requires that its operations comply with environmental and social standards, based on the best international practices, aligned with CABEI's Environmental and Social Policy. In the transport sector, CABEI has realized financing of road infrastructure and has focused recently on improving urban mobility, as well as regional integration through support for railroad projects, among others. Within this framework, it is developing a regional plan for sustainable urban mobility, along with funding for various public transportation initiatives.

CABEI has realized various PPPs in Costa Rica including Ruta 27, Windfarm Valle Central, Altos de Magdalena or with ICE. CABEI will also have two supervising entities for the loan, one contracted by the government of Costa Rica and one directly contracted by CABEI through an international tender to have sufficient external technical know how during the entire process of PP structuring and implementation.

MINISTRY OF FINANCE

The Ministry of Finance (MOF) is as the loan recipient on behalf of the Government of Costa Rica an executing entity.

INCOFER

The executing entity of the CABEI loan is INCOFER (Art. 2.03[23]). Within INCOFER there is an entity to support and assist the institution in all activities related to the concession, the monitoring of the feasibility studies, the bidding stage of the concession, compliance with conditions precedent, design stage and the construction stage. INCOFER will submit to CABEI quarterly reports on the physical execution of the project, compliance with the environmental management plans and in general the compliance with the obligations of the concessionaire contained in the respective Contract. CABEI will realize bi-annual supervision missions and will also contract an external supervision entity.

INCOFER is an autonomous institution of the Costa Rican State, in charge of managing the national railway system. It was created on September 9th, 1985, through Law No. 7001, which has had several reforms, the most important being Law No. 9366 of 2016 which gives INCOFER the mandate to build an electric train in the GAM. It also authorizes the institution to conduct Public-Private Partnerships. INCOFER has extensive experience in railway operations, since it has been in charge of the administration of the railway network in the country since 1985. Currently, INCOFER's passenger rail transport system has three lines, 32 stations and a workshop, which in total extends over approximately 60 km, and mobilizes more than 3.2 million passengers annually. However, it does not have experience in handling concession projects, therefore INCOFER already hired with TA funds of CABEI an operating unit with members with extensive experience in the management of concession contracts. This unit shall also be expanded to include professionals with a strong background in the financial, legal, and railway sectors. An international bidding process to determine the private party entering the PPP will be organized by INCOFER following the regulations of the General Law on the Concession of Public Works with Public Services[24].

Most of INCOFER's current employees worked at the National Concessions Council (the government entity in charge of PPP management in Costa Rica's Central Government) and practically all of them are involved in the LRT project. The staff thus has proven experience in PPPs even of this magnitude, having participated directly in the concession process of the Moín Container Terminal, a public works concession project that exceeds US$1,000 million. INCOFER has also been carrying out a training process for its officials through technical cooperation with the IDB. 20 officials

[21] As of 09/2019: Standard & poor's AA/Stable/A-1+; Moody's Aa3/Stable/P-1; see https://www.bcie.org/en/investor-relations/credit-rating
[22] https://www.bcie.org/fileadmin/bcie/english/files/news-and-media/publications/institutionales/CABEI_Institutional_PPT_ENG_APR2020.pdf
[23] Loan Agreement 2241 between BCIE and Government of Costa Rica, 2020
[24] Law No. 7762; see http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=30464&nValor3=75110&strTipM=TC

received a specialization course in PPP projects. With TA funds from CABEI, INCOFER hired three specialist advisors with extensive experience in concession contract management, who are part of the project's Executive Unit. This Unit will also be expanded to include professionals with a solid background in the financial, legal and railroad sectors. Two additional cooperation agreements with CABEI are in process, aimed at supporting INCOFER during the bidding stage.

A capacity assessment of INCOFER was conducted by CABEI. The assessment concluded that the institution is in full capacity to oversee the concession contract for the LRT and NMT. The institution carries out internal audits periodically and is subject to audits by the Auditor General and the Ministry of Planning and Economic Policy. Its financial management is in accordance with national regulations and audited financial statements have been provided. INCOFER complies with all national laws regarding procurement and no inconsistencies over the past 6 years have been found. Over the past 6-10 years, the institution has carried out several projects to modernize both, cargo and passenger train service. For this project, the executing unit was enforced with three external consultants with a very high profile. The LRT Executing Unit will support and assist INCOFER in all activities related to the follow-up of the LRT feasibility studies, from the analysis of the technical and legal studies, as well as the progress in the delivery of partial and final reports. The consultants will provide technical advice to INCOFER in all matters related to the structuring of the financing of the LRT and subsequently provide the necessary technical support as required by INCOFER.

Implementation Structure

It is estimated that the Government of Costa Rica will have to destinate a net sum of around 110 MUSD per annum[25] for payment of services to the concessionary (apart from the 550 MUSD as partial recognition of the investments) (IDOM, 2020, pp. 8-9). This represents 0.6% of the total government budget in the year 2020 (0.8% of current expenditures)[26].

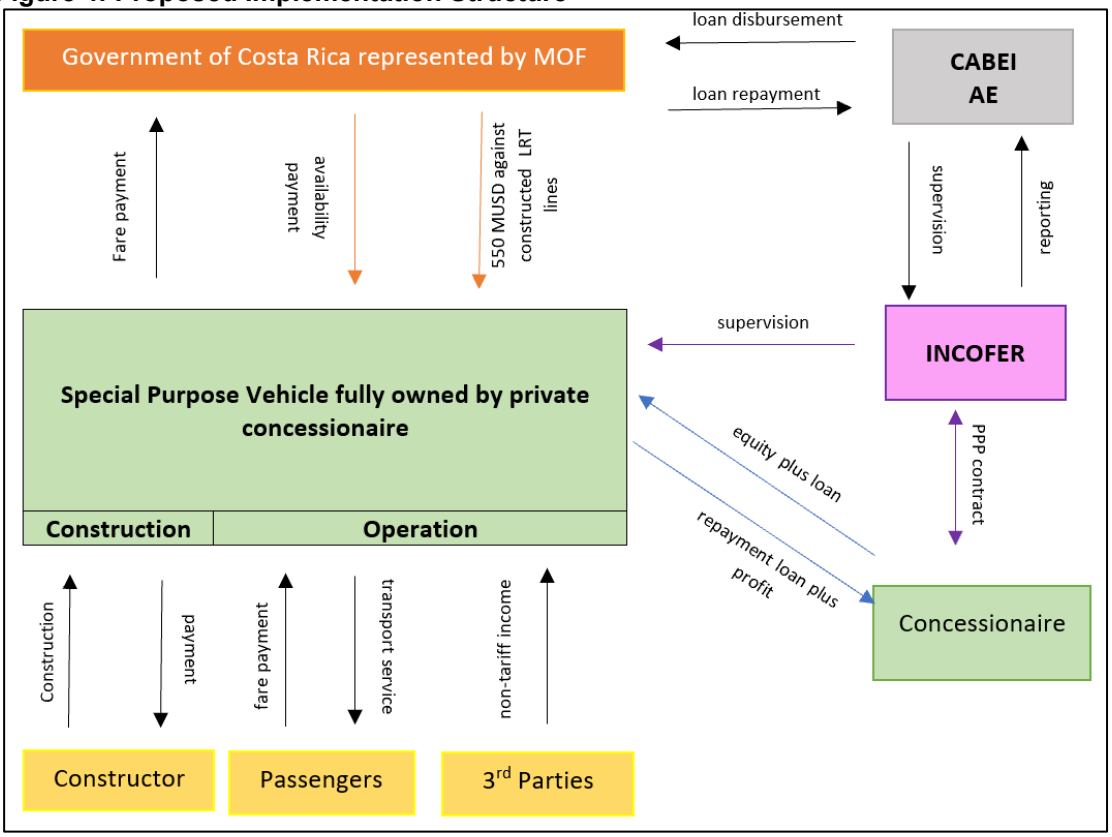
The concession contract will be signed between the Ministry of Public Works and Transportation, INCOFER, the Ministry of Finance, the successful bidder and the concessionaire company (SPV). The MoF, as is the case with all sovereign loans, is responsible to handle the national accounts and to transfer the funds to the private concessionaire. From the awarding of the concession, by law the government has to budget for the availability payment.

The Government of Costa Rica is the beneficiary of the grant for component 2 and the concessional loan of the GCF. The grant for component 3 goes to INCOFER. The private concessionaire receives a one-off payment of 550 MUSD (in 2 tranches) against terminated LRT construction and lines ready for operations. This is not a loan nor an investment in the SPV but a payment for compliance with the concession contract. The GCF finance and its concessionality do not influence in any manner the profitability of the private concessionaire as it is a fixed payment of 550 MUSD followed by annual payments for services. The GCF contribution and its concessionality fully flow to the government and reduce the financial burden only of the Government of Costa Rica and not of the private SPV/concessionaire.

The following figure shows the project structure. The same structure is used for NMT investments as for LRT ones i.e. these investments are included within the tender document and the PPP.

[25] Total around 150 million USD per annum minus income 40 MUSD received from fare box.
[26] 10,510 billion CRC @ 550 CRC per USD end 2019 equals 19.1 billion USD (https://www1.oanda.com/currency/converter/) based on MOF: https://www.hacienda.go.cr/docs/5de7b0492ea2c_Resumen_Egresos_2020_Web.pdf

Figure 4: Proposed Implementation Structure



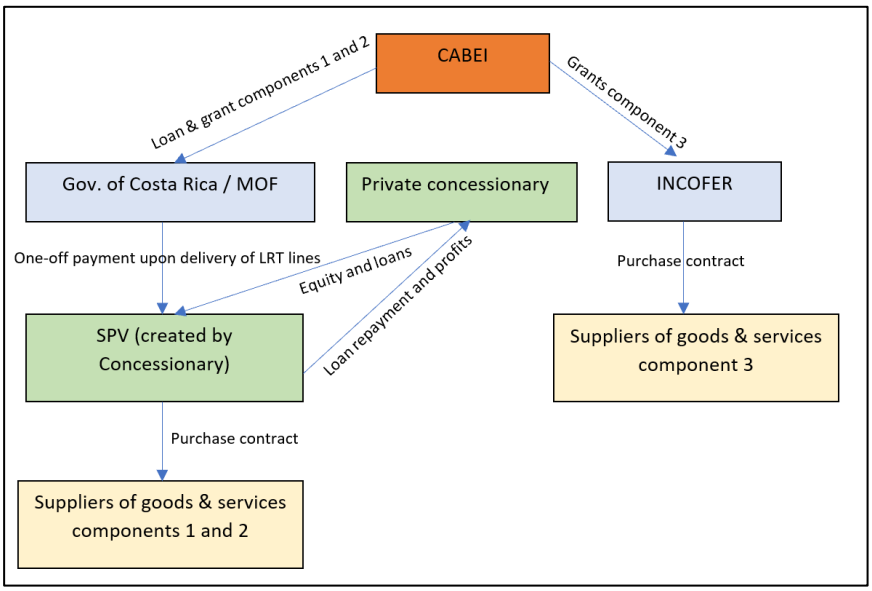
The SPV will be responsible for implementing components 1 and 2 based on the concession contract and the approval of detailed engineering designs of INCOFER with exception of sub-activity 1.1.which is launching and awarding the PPP tender for which INCOFER is responsible. INCOFER will be responsible for implementing Component 3.

The CABEI loan for the project is as of early 2021 under discussion in the Congress of Costa Rica. Only after approval can the tender process for the PPP be started. According to the schedule, the bidding process for the PPP is expected to begin in 2021. It starts with the publication of the bidding notice, followed by a stage of reception and evaluation of the bidder's proposals, an appeal process, if needed, and a stage of PPP contract negotiations. There is no deadline and no congressional approval as INCOFER has these legal attributions.

Implementation Arrangements

CABEI issues a sovereign loan to the Government of Costa Rica. As such it does not manage, supervise or audit the concession execution. The sovereign loan given by CABEI to the Government of Costa Rica is used as counterpart fund of the government for the concession contract. The loan recipient is the Ministry of Finance (MOF). MOF is therefore also an executing entity. INCOFER does not administer any funds of component 1 and 2. MOF will administer these funds and make payments to the SPV at INCOFER's instructions. INCOFER is however responsible to CABEI as executing entity. INCOFER as implementing agency supervisos and approves all detailed engineering designs for components 1 and 2, supervises implementation of the construction activities and issues the construction acceptance certificate and operation permit. Thereafter it supervises and controls implementation and defines if all concession conditions are met for the annual availability payments. CABEI will have two supervising entities for the loan: In the first one, to be contracted by the Government of Costa Rica, CABEI prepares the TORs of the supervising company and the minimum activities to be performed, and the second company is contracted directly by CABEI with an international bidding process for a company with experience in the transport sector to validate the social, environmental, infrastructure and economic commitments assumed by the State for the project. CABEI disbursements and MOF payments to the concessionary are made after provisional entry of operations of each line (Art. 6.02). GCF funds shall be used in the identical manner. The figure below shows the fund flows for loans.

Figure 5: Fund Flows for Loans and Grants



The Executing Entities for the GCF are MOF and INCOFER. The executing entity of the CABEI loan is INCOFER (Art. 2.03[27]). The loan agreement stipulates inter alia that the borrower (i) must carry out the project in accordance with the plan (Art. 9.01); (ii) must comply with all applicable environmental regulations and the environmental and social policies as defined in the Environmental and Social Action Plan of the project (Art. 9.02 and 9.03); (iii) establishes an unique traceable account to verify expenses are realized in accordance to the project plan (Art. 9.04); (iv) acquires goods and services for which CABEI resources shall be used in accordance with CABEIs policies and national procurement laws (Art. 9.09); (v) complies with CABEI's anti-fraud, anti-corruption and other prohibited practices policy (art. 9.11). See for loan supervision and information procedures section G3.

Table 3: Implementation and Procurement Responsibilities per Component and Activity

Component	Activity	Sub Activity	Responsibilities
1. LRT System	1. Identification and engagement of concessionaire	1.1.Launch tender for concession contract	INCOFER
		1.2. Award concession contract	
	2. Design, build and ready to operate LRT	2.1. Detailed engineering	SPV; approval of detailed engineering, acceptance of construction and issuance of operation permit by INCOFER
		2.2. Tendering & construction LRT tracks, stations etc	
		2.3. Tendering and procurement RS	
		2.4. EIA for LRT	
		2.5. Negotiation and getting approval of all permits	
		2.6. LRT constructed	
		2.7. Stations constructed	
		2.8. Depots constructed	
		2.9 Trains purchased	
		2.10. Construction of LRT approved	
		2.11 Operation permit received	

[27] Loan Agreement 2241 between BCIE and Government of Costa Rica, 2020

2. Urban integration with NMT and connectivity/accessibility	3. Design, build and ready to operate cycling lanes	3.1. Detailed engineering of cycling lanes	SPV; approval of detailed engineering and acceptance of construction by INCOFER
		3.2. Tendering of construction of cycling lanes	
		3.3. Construction of cycle lanes delivered	
	4. Integrate, design, and build connectivity interventions at 6 LRT stations	4.1. Detailed engineering design of interventions	SPV; approval of detailed engineering and acceptance of construction by INCOFER
		4.2. Tendering of construction activities	
		4.3. Delivery of stations with connectivity components	
	5. Multiple promotion activities to foster cycle and micro-mobility usage	5.1. Detailed design of activities	SPV; approval of detailed promotion plan by INCOFER
		5.2. Identification and contracting of delivery institution	
		5.3. Delivery of planned activities	
3. CB and gender measures	6. Establish monitoring system and monitor impacts of LRT, last-mile connectivity and NMT interventions	6.1.Design institutional set-up within INCOFER for monitoring of impacts	INCOFER
		6.2. Sub-contract surveys and other components of monitoring	
		6.3. Realize and consolidate annual monitoring reports on impacts of LRT, NMT and last-mile connectivity components	
	7. Deliver capacity building and outreach	7.1. Realize publications on project components with a focus on NMT/connectivity	INCOFER
		7.2. Realize outreach events	
	8. Implement GAP	8.1.a communication campaigns to identify sexual harassment practices and other types of violence in trains and at waiting stations	INCOFER
		8.1b. Train INCOFER staff on the new sexual harassment law	
		8.1c. Implement a rapid reporting system for cases of violence against women	
		8.1d. Establish a complaint mechanism for cases of violence against	

		women that acts automatically	
		8.1e. Implement an adequate lighting system that protects the safety of users	
		8.2.a Design, implement and analyse a comprehensive multimodal transport pilot survey	
		8.2.b Conduct a gender-sensitive evaluation at the user level to better understand the different needs and perspectives of women and men in terms of access to services and infrastructure	
		8.3a LRT infrastructure designs with a gender focus in which their physical integrity is safeguarded and allows an adequate use of the infrastructure	
		8.3b. Improving women's accessibility to non-motorized mobility services	
		8.4a. Attract women to the INCOFER workforce and offer equal conditions to men	
		8.4b. Promote the hiring and provide spaces for women entrepreneurs to be part of the tertiary service providers that the train acquires	
		8.5. Establish spaces for women to be promoted to decision-making positions within the activities relevant to the LRT	
		8.6. Create knowledge product on lessons learned and disseminate these	

The grants for NMT and last-mile connectivity investment measures will be managed identical to the LRT loan. Funds for capacity building, monitoring, gender and NMT promotion shall be managed by INCOFER.

Steps and Timeline

1. The Congress of Costa Rica approves the loan of CABEI. As of March 2021 the credit for financing the state

contribution to the concession, financed by CABEI, is being discussed in Congress.
2. Prior to the bidding process, INCOFER sends CABEI the tender document.
3. CABEI reviews that the payment mechanism included in the document is in accordance with what has been approved by CABEI's. If CABEI has an objection, it reports it. If it has no comments, it informs and allows the bidding to proceed.
4. INCOFER carries out the bidding process.
5. INCOFER, together with the Ministry of Finance and the Ministry of Public Works, awards the concessionaire. The concessionaire proceeds to form the SPV.
6. Prior to signing the concession contract, INCOFER sends CABEI the final version of the concession contract, so that CABEI can verify the terms of the award, including that the concessionaire is not part of the list of prohibited parties in terms of money laundering.
7. With CABEI's non-objection, the concession contract between the SPV, the concessionaire, MOF, MOPT and INCOFER is signed.
8. The deadline for the fulfillment of preconditions and financial closing begins. Estimated time: 12 months
9. During this period, INCOFER must carry out the tender to select the project supervisor, and CABEI must carry out the tender to select the supervisor who will represent CABEI in the supervision of the project.
10. The preconditions for initiating the project construction are fulfilled (approval by INCOFER).
11. The concessionaire completes the construction of each of the LRT lines.
12. INCOFER issues the provisional acceptance certificate and operation permit.
13. The concessionaire requests the payment of 495 MUSD
14. MOF together with INCOFER requests CABEI to disburse the 495 MUSD to the concessionaire. CABEI disburses the funds after verifying that all legal milestones have been met.
15.The concessionaire makes the adjustments to the pending construction aspects.
16. The project's final acceptance certificate is issued by INCOFER.
17. MOF together with INCOFER request CABEI to disburse the remaining 55 MUSD to the concessionaire. CABEI disburses the funds after verifying that all legal milestones have been met.

CABEI already approved the project with an Annex that CABEI submits the project to the GCF. The Congress wants to discuss and approve the project once the GCF has decided if it will co-finance the LRT or not.

B.5. Justification for GCF funding request (max. 1000 words, approximately 2 pages)

Climate Vulnerability

Costa Rica has the 8th highest economic risk exposure to three or more climate change related hazards. 6.8% of its total area is exposed to multiple adverse natural events, 78% of the population and 80% of the country's GDP reside in areas at high risk of climate hazards (GFDRR, 2011). The proposed project is a climate resilient urban transport infrastructure and reduces the vulnerability to climate change impacts whilst mitigating GHG emissions in the transport sector.

Fiscal Situation

Two pressing development challenges stand out in Costa Rica: the fiscal situation and persistent inequality. These challenges affect the basic pillars of the Costa Rican development model: inclusion, growth, and sustainability.

Successful implementation of the fiscal reform and the fiscal rule that came into effect with the 2020 budget remain key to preserving macroeconomic stability. The central government debt reached 2019 59% of GDP, up from 53% in 2018, and double its level a decade ago. The large fiscal deficit is the main risk to macroeconomic stability. Costa Rica has been hit hard by the COVID-19 pandemic, notwithstanding the government's proactive response and the country's sound universal healthcare system. The economy is estimated to grow by 2.6% in 2021, following a strong contraction in 2020 (IMF, January 2021). The important and immediate medical, social, and economic needs prompted by the crisis will require higher fiscal spending and consequently a deterioration in the fiscal position in 2020[28]. January 2021 the country has reached a technical agreement with the IMF for a program of reforms and policies to reduce the fiscal deficit and to promote reforms which allow for lasting and inclusive growth. This serves as

[28] https://www.imf.org/en/Countries/CRI

policy anchor to support fiscal consolidation and free additional multilateral funding at lower borrowing costs. The country has launched as response a Green Recovery Plan with a focus on investing in profitable infrastructure like the LRT with social benefits and which create short-term jobs and a long-term greening of the economy. The financial structure of the project, executed through a PPP and with the government contribution based on a multilateral loan with a 5-year grace period allows to create much-needed short-term jobs without increasing the short and medium-term fiscal deficit whilst investing resources in long-term sustainable and profitable transport infrastructure. Also the IMF acknowledges that Costa Rica's efforts to decarbonize its economy helps to generate sustainable growth opportunities for the country[29]. Concessional finance is crucial for the country to undertake this transformational change. Concessional finance of the GCF reduces the fiscal burden for the country and for reducing the fiscal burden whilst enabling to implement the Green Recovery Plan.

Project Finance

The project is a PPP. The total investment of 1.852 billion USD for the LRT (including finance costs of 298 MUSD) shall be borne with a government contribution of 30% (550 MUSD equivalent to the loan received from CABEI) and 1,302 MUSD from the private sector (of which 250 MUSD as equity). The SPV receives a one-off payment against constructed LRT liens ready for operations of 550 MUSD. This is not a loan or equity, but a payment against having complied with the construction of the LRT lines. Thereafter the concessionaire receives annual availability payments. The SPV/private concessionaire does not receive a loan directly or indirectly from the GCF. The 550 MUSD paid by the Government of Costa Rica are a one-off payment to make the PPP viable. The only beneficiary of the GCF finance is the Government of Costa Rica which has lower financial costs and can fund the project better.

The GCF finance will not have an impact on the equity return for the PPP. The financial structuring of the project is based on a profitability assumption (FIRR) required by the potential concessionaire. For the PPDD, where the concessionaire takes more risk (part of the demand risk is transferred), a 13.5% FIRR was assumed to be expected by a investors, while for the PPDi, where the demand risk remains on the state's side a 10% FIRR was estimated. In both structures the government contribution of 550 MUSD to which the GCF contributes is fixed. The impact of GCF finance is linked to the balance sheet of Costa Rica and reduces the financial burden for the country. Due to the loan concessionality it has an important contribution to the financing part which is very important especially in light of the fiscal situation of the country.

The projected impact of the 550 MUSD loan of CABEI on the central government debt level is by 2026 an increase of 0.65%. Whilst this is not a huge increase concessional loans from the GCF are critical for the country to implement the LRT, due to the fiscal situation of the country aggravated with the coronavirus pandemic. The interest rate of the GCF is more concessional than the CABEI rate of 6-month Libor + 2.9%[30]. CABEI does not charge commitment fee and the same is requested from the GCF thereby reducing immediate cash-flow pressure on the government.

GCF Finance Instruments

GCF finance is separated in a loan of 250 MUSD and a grant of 21.3 MUSD. The loan is used by the Government of Costa Rica as part of the one-off payment to the private concessionary. The GCF grant is 1.3 MUSD for capacity building, monitoring and gender measures and 20 MUSD for NMT/connectivity measures.

Last-mile connectivity and NMT investments such as cycling lanes do not generate a direct income. Improved pedestrianization, accessibility, and NMT facilities such as cycle lanes are to a large extent public goods in having non-rivalry in consumption and non-excludability[31]. Increasing levels of cycling means improving accessibility, livability and overall attractiveness of the city for citizen plus improved air quality and reduced congestion. These benefits cannot be recovered by the investor of measures thereby calling for government intervention. One of the problems associated with investments in NMT and last-mile connectivity which results in limited government involvement is that benefits are perceived in the short term in increased attractiveness of the city whilst the significant and transformational impacts of cycle lanes are clearly in the medium and long-term with more people getting accustomed to using this mode of transport, by increasing the number of LRT passengers through improved

[29] IMF Reaches Staff-Level Agreement with Costa Rica on a Three-Year Extended Fund Facility and Completes 2021 Article IV Discussions

[30] July 2020 equivalent to 0.34% + 2.9% = 3.24%

[31] Cycle lanes could theoretically be made to exclude non-payers; in practice this is however from an infrastructure viewpoint not feasible.

accessibility and attractiveness of the LRT, and by creating a behavioral change. To quantify ex-ante the economic benefits of such interventions is complex.

Cycling projects are more successful if they are undertaken in combination with high quality public transport projects, as a single cycling project often has only a small effect, but in combination it can bring about a bigger change (Civitas, 2016). The LRT is thus a big opportunity to promote NMT and last-mile connectivity measures. The LRT is linked with urban development and can create a paradigm shift towards sustained low-carbon urban transport. These elements are critical to take the project beyond a standard LRT and result in an innovative and transformative urban development project. Without grants these important activities will not be established, although having a positive societal impact, as they do not form part of the core investment program of the LRT, and the government needs to focus its limited available resources on areas with a visible and short-term impact such as the train infrastructure.

The grant finance components have a direct connection to the requested loan. They focus on NMT, last-mile connectivity and urban development, shifting the metropolitan area towards low carbon urban transport. The grant is therefore an important component to ensure the impact of GCF investment and a crucial aspect for the desired paradigm shift.

GCF Added Value

The GCF involvement reduces the fiscal burden of the government. GCF grant components create added value on (i) more inclusive design of the LRT linking the mass transit system with aspects of last-mile connectivity , NMT and multi-modal integration; (ii) increased social and environmental impact through last-mile connectivity and NMT measures; (iii) transformational impact and paradigm shift towards a sustainable low carbon urban transport system; (iv) replication potential for low carbon transport – other investments in mass transit systems in the region do not include aspects of l ast-mile connectivity or NMT with Costa Rica having the option of creating a landmark project.

Concessional finance from the GCF is basically critical and a game-changer due:

a). Funding availability: The IMF states the Costa Rica is facing severely constrained availability of external financing (tourism receipts which represent 19% of exports have collapsed due to COVID-19 in 2020) and tighter global financial conditions make market borrowing costs prohibitive for Costa Rica with EMBI spreads 500bp higher compared to 2019. Costa Rica is facing lower than expected external loan disbursement and limited borrowing room from a small, satiated domestic market (IMF Country report no 20/145 Costa Rica)[32]

b). The long tenure of 40 years of GCF finance distributes payments over a longer period and gives Costa Rica an important breathing space and more budgetary flexibility for other investments and financing demands.

c). The GCF concessional interest rate reduces the finance burden for servicing external debt. Fitch has forecasted that interest payments reach 38% of central government revenues in 2020 or 5.4% of GDP being the 3rd highest in Latin America[33]. The effective interest rate of Costa Rica in 2020 is 8.4% ((IMF Country report no 20/145 Costa Rica , Figure AII.1) i.e. Costa Rica can save 621 MUSD in interest payment. This is equivalent to 14% of the annual estimated required availability payment for the LRT.

d). The GCF 10 year grace period cannot be obtained from private finance and is very important in the current tight fiscal situation of Costa Rica as it gives urgently required breathing space to fix the fiscal situation and get on a growth path whilst implementing fiscal reform.

B.6. Exit strategy and sustainability (max. 500 words, approximately 1 page)

[32] IMF 05.2020.pdf
[33] fitchratings.com

The concession contract is for 35 years (estimated at 5 years construction and 30 years operations[34]) after which the facilities will be turned over to INCOFER or a new contract is established with the same or another private entity. The concession contract is also a period of know-how and technology transfer enabling national institutions to continue the project after ending the concession period. During the concession contract the subsidies of the Government are defined so as to enable the private party to recover its investment and the operational expenses. Once the concession has terminated various parts of the LRT still have a remaining life-span e.g. structural parts of the tracks are estimated to have a lifespan of 80 years or structural parts of the electrification system are estimated at 60 years (IDOM, 2020, p. 72).

If the public transport system will require in 35 years subsidies or not is an open question. However, a low carbon mass transport system as backbone of public transport combined with NMT or 0-emission last-mile connectivity vehicles and services is as of today considered to be the transport system which covers mobility demands of the people with a low overall environmental impact, low economic costs and a high quality of life. The LRT has a highly positive economic internal rate of return justifying also in the future potential financial subsidies (if required or desired[35]) due to the positive externalities or public goods created by the project (less air pollution, less noise, less congestion, less accidents and less GHG emissions). Already today from an economic perspective the LRT is not subsidized but profitable for the country and society.

The NMT and last-mile connectivity investments are expected to result in a transformational change towards shorter trips realized increasingly by walking, cycling including electric bicycles and micro-mobility forms such as electric scooters. Once citizens feel how this improves the quality of life of the city the pressure will mount to expand these investments i.e. not roll them back but expand them.

[34] The concession period remains at 35 years even if construction takes more time

[35] More than 100 cities worldwide have even come to the conclusion that free public transport is economically more profitable than charging a transport tariff as additional ridership and costs as well as the subsidy of the full financial costs are outweighed by the additional health, environmental and infrastructure benefits as well as increased productivity and city livability due to reduced congestion (https://www.nytimes.com/2020/01/14/us/free-public-transit.html). Luxembourg is the first country in the world to offer countrywide since March 1st 2020 free public transport countrywide on trains, trams or buses (https://www.mobiliteit.lu/de/fahrscheine/kostenloser-transport/#:~:text=Luxemburg%20ist%20stolz%20darauf%2C%20das,oder%20Tram%20und%20los%20geht%27s!)

B. FINANCING INFORMATION

C.1. Total financing

(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)		Total amount		Currency	
		271.3		million USD ($)	
GCF financial instrument		**Amount**	**Tenor**	**Grace period**	**Pricing**
(i)	Senior loans	250	40 years	10 years	0.00 %
(ii)	Subordinated loans	Enter amount	Enter years	Enter years	Enter %
(iii)	Equity	Enter amount			Enter % equity return
(iv)	Guarantees	Enter amount	Enter years		
(v)	Reimbursable grants	Enter amount			
(vi)	Grants	21.3			
(vii)	Results-based payments	Enter amount			

(b) Co-financing information[36]	Total amount	Currency
	Enter amount	Options

Name of institution	Financial instrument	Amount	Currency	Tenor & grace	Pricing	Seniority
CABEI	Senior Loans	300	million USD ($)	25 years 5 years	6-month LIBOR + 2.9%	pari passu
tbd[37]	Equity	250	million USD ($)	Enter years Enter years	Enter%	Options
tbd[38]	Senior Loans	1,052	million USD ($)	Enter years Enter years	Enter%	Options
Click here to enter text.	Options	Enter amount	Options	Enter years Enter years	Enter%	Options

(c) Total financing (c) = (a)+(b)	Amount	Currency
	1,873.3	million USD ($)

(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)	High concessionality conditions are requested for the loan from the GCF based on the high climate risk vulnerability of Costa Rica. The private concessionary will be defined through the tender. The private concessionary invests an estimated 1,302 MUSD. The total investment amount is estimated by the feasibility study but might vary depending on the assessment of the concessionaire and the detailed engineering design. Based on the assessment realized by the private concessionaire at the tender stage they will require a higher or lower annual contribution. The ione-off payment of the government to the SPV (550 MUSD) is however fixed. The final financial structure of the SPV is defined once the project has been awarded to the private concessionary. The end-use of GCF proceeds is for refinancing the bridge loan. CABEI and GCF resources are disbursed based on constructed LRT lines of the concessionary. Latter will use these funds on his discretion.

C.2. Financing by component

[36] Financing instruments as well as amount per each instrument for the private investment are indicative and subject to the final financial resources structuration to be mobilized by the concessionaire to be selected at a later stage.

[37] Private concessionary

[38] Private concessionary

Component	Output	Indicative cost million USD ($)	GCF financing		Co-financing		
			Amount million USD ($)	Financial Instrument	Amount million USD ($)	Financial Instrument	Name of Institutions
1. LRT system	Infrastructure	834.2	163.0	Senior Loans	671.2	Senior and subordinated loans, equity	CABEI & private investor
	Rolling stock	452.4	87	Choose an item.	365.4	Senior and subordinated loans, equity	CABEI and private investor
	Others	267.3	0	Choose an item.	267.3	Senior and subordinated loans, equity	CABEI and private investor
	Financing Charges	298.1	0	Choose an item.	298.1	Senior and subordinated loans, equity	CABEI and private investor
2. Urban integration with NMT & connectivity/accessibility components	Infrastructure investments	20	20	Grants	0	Choose an item.	Click here to enter text.
3. Capacity building and gender measures	CB, training, outreach	1.3	1.3	Grants	0	Choose an item.	Click here to enter text.
Indicative total cost (USD)		1,873.3	271.3		1,602.0		

C.3 Capacity building and technology development/transfer (max. 250 words, approximately 0.5 page)

C.3.1 Does GCF funding finance capacity building activities?	Yes ☒ No ☐
C.3.2. Does GCF funding finance technology development/transfer?	Yes ☐ No ☒

Capacity Building

NMT and last-mile connectivity monitoring of activities allows to gain insight and experience on the impacts of different measures in the area of last-mile connectivity and NMT and how they interact with ridership and passenger satisfaction of the LRT system. This will be based on different monitoring instruments using e.g. surveys. The improved data collection generates information on how to improve the quality of service, how to establish inclusive measures for all, how to improve safety and how to encourage people to use environmentally friendly transport. This includes tracking of mode-shift and the impact of activities on the trip structure of people, the identification of triggers of change in transport behaviour and the monitoring of GHG and sustainable development impacts. Improved monitoring and knowledge on successful interventions and their impacts are an important element to facilitate future funding of expansion of last-mile connectivity and NMT activities and services. The results of the monitoring will be made accessible to stakeholders through knowledge products such as guidelines and impact reports on NMT and last-mile connectivity interventions, and outreach activities such as webinairs and workshops. The investment of the GCF in this area is 1 MUSD.

Technology Transfer

Costa Rica has to the moment no modern, electric LRT. It has experience with rail systems but these are based on outdated diesel locomotives. The GCF investment in the LRT enables a technology transfer of environmentally sound mass urban transit technology. Technology transfer is made through the concession contract.

C. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

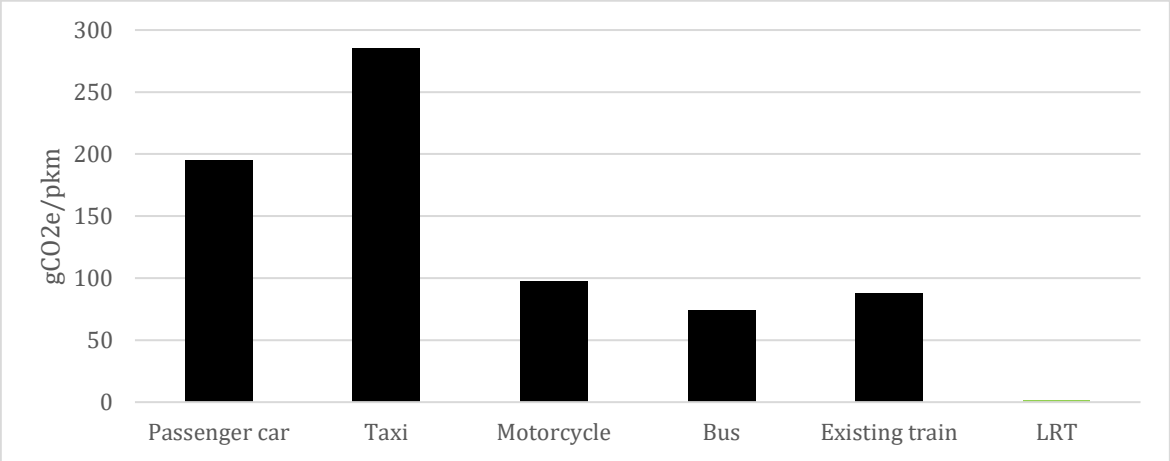
D.1. Impact potential (max. 500 words, approximately 1 page)

The project reduces GHG emission through the LRT itself, the NMT and last-mile connectivity activities[39].

1. LRT

Emissions are reduced due to mode-switch. The LRT is powered by electricity produced to >98% by renewables. The following graph compares the well-to-wheel (WTW) emissions per pkm of different modes of transport.

Figure 6: GHG Emissions WTW per pkm of Transport Modes in GAM, 2019 (gCO_{2e}/pkm)



Note: WTW = well-to-wheel; pkm = passenger-kilometer
Source: (Grutter Consulting, 2020h); all emission factors based on localized data

The methodological approach to determine LRT emission reductions is based on an approved Clean Development Mechanism methodology.[40] The project complies with all applicability conditions of the methodology (see for details Annex 22, table 6) including, but not limited to:

- The LRT is a new rail-based infrastructure. The existing right-of-way of the old train is taken. However, the complete track is built new: the old system is often 1-way, is extremely old and cannot take trains with a higher speed. The investment is in a 100% new rail track, new bridges and overpasses (the current system has lots of crossings with cars), new stations, new signalling, new information system and new trains. Nothing will be used from the old system. The only part of the old train is the right-of-way which of course reduces costs considerably as no land purchase needs to be realized. This is thus clearly a brand-new LRT with new infrastructure and completely different passenger capacity (20x higher passenger capacity), speeds and convenience. The project is thus fully compliant with this condition as it “builds a new rail line”.
- The LRT replaces existing mixed-traffic bus routes. The Ministry of Transport is currently re-structuring the entire bus-transport system of the GAM based on the Decree No 40186-MOPT which gives the Ministry the authority to re-structure bus routes and concessions. Bus routes parallel to and in the catchment area of the LRT will be closed and re-structured. This within a larger Program of restructuring and modernizing the bus system. Private operators are also not interested in operating routes without or with far less passengers as the public bus system in Costa Rica operates without subsidies to the bus operators i.e. if passenger numbers drop the private concessionaires either reduce frequencies or give back the concession (this has happened) as they cannot operate the route in a profitable manner.

[39] For methodological details, calculation procedures as well as full datasets see (Grutter Consulting, 2020h) and excel sheet “LRT Project Costa Rica”
[40] The methodology was developed by Grutter Consulting https://cdm.unfccc.int/methodologies/DB/FXQBDV16UML49NJN03U1QQTEY9J90E

Llifespan emission reductions are estimated at 6,544,000 tCO_{2e}. Upstream leakage emissions due to infrastructure and vehicle manufacturing are 818,000 tCO_{2e} higher for the baseline than for the LRT project i.e. their non-inclusion is conservative[41].

The GHG reduction is due to mode shift. The expected mode shift from passenger cars, taxis including shared mobility (Uber is very large in the GAM), and the traditional bus system is basically due to time savings and having a safe and convenient transport system. The mode shift was modelled using a 4-stage travel demand modelling (IDOM, 2020). Rail systems have shown to have a larger mode shift from private car users than bus-based public transport systems such as BRTs due to being more convenient and having shorter trip times. This can be observed for example when comparing the results of rail-based CDM mass transit projects registered at the UNFCCC with BRT systems.

2. NMT Component

The methodological approach to determine the GHG impact is based on a GEF approach (GEF, 2015) based on (i) km of cycle-lanes (ii) number of additional cycling trips (iii) trip length (iv) baseline mode (iv) emission factors of baseline modes. GEF default values and monitored local data is used. Lifetime reductions of 296,000 tCO_{2e} are expected due to this component. The project has lower upstream emissions (road respectively cycling infrastructure and vehicle manufacturing emissions) than the baseline i.e. not considering upstream emissions is conservative.

3. Last-mile Connectivity Component

Last-mile connectivity and improved accessibility as well as initial TOD measures reduce GHG emissions through short-term travel behavioural change and long-term lifestyle change. In the short-term measures including mixed land use, urban development along the LRT line, and NMT priority in infrastructure affects GHG emissions through shorter trips due to substitution of destinations and trip chaining, mode shift towards public transport and NMT due to increased convenience and attractiveness of latter, and increased load factor of public transport. In the long run, lifestyle changes – including attitudes toward different modes and slower growth of car ownership (as driving becomes relatively less attractive) will influence further travel behaviour and reinforce patterns (Zegras, 2009). Measures taken by the project are combined efforts to increase attractiveness and connectivity of involved stations e.g. through improved pedestrianization, infrastructure for direct access (e.g. bridge to overpass roads), bus connection stations, cycling lanes and cycling park facilities, 0-emission connectivity sharing vehicles (scooters, cycles) rest areas, greening of spaces etc. All of these measures contribute to ease access for residents, improve connectivity with NMT and bus-based transport and increase attractiveness of the area. The methodological approach used was developed by Grutter Consulting and the MIT/USA for the World Bank and was applied in a project in Nanchang/China (Zegras, 2009). It is based on a control-group approach comparing transportation GHG emissions per resident under BAU and in the project area. Important parameters are the number of residents in the influence zone, mode switch, trip distances and emission factors. Lifetime reductions of 783,000 tCO_{2e} are expected due to this component.

4. Summary Mitigation Impact

The project has a cumulative average annual GHG reduction of 173,246 tCO_{2e} and a lifespan impact of reducing 7,622,805 tCO_{2e}. This is a conservative calculation as it does not include indirect trip effects of the measures, synergy effects of an improved public transport system and improved links creating additional passengers also on bus routes, nor upstream emission effects which would increase the emission reductions claimed.

The program will lock-in long-lived low emission infrastructure including a climate resilient LRT, NMT and last-mile connectivity measures. It will benefit directly 2.7 million inhabitants or 52% of the population of Costa Rica living within the catchment area of the project. Impacts will be monitored to establish a solid methodological base to determine the cause-impact relationship and to estimate better the GHG impact of measures (Grutter Consulting, 2020f).

[41] In the baseline more vehicles utilize road space resulting in additional road construction and vehicle manufacturing emissions.

D.2. Paradigm shift potential (max. 500 words, approximately 1 page)

The project results in a paradigm shift towards low carbon transport due to following features:

- The project is integrated with plans to decarbonize further transport through usage of electric vehicles as well as a re-organization of public transport. The metropolitan area of San Jose has started to construct a network of cycle ways and wants to achieve a shift towards public and NMT plus electrified transport. The project is therefore not a stand-alone investment but part of a strategy to achieve a low-carbon transport system and has with the integrated NMT measures a large **potential for scaling up and replication** throughout the city and in other urban areas of Latin America.
- The project is closely integrated with 0-emission last-mile connectivity activities making the LRT a showcase on low carbon urban transport. The integration of LRT with a private sector managed bus-based public transport system and with comprehensive last-mile connectivity and NMT interventions can serve as model case for a modern approach to public transport interventions, important for the region which lacks such models.
- The project is a step towards electrification of transport. This results in a massive decrease of emissions per passenger-km due to the nearly fully fossil free electricity generation of Costa Rica. Transport emissions are the major source of GHG emissions of the country and reducing transport emissions is the core factor for achieving the target of carbon neutrality. The project can reduce transport emissions of the GAM by around 10%[42]. The LRT represents a fundamental shift towards reducing the carbon transport footprint of the metropolitan area. It has a **significant contribution to a climate-resilient development pathway and to achieve the national climate change target**.
- The project includes the collection and reporting of standardized data on the impact of last-mile connectivity and NMT measures and thus serves to improve the planning and the impact assessment of such measures. Results will be published, knowledge products are prepared, and outreach activities are included in the budget for **knowledge sharing and learning**. This is important to ensure that replication is based on learning from experiences and to justify investments based on the expected impacts.
- The major barrier towards achieving a modern, attractive, multi-modal low-carbon public transport system is that this requires a comprehensive and systemic change. A paradigm shift is made towards offering the passenger a more convenient system which is fast, safe, reliable, comfortable, modern, green, accessible and at a reasonable cost. The transportation sector is transformed to a sustainable low-carbon system with a dominance of public transportation and NMT. The LRT has also been climate proofed.
- The project is line with the post COVID Green Recovery plan of Costa Rica with a focus on resilient infrastructure to transform the country into a green economy and allows Costa Rica to achieve its target of decarbonization and net zero emissions by 2050.

D.3. Sustainable development (max. 500 words, approximately 1 page)

Sustainable Development Goals (SDGs)[43]

The project contributes significantly to sustainable development goals (SDG) 3 (“good health and well-being”), SDG goal 9 (“industry, innovation and infrastructure”), SDG goal 11 (“sustainable cities and communities”), and SDG goal 13 (“climate action”).

Environmental Co-Benefits

Environmental benefits are basically reduced air and noise pollution. For air pollution benefits the same methodological approach is used as for GHG benefits (Grutter Consulting, 2020h). The following table shows the projected environmental benefits.

[42] GAM transport emissions were estimated to be in 2014 1.87 $MtCO_{2e}$ (Grutter Consulting, 2016)
[43] https://sdgs.un.org/goals

Table 4: Projected Reduction of Pollutants due to the Project

Parameter	Average Annual Reduction	Cumulative lifetime reduction
$PM_{2.5}$ reduction	7 tons	295 tons
NO_x reduction	266 tons	11,670 tons
SO_2 reduction	1 ton	56 tons

Source: (Grutter Consulting, 2020h)

Around 90% of the impact is due to the LRT and the rest due to NMT and last-mile connectivity measures.

Social Co-Benefits

The project will benefit the GAM with 2.7 million inhabitants through access to safe, reliable, and affordable public transport. In accordance with 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 $PM_{2.5}$ is 16 µg/m^3 which exceeds the recommended maximum of 10 µg/m^3 [44]. Improving air quality through zero-combustion emission technologies like the electric train and NMT, reduces emissions from the transport sector which is the main source of air pollutants in the GAM. The LRT has significant health benefits due to improved air quality, less noise pollution and reduced accidentality. NMT and last-mile connectivity components also have a positive impact on these aspects and cycling ways improve the safety of cyclists whilst allowing for a healthy lifestyle.

Economic Co-Benefits

Following economic benefits have been identified by the project:

- Time savings valued at 3,354 MUSD (IDOM, 2020);
- Vehicle operating cost savings estimated at 520 MUSD (IDOM, 2020);
- Reduced accidentality costs estimated at 53 MUSD (IDOM, 2020);
- Reduced emissions of air pollutants calculated by assigning a monetary value to emissions of $PM_{2.5}$, NO_x, and SO_2 estimated at 79 MUSD (Grutter Consulting, 2020h);
- Reduced GHG emissions valued based on the social cost of carbon valued at 550 MUSD (Grutter Consulting, 2020h);
- Reduced noise emissions valued at 6 MUSD (IDOM, 2020);
- Overall, the project is expected to generate 1,200 temporary jobs during construction and 1,460 direct jobs during operations (IDOM, 2020, p. 227/228).

The project has 3.3x more economic benefits than economic costs or an EIRR of 26% (IDOM, 2020).

Gender-Sensitive Development Impact

A gender analysis and a gender action plan have been developed by the project (Grutter Consulting, 2020g). The intervention areas include aspects are related to (i) mobility and security to ensure infrastructure takes into account mobility patterns of women and minimizes the risk of violence; (ii) accessibility ensuring that new infrastructure is in line with requirements of women; (iii) participation of women in the transport sector at all stages and decision levels. This refers to LRT as well as NMT infrastructure with the goal of ensuring safe, accessible services catering to the demands and needs of women.

D.4. Needs of recipient (max. 500 words, approximately 1 page)

As with other Mesoamerican Countries, Costa Rica is considered a primary “hot spot” for climate change in the tropics. An analysis of temperature and precipitation reveals many changes in the extreme values of these variables during the period between 1961 and 2003. Extreme precipitation has increased significantly and is strongly correlated with the temperature of the tropical Atlantic Ocean. The trend over the last 40 years suggests a strengthening of the hydrological cycle, with more intense rain occurring during shorter periods of time that produce greater average precipitation per episode. This trend is expected to continue in the future due to climate change, possibly resulting in

[44] https://www.iamat.org/country/costa-rica/risk/air-pollution

a greater frequency or intensity of extreme events such as floods and droughts. It can be stated on the basis of numerous studies that the intensification of extreme weather events increases the hydrological vulnerability of the country. Estimates indicate that costs due to hydrometeorological events and climatic extremes will absorb by 2025 under a conservative scenario between 0.68% and 1.05% of GDP and in a scenario of higher risk between 1.64% and 2.50% of GDP (MINAE, 2019). Costa Rica has the 8th highest economic risk exposure to three or more climate change related hazards. 6.8% of its total area is exposed to multiple adverse natural events, 78% of the population and 80% of the country's GDP reside in areas at high risk of climate hazards (GFDRR, 2011). The proposed project is a climate resilient urban transport infrastructure and reduces the vulnerability to climate change impacts whilst mitigating GHG emissions in the transport sector. The LRT investment has been extensively checked for climate proofing (see Grutter Consulting, 2020, reports d and e).

2018, after many years of discussion and after increasing debt, the country passed a tax reform giving increasing confidence and reassurance to national financial markets and an improved medium- and long-term fiscal outlook. The large fiscal deficit is the main risk to macroeconomic stability, with debt projected to exceed 60% of GDP in 2020. The containment measures for the coronavirus pandemic, coupled with the global economic downturn, are expected to take a major toll on the economy in the short term and cause a temporary deterioration in the country's fiscal and external positions. The country has deployed a post-COVID19 plan based on a Green Recovery of Costa Rica with investment in transport infrastructure being a core element. This shall create short-term jobs and a long-term greening through investing in profitable and climate-resilient public transport infrastructure. Concessional finance is crucial for the country to undertake in this situation long-term investment projects.

The Government of Costa Rica is the beneficiary of the grant and the concessional loan of the GCF. The private concessionaire receives a one-off payment of 550 MUSD (in 2 tranches) against delivery the LRT lines. This is not a loan nor an investment in the SPV but a payment for compliance with the concession contract. The GCF finance and its concessionality do not influence in any manner the profitability of the private concessionaire as it is a fixed payment of 550 MUSD followed by annual payments for services. The GCF contribution and its concessionality fully flow to the government and reduce the financial burden only of the Government of Costa Rica and not of the private SPV/concessionaire.

D.5. Country ownership (max. 500 words, approximately 1 page)

Country Ownership

Costa Rica has a long tradition in being on the forefront of combating climate change. During the nineties, Costa Rica contributed to the global awareness on climate change, becoming part of the first joint implementation projects. In 2007, Costa Rica´s National Climate Change Strategy was launched, supported by the creation of a Climate Change Department at the MINAE (Ministry of Environment and Energy). Costa Rica launched in 2019 the National Decarbonization Plan 2018-2050 which aims for a decarbonized economy with net-zero emissions in 2050 (Government of Costa Rica, 2019). The project is linked to the National Development and Investment Plan 2019-2022 (Mideplan, 2018), the NDC (MINAE, 2015), the National Decarbonization Plan (Government of Costa Rica, 2019), the National Transport Plan for Costa Rica 2011-2035 (MOPT, 2011), the National Plan for Electric Transport (MINAE, 2019), and the National Energy Plan 2015-2030 (MINAE, 2015). The LRT is also a core component of the post COVID19 Green Recovery Plan of Costa Rica.

The transport sector is responsible for 51% of the country's GHG emissions and 76% of total energy emissions in 2015 (MINAE, 2019). Fostering of public transport and electrifying the transport sector are key strategies to achieve this ambitious target. The LRT is explicitly highlighted in the national decarbonization plan, the 2nd BUR as well as the NDC of Costa Rica. The NDC includes the train as a mitigation measure and specifically mentions that its construction will require both fiscal resources as well as external financial resources.

The commitment to decarbonization is also reflected in the Costa Rican electricity system: In In 2019 99.2% of produced electricity was from renewable resources (ICE, 2020). Electrification of the transport sector is a strategy which will reduce drastically the carbon footprint of the country[45].

[45] See annual SEN reports of ICE and for the grid factor (Grutter Consulting, 2020h)

Engagement with Civil Society Organizations and other Relevant Stakeholders

Since the planning stage, the Government of Costa Rica has joined forces with the different municipalities that are part of the area of influence of the LRT. December 4th, 2018 the Mayors of the fifteen affected municipalities signed a Framework Agreement for Inter-municipal Cooperation with the aim of developing guidelines for territorial planning and urban development, and the development of urban equipment and infrastructure complementary to the LRT. Numerous consultations where made through this and other instruments[46]. The planned interventions in the area of NMT and last-mile connectivity measures where discussed in multiple roundtables with all stakeholders.

During the construction phase a continuous involvement will be sought. INCOFER as executing entity will have to design and deliver to CABEI a citizen participation and consultations plan with quarterly follow-up report of the actions carried out with evidence. For operations INCOFER must design and implement a citizen participation plan and consultations with bi-annual monitoring reports by INCOFER or the Concessionaire to CABEI.

D.6. Efficiency and effectiveness (max. 500 words, approximately 1 page)

The LRT component is co-financed with a GCF loan. 86% is co-finance basically through private sector capital (around 70%) and through a loan from CABEI. The GCF loan has a lower interest rate than the CABEI loan which is important for the Government of Costa Rica as it reduces fiscal spending. GCF financing ensures the project viability and assists in crowding-in of private capital through the PPP.

For the concessionary the LRT is financially profitable – overall, however a subsidy rate of 60% will be required. Subsidies of mass transit means are common worldwide (World Bank, 2018). The external benefits of the project due to time savings, positive health and environmental impacts, vehicle operating costs savings and reduced accidentality result in an Economic Internal Rate of Return of 26%[47] (IDOM, 2020). This refers to the LRT only which represents 99% of the CAPEX and 99% of the economic benefits. The main parameters included for the EIRR calculation are the CAPEX of the LRT and the operational costs versus as benefits time savings (91% of benefits), environmental benefits (7%) and reduced accidentality plus producer surplus. The results are robust against a sensitivity analysis as is shown in the following table. The switching point for passenger demand from where the project is economically not feasible anymore is for example a 69% lower passenger demand than projected.

Table 5: Sensitivity of EIRR to Parameter Changes

Parameter Change	EIRR
Basic Model	26%
Social discount rate Costa Rica	8.3%
30% increase CAPEX	22%
50% increase OPEX	25%
30% reduction of time savings	21%
30% reduction of all benefits (idem to 30% demand reduction)	20%

Calculated with IDOM FSR Economic Model, sheet “Flujos Econ”

NMT, last-mile connectivity and capacity building investments are grant financed by the GCF. This is justified as all these investments do not result in financial returns. Benefits of these initiatives are largely public goods. The magnitude of the benefits can thereby be far less precisely estimated and is predominantly in the medium and long term (due to behavioral long-term changes). Using scarce public resources to finance these activities is extremely difficult, especially under the adverse fiscal situation of Costa Rica, where already the core investment in the LRT results in long and difficult political negotiations. The EIRR of the NMT and last-mile connectivity measures is 34% based on the economic benefits of reduced emissions and reduced vehicle operating costs i.e. for the society these are highly profitable investments[48]. The EIRR is calculated separately for the 2 measures due to the weight of the CAPEX LRT relative to the NMT (99% to 1%) and the weight of economic benefits of the LRT (99% of economic

[46] For a summary see (Grutter Consulting, 2020i)
[47] The economic benefits are the justification for realizing subsidies as without these the LRT would not be established.
[48] See Annex 22 GHG and SD Impacts of LRT, sheet “CB NMT & TOD”

benefits are LRT and 1% NMT). The NMT and connect measures in their own are justified with their stand-alone EIRR.

The total capital investment is 1.8733 billion USD with a requested GCF finance of 271.3 MUSD and a GHG reduction of 7.62 $MtCO_2$ resulting in an effectiveness of the GCF investment of 36 USD/tCO_2. GHG marginal abatement costs of transport projects tend to be higher than of other interventions as they are also not realized primarily due to the GHG impact but to enable a safe, affordable, efficient, convenient and sustainable public transport system.

The co-financing rate of the GCF is 5.9 i.e. 86% of the total investment is co-financed. This is a very high rate compared to other mitigation projects co-financed by the GCF[49].

Technology-wise the project is based on a state-of-the art LRT. The currently used diesel rail system is completely re-vamped and replaced with a modern electric LRT system. Modern principles of urban development are applied including integration with the existing bus-based public transport system, NMT and last-mile connectivity measures. In absence of the GCF financing NMT as well as last-mile connectivity components would not have been included in the project as can be seen from the investment plans of the feasibility reports.

[49] See Grutter Consulting, 2020, GCF statistics

D. LOGICAL FRAMEWORK

E.1. Paradigm shift objectives

☒ Shift to low-emission sustainable development pathways

☐ Increased climate resilient sustainable development

E.2. Core indicator targets

E.2.1. Expected tons of carbon dioxide equivalent (t CO_2 eq) to be reduced or avoided (mitigation and cross-cutting only)	Annual	173,246 t CO_2 eq	
	Lifetime	7,622,805 t CO_2 eq	
E.2.2. Estimated cost per t CO_2 eq, defined as total investment cost / expected lifetime emission reductions (mitigation and cross-cutting only)	(a) Total project financing		1,873.3 million USD
	(b) Requested GCF amount		271.3 million USD
	(c) Expected lifetime emission reductions		7,622,805 t CO_2eq
	(d) Estimated cost per t CO_2eq (d = a / c)		246 USD **/ t CO_2eq**
	(e) Estimated GCF cost per t CO_2eq removed (e = b / c)		36 USD **/ t CO_2eq**
E.2.3. Expected volume of finance to be leveraged by the proposed project/programme as a result of the Fund's financing, disaggregated by public and private sources (mitigation and cross-cutting only)	(f) Total finance leveraged		1,602 million USD
	(g) Public source co-financed		300 million USD
	(h) Private source finance leveraged		1,302 million USD
	(i) Total Leverage ratio (i = f / b)		5.9
	(j) Public source co-financing ratio (j = g / b)		1.1
	(k) Private source leverage ratio (k = h / b)		4.8
E.2.4. Expected total number of direct and indirect beneficiaries, (disaggregated by sex)[50]	Direct		
	Indirect		
E.2.5. Number of beneficiaries relative to total population (disaggregated by sex)	Direct		
	Indirect		

[50] On average 60 million passengers per year; direct beneficiaries might have used the LRT for 1 trip or for multiple trips per year. There is no control which passengers will use the LRT. The direct beneficiaries are the people living in the catchment area of the LRT; the gender distribution is based on the urban share of women (https://www.inec.go.cr/). Direct population numbers are based on the projected 2020 population by Inec.

E.3. Fund-level impacts

Expected Results	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
M2.0 Reduced emissions through increased access to low-emission transportation	M2.1 Tonnes of carbon dioxide equivalent (t CO2eq) reduced or avoided - low emission gender-sensitive transport	Reports MINAE (DCC) based on surveys and measure-ments[51]	0	0 tCO_{2e}	157,012 tCO_{2e}[52]	1. CDM Methodology ACM0016 applied for LRT (86% of ERs); GEF methodology for NMT and MIT methodology for connectivity. 2. Lifespan: 44 years; based on average commercial lifespan of LRT 3. Total GHG reduction lifespan: 7,622,805 tCO_{2e} 4. Average annual GHG reduction: 173,246 tCO_{2e} 5. Construction of all lines is in parallel with lines entering into operations within one year at the end of the implementation period i.e. there will be no mid-term impact. 6. The final year reflects cumulative reductions by end implementation period 7. Assumes timely construction and implementation of all lines. 8. Jobs created mid-term are temporary construction jobs and final are
Social, environmental, economic co-benefit indicators at the impact level	Number of green jobs created for construction and operations (gender disaggregated)	INCOFER annual reports	0	1,200 (30% women)	1,460 (40% women)	

[51] see section E7 for details

[52] source of this figure: Annex 22a- Sheet “total PJ”, Box C2, marked in yellow (rounded value)

						operational permanent jobs 9. Methodology for GHG determination follows report (Annex 22) 10. LRT has lower emissions than current transport system 11. Political willingness to implement the project
	Tons of $PM_{2.5}$ reduced	Reports MINAE (DCC) based on surveys and measurements	0 tons	0 tons	5.6 tons	Residents are willing to use new mobility modes
	Tons of NO_x reduced		0 tons	0 tons	226 tons	
	Tons of SO_2 reduced		0 tons	0 tons	1.1 tons	

E.4. Fund-level outcomes

Expected Outcomes	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
M8.0 Increased use of low-carbon transport	M8.1 Number of additional female and male passengers using low-carbon transport as a result of Fund support	Reports INCOFER based on ticketing and surveys (for gender split)[53]	0 43% female current PT[54]	0	45 million 50% female[55]	1. residents are willing to use new mobility modes 2. Monitoring systems are sufficient to improve service levels Passenger projections based on 4-step transport model[56]. The average number of users stated in the FP (64 million) is the average number of users per annum over the project lifetime.

[53] see section E7 for details
[54] Gender report figure 14 (Grutter Consulting, 2020g)
[55] Target based on current female share of population in the GAM
[56] IDOM, 2020, FSR 3rd Report; Memoria 10: Modelo de Demanda (Demand Model)

						The final figure here is the cumulative number of passengers at the end of the implementation period.
Number of technologies and innovative solutions transferred or licensed to support low-emission development as a result of GCF support	Number of technologies and innovative solutions transferred or licensed to support low-emission development as a result of GCF support	Reports INCOFER	0	1 new techno-logy: LRT	1 new techno-logy: LRT	1.Funding is available 2. Finance is available 3. CB leads to effective technology transfer

E.5. Project/programme performance indicators

Expected Results	Indicator	Means of Verification (MoV)[57]	Baseline	Target		Assumptions
				Mid-term[58]	Final[59]	
1. Inhabitants shift from baseline modes of transport to LRT	1.1. LRT passengers baseline mode share	Reports INCOFER based on gender disaggregated surveys with trip distance per mode baseline and project	0 (no mode-shift)	0	49% car 9% taxi 33% bus 9% old train	Residents are willing to use new mobility modes The final figure is the cumulative number at the end of the implementation period
	1.2. LRT passenger trip distance		0 km (no LRT)	0	16km	
	1.3. Rail based mode share in % of all trips	Reports by MOPT, MINAE, 3rd parties	0.0% in 2017[60]	0.0%[61]	0.9%[62]	
2. Inhabitants shift from baseline modes of transport to cycling due to increased convenience and safety	2.1. passenger-km of cycle way users	Reports INCOFER based on gender-disaggregated surveys	0	0	156 million pkm	
	2.2. cycle way user baseline mode share		0 (no mode-shift)	0	90% bus 10% car	
	2.3. Cycling mode share in % of all trips	Reports by MOPT, MINAE, 3rd parties	1.0% in 2017 (MINAE, 2017)	1.0%	1.3%[63]	
3. Mode-shift towards low-carbon transport at intervention	3.1. number of residents in catchment area of intervened stations	Reports INCOFER based on updated inec statistics	0	0	139,000 residents	

[57] See section E7 for details
[58] Construction stage
[59] Cumulative
[60] Currently operating urban train based on (MINAE, 2017)
[61] Lower level as LRT under construction stopping operations of existing train
[62] Source: Excel File 22a - sheet “Impact LRT”
[63] Excel File 22a - sheet “NMT Impact”

stations due to increased connectivity, accessibility, attractiveness and convenience of stations and improved pedestrian and cycling facilities	3.2. GHG emissions per resident per year intervened area for transport	Report INCOFER based on control-group survey	0.74 tCO_{2e}	0.74 tCO_{2e}	0.61 tCO_{2e}	
4. Reduced trip times of passengers using LRT	Average trip time of LRT passengers compared to trip time prior LRT relative to mode used in absence of the LRT	Report INCOFER based on passenger survey and comparison with baseline	Bus users: 2.1 hours Car/train users: 0.9 hours; LRT users[64]: 0 hours	LRT users: 0[65]	LRT users: 0.7 hours	LRT has lower emissions than current transport system
5. Reduced accidentality rates	5.1. Reduced number of accidents	Report INCOFER based on passenger survey and comparison with BAU accidentality	0	0	5.1. 74 accidents less	Residents are willing to use new mobility modes Average annual figures are higher than the figure for end of implementation period due to increasing passenger numbers
	5.2. Reduced number of injured persons		0	0	5.2. 13 less injured persons	
	5.3. Reduced number of deaths		0	0	5.3. 1 less deaths	

E.6. Activities

Activity	Description	Sub-activities	Deliverables
1. Component 1 LRT System: Identify and engage concessionaire	The private concessionare is identified and engaged through a tender by INCOFER	1.1. Tender for PPP launched 1.2. Concession contract awarded	1.1. Tender launching 1.2. Concession award
2. Component 1 LRT System: Design, build and ready to operate LRT	LRT is fully operational after this activity	2.1. Detailed engineering design of all LRT components 2.2. Tendering and construction incl. equipment of LRT tracks, stations, depots and ancillary components 2.3. Tendering, procurement and reception of rolling stock 2.4. Environmental Impact Assessment for LRT 2.5. Negotiation and approval of all permits required to build and operate the LRT 2.6. LRT constructed	2.1. Detailed engineering design report approved by INCOFER 2.2.a Procurement document construction LRT 2.2.b LRT fully constructed and turned-over to SPV 2.3.a Procurement document rolling stock 2.3.b Rolling stock delivered to SPV 2.4. EIA approved by SETENA 2.5.a Documentation of all construction permits

[64] No LRT in baseline
[65] LRT under construction

		2.7. Stations constructed 2.8. Depots constructed 2.9. Trains purchased 2.10. Approval of construction 2.11. Operation permit	2.5.b Documentation of all operational permits 2.6. 85km of LRT tracks operational 2.7. 46 stations operational 2.8. 4 depots operational 2.9. 78 trains operational 2.10. INCOFER issues the construction acceptance certificate 2.11. INCOFER issues the operation permit
3. Component 2 Urban integration with NMT and connectivity/accessibility component: Design, build and ready to operate cycling lanes (combined with activity 4)	Cycling lanes fully operational	3.1. Detailed engineering design of cycle lanes 3.2. Tendering of construction of cycle lanes 3.3. Delivery of cycling lanes	3.1. Detailed engineering design report approved by INCOFER 3.2.Tender document construction cycle lanes 3.3. INCOFER issues the construction acceptance certificate
4. Component 2 Urban integration with NMT and connectivity/accessibility component: Integrate, design, and build connectivity interventions at 6 LRT stations (combined with activity 3)	6 stations with connectivity completed	4.1. Detailed engineering design of interventions 4.2. Tendering of construction activities 4.3. Delivery of stations with connectivity components	4.1. Detailed engineering design report for interventions 4.2 Tender document for construction activities 4.3 INCOFER issues the construction acceptance certificate
5. Component 2 Urban integration with NMT and connectivity/accessibility component: NMT promotion activities	Multiple promotion activities to foster cycle and micro-mobility usage	5.1. Detailed design of activities 5.2. Identification and contracting of delivery institution 5.3. Delivery of planned activities	5.1. Detailed implementation plan 5.2. Implementation contract 5.3.Report on activities implemented
6. Component 3 capacity building and gender measures: Establish monitoring system and monitor impacts of LRT, last-mile connectivity and NMT interventions	Fully operational monitoring and reporting system on LRT, NMT and last-mile connectivity components incl. institutional structure	6.1. Design institutional set-up within INCOFER for monitoring of impacts 6.2. Sub-contract surveys and other components of monitoring 6.3. Realize and consolidate annual monitoring reports on impacts of LRT, NMT and last-mile connectivity components	6.1. Institutional set-up of monitoring system within INCOFER defined incl. department / staff responsibilities and tasks 6.2.a TORs for and procurement of sub-contracting services 6.2.b Contracts for sub-contracting services signed 6.3. Annual consolidated monitoring report on LRT,

			connectivity, NMT impact based on established monitoring methodology (see Section E7)
7. Component 3 capacity building and gender measures: Deliver capacity building and outreach	Knowledge products are developed and results disseminated	7.1. Realize publications on project components with a focus on NMT/connectivity 7.2. Realize outreach events	7.1.a. Publication of LRT/NMT/connectivity initial impact and consolidated impacts and lessons learnt year 2 and year 5 after full implementation 7.1.b. Publication of guidelines for NMT/connectivity and their integration with mass transit systems 7.2.a. Realize at least 1 webinair for each publication 7.2.b. Realize 5 workshops on results and lessons learnt
8. Component 3 capacity building and gender measures: Implement gender action plan	The activities of the gender action plan are implemented	8.1a. Establish social communication campaigns to identify sexual harassment practices and other types of violence in trains and at waiting stations 8.1b. Train INCOFER staff on the new sexual harassment law 8.1c. Implement a rapid reporting system for cases of violence against women 8.1d. Establish a complaint mechanism for cases of violence against women that acts automatically 8.1e. Implement an adequate lighting system that protects the safety of users 8.2.a. Design, implement and analyse a comprehensive multimodal transport pilot survey 8.2.b Conduct a gender-sensitive evaluation at the user level to better understand the different needs and perspectives of women and men in terms of access to services and infrastructure 8.3a LRT infrastructure designs with a gender focus in which their physical integrity is safeguarded and allows an adequate use of the infrastructure 8.3b. Improving women's accessibility to non-motorized mobility services	8.1a. 4 campaigns realized 8.1b. 80% of staff trained 8.1c. System implemented with 80% of staff trained for attending cases and with 75% of cases being attended 8.1d. In all LRT stations with interventions a panic button is implemented 8.1e. 100% of LRT stations and surrounding facilities have adequate illumination 8.2.a 1 survey conducted with results presented at 2 workshops 8.2.b 2 surveys or evaluations realized with results presented at an 2 workshops 8.3a. At least 90% of LRT stations have been designed with a gender focus and 80% of services offered by the LRT include actions to improve access of women 8.3b1. At least 1 program to foster the usage of cycling for mothers and kids 8.3b2. At least 50% of cycling parking spaces have areas dedicated exclusively for women 8.4a1. Women participation in technical workforce of INCOFER in year 2 15%, in year 4 25% and in year 10 40% (minimum rates) 8.4a2. At least 1 women mentoring program

		8.4a. Attract women to the INCOFER workforce and offer equal conditions to men 8.4b. Promote the hiring and provide spaces for women entrepreneurs to be part of the tertiary service providers that the train acquires 8.5. Establish spaces for women to be promoted to decision-making positions within the activities relevant to the LRT 8.6. Create knowledge product on lessons learned and disseminate	8.4a3. Women participation as LRT drivers in year 2 10%, in year 4 20% and in year 10 40% (minimum rates) 8.4b1. 1 program to facilitate women entrepreneurship for services to the LRT 8.4b2. 1 protocol designed to prevent sexual harassment at work 8.4b3. At least 1 training to prevent sexual harassment for INCOFER staff 8.4b4. 80% of staff exposed to courses on sexual harassment in INCOFER 8.4b5. At least 45% of services provided by 3rd parties to INCOFER are managed by women 8.5a. 1 program for the promotion of women to management positions 8.5b. 50% of INCOFER directors are women 8.6. Report on lessons learnt published online

E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)

In accordance with the AMA the AE will realize an Inception Report, a Mid-Term Evaluation and a Terminal Evaluation plus annual performance reports. INCOFER will provide CABEI project reporting prior to the scheduling of reports to be delivered to the GCF, which as AE CABEI will aggregate and report to the GCF through Annual Progress Reports (APRs). After the loan is declared effective, CABEI will field an inception mission to discuss the project implementation in detail, orient INCOFER on its roles and responsibilities, discuss implementation arrangements, procurement processes, disbursement arrangements, audit, and reporting requirements for the project. CABEI will field review missions during the duration of project implementation to review the project progress and address issues, if needed, to ensure that the project is completed as planned. An independent midterm evaluation will be conducted by CABEI between the second and third year of implementation to assess whether attainment of the project's objectives are still likely to be achieved and if changes in the project may be needed. An independent final evaluation will be conducted by CABEI within 6 months of physical completion of the project. INCOFER will submit the draft completion report to CABEI and CABEI will finalize the GCF project completion report.

INCOFER will provide CABEI project reporting prior to the scheduling of reports to be delivered to the GCF, which CABEI will aggregate and report to the GCF through Annual Progress Reports. After the loan is declared effective, CABEI will field an inception mission to orient the SPV and INCOFER on its roles and responsibilities, discuss implementation arrangements, procurement processes, disbursement arrangements, audit, and reporting requirements for the project. CABEI will field review missions during the duration of project implementation to review the project progress and address issues, if needed, to ensure that the project is completed as planned. All performance indicator as listed in the project agreement will be monitored annually. For impact monitoring and reporting INCOFER will be supported by specialized international support to monitor and report results. GHG monitoring and reporting of impacts is only possible once the LRT is constructed and operational i.e. year 5 onwards. GHG impact monitoring will then be performed on an annual base with year 2 and year 5 of operations including major surveys to assess the impact of the different components. The impact monitoring and reporting includes:

a). Performance of the LRT system including GHG reduction, impact on air pollutants, and mode shift. The monitoring approach will follow basically the CDM approved methodology for Mass Transit Systems ACM0016 which requires as main monitoring parameters passenger numbers, energy consumption of the LRT and passenger surveys to determine the passenger origin-trip mode structure and distances and the baseline mode structure used in absence of the LRT.

b). Impact of the NMT component. The methodological approach to determine the impacts and the monitoring is based on a GEF methodology for cycling ways.

c). Impact of the last-mile connectivity component on GHG and local air pollutants. The monitoring methodology is based on control-group approach monitoring the trip emissions per resident of the project area and a control-group area. The monitoring methodological and statistical approach are based on a methodology developed by Grutter Consulting the MIT/USA for the World Bank for a project in Nanchang/China.

Reports on the impacts of the LRT, NMT and last-mile connectivity activities will be produced and will be accessible to interested parties online. The monitoring is an important component to improve design of future NMT and connectivity measures for an efficient and effective replication of these components. The monitoring methodologies including details on surveys to be used and statistical analysis have been complied in a report (Grutter Consulting, 2020f).

The cost of the impact monitoring including the specialized surveys and statistical analysis as well as international assistance in this process has been included in the capacity building and monitoring budget financed under a GCF grant. The monitoring not only allows retrospectively to determine the GHG and sustainable development impact of the different project components but also allows to determine better the impact of different intervention measures and to plan and design with a better-quality intervention in the NMT and connectivity areas.

3 evaluations are carried out in accordance with Annex 11:
1. Mid-term summative evaluation. This is realized with funds provided under Component 3 by the company contracted for this purpose. It summarizes the development of the different components of the GCF project as of year 3. In year 3 no infrastructure is yet operational. As such this will represent a progress report and will assess the implementation accomplishment in line with the timeline as well as highlighting any potential issues.
2. Impact evaluation: This is realized with funds provided under Component 3 by the company contracted for this purpose. It is realized after one full year of operations and is based on the different surveys realized to assess the impact of the project relative to all defined indicators. The impact monitoring approach is detailed in Annex 11.
3. Self-assessment: this evaluation refers to the implementation of the GCF project in terms of financing, disbursements, and implementation status, not however to the impact of the project.

E. RISK ASSESSMENT AND MANAGEMENT

F.1. Risk factors and mitigations measures (max. 3 pages)

Selected Risk Factor 1: Right of Way

Category	Probability	Impact
Technical and operational	Low	Low

Description

Impossibility of completely regularizing the right of way of all lines. This risk concerns mainly the lines 4 and 5, since for the lines 1-3 the line is currently operational with the old train. The impact of this risk would be a delay in project implementation and in the worst-case scenario the respective line could not be realized.

Mitigation Measure(s)

Study and, where appropriate, regularization of the rights that make up the right of way. The right of way is based on the Decree 22483-MOPT (MOPT, 1993). This mitigation measure eliminates the risk. Expropriations will be carried out under the national expropriation regulations (law 7495) and considering the mitigation measures established in the environmental and social action plan[66].

Selected Risk Factor 2: Design Failures

Category	Probability	Impact
Technical and operational	Low	Low

Description

Risk that the design fails to achieve the required output specifications, with the result that the project has more or less capacity than necessary to meet the needs of the demand. The impact would be that the infrastructure would be built suboptimal resulting potentially in cost overruns for rectifications and potential delays.

Mitigation Measure(s)

The SPV will realize the detailed engineering design. The selection of the private company for the PPP is thus critical. A selection of a high-quality private company with sufficient experience in the design of LRTs will mitigate this risk and make its occurrence highly improbable. There are sufficient private companies with experience in designing comparable LRTs worldwide. The LRT proposed for the GAM is not a complex project and similar LRTs have been designed and implemented successfully in multiple countries worldwide in recent years.

Selected Risk Factor 3: Construction Sur-Cost / Construction Delays

Category	Probability	Impact
Technical and operational	High	Low

Description

Risk that during the design and construction phase the actual project cost exceeds the budgeted costs, due e.g. to an increase in the cost of inputs or construction complexity. In the PPP contract this risk is fully with the private investor as he agrees to build the LRT infrastructure at an agreed upon CAPEX i.e. any cost overruns not provoked through changes of the design requested by the government need to be borne by the private investor. Also construction delays and resultant costs are fully born by the private investor. In traditional government financed projects in Costa Rica cost-overruns have been in the order of 20% i.e. the potential impact is estimated at low.

Mitigation Measure(s)

The PPP contract transfers this risk to the private investor. The contract establishes the procedures and penalties in case of implementation delays. This results in PPP contracts in general delivering the product on-time.

Selected Risk Factor 4: Late Delivery of Rolling Stock

Category	Probability	Impact

[66] See Annex 6.5 (CABEI, 2019)

Technical and operational	Low	Medium
Description		
Risk that the rolling stock selected is not available upon time due to the manufacturer of the rolling stock. This results in an implementation delay of the project with the resultant costs. The risk is born within a PPP by the private investor as he is responsible for timely delivery of the project and its implementation. The probability of the risk is estimated as low as multiple manufacturers are available worldwide and therefore delivery time of rolling stock can be negotiated.		
Mitigation Measure(s)		
Careful time-planning and early procurement contracts of rolling stock. The PPP shifts this risk to the private investor as the concession period is fixed 35 years and annual availability payments are only made in accordance with rolling stock and total service availability. The construction time of the project also provides for sufficient leeway to plan and procure the rolling stock in a timely manner.		
Selected Risk Factor 5: Lower than Expected Demand		
Category	Probability	Impact
Technical and operational	Medium	Low
Description		
Risk that the passenger demand is lower than estimated. This may be due to factors external to the private partner if actions are taken by the Government or the Municipality which affect demand, may be due to actions or failing actions of the private partner e.g. non-adequate service conditions or might be due to factors external to all parties such as the a pandemic. The risk is with the government as farebox revenues come to the government whilst the private concessionary has a fixed availability payment. The magnitude of the risk impact on the government and the SPV depend on the transaction structure model chosen and are higher in the PPDi than in the PPDD model. The impact on government finance is relatively low as the financial and economic profitability is related largely to CAPEX expenditures and not that sensitive to changes in the number of passengers (IDOM, 2020, p. 57). This risk also has an impact on emission reductions and potentially on traffic impacts (the impact of reduced demand is not 1 to 1 on emission reductions as latter is relative to passenger*trip distance*mode used in absence i.e. as example less passengers coming from short-trip bus users affect marginally calculations and less passengers with long trip distance affect more; the same holds true for traffic conditions as it depends if latter is due to less trips than expected in the GAM as total (e.g. due to decreasing trip intensity or less residents than projected for the future), and from which baseline mode we have less passengers). The influence of 1 parameter alone on emission reductions and on traffic mitigation is thus limited. As example the CDM project of Delhi Metro had in its last monitoring period 2016-2018 35% less passengers than projected but still 14% higher emission reductions than projected as the emission reductions per transported passenger where higher than projected due to longer than expected trip distance and higher than expected mode share from high emitting modes.		
Mitigation Measure(s)		
Measures to increase demand are being planned and include: (i) adequate tariff structure which makes the usage of the LRT attractive (ii) Integration measures with the bus-based public transport system including tariff integration and electronic ticketing which result in increased attractiveness and convenience of the public transport system. (iii) Attractive NMT systems including cycling ways and shared mobility services which allow for safe, convenient and seamless trips from origin to destination thus attracting additional passenger demand.		
Selected Risk Factor 6: Lower than Expected Quality of Service		
Category	Probability	Impact
Technical and operational	Medium	Low
Description		
Risk that the service provider does not reach the quality specifications for the service as demanded. This can result in penalties and/or lower than expected demand of passengers and therefore lower revenues.		
Mitigation Measure(s)		
Selection of private partner with experience and good quality track record. The PPP contract establishes penalties and guarantees for quality service deliveries to ensure that service targets are met.		
Selected Risk Factor 7: Higher than Expected Operational Costs		

Category	Probability	Impact
Technical and operational	Medium	Low
Description		
Higher than expected operational costs resulting in lower than expected profitability and less capacity to repay debts. The higher costs can be a result of cost increases (e.g. salaries), underperformance of technologies (e.g. higher electricity usage than expected of trains) or disputes (e.g. labor disputes) resulting in lower than expected quality of services and/or higher than expected OPEX.		
Mitigation Measure(s)		
The risk is born by the private investor under a PPP contract. Selection of a high-quality private partner is thus key to reducing this risk. Insurance or contractual guarantees can also be realized for some of the operational cost risks (e.g. technology performance risks).		
Selected Risk Factor 8: Exchange Rate Risk		
Category	Probability	Impact
Forex	High	Low
Description		
This can be related to the payments of the government to the concessionary, in the CAPEX or OPEX of the concessionary or to the revenues related with the tariff. Exchange rate risks affect the potential revenue in foreign exchange of the concessionary, the OPEX, the CAPEX and also the transfers from government. Dependent on the type of PPP contract the risks are either with the private party, with the government or with both. Results are always a lower profitability of operations.		
Mitigation Measure(s)		
Currency swap contract, as long as the terms and conditions of such contracts are approved by the contracting institution, so that aggressive positions that go beyond a hedge are not taken and that imply an additional risk to the development of the Project. The currency risk is partly mitigated by the combination of income and expenditure in local currency and USD.		
Selected Risk Factor 9: Insufficient Experience Executing Entity		
Category	Probability	Impact
Technical and operational	Medium	Medium
Description		
INCOFER is in charge of realizing the concession agreement but lacks experience in that. INCOFER is also responsible for supervision of the concessionary during the construction and operational phase. While INCOFER has experience in running its rail system, the experience in constructing a new electric LRT is limited. This can lead to an imbalance of know-how between the private concessionary and the supervising institution which could result in non-fulfilment of contractual obligations, non-adequate construction, and construction delays.		
Mitigation Measure(s)		
INCOFER receives technical support from CABEI to carry out its tasks. For the concession phase INCOFER will work with the same procedures and approach as used by the National Concessions Council (CNC) and will also strengthen the SPV during the implementation of the concession, with the resources established for this purpose. For the construction and delivery phase CABEI will contract directly a 3rd party verification company paid with resources of the borrower (0.4% of the loan amount), with field presence. The verifier will be present during the project execution and verify the design products, the global budget, monthly estimates of work, will carry out evaluations of the variations between the real and the programmed physical and financial execution, and the respective analysis of the effect on the time of contractual completion, technical constructive audits, opportune monitoring of change orders, extensions of contracts, and follow-up of possible claims or controversies; likewise it will issue monthly reports to CABEI.		
Selected Risk Factor 10: Money laundering, terrorist financing and prohibited practices risks		
Category	Probability	Impact
Prohibited practices	Low	Low
Description		

Risk of the concessionary being involved in illicit practices.		
Mitigation Measure(s)		
CABEI has its internal system of control. The tender process is an open process with results presented to the public. CABEI realizes a first level due diligence of the concessionary to ensure that this risk is mitigated.		
Selected Risk Factor 11: Construction Permits		
Category	Probability	Impact
Technical and operational	Low	Medium
Description		
Risk of not obtaining by the concessionary on time all required permits for construction and operation. The basic risk impact is a delay in construction and operations. With long delays the impacts can be high.		
Mitigation Measure(s)		
The project is a national priority and its construction and environmental impacts are very limited as it is basically realized on an existing rail track. The experience of INCOFER is useful for the concessionary to identify on time potential problem areas for construction areas and permits		
Selected Risk Factor 12: Identification of High Quality Concessionaire		
Category	Probability	Impact
Other	Low	High
Decsription		
Lack of offers / offers with a very high cost for acting as concessionaire.		
Mitigation Measure(s)		

INCOFER has a preliminary list of interested concessionaires, which exceed 10 companies. Likewise, IDOM corroborated with these companies that the amount to be tendered and the size of the works is feasible, therefore the risk of bankability is low and lack of offers is considered to be very low.

Mitigation measures to reduce this risk are:

(i) Increase of capacity of contracting parties:

- CABEI will have two supervising entities for the loan: (i) the first company, to be contracted by the Gov. of Costa Rica, for which CABEI is preparing the TORs for this project´s supervision company activities, and the minimum activities to be performed by it, and (ii) the second company will be contracted directly by CABEI, through an international bidding process, calling for a company with experience in the transport sector with the objective to validate the social, environmental, infrastructure and economic commitments assumed by the State for the project.
- With TA funds from CABEI, INCOFER hired three specialists as advisors, with extensive experience in concession contract management, who are part of the project's PIU. This Unit will also be expanded to include professionals with a solid background in the financial, legal and railroad sectors.
- Two additional TA cooperation agreements with CABEI are in process, aimed at supporting INCOFER during the international public bidding process of this LRT Project

(ii) Supervision with 3rd party: CABEI will contract directly, on behalf of INCOFER, a specialized 3rd party company, to be paid with resources of the borrower, which will assist in the PPP project design and in structuring the PPP transaction.

(iii) Clearly defined parameters in the draft concession tender and contract which ensure high quality and experienced bidders: There are already a series of technical and financial parameters and requirements that will be requested from potential concessionaires, which mitigate this risk. All potential offerer's must prove significant experience with comparable LRTs and financial strength (see Annex 19 Summary of Tender and Concession Contract Document" especially Chapter 2 Technical Minimum Requirements and chapter 3 Financial Requirements).

Also the contracting parties have a broad experience in structuring large-scale PPPs: The Government of Costa Rica as well as CABEI all have structured and managed large-scale PPPs. Staff involved in these transaction is now at INCOFER. This experience will be used for the LRT.

Selected Risk Factor 13: Funding gap (availability payment) due to the tight fiscal situation of Costa Rica		
Category	Probability	Impact
Other	Low	High
Description		
The risk is that the government is not capable to finance the availability gap payment to the Cocenssionaire.		
Mitigation measure(s)		
The risk is related to the current fiscal situation of Costa Rica. The risk is mitigated by: • The availability payment of around US$100 million needs to be paid annually once the LRT is operational i.e. 6 years from now. The measures to reduce the fiscal deficit have already been taken since December 2018 with the approval of the fiscal reform (but have been temporarily suspended due to COVID-19; however, they have again been taken up end 2020) and will have an impact in a much shorter period. Therefore the future risk is considered to be significantly lower than the current risk. • With the closure of the Concession contract the Costa Rican government assumes the legal obligation of the availability payment i.e. this then forms part automatically of the annual budget. For the year 2020 the availability payment would have meant 0.6% of the Costa Rican budget i.e. whilst significant this is not a huge part of the budget. • Investing in profitable infrastructure will alleviate future fiscal problems. The reduced health costs due to reduced accidentality and reduced air pollution are worth on average annually US$54 million (FSR Annex 2 economic spreadsheet). A large part of these health costs are paid directly by the government through the public health care system i.e. the LRT results in direct reduced fiscal health costs. Time savings result in increased productivity of the economy which again results in increased tax revenues. Overall the fiscal effect is thus considered either positive or close to nil. The GCF financing enables to reduce this risk strongly by having a long loan tenure allowing to spread out payments and by having a long grace period i.e. both allow that the fiscal situation is not aggravated of Costa Rica whilst enabling the investment in green infrastructure.		

F. GCF POLICIES AND STANDARDS

G.1. Environmental and social risk assessment (max. 750 words, approximately 1.5 pages)

Environmental Impacts

A separation of potential environmental impacts during the construction and the operational phase is made. Major anticipated negative environmental impacts of the project during construction are related to traffic disruptions and access to properties, relocation of utilities, cutting trees, noise and air quality impacts, as well as community health and safety. During operation, it is anticipated that the project will have mostly positive environmental impacts—specifically, on urban air quality and acoustic environment. Adequate mitigation measures are incorporated into project design and will be implemented through an environmental management plan. Public consultations with various stakeholders were conducted[67]. The preliminary EIA was disclosed on INCOFERs website June 2020 (IDOM, 2020) and on the website of CABEI for 120 days starting July 25th 2019 and ending October 24th 2019, with approval of the loan through the Board of CABEI on October 30th 2019[68].

The final EIA will be realized by the concessionary. The train requires an environmental permit and authorization granted by the National Environmental Technical Secretariat (SETENA), which involves compliance with all relevant regulations and the corresponding permits e.g. concerning water, air, noise pollution, social aspects etc. (IDOM, 2020, p. 191 to 216). For construction the concessionary will require permits from the Ministry of Public Works and Transport (MOPT) and the corresponding municipalities. The operational permit is given by MOPT.

Social Impacts

The project will affect and potentially displace around 215 persons which have invaded the right of way of the train system in the last years (IDOM, 2020, p. 143). The negotiation mechanisms for the process of expropriation and relocation of owners are based on the Law 7495 (Expropriation Law), which clearly indicates the administrative processes to be followed to compensate the persons or companies that own property where some new sections of the current route of the LRT will have to be traced, as well as the relocation of the persons who will be affected. The total expropriation area is estimated at 420,000m^2 of land and 26,000m^2 of buildings (IDOM, 2020). INCOFER must deliver to CABEI prior to the 1st loan disbursement a copy of the Involuntary Resettlement Plan (PRI), including land acquisition and expropriations, and corresponding protocols. At least five months after the last resettlement INCOFER must deliver to CABEI a final report on the scope and achievements of the PRI considering the reestablishment or improvement of socioeconomic indicators and conditions of affected families.

The project is located in the urban area of San Jose, where no indigenous peoples reside. The project will not affect any indigenous communities and, accordingly, no indigenous peoples planning documents are required (IDOM, 2020, p. 149)[69].

The project will benefit GAMs estimated population of 2.7 million through increased access to safe, reliable, and affordable public transport. Overall, the project is expected to generate 1,200 temporary jobs during construction and 1,460 direct jobs during operations (700 in operations, 700 in maintenance and 60 in administration) (IDOM, 2020, p. 227/228). The affordability of the services is analysed closely. The new fare schedule will largely follow the existing levels (IDOM, 2020). The project during its operations also improves the health of people and reduces mortality and morbidity rates through improved air quality, reduced noise emissions and reduced accidentality.

[67] See for details (Grutter Consulting, 2020i)
[68] https://www.bcie.org/fileadmin/bcie/projects/Estudio%20Ambiental%20Preliminar%20TRP%2015%20julio.pdf
[69] The definition of indigenous communities is based on Art 1 of the Indigenous Law 6172: http://www.dinadeco.go.cr/sitio/ms/3%20Tem%C3%A1tica/3.1%20Asuntos%20ind%C3%ADgenas/3.1.3%20Normativa/3.1.3.1%20Ley%20Ind%C3%ADgena%20N%C2%B0%206172/Ley%206172%20LEY%20INDIGENA%20Y%20SU%20REGLAMENTO.pdf

G.2. Gender assessment and action plan (max. 500 words, approximately 1 page)

Gender Assessment[70]

Costa Rica has been committed to closing gender gaps for almost half a century. Sectors that are less traditional for women, such as transportation, still present significant gender gaps. In Costa Rica, nearly 60% of public transport users are women, yet there are very few women in decision-making positions or as employees in the sector, and only 10% of bus drivers are women. Women have less access to driver's licenses (only 30% of licenses have been issued to women). This shows a greater dependence on the public transportation system

The 2004 specialized survey on violence against women shows that 58% of the women surveyed reported having been the victim of at least one incident of physical or sexual violence at some point in their lives since the age of 16. The public transportation sector also concentrates high levels of violence. The presence of acts of violence against women inhibits them from accessing public transport services and other services provided by the use of buses, trains or cabs. Costa Rican women constantly experience sexual harassment, sexual violence and other types of violence while they are users.

Based on the analysis of available information, the transport sector in Costa Rica continues to be dominated by men in all spheres of decision-making and the provision of transport services, including the train network. Currently, INCOFER has a woman as its executive president. Within the institution's board of directors, 42% (3 of 7 positions, including the executive president) of the positions were awarded to women and 58% to men (4 of 7 positions).

Gender Action Plan

The gender action plan seeks to incorporate activities that will improve women's participation as users and providers of train transportation services. Dimensions included in the gender action plan are (i) mobility and safety; (ii) accessibility and (iii) participation. Within mobility and safety it is proposed to design activities that promote the training of staff to prevent violent events or the implementation of communication tools and campaigns directed to men and women in order to prevent and attend to violence against women. Also, information shall be generated on women's mobility patterns, as well as their specific needs when using the train's transportation system and the different intermodal connections to optimize the LRT for the specific needs of women. In terms of accessibility it is necessary to ensure that women can access different types of services, not only when using the train or waiting inside the stations, but also the connection with other types of multimodal transport and other public spaces. The improved infrastructure should include the necessary spaces to ensure women's comfort and take into account their mobility patterns (accompanied, with shopping carts, or multiple bags or packages, or strollers for children). In terms of participations an increased participation of women in technical, managerial and at decision taking level shall be achieved through capacity building, mentoring and gender targets.

G.3. Financial management and procurement (max. 500 words, approximately 1 page)

CABEI can realize monitoring supervision of the works and can request the administrative, technical, legal, financial and accounting documentation related to the project for its eventual evaluation (Art. 9.05) [71]. CABEI will receive periodic reports of the project status from the project executing unit. CABEI plans to realize a medium term and ex-post evaluation in the terms set forth in Annex E of the Loan Contract[72].

INCOFER will submit to CABEI quarterly reports on the physical execution of the project, compliance with the environmental management plans and in general the compliance with the obligations of the concessionaire contained in the respective Contract. INCOFER will realize an external supervision of the concession contract including final design and supervision of works (includes environmental aspects).

[70] See for more details on this section (Grutter Consulting, 2020g)
[71] See for details (CABEI, 2019), section 2.2.4
[72] The medium term evaluation is planned for maximum 3 months after 50% of disbursement of the loan and the final ex-post evaluation minimum 1 year and maximum 2 years after the last disbursement of CABEI.

CABEI will contract directly a 3rd party verification company paid with resources of the borrower (0.4% of the loan amount), with field presence. The verifier will be present during the project execution and verifies inter alia the design products, the global budget, and will carry out evaluations of the variations between the real and the programmed physical and financial execution, and the respective analysis of the effect on the time of contractual completion, technical constructive audits, etc.; likewise it will issue monthly reports to CABEI.

CABEI's supervision function will be carried out by the Credit Operations Supervision Area (USOC). The follow-up will be carried out through the reports issued by the verifying firm, and through review and field visits, according to the annual plan of supervision visits. CABEI will make at least two supervision visits per year. The follow-up of environmental and social aspects will be carried out by the Bank's Office of Environmental and Social Sustainability (OFAS), who will accompany the USOC, according to the frequency established in the annual supervision plan.

Table 5: Disbursement per Line (USD)

Line	Loan disbursement
Line 1: Paraiso to Atlántico (27.4 km)	159 MUSD
Line 2: Atlántico to Alajuela (21.6 km)	127 MUSD
Line 3: Atlántico to Ciruelas (25.4 km)	148 MUSD
Line 4 Alajuela to Ciruelas (7.8 km) & Line 5 Ciruelas to El Coyol (2.7 km)	61 MUSD
Definitive reception of all lines and operational start	55 MUSD
Total	**550 MUSD**

Source: (CABEI, 2019), Table II-5

Procurement

A tender for a concession agreement is made. All procurements are the sole responsibility of the concessionary and not realized by CABEI or INCOFER. CABEI has to review the PPP bidding poster before the bidding starts and grant it's no objection, and subsequently, CABEI must review the award to the winning concessionaire and grant it's no objection as well. Project contracts and procurement for construction of the LRT are the sole responsibility of the concessionaire given that the design, construction, operation and maintenance risk is transferred to the private concessionaire. CABEI and the Government of Costa Rica have no interference in this process.

G.4. Disclosure of funding proposal

☐ No confidential information: The accredited entity confirms that the funding proposal, including its annexes, may be disclosed in full by the GCF, as no information is being provided in confidence.

☒ With confidential information: The accredited entity declares that the funding proposal, including its annexes, may not be disclosed in full by the GCF, as certain information is being provided in confidence. Accordingly, the accredited entity is providing to the Secretariat the following two copies of the funding proposal, including all annexes:

- ☐ full copy for internal use of the GCF in which the confidential portions are marked accordingly, together with an explanatory note regarding the said portions and the corresponding reason for confidentiality under the accredited entity's disclosure policy, and
- ☐ redacted copy for disclosure on the GCF website.

The funding proposal can only be processed upon receipt of the two copies above, if containing confidential information. Annexures 12 to 15 are confidential information.

G. ANNEXES

H.1. Mandatory annexes

☒	Annex 1	NDA no-objection letter(s)
☒	Annex 2	Feasibility study - and a market study, if applicable (CONFIDENTIAL)
☒	Annex 3	Economic and/or financial analyses in spreadsheet format (CONFIDENTIAL)
☒	Annex 4	Detailed budget plan
☒	Annex 5	Implementation timetable including key project/programme milestones
☒	Annex 6	E&S document corresponding to the E&S category (A, B or C; or I1, I2 or I3): ☒ Environmental and Social Impact Assessment (ESIA) or ☐ Environmental and Social Management Plan (ESMP) or ☐ Environmental and Social Management System (ESMS) ☒ Others (please specify) – Environmental and Social Management Framework (ESMF)
☒	Annex 7	Summary of consultations and stakeholder engagement plan
☒	Annex 8	Gender assessment and project/programme-level action plan
☒	Annex 9	Legal due diligence (regulation, taxation and insurance)
☒	Annex 10	Procurement plan Component 3
☒	Annex 11	Monitoring and evaluation plan
☒	Annex 12	AE fee request (CONFIDENTIAL)
☒	Annex 13	Co-financing commitment letter, if applicable **(template provided)**
☒	Annex 14	Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule (CONFIDENTIAL)

H.2. Other annexes as applicable

☒	Annex 15	Evidence of internal approval **(template provided)**
☒	Annex 16	Map indicating the location of proposed interventions
☒	Annex 17	CRVA Reports (CONFIDENTIAL)
☒	Annex 18	NMT and TOD Reports (CONFIDENTIAL)
☒	Annex 19	Summary Tender Document (CONFIDENTIAL)
☐	Annex 22	GHG emission reduction (22a) and spreadsheet (22) and Monitoring Manual (22b) (CONFIDENTIAL)

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No-objection letter issued by the national designated authority(ies) or focal point(s)

República de Costa Rica
Ministerio de Ambiente y Energía
Despacho de la Ministra

San José, March 4th, 2021
DM-206-2021

To: The Green Climate Fund (GCF)

Ref: Funding proposal for the GCF by the Central American Bank for Economic Integration (CABEI) regarding Light Rail Transit for the Metropolitan Area of San José (GAM)

Dear Madam, Sir,

We refer to the project Light Rail Transit for the Metropolitan Area of San José (GAM) in Costa Rica as included in the funding proposal submitted by the Central American Bank for Economic Integration (CABEI) to us on November 26th, 2020.

The undersigned is the duly authorized representative of the Ministry of Environment and Energy, the National Designated Authority of Costa Rica.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the project as included in the funding proposal.

By communicating our no-objection, it is implied that:

(a) The government of Costa Rica has no-objection to the project as included in the funding proposal;
(b) The project as included in the funding proposal is in conformity with Costa Rica's national priorities, strategies and plans;
(c) In accordance with the GCF's environmental and social safeguards, the project as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the project as included in the funding proposal has been duly followed.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

ANDREA MEZA MURILLO (FIRMA)
Firmado digitalmente por ANDREA MEZA MURILLO (FIRMA)
Fecha: 2021.03.04 14:51:58 -06'00'

Andrea Meza Murillo
Minister of Environment and Energy
MINAE Costa Rica

Teléfono (506) 2233-4533 o 2257-0922 Ext. 1162 ó 1163 Apdo. Postal: 10104-1000
San José, Costa Rica
Correo electrónico: despachominae@minae.go.cr

Environmental and social safeguards report form pursuant to para. 17 of the IDP

Basic project or programme information	
Project or programme title	Light Rail Transit for the Metropolitan Area of San José (GAM)
Existence of subproject(s) to be identified after GCF Board approval	No
Sector (public or private)	Public
Accredited entity	Central American Bank for Economic Integration (CABEI)
Environmental and social safeguards (ESS) category	Category A
Location – specific location(s) of project or target country or location(s) of programme	Greater Metropolitan Area of San José, Capital City of Costa Rica
Environmental and Social Impact Assessment (ESIA) (if applicable)	
Date of disclosure on accredited entity's website	Wednesday, February 17, 2021
Language(s) of disclosure	English and Spanish
Explanation on language	Spanish is the local language in Costa Rica, and the documents are also disclosed in English to comply with GCF Information Disclosure Policy (IDP).
Link to disclosure	English: https://www.bcie.org/en/operations/in-process-operations/detail-in-process-operations/5741 Spanish: https://www.bcie.org/operaciones-y-adquisiciones/operaciones-en-proceso/detalle-operaciones-en-proceso/5741
Other link(s)	N/A
Remarks	A Preliminary Environmental and Social Impact Assessment (ESIA) consistent with the requirements for a Category A project is contained in the "Environment Effect investigation (EIA)" file in the online disclosure. Confirmation that the EIA is consistent with the requirement for a Category A project is subject to further due diligence on the Funding Proposal.
Environmental and Social Management Plan (ESMP) (if applicable)	
Date of disclosure on accredited entity's website	Wednesday, February 17, 2021
Language(s) of disclosure	English and Spanish
Explanation on language	Spanish is the local language in Costa Rica, and the documents are also disclosed in English to comply with GCF Information Disclosure Policy (IDP).

Link to disclosure	English: https://www.bcie.org/en/operations/in-process-operations/detail-in-process-operations/5741 Spanish: https://www.bcie.org/operaciones-y-adquisiciones/operaciones-en-proceso/detalle-operaciones-en-proceso/5741
Other link(s)	N/A
Remarks	An ESMP, or an Environmental and Social Action Plan (ESAP) according to CABEI's policies and procedures on Environmental and Social Safeguards (ESS), consistent with the requirements for a Category A project is contained in the "Report SIEMAS" file in the online disclosure. Confirmation that the Report SIEMAS is consistent with the requirement for a Category A project is subject to further due diligence on the Funding Proposal.
Environmental and Social Management (ESMS) (if applicable)	
Date of disclosure on accredited entity's website	N/A
Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	N/A
Any other relevant ESS reports, e.g. Resettlement Action Plan (RAP), Resettlement Policy Framework (RPF), Indigenous Peoples Plan (IPP), IPP Framework (if applicable)	
Description of report/disclosure on accredited entity's website	N/A
Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	There is a condition in the financing approved by CABEI, for the private concessionaire that will be awarded for the implementation of the project, in which it is requested that a Resettlement Plan be developed and implemented if the project requires it.
Disclosure in locations convenient to affected peoples (stakeholders)	
Date	Tuesday, June 14, 2016
Place	National TV[1], local press and Social Media announcements regarding the project were made by the Presidency of the Republic of Costa Rica and INCOFER. Once the project is awarded by the government to a private concessionaire, the final ESIA will be developed and thereafter disclosed in physical locations such as INCOFER and the awarded private concessionaire offices.

[1] https://www.bing.com/videos/search?q=tren+electrico+gam+incofer+2018&docid=608045379818357098&mid=057C8CB498D3CAD10FB9057C8CB498D3CAD10FB9&view=detail&FORM=VIRE

Date of Board meeting in which the FP is intended to be considered	
Date of accredited entity's Board meeting	Wednesday, October 30, 2019
Date of GCF's Board meeting	Monday, June 28, 2021

Note: This form was prepared by the accredited entity stated above.

Environmental and social safeguards report form pursuant to para. 17 of the IDP (revised)

Basic project or programme information	
Project or programme title	Light Rail Transit for the Greater Metropolitan Area (GAM)*
Existence of subproject(s) to be identified after GCF Board approval	No
Sector (public or private)	Public
Accredited entity	Central American Bank for Economic Integration (CABEI)
Environmental and social safeguards (ESS) category	Category A
Location – specific location(s) of project or target country or location(s) of programme	Greater Metropolitan Area of San José, Capital City of Costa Rica
Environmental and Social Impact Assessment (ESIA) (if applicable)	
Date of disclosure on accredited entity's website	Wednesday, February 17, 2021
Language(s) of disclosure	English and Spanish
Explanation on language	Spanish is the local language in Costa Rica, and the documents are also disclosed in English to comply with GCF Information Disclosure Policy (IDP).
Link to disclosure	English: https://www.bcie.org/en/operations/in-process-operations/detail-in-process-operations/5741 Spanish: https://www.bcie.org/operaciones-y-adquisiciones/operaciones-en-proceso/detalle-operaciones-en-proceso/5741
Other link(s)	N/A
Remarks	An ESIA consistent with the requirements for a Category A project is contained in the "Environment Effect investigation (EIA)".*
Environmental and Social Management Plan (ESMP) (if applicable)	
Date of disclosure on accredited entity's website	Wednesday, February 17, 2021
Language(s) of disclosure	English and Spanish
Explanation on language	Spanish is the local language in Costa Rica, and the documents are also disclosed in English to comply with GCF Information Disclosure Policy (IDP).
Link to disclosure	English: https://www.bcie.org/en/operations/in-process-operations/detail-in-process-operations/5741 Spanish: https://www.bcie.org/operaciones-y-adquisiciones/operaciones-en-proceso/detalle-operaciones-en-proceso/5741
Other link(s)	N/A

Remarks	An ESMP consistent with the requirements for a Category A project is contained in the "Report SIEMAS".*
Environmental and Social Management (ESMS) (if applicable)	
Date of disclosure on accredited entity's website	Sunday, May 31, 2021
Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	N/A
Any other relevant ESS reports, e.g. Resettlement Action Plan (RAP), Resettlement Policy Framework (RPF), Indigenous Peoples Plan (IPP), IPP Framework (if applicable)*	
Description of report/disclosure on accredited entity's website	Monday, May 31, 2021
Language(s) of disclosure	English and Spanish
Explanation on language	Spanish is the national language of all participating countries.
Link to disclosure	English: https://www.bcie.org/en/operations/in-process-operations/detail-in-process-operations/5741 Spanish: https://www.bcie.org/operaciones-y-adquisiciones/operaciones-en-proceso/detalle-operaciones-en-proceso/5741
Other link(s)	N/A
Remarks	An ESIA consistent with the requirements of a Category A project is contained in the "Environmental and Social Management Framework" developed according to CABEI's policies and procedures on Environmental and Social Safeguards (ESS). There is a condition in the financing approved by CABEI, for the private concessionaire that will be awarded for the implementation of the project, in which it is requested that a Resettlement Plan be developed and implemented if the project requires it.
Disclosure in locations convenient to affected peoples (stakeholders)	
Date	Tuesday, June 14, 2016
Place	National TV[1], local press and Social Media announcements regarding the project were made by the Presidency of the Republic of Costa Rica and INCOFER. Once the project is awarded by the government to a private concessionaire, the final ESIA will be developed and thereafter disclosed in physical locations such as INCOFER and the awarded private concessionaire offices.
Date of Board meeting in which the FP is intended to be considered	

[1] https://www.bing.com/videos/search?q=tren+electrico+gam+incofer+2018&docid=608045379818357098&mid=057C8CB498D3CAD10FB9057C8CB498D3CAD10FB9&view=detail&FORM=VIRE

Date of accredited entity's Board meeting	Wednesday, October 30, 2019
Date of GCF's Board meeting	Tuesday, June 29, 2021

Note: This form was prepared by the accredited entity stated above.

*****Subsequent to the disclosure of this form to the Board and active observers on 26 February 2021, the following updates have been made: The project name has been slightly modified. The Secretariat requested the accredited entity to produce and disclose the "Environmental and Social Management Framework". After further due diligence on the funding proposal, the Secretariat has confirmed that the "Environment Effect investigation (EIA)", "Report SIEMAS", and the Environmental and Social Management Framework are consistent with the requirements for a Category A project.

Secretariat's assessment of FP166

Proposal name:	Light Rail Transit for the Greater Metropolitan Area (GAM)
Accredited entity:	Central American Bank for Economic Integration (CABEI)
Country/(ies):	Costa Rica
Project/programme size:	Large

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
This project has a relatively high greenhouse gas (GHG) impact thanks to electrification powered by > 98 per cent renewable sources.	A continuous fiscal burden is expected by the government for its annual subsidy payment to the project during the operation of the LRT system.
The project expects to play a key role in effecting systematic change in public transport, being integrated with other transport modes including buses, routes of which will be reorganized around the light rail transit (LRT) system.	A selection of the concessionaire that meets both technical and financial requirement is critical given the high upfront capital investment required from the private sector.
The components on non-motorized transport and transit-oriented components expect to bring behavioural change and complement modal shift towards public transport.	
The project promotes high financing leverage from the concessionaire and the private sector. The government capital contribution will start only after each LRT line begins operation, shifting the construction risk to the private sector.	

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the term sheet and addendum VI, titled "List of proposed conditions and recommendations", respectively.

II. Summary of the Secretariat's assessment

2.1 Project background

3. The project aims to establish a modern, fast, safe and environmentally sound electric light rail transit (LRT) system with 85 kilometres (km) of double tracks on five lines, which will be integrated with non-motorized transport (NMT) and transit-oriented development measures

in the metropolitan area of San José (Greater Metropolitan Area of Costa Rica (GAM)) in Costa Rica. The LRT system, once established, expects to transport 63 million passengers annually, benefitting around 2.7 million people and contributing to greenhouse gas (GHG) emission reductions of 7.62 million tonnes of carbon dioxide equivalent (tCO_2eq) during the 44-year lifetime of the project. Total project financing amounts to USD 1.8 billion, and GCF is requested to provide USD 250 million in loans and USD 21.3 million in grants.

4. The transport sector contributed 51 per cent of Costa Rica's GHG emissions of 10 million tCO_2eq according to Costa Rica's 2015 intended nationally determined contribution. The proposal further states that the main mode of transport in Costa Rica is via private car or car-sharing services, accounting for more than 40 per cent of the mode share of the motorised trips, which increases congestion in GAM. Trends show that more passengers are shifting towards private means of transport or ride-sharing services due to the inadequate public transport service, coupled with the economic growth of the country over the past decades. Bus is the main form of public transport available in the region and fails to offer a network of integrated routes and a fare system. This means passengers often experience long travel times, for instance around 70 per cent longer than a trip by car, while paying costly fares for short distance trips.

5. The country has established an ambitious Decarbonisation Plan to achieve a carbon-neutral economy by 2050. Under the business-as-usual scenario, the country expects an increase in GHG emissions of 44 per cent by 2050 compared to 2015. However, this systemic change in transport sector, especially with this project at the centre of it, aims to reduce emissions in the country by 65 per cent.

6. Costa Rica has one of the most decarbonized electrification systems, with more than 98 per cent of its electricity generated from renewable sources. By replacing the old single-track rail system with a double-track light rail system powered by more than 98 per cent renewables, the project expects to contribute to the achievement of the 2050 net-zero emission goal of the country.

7. The borrower of the GCF loan and recipient of the GCF grant is the Government of Costa Rica, represented by the Ministry of Finance (MOF). The *Instituto Costarricense de Ferrocarriles* (Incofer), the national rail authority, will also act as an executing entity (EE) of the project as a grantor of the concession. The project will be implemented under a public–private partnership (PPP) structure in which a special purpose vehicle (SPV) is 100 per cent owned by the private sector and is responsible for the initial capital expenditures of the project (USD 1.3 billion) with its own equity investment and loans from other financiers. The government contribution to this project will be capped at a total amount of USD 550 million, which consists of loans from GCF and the Central American Bank for Economic Integration (CABEI).

8. The project has been assigned Category A due to the scale of the construction to be involved, the likely involuntary land acquisition, and the possible displacement of dwellings, structures and business establishments.

2.2 Component-by-component analysis

Component 1: LRT system (total cost: USD 1.852 billion; GCF cost: USD 250 million)

9. This component seeks to finance the infrastructure for the LRT, including:

(a) Infrastructure and systems worth USD 834 million with the main elements being rail track, rail stations, electrification, signalling, train depots and workshops, communication systems and the rehabilitation of affected services. This subcomponent also includes USD 25 million for urban integration, USD 13 million for rehabilitation of historic patrimony and USD 4 million for waste management;

(b) Rolling stock worth USD 452 million for 78 trains at USD 5.8 million per unit;

(c) Financing charges during implementation estimated at USD 298 million;

(d) Other costs of USD 268 million including acquisition of land and buildings, design and implementation, and indirect costs (administration, profit, contingency). This subcomponent also includes USD 10 million or environmental and social measures.

10. The country has been exploring different options to transform the public transport system for decades, including restructuring the existing bus system, which is dominated by more than 40 private bus operators. The integrated sustainable mobility plan for GAM in Costa Rica, financed by the Global Environment Facility and the Inter-American Development Bank, concludes that an integrated transport system with an LRT combined with a bus system based on a re-organization and sectorization of routes is the most effective option. The government expects that once the LRT system is established, the competing bus routes will be redirected to serve as connecting lines to the areas far from the LRT lines and will ultimately introduce an integrated fare system.

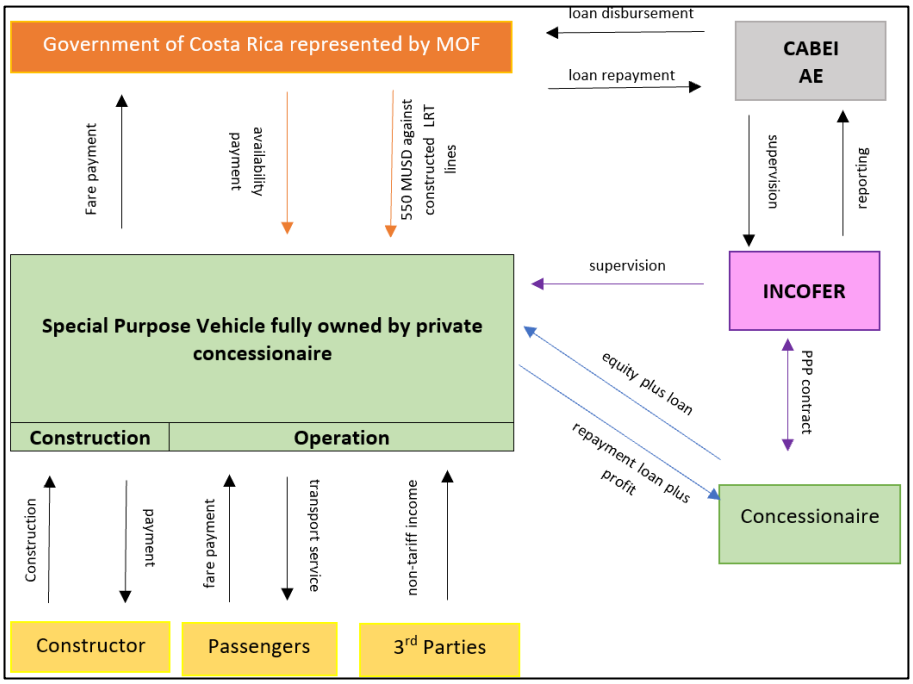
11. While the LRT is deemed as an efficient solution in terms of both (i) performance in speed, reliability and capacity; and (ii) its GHG emission reduction impact, it often entails high capital expenditures not only for civil works and rolling stocks but also for land acquisitions. The project will use the existing right-of-way, which is currently operated as a single track for a diesel train. This will reduce the investment cost of the project by 50 per cent compared to similar LRT project costs, making the project cost on par with high quality bus transit systems, while providing more reliable, convenient and sustainable transport service to the community with a longer lifespan of the asset.

12. **PPP**. The project is structured as a PPP transaction and requires a concessionaire to cover the initial capital investment up to the operation of each of the five lines to be built. The structure follows a common PPP model applied to other transport projects in the region with an SPV that is 100 per cent owned by the private sector and takes into consideration project attractiveness to private sector investors, country context and risk allocation among different parties. The government contribution of USD 550 million to the project will be made after the LRT system commences operation, and the proceeds will go into the project cashflow and ultimately be used to repay the bridge loan that the SPV takes out during the construction phase. The proposed implementation structure is provided in Figure 1.

13. The payment scheme is not yet defined but is subject to negotiation between the government and selected bidder. Two options will be proposed: (1) availability payment (Pago por Disponibilidad y transferencia de ingresos (PPDi)) with no demand risk; and (2) availability payment with a minimum income guarantee (Pago por Disponibilidad con transferencia de Demanda (PPDD)). The government expects to pay around USD 96–123 million for the respective options in the form of an annual subsidy to fill in the spread between the technical tariff (agreed under the concession contract) and the passenger tariff (which is set at a level similar to the current single bus trip rate so that the SPV meets the expected equity internal rate of return (IRR). Under the PPDD scenario, a higher equity IRR of 13 per cent is expected compared that of the PPDi model, as the SPV would bear the demand risk to a certain extent.

14. The project expects to achieve an emission reduction of 6.5 million tCO_2eq through the modal shift from passenger cars, taxis including ride-sharing services and existing bus systems to LRT-based public transport.

Figure 1. Public–private partnership implementation structure



Component 2: Urban integration with NMT and connectivity/accessibility (total cost: USD 20 million; GCF cost: USD 20 million)

15. This component is to finance:

(a) Sixteen km of segregated cycle lanes connecting the LRT stations and parking stations with optimal lighting and safety measures; and

(b) Infrastructure required to improve the connectivity/accessibility of the LRT system at six stations including walkways, pedestrianization, multi-modal integration with other modes of transport such as bus systems, and various access bridges for pedestrians and bicycles to avoid dangerous crossings and/or reduce walking distances and promote the greening of spaces.

16. The GAM currently has less than 20 km of non-integrated cycle lanes. The country has limited experience in both NMT and transit-oriented development (TOD)/connectivity measures and its linkage with the mass transit system while not taking advantage of the potential economic and environmental benefits from them. Through the support from different donor agencies and funding from the GCF Project Preparation Facility, the country and accredited entity (AE) explored the potential impact and design of the NMT and TOD measures and introduced such interventions to this project.

17. The improved safety and interconnection with the LRT system, including bike parking spaces, will promote non-motorized travel by bike. Improved accessibility of LRT stations for pedestrians and improved connectivity for entire trips without complex transfers to other means of transport (e.g. bus) will allows for a more comprehensive transformation of the public transport landscape of the project area.

18. Through behavioural change and a contribution to the modal shift towards public transport, this component seeks a cumulative emission reduction of 1.08 million tCO_2eq by the end of the project lifetime.

Component 3: Capacity-building and gender measures (total cost: USD 1.3 million; GCF cost: USD 1.3 million)

19. This component consists of the following activities:

(a) Establish a monitoring system and monitor the impacts of LRT, last-mile connectivity and an NMT intervention;

(b) Promote knowledge-sharing and outreach, including: (1) publications on lessons learned from the project with a focus on NMT/connectivity; and (2) organizing outreach events; and

(c) Implement the gender action plan.

20. Monitoring activities under component 2 is critical and will provide valuable insight on how the NMT and TOD measures interact with ridership and passenger satisfaction on the LRT system. This is to be captured using different monitoring instruments including surveys. This particular subcomponent will track modal shift and the impact of activities on people's trip structures; identify the triggers of change in transport behaviour; and monitor the GHG and sustainable development impact. The data and lessons learned collected from this component will be used to ensure the service quality of the integrated LRT system and further pave the way for future expansion of NMT/TOD interventions in the project area and also for future projects in other countries and/or regions that are considering mass transit/public transport projects integrated with NMT/TOD measures.

21. With only 30 per cent of driving license holders being women, dependence on public transport is higher among female passengers, who make up nearly 60 per cent of the total number of users in Costa Rica while noting the increase in use of ride-hailing services by women. The project has considered gender aspects in its infrastructure design to provide a safe and convenient transport service for female passengers such as good lighting at stations, panic buttons, spaces to ensure women's comfort that take into account their mobility patterns (e.g. accompanied by shopping carts, multiple bags or packages, or strollers).

22. Through this component, the project will utilize communication tools and campaigns directed at men and women in order to prevent and address violence against women and also will establish a rapid reporting system and complaint mechanism for reporting violence against women. Furthermore, the project will provide necessary trainings and other measures to promote women's participation in the workforce and decision-making processes in the transport sector.

III. Assessment of performance against investment criteria

3.1 Impact potential *Scale: High*

23. In total, 7.62 million tCO_2eq are expected to be mitigated over the lifespan of the project. An estimated 86 per cent of the emission reductions are due to the LRT given that the LRT runs on electricity, which is produced using over 98 per cent renewables in Costa Rica. Four per cent of the GHG reductions from the project are attributed to the fostering of cycling and micro-mobility, and 10 per cent is due to TOD interventions. While the figure appears smaller compared to projects funded by GCF in other mitigation result areas such as renewables and forestry, the impact potential is on the high end for typical transport projects thanks to the low emission factor of electricity in Costa Rica.

3.2 Paradigm shift potential *Scale: High*

24. GCF funding is critical for the country to overcome financial barriers and limited experience with NMT that hinder the development of a modern, multi-modal low-carbon public

transport system. The LRT is the backbone that integrates all types of public transport with NMT and functions as a trigger of a paradigm shift in urban transportation. The LRT combined with NMT and connectivity measures are expected to drive a long-term behavioural shift to relying on public transport systems instead of private means of transport that produce high levels of GHG emissions and pollution.

25. The focus on last-mile connectivity and NMT measures also involves the collection and reporting of standardized data monitoring, which will feed into knowledge products for future sharing and learning. It has the potential to be scaled up and replicated in other cities in Costa Rica and other countries in the same region.

3.3 Sustainable development potential *Scale: High*

26. The LRT is a core component of the post-COVID-19 Green Recovery Plan of Costa Rica.

27. The project is expected to contribute significantly to Sustainable Development Goals (SDGs) 3 (good health and well-being), 9 (industry, innovation and infrastructure), 11 (sustainable cities and communities) and 13 (climate action).

28. From the environmental perspective, the operation of LRT combined with the NMT will result in reduced air and noise pollution. In terms of economic co-benefits, the project is expected to generate 1,200 temporary jobs during construction and 1,460 direct jobs during operations. Reduced air pollution, reduced accidentality costs and time savings can also be monetized to a total amount of USD 4,562 million. While all of these factors would be important, only good health and well-being through less pollution and climate action are included in the economic analysis. The project has an economic internal rate of return (EIRR) of 26 per cent.

3.4 Needs of the recipient *Scale: Medium to high*

29. Costa Rica's net-zero goal would require a decarbonized transport sector that currently stands as the top GHG emitter of the country. The needs of the population to access a cleaner and more efficient form of transport and use fewer private vehicles are well-established. The concessionality of the GCF loan is necessary to ease the fiscal burden on the Government of Costa Rica, whose commitment to subsize the technical tariff at a rate of 60 per cent is required to make the PPP financially viable during the concession period.

3.5 Country ownership *Scale: High*

30. The country ownership potential of this project is assessed as high. Costa Rica has been ambitious in its climate goal. It is aiming for a decarbonized economy with net-zero emissions in 2050. The transport sector is the largest GHG emitter in Costa Rica; it contributed 51 per cent of the country's GHG emissions in 2015. The need to decarbonize the transport sector is reflected in various national development plans and strategies, including its nationally determined contribution, National Decarbonization Plan 2018–2050, and the National Transport Plan for Costa Rica 2011–2035. The country ownership is also evidenced by the government's commitment to subsidize at a rate of 60 per cent to make the LRT financially profitable despite its fiscal difficulties in recent years.

31. The proposal has been developed in consultation with relevant stakeholders, including government agencies, development partners, academia and civil society. In addition, the project has a strategy and mechanism to continuously involve relevant stakeholders during the construction phase.

3.6 Efficiency and effectiveness *Scale: High*

32. The efficiency and effectiveness potential of this proposal is considered high.

33. The cost per tCO_2eq reduced in terms of GCF funding is estimated to be USD 36 over the USD 271.3 million in total GCF financing and USD 2.79 over the USD 20 million in GCF grant financing for the NMT/TOD component. The economic analysis calculates EIRR and net present value over a 30-year period, which appears to be appropriate for projects of this nature. The economic analysis shows a cost-benefit ratio of 3.25 and an EIRR of 26.1 per cent.

34. The LRT component is co-financed with a concessional loan from GCF (USD 250 million) and CABEI (USD 300 million), and the remaining 70 per cent of its costs will be covered through the leveraged private sector capital. This translates to a total leverage ratio of 5.9 and a private sector leverage ratio of 4.8 if the project successfully pulls in private capital.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

35. **Project background.** The project involves upgrading the existing single-track, diesel passenger train system into a state-of-the-art, mostly dual-track, electric passenger train system. The project consists of three components, namely: (1) an LRT system; (2) urban integration with NMT and connectivity/accessibility components; and (3) capacity-building and gender measures. The LRT component 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 (i) rehabilitation and expansion of bridges over more than 50 water channels; (ii) the construction/remodeling of 47 stations, including 10 intermodal stations; (iii) construction of ancillary facilities such as a central workshop, 4 courtyards/garages, an administrative building, 24 substations and catenary and power supply; (iv) relocation of public services; and (v) drainage and road connectivity works. Component 2 will involve improvements to the connectivity and accessibility of areas around the stations, including the construction of 16 km of cycle lanes, parking facilities for cyclists, improved walkways, pedestrian access bridges, installation of security cameras, and greening of spaces. The environmental and social co-benefits of the project include reduced air pollution as a result of reduced particulate matter emissions in the operation of the electric trains. The inclusion of the NMT and last-mile connectivity components are expected to improve safety and security to pedestrians and cyclists that will use the system. The project is also expected to reduce noise pollution and enhance public access to a safe, reliable and affordable transportation system.

36. **Environmental and social risk category.** The project has been assigned Category A since it entails activities with potential significant adverse environmental and/or social risks and impacts that, individually or cumulatively, are diverse, irreversible, or unprecedented. These are mainly due to the scale of the construction to be involved, the likely involuntary land acquisition and the possible displacement of dwellings, structures and business establishments. Most of the adverse impacts will be experienced during the construction stage and are related to traffic disturbances and temporary access restrictions to properties, potential relocation of utilities, cutting of trees in the rights-of way, increased generation of noise and air pollution, as well as occupational hazards to workers and community health and safety. The Secretariat confirms the environmental and social risk categorization and that the project is within the risk accreditation level of the AE.

37. **Safeguards instruments.** A PES was submitted by the AE, which provided an initial assessment of the potential environmental and social risks and impacts of the project. A more

formal environmental and social impact assessment (ESIA) will have to be prepared by the future concessionaire when the detailed engineering design has been specified. The ESIA will be the basis for the issuance of the environmental license by the National Environmental Technical Secretariat. The AE evaluated the project based on its System for the Identification, Evaluation and Mitigation of Environmental and Social Risks, its tool for identifying potential environmental and social risks. The due diligence of the AE found gaps in the PES, for which an environmental and social action plan (ESAP) was developed and submitted. Since the detailed ESIA cannot be undertaken yet (pending the engagement of the concessionaire, which will undertake the detailed engineering design of the project along with the ESIA study), an environmental and social management framework (ESMF) that provides guidance on undertaking the assessment and development of mitigation measures was also prepared.

38. **Status of compliance with the GCF environmental and social safeguards (ESS) standards**. The following discussion presents the status of the project's compliance with GCF ESS standards.

(a) **ESS 1: Assessment and management of environmental and social impacts and risks.** A preliminary environmental and social assessment through the PES, an ESAP and an ESMF were prepared. The ESMF has specified the scope and outlined the processes and steps for the conduct of the detailed ESIA simultaneously with the detailed engineering design preparation. The scope of the ESIA will cover the requirements of the country, the AE and the GCF. The ESIA will include, among other things, the baseline conditions, assessment of project alternatives, identification of potential direct, indirect, induced, long-term and cumulative impacts including from associated facilities, and the measures to avoid, minimize and mitigate the identified risks and impacts and compensate for residual impacts. Frameworks for stakeholder engagement and the establishment of grievance redress mechanisms have also been included.

(b) **ESS 2: Labour and working conditions.** Based on the ESMF, the country's legal framework on labour and working conditions is fully at par with the International Labour Organization standards. Nevertheless, there is a small risk of possible non-compliance from contractors and subcontractors as regards health and safety of workers during construction activities. Nevertheless, the ESMF recommends the following measures: (i) incorporation of clauses in contractors' contracts about the strict observance of labour standards; (ii) provision of labour management guidelines to contractors that highlight critical compliance areas/aspects; and (iii) periodic audits of labour and working conditions by project management. The risk of non-compliance and the adequacy of these measures will be further validated and refined in the ESIA.

(c) **ESS 3: Resource efficiency and pollution control and prevention.** There are sufficient laws in the country on the abstraction and industrial use of water. The use of water in the project will be covered by permits, hence the risk of non-compliance with the regulation is low. In terms of pollution, the project will likely involve the generation of noise and dust, including fine particulate matter during excavation works and demolition of existing concrete structures. The ESMF provides a list of measures to minimize and mitigate impacts of these on the air quality. These will also be validated and further refined in the ESIA.

(d) **ESS 4: Community health, safety and security.** The risks involved under this standard include exposure of residents along the railway to physical hazards during construction as well as the risks associated with the influx of labour and economic migrants into their communities (e.g. pressure on living space, spread of diseases and potential increase in criminality and gender-based violence, including sexual exploitation, abuse and harassment risks and cultural conflicts). The ESMF suggests requiring contractors to provide accommodation for their workers in the worker camps; always secure construction areas; install barriers and proper signage; and provide safe and well-

lighted passageways and road crossings for the public. These risks and measures will also be further assessed and refined in the ESIA.

Earthquake hazard is also particularly significant in Costa Rica for large public infrastructure due to its tectonic profile. Fire hazards have also been historically significant. These resulted in the adoption of stricter codes in the country. The ESMF suggests strict compliance with the National Fire Protection Association codes in the design and operations of public places and systems and with Costa Rica's seismic code and good international industry practice in the structural design of buildings, bridges and elevated railway tracks.

(e) **ESS 5: Land acquisition and involuntary resettlement.** The project will involve right-of-way recovery and additional land acquisition for the expansion of tracks, stations and the construction of other facilities, including accessibility and connectivity infrastructure around the stations. Initial estimates show that the project will affect and potentially displace around 215 persons who are in the right-of-way of the train system. To address the potential involuntary resettlement impacts of these land acquisitions, the ESMF includes a resettlement policy framework that requires and will guide the preparation of resettlement plans. The requirement for resettlement plans including land acquisition and expropriation, economic restoration and land donations (as applicable) is also included in the ESAP.

(f) **ESS 6: Biodiversity conservation and sustainable management of living natural resources.** There are no officially declared protected wilderness areas within the influence area of the project. The nearest protected area is the Cerros de la Carpintera Protection Zone. However, the existing railroad passes through patches or sometimes long stretches of vegetated areas which are habitat to some wild species. These places may also be part of a network of thickets where some birds and small mammals roam. The project will comply with the country's permit requirements for vegetation clearings. The ESMF suggests to further study the biodiversity significance of these areas and explore options of conserving and maintaining these areas as part of the connected network of green spaces/parks. It also suggests developing wildlife crossings. The ESAP also provides for the preparation and implementation of the forestry resource management plan. It also requires the EE to ensure the contractor develops and implements a protection, rescue and resettlement plan for the fauna when construction works are underway. These measures will be validated and firmed up in the ESIA.

(g) **GCF Indigenous Peoples Policy and ESS 7: Indigenous peoples**. In its ESMF, the AE states that the project will not affect any indigenous peoples' territories or reserve areas. There may, however, be a possibility that small communities of migrant indigenous people may be present in the informal settlements along the railway. This will be validated in the development of the ESIA; if communities of indigenous peoples are present and project impacts on their socioeconomic situations are significant, the AE will include a separate development plan in the environment and social management plan (ESMP) to address those impacts.

(h) **ESS 8: Cultural heritage.** The project will include enhancements of cultural heritage structures along the railway line. Cultural heritage buildings and sites will be identified and inventoried during the conduct of the ESIA. The project will consult the National Museum of Costa Rica as to the significance of these sites and structures, if any, as well as the conservation plan to be undertaken. A chance finds procedure including a cultural heritage plan will be developed if structures of cultural or religious significance will be affected. A cultural heritage policy framework is included in the ESMF.

39. **Implementation arrangements.** The AE shall administer the proceeds to be disbursed by the GCF for the implementation of the project. The EE – Incofer (Costa Rica's state-owned rail

authority) – will have the legal personality, own the assets and have the project supervisory role. Project implementation will be the responsibility of the SPV that will be established by the concessionaire. Incofer will ensure compliance with the obligations of the concessionaire, including compliance with the ESMPs. On the other hand, the AE will conduct biannual supervision missions in addition to an external supervision entity that will be engaged to validate the overall commitments for the project, including environmental and social aspects.

40. **Stakeholder engagement and grievance redress mechanism.** Several meetings were held with various stakeholders, as indicated in Annex 7 (Summary stakeholder engagement). The PES also included a preliminary awareness-raising strategy and awareness-raising mechanism for stakeholders that will be updated and detailed in the ESIA according to the environmental regulations The ESIA shall further document the disclosure and reporting process with stakeholders. The EE is also required to design and implement a citizen participation plan, relevant consultation plan and a complaints mechanism to be approved by the AE as part of the ESAP. The ESMF also provides an initial draft of the stakeholder engagement plan (SEP) at the inception of the ESIA study and can use such draft to guide the consultations. The ESIA will include a detailed SEP in accordance with national environmental regulations, the ESAP and the ESMF (which also includes an information disclosure policy framework, stakeholder engagement policy framework and grievance redress policy framework).

41. The AE has an existing grievance redress mechanism at the institutional level. The ESAP and the ESMF also provide for a grievance redress mechanism that will be set up at the commencement of the construction activities. Furthermore, in line with the GCF Indigenous Peoples Policy, the GCF indigenous peoples' focal point will also be available to local communities for assistance at any stage, including before a claim has been made.

4.2 Gender policy

42. The AE has provided a gender assessment and gender action plan and therefore complies with the requirements of the Gender Policy of the GCF.

43. The gender assessment was conducted using desk reviews as well as through consultations with various stakeholders including government institutions at national, regional, and local levels, women's organizations and groups, as well as private sector institutions and civil society organizations (CSOs). The assessment demonstrates the existence of an enabling environment to promote gender equality and women's empowerment in Costa Rica. Costa Rica has regulatory frameworks and a national policy for effective equality between women and men, which focuses on coordination among the various institutions to ensure (i) progress in employment, health and education; (ii) strategic action on equal rights and time, wealth and power distribution; as well as (iii) expansion of access to opportunities for women in various sectors including public transport and climate change. Despite the existence of an enabling environment, positive developments and gender equality achievements, women are still underrepresented in decision-making processes and positions at all levels; women do not enjoy significant roles in the transport sector and other less traditional sectors. A case in point is that around 60 per cent of women are users of public transport yet there are only a few women in decision-making positions and as employees in the sector. Ten per cent of bus driver positions are held by women, and the percentage is much lower for cab drivers (and even lower in the metropolitan area (one assistant to the driver)). In terms of transport facilities, as women tend to use public transport more than men and are responsible for taking children to school and caregiving tasks, trips are usually short in terms of time and distance. Few women have driver's licenses so they do not drive their own cars. They also use the train less often than men, but the reasons for this are not understood yet. Inferences from other contexts indicate that women choose to use certain modes of transport based on the level of convenience between stations,

frequency of travel and safety inside trains and stations. Given such considerations, women use cabs, buses, Uber and bicycles much more than men. The assessment indicates that overall, there is insufficient information to understand the differentiated preferences and needs of women and men in the sector.

44. The assessment further notes that (i) the unequal access and position of women is perpetuated by norms and practices that dictate that women should work only if their partner's salary is not sufficient; and (ii) poverty, particularly among female-headed households, also contributes to inequality in access to opportunities and decision-making. Women in Costa Rica spend more than twice as much time as men on unpaid domestic work, with food and care work demanding the greatest investment of women's time. This results in women having less time to find and keep a job. It is also noted that COVID-19 has resulted in women (i) not working as a result of scarcity of job opportunities, and if they are working, it seems to be in low productivity sectors; and (ii) having to leave their jobs to take on more household-related responsibilities than men. In addition, the wage gap between women and men for the same jobs is prevalent in all sectors and for all types of jobs in both the public and private sectors. While employment, wage gaps, and access to transport and similar sectors constitute significant barriers, at the same time the public transport sector is where women face significant levels of violence as users of the service. Furthermore, there are limitations in the generation of data to demonstrate and substantiate the magnitude of the problem and not enough information about women's safety and experiences on public transport. This is despite the fact that efforts are underway to raise awareness about the implications of sexual harassment prevalent in such services.

45. The AE has provided a gender action plan and therefore complies with the requirement of the Gender Policy of the GCF. The gender action plan provides activities that address the challenges faced by women in the transport sector and includes indicators and timelines for the implementation of each activity. Each indicator will be measured against its baseline, and targets are presented in a sex-disaggregated manner. All activities have timelines set as year 5 with corresponding budgets. The National Institute for Women (INAMU), as the expert institution on gender issues at both the local and national levels, has a crucial role to play in the implementation of planned activities outlined in the gender action plan in close collaboration with other government institutions, ministries and CSOs.

46. Based on the gender assessment and challenges identified particularly in the transport sector, the project has developed the gender action plan with components and activities that aim to address the gender-related gaps in the transport sector. These activities target women as both transport service users and providers. The activities included in the gender action plan speak to ensuring mobility and safety by gaining an understanding of gender-differentiated mobility patterns and preferences through surveys and evaluations; providing non-motorized mobility services; preventing violence against women in public spaces and train services through the development of applications for rapid reporting systems and smartphones that allow for reporting violence against women; and ensuring women's access to services through gender-responsive infrastructure design. The project will also create direct and indirect jobs for women in the public sector, especially in trains, while at the same time creating an enabling environment for women to engage in all decision-making levels.

4.3 Risks

4.3.1. Overall proposal assessment (medium to high risk)

47. The GCF is requested to provide USD 271.3 million for financing electric LRT and investing in the promotion of NMT. The project cost estimated by the AE is USD 1,852 million. The AE and GCF are providing USD 571million combined; however, financing sources (equity and debt) for USD 1,302 million are yet to be determined. This will be arranged by a private

concessionaire to be chosen through a bidding process. The final financial structure will be defined once the project has been awarded.

48. The AE has indicated that the project construction will be financed by a private concessionaire through bridge loans. The GCF loan of USD 250 million to the Government of Costa Rica will be used to repay the bridge loan. The GCF grant of USD 20 million is for NMT/connectivity measures, and additional grant of USD 1.3 million is for capacity-building. The AE proposal to use GCF financing to repay the bridge loan after the construction of the project is reflected in the funding proposal. Alternatively, GCF may consider financing the project during the construction stage with a pre-disbursement condition of achieving financial close (fund tie-up for the entire project cost).

4.3.2. Accredited entity/executing entity capability to execute (medium risk)

49. The AE, CABEI, is the regional development entity and has experience investing in the region over five decades. From 2010 to 2018, CABEI approved projects totalling USD 13 billion, of which USD 3.3 billion was used in Costa Rica. CABEI has realized various PPPs in Costa Rica and in the region; these investments, although of relatively smaller size, have given CABEI experience in financing long-term projects.

50. The EE is Incofer, which is a state-owned rail authority that operates the country's railway network. A capacity assessment of Incofer conducted by CABEI concluded that the institution is in full capacity to oversee the concession contract of the project. While Incofer has experience in running its rail system, its experience in constructing a new electric LRT is limited. The EE will receive the technical support from AE to carry out its tasks.

4.3.3. Project-specific risks (high risk)

51. Fund tie-up: The project is large with an expected cost of USD 1,873 million, of which the sources for 70 per cent financing are not yet identified and will be finalized only after the award of the project to the private concessionaire. It may not be possible to award the concession before the execution of funded activity agreement (FAA) stage.

52. Bankability of the concession: Currently, the terms of the concession agreement are not available. With regard to demand risk, the proportion of risk to be assumed between the concessionaire and the government is yet to be determined. In addition, potential changes in the tariff and its influence on the PPP contract have not yet been decided. The electricity supply and pricing will also be negotiated later. These aspects will affect the annual availability payment of the concessionaire. The AE has indicated that it will not manage, supervise or audit the concession execution. Instead, it will contract a specialized third-party company on behalf of the EE to assist in the PPP project design and in structuring the PPP transaction. An adequate tariff which makes LRT attractive, a long-term agreement between the electricity supplier and concessionaire at stable prices, currency risk management and sound structuring are necessary to improve the bankability of the project.

53. Impact risk: The AE has estimated the project's mitigation impact at 7.6 million tonnes of carbon dioxide equivalent ($MtCO_2eq$) over the project lifetime of 44 years. However, as per the logical framework in the funding proposal, the AE has a final impact target of only 0.1 $MtCO_2eq$ (1.4 per cent of the total presented impact) as the AE will monitor and report to GCF the project impact during the six-year implementation period only. Hence, the GCF will not receive reporting on the complete ex-post impact of the project.

54. Effective use of GCF funds in case of delay: Approx. 92 per cent of the GCF disbursement is projected occur in year 4 of implementation period; the project requires an approval by the Congress of Costa Rica to start the tender process for the PPP. The credit for financing the state contribution to the concession (financed through CABEI) is being discussed in Congress, and the

funding proposal has not provided any target date. General elections are scheduled to be held in February 2022, which may affect the approval and/or implementation of the project. In case of (i) delays in approval at the government level; (ii) the tie-up of funds; and (iii) implementation by the concessionaire, GCF-approved funds will remain committed but unutilized. Therefore, the term sheet includes a covenant that the concessionaire to be selected by the government shall achieve financial close for the project cost within 2 and a half years of the effectiveness of the subsidiary agreement. The concessionaire's failure to achieve financial close will constitute a Major change.

55. Financial viability of the project: The ratio for sharing demand risk is still to be determined. For the model where the concessionaire takes part in the demand risk, an FIRR of 13.5 per cent is assumed by investors, while for the model where the demand risk is assumed by the government, an FIRR of 10 per cent is estimated. The AE expects that the project will be able to recover 65 per cent of operational costs or 40 per cent of total costs through tariffs. The remaining part is covered by governmental subsidies (USD110 million annually) during the concession contract of 35 years. Therefore, the government's continued ability to subsidize the project is important for the viability of the project.

56. Credit risk: GCF is providing a sovereign loan to the Government of Costa Rica (Moody's B2). The credit profile of the country remains weak due to increased funding risks as a result of pandemic-related economic and fiscal shocks. However, a highly concessional GCF loan with a long-term repayment profile is linked to the balance sheet of Costa Rica and reduces the financial burden for the country.

57. Concessionality: GCF is requested to provide a highly concessional loan to the Government of Costa Rica. This concessionality is expected to result in a lower tariff to the end users. However, the concessionality benefits to the end user will also be affected by the project cost and the cost of other financing. The project cost includes a financing cost of USD 298 million, which is 16 per cent of the total cost. It is recommended that the AE perform a prudent check on the project cost and co-financing pricing as part of its due diligence in the implementation of the project.

4.3.4. Compliance risk (medium risk)

58. The recipient country, Costa Rica, is not subject to United Nations Security Council restrictive measures.

59. The AE will implement the project jointly with the Government of Costa Rica, acting through Incofer and MOF (acting as EEs).

60. The AE has performed the capacity assessment and determined that the EEs pose a low risk when it comes to their ability to manage money laundering (ML), terrorist financing (TF) and prohibited practices (PP). Office of Risk Management and Compliance (ORMC)/Compliance notes that the Executive President, Vice President and all Board Members of INCOFER are politically exposed persons acting in their official capacity.

61. The AE has performed the risk assessment for the project and determined it is at low risk for ML, TF and PP. As a risk mitigation measure, the AE ensures that loan agreements with EEs contain provisions where borrowers are required to comply with the CABEI anti-fraud, anti-corruption and other PP policies.

62. ORMC/Compliance has conducted a review of the project in accordance with the relevant GCF Board approved policies and does not find any material issue or deviation with respect to compliance issues. Based on available information for this funding proposal, the ORMC/Compliance Team has determined a risk rating of 'medium' and has no objection to this request proceeding to the next steps for processing.

4.3.5. GCF portfolio concentration risk (low risk)

63. In the case of approval, the impact of this proposal on the GCF portfolio concentration in terms of result area and single proposal limits is not material.

4.3.6. Recommendation

64. It is recommended that the Board consider the above factors in its decision.

Summary risk assessment		Rationale
Overall programme	Medium-high	The GCF loan of USD250million to the Government of Costa Rica will be used for repaying the bridge loan of the concessionaire. Approx. 70 per cent (USD1.3billion) of the total financing and the final financial structure have not been confirmed. The GCF will receive reporting on only 1.4 per cent of the total impact envisaged during the implementation period. The AE has a limited role in the concession execution process. The government capacity to execute the concession and finance approx. USD110million per annum for 35 years will be critical for the successful and sustainable implementation of the project.
Accredited entity/executing entity capability	medium	
Project-specific execution	high	
GCF portfolio concentration	low	
Compliance	Medium	

4.4 Fiduciary

65. CABEI is the AE of this project. The AE shall administer the GCF proceeds to be disbursed by the GCF for the implementation of the project. CABEI will make at least two supervision visits per year.

66. The EE is Incofer. A capacity assessment of Incofer was conducted by CABEI. The assessment concluded that the institution is in full capacity to oversee the concession contract for the LRT and NMT. The MOF is the loan recipient, and the Government of Costa Rica, represented by the MOF, is thus also an EE.

67. Incofer will manage component 3 and does not administer any funds of component 1 and 2. MOF will administer these funds and make payments to the SPV at the instruction of Incofer. However, Incofer is responsible to CABEI as an EE. As an implementing agency, Incofer supervises and approves all detailed engineering designs for components 1 and 2, supervises the implementation of the construction activities and issues the construction acceptance certificate and operation permit.

68. Project implementation will be the responsibility of the SPV, which is established by the concessionaire of the train under the supervision of Incofer. The private concessionaire will be defined through the tender. The final financial structure of the SPV will be defined once the project has been awarded to the private concessionaire.

69. The use of GCF proceeds is for refinancing the bridge loan. CABEI and GCF resources are disbursed based on the constructed LRT lines of the concessionaire. The sovereign loan given by GCF and CABEI to the Government of Costa Rica is used as a counterpart fund of the government for the concession contract. As such CABEI does not manage, supervise or audit the concession execution.

70. Incofer will submit quarterly reports to CABEI on the physical execution of the project, compliance with the environmental management plans and, in general, compliance with the obligations of the concessionaire contained in the respective contract.

71. All procurements are the sole responsibility of the concessionaire and not realized by CABEI or Incofer. Project contracts and procurement for construction of the LRT are the sole responsibility of the concessionaire given that the design, construction, operation and maintenance risk is transferred to the private concessionaire. CABEI and the Government of Costa Rica have no interference in this process.

4.5 Results monitoring and reporting

72. As a mitigation project, the intervention is foreseen to result in an overall GHG emission reduction amounting to 7,622,805 tCO_2eq over a lifetime period of 44 years. The estimated GCF cost per tCO_2eq removed is USD 36. Moreover, by the end of the project implementation period, emissions of fine particulate matter (PM2.5) and nitrogen oxides (NOx) are expected to be reduced by 5.64 and 226 tonnes, respectively, while an additional 1,460 green jobs will be created in the target area.

73. The Theory of Change adequately explains how change is understood to come about. The 'if, then, because' logic is appropriately formulated in the diagram as provided in the funding proposal, and the stated results, outcomes and interlinkages are defined in a manner that is adequately supportive of meeting the ultimate project goal.

74. Overall, the logical framework has been found to meet the requirements in the results management framework and performance measurement framework. The final version of the logical framework has been designed with the relevant details, including reporting on the appropriate impact and outcome indicators for mitigation as well as the social, environmental and economic co-benefit indicator. The project-level results are sufficiently aligned with the fund-level impact and outcomes. That is expected to provide a sufficient basis for measuring the desired results.

75. The arrangements for monitoring, evaluation and reporting in section E.7 and Annex 11 of the funding proposal are adequate. The implementation timetable has been provided in a format that would enable progress assessment during the implementation period, with deliverables properly integrated to determine implementation performance in concrete terms.

4.6 Legal assessment

76. The Accreditation Master Agreement (AMA) was signed with the AE on 6 September 2017 and it became effective on 16 November 2017.

77. The AE has not provided a legal opinion/certificate confirming that it has obtained all internal approvals and that it has the capacity and authority to implement the project. It is recommended that, prior to the submission of the funding proposal to the Board: (a) the AE obtains all its internal approvals; and (b) GCF receives a certificate or legal opinion from the AE in form and substance satisfactory to GCF confirming that all final internal approvals by the AE have been obtained and that it has the authority and capacity to implement the project.

78. The proposed project will be implemented in Costa Rica, a country in which GCF is not provided with privileges and immunities. This means that, among other things, GCF is not protected against litigation or expropriation in this country, the risks of which need to be further assessed. The GCF Secretariat sent a response to the observations by the Government of Costa Rica on the draft of the agreement on privileges and immunities and background on 28 February 2019.

79. The Heads of the Independent Redress Mechanism and Independent Integrity Unit have both expressed that it would not be legally feasible to undertake their redress activities and/or investigations, as appropriate, in countries where GCF is not provided with relevant privileges and immunities. Therefore, it is recommended that disbursements by GCF are made only after GCF has obtained satisfactory protection against litigation and expropriation in the country, or has been provided with appropriate privileges and immunities.

4.7 List of proposed conditions (including legal)

80. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:

(a) Submission by the AE to GCF of a certificate or legal opinion, in a form and substance satisfactory to the GCF Secretariat, within 120 days after Board approval, confirming that the AE has obtained all final internal approvals needed by it and has the capacity and authority to implement the proposed project;

(b) Signature of the FAA in a form and substance satisfactory to the GCF Secretariat, within 180 days from the date of Board approval or the date the AE has provided a certificate or legal opinion confirming that it has obtained all final internal approvals, whichever is later; and

(c) Completion of the legal due diligence to the satisfaction of the GCF Secretariat.

Independent Technical Advisory Panel's assessment of FP166

Proposal name:	Light Rail Transit for the Greater Metropolitan Area (GAM)
Accredited entity:	Central American Bank for Economic Integration (CABEI)
Country/(ies):	Costa Rica
Project/programme size:	Large

I. Assessment of the independent Technical Advisory Panel

1.1 Impact potential *Scale: High*

1. This is a transport infrastructure project, which will be implemented along the central east–west axle of the larger urban zone of San José, Costa Rica, known as Gran Area Metropolitana (GAM). The transport infrastructure will be developed as a light rail transit (LRT) system along the existing right of way of an old, slow, single-track, diesel-fueled rail system. The LRT, with 85 km of double tracks on five trainlines is expected to transport annually about 63 million passengers and benefit around 2.7 million inhabitants or 52 per cent of Costa Rica's population in the metropolitan area of San José. The energy used to power the LRT will come from Costa Rica's low-carbon electricity grid; Costa Rica produces more than 98 per cent of its electricity by renewable energy sources and has surplus capacity and a grid emission factor (EF) of 0.015 kg carbon dioxide equivalent (CO_2eq)/kWh. A key characteristic of the LRT system is that it is designed to be the backbone of an integrated public transport system, with proper implementation of modern principles of urban development, including the integration of the existing bus-based public transport system, non-motorized transportation (NMT), with segregated bicycle lanes and improved pedestrian walkways. The basic caveat of the greenhouse gas (GHG) emission reduction that will be delivered by this project will be based on not only the replacement of the baseline rail system with the low carbon powered LRT, but also the shift of passengers from baseline modes (public and private) to the LRT. The modal shift measures as set out in the United Nations Framework Convention on Climate Change baseline and monitoring methodology for LRT and bus rapid transit (BRT) projects have been adopted for the estimation of the reduction in GHG emissions that will be delivered by this project.

2. In the absence of this project, the baseline transport modes within the boundary of the proposed LRT project, as listed in 2017, are composed of private cars (42 per cent); public buses (41 per cent); taxis (9 per cent); motorcycles (7 per cent); and the old single-track diesel rail (<1 per cent). Over the period 2007–2017, use of public buses declined from 64 to 41 per cent while private car and ride-hailing services mode share increased during the same period. These changes in mode share have continued in the same direction to the present. The decrease in the share of public transportation (especially public buses) has been attributed to the very inefficient and poorly maintained public buses, operated by small-scale holders, who have been allocated corridor contracts and who do not have the financial wherewithal to properly maintain and add new and modern capacity to the old fleet as frequently as needed. Moreover, roads are very frequently congested, which results in higher than usual travel times and cost of travel. It is important to point out that, during the historical period (2007–2020), NMT has played only a marginal role in the transport mode share in the project area, with the lack of cycling infrastructure and the associated safety concerns being the main reasons.

3. When the LRT is built and commissioned, it is expected that some of the passengers who use the baseline modes listed above will shift to the use of the modern, fast and convenient LRT as the single-line rail will be decommissioned and replaced with the LRT. It is also stated that all the public bus concessions on routes that are parallel to the proposed LRT will be cancelled immediately the LRT is operational. Passengers using the baseline modes along routes parallel to the LRT will also shift to the use of the LRT when the project becomes operational. There are indications that at the start of the LRT operation, modal shift from the public bus system to the LRT may not be as comprehensive as it might be. This is because bus lines are currently not very well interconnected. Each operator has a concession for their line and all buses drive to the city Centre, where passengers can change to another bus line to get closer to their destination. Bus lines are connected with the current rail system, allowing the user to change from the bus to the train and vice-versa only at some specific stops.

4. The restructuring of the existing (baseline) public bus routes, aimed at engendering seamless travel between the new LRT and public buses, is currently being carried out. The output of the ongoing route restructuring exercise is expected to be available fairly soon after the commissioning and start of operation of the LRT. The implementation of such a plan will enhance bus–bus and bus–LRT connections. Since the bus routes are owned by private operators, the cancellation of the public bus routes, which are parallel to the LRT routes, and the restructuring of the remaining bus routes must be carried out in such a way that will avoid public protest or social disruption, which may be generated if care is not taken; private bus operators in Costa Rica are usually locked in a competitive position, disagree on common approaches and resist changes in their modus operandi. Although no official information on how the restructuring will be implemented was available in the materials reviewed by the independent Technical Advisory Panel (TAP), it is understood that owners of the routes that will be cancelled are being engaged by government and that there is ongoing work on an integrated electronic fare system that would allow the use of the same ticket when switching modes. These developments, which will be carried out by Costa Rica's Ministry of Public Works and Transport, are outside the scope of the proposed project. Therefore, some of the modal shifts that will be engendered by the restructuring of the public bus routes may not be captured by the ex-post survey as some of the linkages (bus–bus and bus–LRT) will not exist before the LRT is built and hence not be considered in the responses of the users of the LRT. Thus, the fractional shares of the modal shifts may appear to be lower than they will be in real terms, leading to an underestimation of the implication of modal shift. Since this will deliver baseline GHG emission estimates, it can be concluded that the calculation of GHG emission reduction will be conservative.

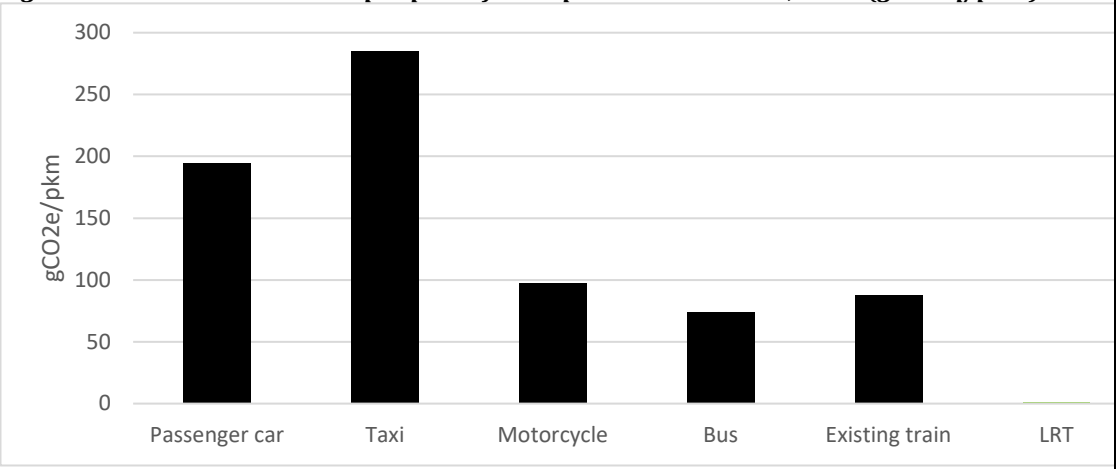
5. The project reduces GHG emissions through the LRT itself, the NMT and last-mile connectivity activities. A brief description of each of the emission reduction pathways is described in Box A below:

BOX A: GHG EMISSION REDUCTION PATHWAYS FOR THE LRT PROJECT

a.	***LRT emission reduction*** GHG emissions are reduced by the LRT through modal shift. A key GHG emission reduction estimation methodology/approach in this submission is the determination of the transport modes that travelers using the LRT would have used if the project activities were not implemented (i.e., in the absence of the LRT transport mode). The modal shifts that will occur in each operational year of the LRT will be determined by sample surveys, where travelers on the LRT will be questioned on the way they would have made their present journey (from start to finish) before the LRT mode was available. Information on baseline modes that would have been utilized by LRT passengers (including the type, fuel utilized in the baseline, average travel times on each mode in the baseline, modal average EF using Costa Rican data) will be established from the survey with up-to-date local data being used for the baseline calculation. In addition, using in-country data through a Well-to-Wheel (WTW) analysis, emissions per km (pkm) for each of the modes present

in the project boundary are established. GHG emissions Wheel to Well (WTW) per passenger km (pkm) for the modes present in the baseline in GAM in 2019 is presented in Figure 1.

Figure 1: GHG emissions WTW per pkm of transport modes in GAM, 2019 (gCO_2eq/pkm)



Abbreviations: WTW = Well-to-Wheel; pkm = passenger-kilometer.
***Source*: (Grutter Consulting, 2020h)[1]; all emission factors based on localized data.**

Essential elements of the United Nations Framework Convention on Climate Change clean development mechanism methodology ACM0016 "Mass Rapid Transit Projects"[2] were utilized in developing the GHG emission reduction that will be delivered by this LRT project. The key elements of the GHG emissions calculation include baseline emissions – determination of the mode share of travel that would have been used by passengers using the LRT in a particular year; the GHG emissions WTW per pkm for each mode available in the base year and the total number of passengers transported by the LRT in that year; project emissions – electricity consumed by the LRT in that year; and the Costa Rican grid EF; leakage emissions are assumed to be zero.

(i) Baseline GHG emissions

Baseline emissions are then calculated based on the number of passengers, the mode share, the EF per pkm per mode and the average trip distance.

$$BE = P \times \sum_i MSB_i \times TD_i \times EF_i \quad (1)$$

Where:

BE	Baseline emissions (tCO_2eq)
P	Million LRT passengers (passengers)
MSB_i	Share of LRT passengers which in the absence of the LRT would have used mode *i* (%)
TD_i	Trip distance on mode *i* of LRT passengers (km)
EF_i	EF of mode *i* (gCO_2eq/pkm)

To determine baseline emissions of PM2.5, nitrogen oxides and sulfur dioxide the same equation is used but with the EF for the respective pollutant.

(ii) Project GHG emissions

Only direct project emissions are taken for ex ante calculations. The same is applied for the baseline, where the trip distance of the project is taken and not the entire trip distance from origin to destination. Project emissions are based on electricity consumption of the LRT and the carbon factor of the electricity grid of Costa Rica.

$$PE = EC \times EF_{elec} \quad (2)$$

Where:

PE	Project emissions (tCO_2eq)
EC	Electricity consumption of the LRT (MWh)
EF_{elec}	Carbon factor of the electricity grid of Costa Rica

[1] Grutter Consulting. (2020h). *Emission Impact LRT Costa Rica (Annex 19).*
[2] https://cdm.unfccc.int/methodologies/DB/FXQBDV16UML49NJN03U1QQTEY9J90E

	Emission reductions are baseline emissions minus project emissions. $ER = BE - PE$ (3) Where: ER Emission reductions (tCO_2eq) BE Baseline emissions (tCO_2eq) PE Project emissions (tCO_2eq) The same approach used for GHG emissions is used for the estimation of the emissions of local pollutants with the exception that the LRT has no direct local pollutants, that is, project emissions of local pollutants is zero.
b.	***NMT component emissions*** The methodological approach to determine the GHG impact is based on a Global Environment Facility approach (GEF, 2015)[3] based on (i) km of cycle lanes; (ii) number of additional cycling trips; (iii) trip length; (iv) baseline mode; and (v) EFs of baseline modes. Global Environment Facility default values and monitored local data are used.
c.	***Last-mile connectivity component emissions*** The methodological approach utilized for this class was developed by Grutter Consulting and the Massachusetts Institute of Technology for the World Bank and was applied in a project in Nanchang, China (Zegras, 2009)[4]. It is based on a control group approach comparing transportation GHG emissions per resident under a business-as-usual scenario and in the project area. Important parameters are the number of residents in the influence zone, mode switch, trip distances and EFs.

6. According to the information provided in the funding proposal and related annexes, the project has been developed around three components, summarized as follows:

Component 1: The LRT

(a) Activity 1: Identify and engage concessionaire.

(i) Sub-activity 1.1: Launch tender for concession contract

(ii) Sub-activity 1.2: Award concession

(b) Activity 2: Design, build and prepare to operate

(i) Sub-activity 2.1: Detailed engineering

(ii) Sub-activity 2.2: Tendering and construction of LRT tracks, stations, etc.

(iii) Sub-activity 2.3: Tendering and procurement of rolling stock

(iv) Sub-activity 2.4: Environmental Impact Assessment (EIA) for LRT

(v) Sub-activity 2.5: Negotiation and obtaining approval for all permits

(vi) Sub-activity 2.6: Construction of LRT

(vii) Sub-activity 2.7: Construction of stations

(viii) Sub-activity 2.8: Construction of depots

(ix) Sub-activity 2.9: Purchase of trains

(x) Sub-activity 2.10: Approval of the construction of the LRT

(xi) Sub-activity 2.11: Operation permit received

[3] GEF. (2015). *Manual for Calculating Greenhouse Gas Benefits of Global Environment Facility Transportation Projects.*
[4] Zegras, P. (2009). Behavior-Based Transportation Greenhouse Gas Mitigation Under the Clean Development Mechanism: Transport-Efficient Development in Nanchang, China. *Transportation Research Record: Journal of the Transportation Research Board, No 2114, 38046*.

Component 2: Urban integration with NMT

(c) Activity 1: Design, build and prepare to operate cycle lanes

- (i) Sub-activity 1.1: Detailed engineering of cycle lanes
- (ii) Sub-activity 1.2: Tendering and construction of cycle lanes
- (iii) Sub-activity 1.3: Construction of cycle lanes delivered

(d) Activity *2*: Integrate, design and build connectivity interventions at six LRT stations

- (i) Sub-activity 2.1: Detailed engineering of interventions
- (ii) Sub-activity 2.2: Tendering of construction activities
- (iii) Sub-activity 2.3: Stations constructed

(e) Activity 3: Multiple promotion of activities to foster cycle and micro-mobility usage

- (i) Sub-activity 3.1: Detailed design of activities
- (ii) Sub-activity 3.2: Identification and contracting of delivery institutions
- (iii) Sub-activity 3.3: Delivery of planned activities

Component 3: Community-building and gender measures

(f) Activity 1: Establish monitoring system and monitor impacts of LRT, last-mile connectivity and NMT interventions

- (i) Sub-activity 1.1: Design institutional set-up within the Costa Rican Institute of Railways (INCOFER) for monitoring of impacts
- (ii) Sub-activity 1.2: Sub-contract surveys and other components of monitoring
- (iii) Sub-activity 1.3: Realize and consolidate annual monitoring reports on impacts of LRT, NMT and last-mile connectivity components

(g) Activity 2: Deliver capacity-building and outreach

- (i) Sub-activity 2.1: Realize publications on project components with a focus on NMT/connectivity
- (ii) Sub-activity 2.2: Realize outreach events

(h) Activity 3: Implement gender action plan

- (i) Sub-activity 3.1: Communication campaigns to identify sexual harassment practices and other types of violence in trains and at rail stations
- (ii) Sub-activity 3.2: Train INCOFER staff on the new sexual harassment law
- (iii) Sub-activity 3.3: Implement a rapid reporting system for cases of violence against women
- (iv) Sub-activity 3.4: Establish a complaints mechanism for cases of violence against women that acts automatically
- (v) Sub-activity 3.5: Implement an adequate lighting system that protects the safety of users
- (vi) Sub-activity 3.6: Design, implement and analyze a comprehensive multimodal transport pilot survey
- (vii) Sub-activity 3.7: Conduct a gender-sensitive evaluation at the user level to better understand the different needs and perspectives of women and men in terms of access to services and infrastructure

(viii) Sub-activity 3.8: LRT infrastructure designs with a gender focus in which women's physical integrity is safeguarded and allows adequate use of the infrastructure

(ix) Sub-activity 3.9: Improving women's access to non-motorized mobility services

(x) Sub-activity 3.10: Attract women to the INCOFER workforce and offer equal conditions to men and women

(xi) Sub-activity 3.11: Promote the hiring of and provide spaces for women entrepreneurs to be part of the tertiary service providers that the LRT acquires

(xii) Sub-activity 3.12: Establish spaces for women to be promoted to decision-making positions within the activities relevant to the LRT

(xiii) Sub-activity 3.13: Create and disseminate knowledge products on lessons learned

7. Financing for the three components described above, and sources of the funding (GCF and co-financing) for the activities, are summarized in Table 1.

Table 1: Project components and activities with indicative financing

Component	**Output**	**Indicative cost** million USD ($)	**GCF financing**		**Co-financing**		
			Amount million USD ($)	**Financial instrument**	**Amount** million USD ($)	**Financial instrument**	**Name of institutions**
1. LRT system	Infrastructure	834.2	163.0	Senior Loans	671.2	Senior and subordinated loans, equity	CABEI and private investor
	Rolling stock	452.4	87	Choose an item.	365.4	Senior and subordinated loans, equity	CABEI and private investor
	Others	267.3	0	Choose an item.	267.3	Senior and subordinated loans, equity	CABEI and private investor
	Financing charges	298.1	0	Choose an item.	298.1	Senior and subordinated loans, equity	CABEI and private investor
2. Urban integration with NMT & connectivity /accessibility components	Infrastructure investments	20	20	Grants	0	Choose an item.	Click here to enter text.
I 3. Capacity-building and gender measures	Capacity-building, training, outreach	1.3	1.3	Grants	0	Choose an item.	Click here to enter text.
Indicative total cost		**1,873.3**	**271.3**		**1,602.0**		

Source: From section C.2. – Financing by Components on page 28 of the funding proposal,

Note: All the financing amounts are estimates based on the current scope of the projects. These are indicative and subject to approval by the World Bank Board and agreements with the executing entities.
Abbreviations: CABEI = Central American Bank for Economic Integration; LRT = light rail transit; NMT = non-motorized transportation USD: United States Dollars

8. The total financing needed (GCF financing plus co-financing) for this project is USD 1,873.3 million. This is expected to be contributed as follows:

(a) **GCF:** USD 271.3 million made up of:

  (i) Senior loan: USD 250 million with a 40-year tenor, 10-year grace period and 0.00 per cent annual interest rate; and

  (ii) Grant: USD 21.3 million; and

(b) **Co-financing:** USD 1,602 million sourced as follows:

  (i) Central American Bank for Economic Integration (CABEI) – senior loan: USD 300 million with a 25-year tenor, 5-year grace period and 6-month London Inter-bank Offered Rate + 2.9 per cent;

  (ii) Private concessionaire (to be decided through project activity 1.1) – equity: USD 250 million; and

(c) Private concessionaire (to be decided through project activity 1.1) – senior loan: USD 1,052 million, Terms yet to be finalized.

9. The private concessionary will be defined through the tender. The private concessionaire invests an estimated USD 1,302 million. The total investment amount stated here has been estimated by the feasibility study carried out during the planning of the project and might vary depending on the assessment of the concessionaire and the detailed engineering design. Based on the assessment realized by the private concessionaire at the tender stage they may require a higher or lower annual contribution. The Government of Costa Rica is expected to provide a one-off payment of USD 550 million to the special purpose vehicle (SPV) to cushion the cost of the capital expenditure (CAPEX) of the facility that they must raise to implement this project. The USD 550 million will be provided to the Government of Costa Rica as a very concessional loan of USD 250 million from GCF and a senior loan of USD 300 million from CABEI. The payment of the USD 550 million from the Government of Costa Rica to the SPV will be disbursed based on the constructed LRT lines of the concessionary. The one-off payment of the government to the SPV (USD 550 million) is fixed even when the project CAPEX is different from the one estimated by the feasibility study. The final financial structure of the SPV is defined once the project has been awarded to the private concessionary.

10. The expected potential outcomes that will be delivered by this project as estimated and presented in the funding proposal and in the annexes submitted for this review have been evaluated by the independent TAP as conservative estimates. These are summarized as follows:

(a) Replacement of the existing old technology, diesel-fuelled, slow, single-track rail system with a fast, comfortable, six-lane, low-carbon electric-powered LRT system;

(b) Not only will the LRT displace the use of fossil diesel fuel used by the baseline rail system, with its emissions of GHGs, noxious gases and particulates, but it will also deliver additional climate mitigation benefits from its utilization of low-carbon power from the Costa Rican grid;

(c) The inclusion of NMT facilities (bicycles and cycle lanes) and last-mile connectivity at LRT stations (safe crossings and pedestrian walkways) will engender modal shift towards LRT, cycling and low-carbon transport at passenger connection and transfer stations;

(d) The entire LRT system will also catalyse modal shifts from other existing transport modes, including public buses, passenger cars (private cars, taxis), motorcycles, etc., with passengers who utilize these pre-project modes shifting to the LRT because of its convenience and journey time savings, as passengers move from the congested baseline modes. These modal shifts are the key sources of the GHG emission reductions that will be delivered by this project;

(e) Modal shift will be brought about by the convenience of the LRT and the NMT. The LRT reduces journey times for car and conventional bus users by 30–60 per cent and will offer safe as well as interconnected services. The current public bus system routes, it is planned, will be restructured to promote integration with the LRT and promote seamless connections and avoidance of duplicated routes. Thus, the modal shift that will be estimated using the result of the survey of project passengers (what baseline mode would you have used to undertake your current travel in the LRT in the absence of the LRT) will underestimate the modal shift, and hence the baseline emissions, thus ensuring that the emission reduction estimated by the modal shift methodology produces a conservative result; and

(f) The independent TAP reviewed the methodologies used in the calculation of the GHG emission reductions expected to be delivered by the interventions of this proposed project. The methodological approach in all the calculations presented in the funding proposal were judged to be sound and the tools used are expected to deliver reliable and conservative estimates of GHG emission reductions. The mitigation benefits that will be delivered by the project will be a cumulative average annual reduction in GHG emissions of 173,246 tCO_2eq and a lifespan impact of a reduction of 7,622,805 tCO_2eq;

11. The independent TAP concludes that this project will deliver a high climate impact potential.

1.2 Paradigm shift potential *Scale: High*

1.2.1. Comprehensiveness

12. In the absence of this LRT project, the following baseline conditions will continue to hold in the transport sector of Costa Rica and especially in the catchment area of the GAM:

(a) The Costa Rican transport sector will continue to lead the GHG emissions pathway of the country. The sector contributed 51 per cent of national emissions of about 10.9 MtCO2eq in 2015. Without the proposed mitigation interventions of this project, it is expected that under the business-as-usual scenario, the GHG emissions of the transport sector will continue to grow by 44 per cent, while under a mitigation scenario they are projected to fall by 65 per cent by 2050, compared with the 2015 level (MINAE, 2019);

(b) The public transport system of Costa Rica (public buses and trains) decreased from a mode share of 64 per cent in 2007 to 41 per cent in 2017. During the same period, the use of private cars increased from 31 to 42 per cent (L.C.R. Logistica S.A., 2007). In the absence of this project, which will deliver a good template for low-carbon transportation, this trend is likely to be maintained. This will continue to exacerbate GHG emissions and congestion on the roads of the country's metropolis and cities and hence increase the carbon footprint of the country's transport sector.

(c) In the absence of LRT investments such as that proposed in this project, public funding will not be available and consequently investments in low-carbon transport modes that will utilize the low-carbon electricity available from Costa Rica's grid will not occur; and

(d) Without the concessional loan from GCF, it is unlikely that the LRT project as currently conceptualized, especially the public–private partnership (PPP) model currently proposed, can be achieved. It is unlikely that Costa Rica will be able to attract private concessionaires who will bring such a level of investment for infrastructure development into the country. The result would be the continuation of the baseline scenario, characterized by growing numbers of private cars, low investment in the improvement of the stocks of public buses and continuing congestion on the roads of the metropolis, all leading to an unsustainable transport sector.

13. Since the availability of funds to carry out this investment will change much of the storyline set out above, a comprehensive low-carbon result will be delivered by this project intervention.

14. The key barriers identified in the reports reviewed that will also be removed by the proposed project intervention include the following:

(a) Lack of funds to prosecute this kind of investment due to the current poor fiscal situation of Costa Rica's economy. It can be argued that in the absence of the concessionary funding from GCF, which will be expected, together with funds from CABEI, to catalyse the flow of private sector funds (from the concessionaire), this low-carbon project would not occur;

(b) Lack of public investment in public transport modes, including in infrastructures such as roads and bridges. This impedes the ability of operators to improve the condition of the vehicles or rolling stock in public sector modes, giving rise to a funding barrier from the non-availability of the long-term revenue streams required to cover payment obligations, including debt service. Therefore, most public transport systems can only partially cover their funding necessities from farebox and ancillary revenues and require transfers from the government's budget. The proposed project funding structure is a very effective way to address this barrier. It can therefore be said that the success of the scheme will deliver comprehensive paradigm shift; and

(c) Lack of the experience, information and knowledge regarding successful NMT and last-mile connectivity interventions necessary to an effective LRT system. Less than 20 km of non-integrated cycle lanes exist in the GAM in the pre-project situation. There is therefore a lack of experience in the planning and implementation of cycle lanes, their linking with public transport and their impact, and connectivity/accessibility interventions, which effectively results in a barrier to approving such new investment projects. The success of this LRT intervention will help to eliminate this barrier and allow for such projects to be replicated, hence delivering comprehensive paradigm shift.

15. The independent TAP believes that the structure of this proposed LRT project, as described in the funding proposal and annexes, is sufficiently comprehensive to deliver the necessary infrastructure and the expected level of modal shift when the infrastructure is in place. This will be facilitated by the availability of concessional loans that will provide public investment to enable the private sector concessionaire to bring investment into this project, compared with the status quo. This will also remove some of the existing barriers to private sector investment in low-carbon transport sector development in Costa Rica. The flow of concessional funding from GCF will be to the Government of Costa Rica and not to the private sector, thus enhancing the argument that the benefit truly flows to the people of Costa Rica. The independent TAP concludes that this intervention should deliver comprehensive paradigm shift.

1.2.2. Innovation

16. Innovation is partially delivered through changes to the status quo that result in value creation, reforms and renovation of failing systems (impossible to change the baseline narrative of inability to introduce a low-carbon transport mode) and ensuring sustainability of the

process. The Costa Rica LRT investment can deliver such results. The development of the proposed LRT with NMT and last-minute access infrastructure in the metropolis is hampered by some of the barriers discussed above and in the funding proposal and some of its annexes. The proposed LRT intervention is expected to mitigate these barriers and set the pace for a low-carbon transport sector in Costa Rica. The strategy to achieve this was presented convincingly in the funding proposal and annexes. Although the technologies and means (LRT, NMT and last-minute access infrastructure) that are likely to be used by the proposed intervention may not be a global innovation, they could well be innovative in the context of the country and perhaps the region; this is important as the development of the LRT system will increase the penetration of low-carbon transport systems in Costa Rica. This becomes even more important if the development of this fast and comfortable electric-powered train incentivizes the implementation of electric vehicles in the country as believed.

1.2.3. Creation of an enabling environment/sustainability of outcomes

17. Among the pieces of the puzzle of this intervention, the search for a private sector investor to raise the funds needed to design and construct the LRT infrastructure seems to be the issue that still portends some level of risk. The project cannot go forward if a concessionaire is not found. The independent TAP believes that the investment will eventually and in a timely manner succeed in selecting a concessionaire for the following reasons:

(a) INCOFER, Costa Rica's leading agency for this project (the grantor), has already identified about 10 international companies, each of which has shown interest in the concessionaire role. According to the information available to the independent TAP, each of these potential concessionaires have evaluated as acceptable the CAPEX figures from the feasibility study (and perhaps the front-end engineering) prepared for project planning. The concessionaire eventually selected will, however, carry out its own detailed engineering and detailed cost of the project – which may be higher or lower than the earlier estimate. According to information in the funding proposal, changes in the concessionaire's CAPEX estimate will not affect the quantum of the bridging fund (USD 550 million) that will be paid to the concessionaire; and

(b) A PPP model that will be used in engaging the concessionaire is a very attractive mechanism to bring private funds to this project. The PPP will be implemented through an SPV established and fully owned by the concessionaire. The government does not participate with equity or loans to the SPV but uses a forfeiting model and pays upon completed construction a fixed sum of USD 550 million and annual operations availability payments linked to performance criteria. This system is more attractive for investors and makes the system less prone to government interference and hence likely to enhance the success of selection of a strong concessionaire.

18. The two points discussed above will provide adequate support for the belief that the selection of concessionaire and hence the successful incorporation of an SPV that will play a crucial role in the implementation of this project should not be an insurmountable barrier. Therefore, the project plan as presented in the funding proposal and some of the annexes should deliver sustainable outcomes as well as also create an enabling environment that will successfully deliver this project.

1.2.4. Potential for scaling up and replication

19. Scaling up and replication of this proposed intervention in Costa Rica will involve the expansion of the project in GAM in the near future and the implementation of the LRT in other major cities in Costa Rica and other countries of the region. Since this is an electrically powered transportation project, it will be expected that lessons learned from the success of the LRT will incentivize the introduction of non-train electric vehicles in the country. What then are the

elements and characteristics of the current LRT project implementation that will provide for robustness of the potential for the scaling-up and replication of the intervention? These elements and characteristics can be summarized as follows:

(a) The participation of the private sector in this project, especially the structuring of the financial arrangement available to the concessionaire, will make the project less risky and reduce the investment of the government. These are positive impacts that will provide an enabling environment for replication and scaling;

(b) Although the restructuring of the route of the private sector operated public bus system is not part of this project's scope of work, it is understood that this will be done with the restructured route integrated with the LRT. The LRT by design will also be integrated with the NMT as well as the last-mile connectivity interventions, which will provide a model for a modern approach to public transport interventions that is not available in Costa Rica or in other countries of the region. This is an element and a characteristic of this intervention that will deliver good potential for future scaling-up and replication of the project ideas; and

(c) A key paradigm shift in the transport sector of Costa Rica is the use of low-carbon electricity as a source of transport energy. Given that Costa Rica's transport sector is the leading source of GHG emissions in the country, successfully utilizing the low-carbon electricity from the national grid in this project will provide a solid platform for replicating the use of electricity as power for other modes (e.g. electric vehicles).

20. Given the three elements discussed above, the independent TAP concludes that the successful implementation of the LRT project should deliver tangible potential for the scaling-up and replication of many of the aspects of the current project idea.

1.2.5. Potential for knowledge-sharing and learning

21. The design and implementation plan of the LRT system includes some strategies for knowledge-sharing, project data acquisition and learning, which are essential for knowledge-sharing and learning. Some are described below to illustrate the potential for knowledge-sharing and learning built into the LRT project design:

(a) One of the key activities that will be funded using grant funding from GCF is the creation of knowledge products on lessons learned and the dissemination of the information in such reports. These reports will be published and presented at outreach activities. Such activities are included in the budget for knowledge-sharing and learning;

(b) Important data and information will be collected in a focused survey covering the entire project segments. These will include a sample survey of passengers in the LRT when operational to determine the transport modes that the passengers would have used in the absence of the LRT. Information so developed will help to set the modal shift and behaviour characteristics of LRT passengers. The information captured by such a survey will not only be useful for determining the baseline of this project but also provide useful information that will enhance the knowledge base for future planning of such systems; and

(c) The project also includes the collection and reporting of standardized data on the impact of last-mile connectivity and NMT measures and thus serves to improve the planning and the impact assessment of such measures. This will be useful to determine the performance and impact of these project components and provide a datum for knowledge sharing and learning.

22. The proposed project will deliver comprehensive and innovative attributes that the independent TAP believes will contribute strongly to a high paradigm shift potential. It will deliver an enabling environment that will make the tangible outcomes of the intervention

sustainable, while also enhancing replicability of the project concept. The knowledge-sharing platform, which is a sub-component of the project delivery, will enhance robust knowledge-sharing and learning attributes that are essential for the scalability and replication of the project. In the light of these observations, the independent TAP concludes that the paradigm shift potential is high.

1.3 Sustainable development potential *Scale: High*

1.3.1. Alignment with the Sustainable Development Goals

23. The Sustainable Development Goals (SDGs) that the project intervention are expected to align with are summarized as follows:

(a) SDG 3 (good health and well-being): the fossil fuels (diesel) used as transport fuel in the old diesel train will be completely replaced, (while some of the diesel and gasoline used in the baseline public buses may be curtailed by modal shift) leading to a saving in the emissions from the journeys of passengers who would have used the fossil fuel modes in the absence of the LRT. These fossil fuels are sources of emissions of noxious gases and particulates. $PM_{2.5}$, a particulate matter that would be emitted in the baseline and reduced because of the project, is of particular importance to the health and well-being of the people of Costa Rica;

(b) SDG 9 (industry, innovation, and infrastructure): the sustainable development benefits that the project will deliver under SDG 9 include strengthening the performance of the transport sector, making it more effective in delivering its value addition, which will in turn have a positive value addition to all sectors of Costa Rica's economy, including industry. In addition, it is expected that infrastructure (rail lines and link roads) will be developed, and the use of low-carbon electricity will penetrate the transport sector;

(c) SDG 11 (sustainable cities and communities): the baseline public transport situation in the city of San José and the larger GAM area is characterized by the domination of private cars, followed by public transport (mostly by the uncomfortable public buses); very serious traffic congestion, adding more time to typical travel times; very slow trains on old gauge single-track rail lines burning diesel; and uncoordinated public bus routes. The combustion of fossil fuels in these baseline modes not only emits GHGs, but also noxious gases and particulates, with a significant impact on the health of residents of the GAM. The proposed project will replace the old gauge rail with the LRT, which will use electricity from the low-carbon grid of the country as its source of operational energy. As a result of the availability of the LRT, which will carry more passengers than all the baseline modes combined, GHG emissions will be greatly reduced, fossil fuel that would have been used for the baseline travels of LRT passengers will be curtailed because of modal shift – with a significant reduction in the emissions responsible for public health deterioration in the city – and better living conditions (better air quality over time) for city dwellers. Hence it can be correctly concluded that the LRT project will deliver on SDG 11; and

(d) SDG 13 (climate action): A primary goal of this project is to alter the GHG emission pathway from the historical upward scenario that has been forecasted for Costa Rica's transport sector. The LRT project will deliver over 10 per cent of the emission reductions that have been estimated to alter the historical GHG emissions pathway. The project will also enable the expansion of this mitigation intervention in San José and the replication of similar mitigation interventions in the transport sector of other cities in the country and replication of the success of the present intervention in other countries in the region. Therefore, this LRT project will deliver on SDG 13.

1.3.2. Economic co-benefits

24. The success of the financial structure of this LRT project and the implementation model put together for this PPP intervention will enhance the planning of more low-carbon intervention in the transport sector of Costa Rica. The success of this first fast electric train will catalyse the implementation of other electric transportation projects in the country as it will facilitate a reduction in the perceived risks of such projects. This project will mobilize into Costa Rica's infrastructure investment fund to the tune of about USD 2 billion with positive economic benefits for the country. The enabling environment that will be created by the success of the pioneer project will add more value to this initial economic benefit through the possibility of many other such projects within the project boundary and in other cities in the country. This will reduce the need for fossil fuel imports (mostly for the needs of the transport sector) as many of the modes will be substituted by electricity use once the LRT is operational. This will deliver beyond marginal economic co-benefits to Costa Rica. Over time, because of the diversification of the energy mix for the transport sector (away from fossil fuel), the country's economy will be protected from the negative impacts of fossil fuel price fluctuations.

25. Other economic co-benefits that have been identified in the project write-up that the independent TAP reviewed can be summarized as follows:

(a) Time savings from using the LRT valued at USD 3,354 million (IDOM, 2020);[5]

(b) Operating cost savings estimated as USD 520 million (IDOM, 2020);[6]

(c) Reduced accident rates with cost savings of about USD 53 million (IDOM, 2020);[7]

(d) Reduced emissions of air pollutants calculated by assigning a monetary value to emissions of PM2.5, nitrogen oxides and sulfur dioxide estimated at USD 79 million (Grutter Consulting, 2020);[8]

(e) Reduced GHG emissions valued on the basis of the social cost of carbon at USD 550 million (Grutter Consulting, 2020);[9]

(f) Noise emissions valued at USD 6 million (IDOM, 2020);[10]

(g) Overall, generation of 1,200 temporary jobs during construction and 1,460 direct jobs during operations (IDOM, 2020);[11] and

(h) Delivery of 3.3 times more economic benefits than economic cost or an economic internal rate of return of 26 per cent (IDOM, 2020);[12]

26. Coronavirus disease 2019 (COVID-19) has resulted in the diversion of a sizeable proportion of public funds available in most countries, including Costa Rica. With available public finance targeted at critical COVID-19 challenges, the implementation of this project will reduce the economic losses that will arise from non-implementation of the nationally determined contribution (NDC) targets.

27. By leveraging private investments at scale, the successful implementation of this project will spare Costa Rica's limited public sector finance, which could then be directed to, for example, healthcare and post-COVID-19 strategies for other needy sectors such as education,

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5 IDOM, 2020, FSR 3rd Report; Memoria 10: Modelo de Demanda (Demand Model).
6 As footnote 6 above.
7 As footnote 6 above.
8 Grutter Consulting, (2020), NMT and TOD Report 3, Intervention Proposal (See FSR of this project – Annex 22).
9 As footnote 9.
10 As footnote 6
11 As footnote 6
12 As footnote 6

infrastructure and welfare. These are co-benefits that will be delivered by a successful implementation of this LRT project.

1.3.3. Social and health co-benefits

28. The project will deliver better air quality in the GAM area and progressively in Costa Rica, where the air quality has been described by the World Health Organization guidelines as moderately unsafe. The most recent data indicate that the country's annual mean concentration of PM2.5 is 16 µg/m^3, which exceeds the recommended maximum of 10 µg/m^3. [13] The LRT, because of its non-combustion technology to power this transport mode and displace some of the baseline fossil fuel use, will deliver lower PM2.5 emissions with attendant health co-benefits. The other project components – the NMT and the last-mile connectivity – will also contribute more value to the health co-benefits discussed above.

1.3.4. Environmental co-benefits

29. The air quality co-benefits of this project will result from reduced environmental pollution that will be engendered by the no-combustion powering of the LRT compared with the modes that would have been used in the baseline. The estimates of each of the non-GHG emissions associated with the implementation of the proposed LRT are presented in Table 2.

Table 2: Projected reduction of pollutants due to the project (tonnes)

Parameter	Average annual reduction	Cumulative lifetime reduction
PM 2.5 reduction	7	295
NOx reduction	266	11,670
SO2 reduction	1	56

Source: Grutter Consulting (2020) Emission Impact LRT Costa Rica (Annex 19).

30. These environmental co-benefits, as well as a reduction in noise pollution, will be delivered by the LRT and its other components.

1.3.5. Gender-related co-benefits

31. The gender co-benefits of the proposed LRT project in the GAM area were well articulated in the funding proposal and in its annex 8 (Gender analysis and action plan). The following three dimensions were included in the gender action plan and built into the project implementation plan. The three dimensions include:

(a) Mobility and safety – apart from ensuring that the LRT is fast and able to carry passengers with a goal of ensuring optimum use of time in journeys and safety for all passengers, special attention has been placed on the special needs of women. This will include: building schemes into the project implementation and operations to facilitate optimum mobility of all passengers and, for women, proper security to ensure that the infrastructure includes measures that will enhance the mobility patterns of women and minimize the risk of violence against them within and around all the LRT facilities. This is achieved through the inclusion of gender-differentiated mobility patterns and measures, including intermodality of different media;

(b) Accessibility – ensuring that the new infrastructure, when implemented and operational, takes the requirements of women into consideration. The design, implementation and operation of the LRT and all its associated infrastructure take into consideration accessibility for women through:

[13] See https://www.iamat.org/country/costa-rica/risk/air-pollution.

(i) Acknowledging the flaws in the pre-project system that brought about a barrier for women to economic activities. For example, many of the stations or bus stops, where passengers are picked up are not well lit and secure, especially in the early hours of the morning (peak commuting period), late evening and night, posing risks to women and their ability to travel for economic activities;

(ii) Ensuring that the new LRT facilities are designed to take into account the needs of women and to safeguard their physical autonomy, such as through the provision of well-lit female toilets, etc.; and

(iii) Monitoring gender issues: the monitoring and project evaluation monitoring protocol includes monitoring and evaluating gender-related issues, focusing on results and outcomes at the project level; and

(c) Participation of women – this very important dimension is built into the project to ensure gender mainstreaming. Being part of the gender action plan of this project, it will ensure that women are engaged in the transport sector at all stages and decision levels. The gender action plan has been designed to provide women with the opportunity to play tangible roles at all levels of activity of this project, including decision-making, working on the trains, and participating in all services that will be offered by contract model at stations and other parts of the integrated system. The project monitoring and evaluation is also expected to provide reports on progress in reaching the gender action plan goals.

32. In view of the above-mentioned contributions to various elements of sustainable development, the independent TAP concludes that the project will generate significant sustainable development potential and can deliver all the benefits discussed in section 1.3 above. Therefore, the independent TAP concludes that the sustainable development potential of this proposed project is high.

1.4 Needs of the recipient *Scale: High*

1.4.1. Needs of the country

33. It is argued in the funding proposal that, because Costa Rica is considered a primary "hot spot" for climate change in the tropics, this proposed project fits the needs of the country in responding to the various climate change impacts; however, the independent TAP has taken a very different approach to the needs of Costa Rica in this context. The climate change impacts listed in the funding proposal include extreme precipitation, which has increased significantly, being strongly correlated with the temperature of the tropical Atlantic Ocean, and is expected to continue in the future as a result of climate change and to result in a greater frequency or intensity of extreme events such as floods and droughts. Such current and future impacts have been put forward as the key reasons why this project is needed in Costa Rica. To substantiate this claim a very articulate climate rationale argument will be required and since this project has been designed as a GHG mitigation project, the independent TAP decided to focus on other reasons that can strongly support the argument that this intervention is greatly needed.

34. The key reasons why this project is needed by Costa Rica (in addition to the climate change reasons described in the funding proposal and summarized in para. 33 above) can be summarized as follows:

(a) GHG emissions in Costa Rica in 2015 were estimated at about 10.9 $MtCO_2eq$, with the transport sector contributing about 51 per cent of these emissions. The sector is the leading emitter of GHGs because it is entirely dependent on fossil fuel use. This makes the proposed project, which will change a major mode of transportation to electric fast rail (the LRT), a logical trigger for a paradigm shift in the transport sector. Therefore,

fostering of public transport and electrifying the transport sector (given the low-carbon nature of Costa Rica's grid with 98 per cent renewable energy sources) are the main strategies to achieve Costa Rica's ambitious target of decarbonization. That the LRT stands out in the strategy for decarbonization of the transport sector of Costa Rica is confirmed by the country's various climate change strategy documents (Costa Rica's second biennial update report (MINAE, 2019)[14] and the National Decarbonization Plan (Government of Costa Rica, 2019)[15]);

(b) In its NDC, Costa Rica reaffirmed its aspiration to become a carbon-neutral economy, aiming for a decarbonized economy with net-zero emissions by 2050 (Government of Costa Rica, 2019). Costa Rica received from the United Nations Environment Programme the 2019 Champions of the Earth award for its commitment to ambitious policies to combat climate change.[16] This proposed project is aligned to the country's decarbonization aspiration;

(c) The Costa Rican electricity system, with over 98 per cent of renewable energy production since 2015, is one of the few decarbonized systems in the world. Planned energy expansions will diversify renewable energy sources even more (ICE, 2019)[17]. The development of a modern, fast and comfortable electric train can therefore be considered a logical follow-up to the achievement of a low-carbon electricity grid in Costa Rica. The LRT is a key component in reducing urban transport emissions in that it will consume annually less than 1 per cent of energy generation; Electrification of other modes of the transport sector, (private cars and buses) is a logical follow-up to a successful LRT project;

(d) The mode share of motorized trips has historically been changing towards an increase in the use of private cars and a significant decrease in the use of the public bus system. The implication is more congestion on the roads, especially in the GAM, and worsening air pollution. The LRT, which will be a fast and comfortable mode of transportation, will promote modal shift, thus reducing travels in the buses and, it is to be hoped, if properly integrated, also engender some shift from private cars. This will indirectly reduce congestion on the roads, reduce air pollution and establish the know-how to utilize low-carbon electricity for the transport sector, making the LRT project a necessary intervention in the transport sector of Costa Rica.

35. The LRT project presented to the independent TAP for review has been designed to address the issues discussed above. The technical design and the financial plan are expected to provide adequate funds through the PPP model to meet the CAPEX requirements for the project and provide the Government of Costa Rica with highly concessional debt, which will enable the public sector part of the PPP to provide the concessionaire with bridging funds. This will make the project funding attractive to the private entity; provide the concessionaire (its SPV) with the necessary funds to operate and maintain the infrastructure and the rail system over the concession period; and have in place what can become a workable exit strategy for the private sector partner. These actions will assist the LRT to deliver the primary goals of reducing the GHG emissions of Costa Rica's transport sector and set the stage for use of low-carbon power as a transportation energy, starting with the LRT and, it is to be hoped, extended in future to other modes such as road vehicle electrification.

1.4.2. Economic and financial needs of the country

[14] MINAE. (2019). *Plan Nacional de Transporte Electrico 2018-2030*
[15] Government of Costa Rica. (2019). *National Decarbonization Plan 2018-2050*
[16] See https://www.unenvironment.org/news-and-stories/press-release/costa-rica-named-un-champion-earth-pioneering-role-fighting-climate.
[17] ICE. (2019). *Plan de Expansion de la Generacion Electrica 2018-2034.*

36. It can be concluded that the financial structuring of the project has been designed in a way that meets the country's economic and financial needs. The economy of Costa Rica in recent years has been suffering from fiscal weakness due to high fiscal deficit. The deficit has lately been the main risk to the macroeconomic stability of the country, with debt projected to exceed 60 per cent of gross domestic product in 2020. The negative effect of the COVID-19 pandemic has further worsened the financial strength of public budgeting to the extent that in the absence of the planned PPP funding model the present project would not have been possible. As argued in the funding proposal, the important and immediate medical, social and economic needs prompted by COVID-19 will require higher fiscal spending, which will lead to a deterioration in the fiscal position in 2020.[18] In recognition of this fiscal weakness, the country reached a technical agreement with the International Monetary Fund in January 2021 on a programme of reforms and policies to reduce the fiscal deficit and to promote reforms which allow for lasting and inclusive growth. This has provided a strong fiscal base to release multilateral funding at lower borrowing costs for infrastructure planning and implementation of the country's green recovery plan with a focus on investing in profitable infrastructure. The financial structure of the LRT project, executed through a PPP and with the government contribution based on a multilateral loan with a five-year grace period, allows the creation of much-needed short-term jobs without increasing the short- and medium-term fiscal deficit while investing resources in long-term sustainable and profitable transport infrastructure. Thus, the design of the LRT project (technical and financial) fits into this narrative and is very much needed in the country.

37. The concessional loan of USD 250 million from GCF is expected to crowd in financing from CABEI and a yet to be selected concessionaire (~USD 1,602 million). In addition, grant funding from GCF (~USD 21.3 million) will fund various components of the LRT, including urban integration with NMT and connectivity/accessibility components, as well as capacity-building, training and outreach. This will further strengthen the "can-do" ability of country stakeholders and further strengthen the country's economic and fiscal environment over a long period.

38. Given the analysis of the project information made available for the review of this project submission, and the discussion of the issues presented in this section, the independent TAP concludes that the LRT project will deliver the estimated decarbonization of Costa Rica's transport sector, while incentivizing the shift of more modes to the use of the low-carbon grid electricity in the sector and deliver a robust economic and financial atmosphere that can make this project concept successful. Therefore, the independent TAP has scored the needs of the recipient as high.

1.5 Country ownership *Scale: High*

1.5.1. Evidence of country ownership through participation of relevant stakeholders

39. Country ownership is strongly related to national stakeholder engagement. The funding proposal provides the following information on the level of stakeholder engagement adopted by the accredited entity (AE) and the Government of Costa Rica in the development of the LRT project:

(a) The LRT project has been planned within the context of the Government of Costa Rica's historical commitment to the international climate change agreements. The country has a long tradition of being at the forefront of combating climate change. During the 1990s, Costa Rica contributed to the global awareness on climate change, becoming part of the first joint implementation projects. The country has created within its institutional space public policy and strong institutional arrangements, which have delivered various

[18] See https://www.imf.org/en/Countries/CRI.

strategies that can be said to be precursors of the proposed LRT project. These relevant strategies include:

(i) Costa Rica´s National Climate Change Strategy, which was launched in 2007 and supported by the creation of a Climate Change Department at the Ministry of Environment and Energy (MINAE);

(ii) The launching in 2019 of the National Decarbonization Plan 2018–2050, which aims for a decarbonized economy with net-zero emissions by 2050 (Government of Costa Rica, 2019)[19]; and

(iii) These strategies and others, such as the National Development and Investment Plan 2019–2022 (Mideplan, 2018)[20], the Nationally Determined Contributions (NDC) (MINAE, 2015)[21], the National Transport Plan 2011–2035 (MOPT, 2011)[22], the National Plan for Electric Transport (MINAE, 2019)[23], the National Energy Plan 2015–2030 (MINAE, 2015)[24] and the post-COVID-19 green recovery plan, all have the concept of the LRT as either a part or a core component of these strategies and plans. Therefore, it is conceivable to argue that the planning and development of the LRT were discussed with relevant stakeholders who housed each of the plans discussed above; and

(b) Pertinent information presented in the funding proposal and its annexes concerns the responsibility of Costa Rica's transport sector for 51 per cent of the country's GHG emissions and 76 per cent of total energy emissions in 2015 (MINAE, 2019)[25]. The need to improve and restructure the transport sector and make it more sustainable is well articulated in many country strategies. Given the leading role that the transport sector is playing in the country's carbon footprint, and the fact that the electricity sector is very low carbon, the electrification of many modes in the transport sector can deliver substantial GHG emission reductions. This strategy is articulated in many of the country's strategy documents such as in the Costa Rica's second biennial update report and its NDC. Electric rail as a mitigation measure and specifically the LRT concept are highlighted in many of these strategy documents and formed the foundation for the way the current LRT project was conceptualized and planned. This provides strong evidence of country ownership, as the above-mentioned facts must have been considered in the analysis, design and planned roll-out of the LRT project. It must also have been discussed widely with the relevant stakeholders mentioned in paragraph 39(a) above. Since no evidence of formal stakeholder interaction from the bottom up was included in the submission, it is very difficult to evaluate the extent of stakeholder interaction in the development of the LRT.

1.5.2. Alignment of the project with relevant national strategies

40. The proposed LRT project is well aligned to the national strategies referred to in paragraph 39(a) above. It is the opinion of the independent TAP that the LRT project as proposed is in alignment with the pertinent climate change mitigation, transport sector and energy sector objectives of Costa Rica, given that GHG emissions are targeted for reduction and

[19] Government of Costa Rica. (2019). *National Decarbonization Plan 2018-2050.*
[20] Mideplan. (2018). *Plan Nacional de Desarrollo y de Inversion Publica 2019-2022*.
[21] MINAE. (2015). *Costa Rica's Intended Nationally Determined Contribution*.
[22] MOPT. (2011). *Plan Nacional de Transportes de Costa Rica 2011-2035; Transporte Publico: El transporte publico de pasajeros y el Proyecto de Sectorizacion.*
[23] MINAE. (2019). *Costa Rica II Informe Bienal de Actualizacion ante la Convencion Marco de las Naciones Unidas sobre el Cambio Climático.*
[24] MINAE. (2015). *Plan Nacional de Energia 2015-2030.*
[25] As footnote 23 above.

the leading contribution to national GHG emission inventories in the country's energy and transport sectors is from the transport sector.

1.5.3. Engagement with civil society organizations and other relevant stakeholders

41. Information in the funding proposal showed that as from the inception of the plan to develop the LRT, especially once the draft of the plan was available, the Government of Costa Rica engaged all the municipal governments within the area of influence of the LRT. On 4 December 2018, as an example of the result of the many interactions with stakeholders, the mayors of the 15 affected municipalities signed a framework agreement for intermunicipal cooperation with the aim of developing guidelines for territorial planning and urban development, and the development of urban equipment and infrastructure complementary to the LRT. The planned interventions in the area of NMT and last-mile connectivity measures were discussed in multiple round tables with all stakeholders. It is not clear from the funding proposal whether INCOFER as the executing entity for this project presented to CABEI, the AE, evidence of relevant stakeholder (citizen) engagement during the planning and design of the LRT. This is the design that formed the basis of the concessionaire interest in this project. Information in the funding proposal, however, showed that for the construction period (the engineering design that will form the basis of the construction will be prepared by the successful concessionaire), continuous involvement of relevant stakeholders must be engendered. INCOFER, according to the information available, must design and deliver to CABEI a citizen participation and consultations plan with a quarterly follow-up report of actions carried out, complete with evidence. During the operation of the project, INCOFER is also expected to design and deliver to CABEI a citizen participation and consultations plan with biannual monitoring reports by INCOFER or the concessionaire to CABEI.

42. As part of the project plan, given that better and faster alternatives will be provided to users of buses on bus routes parallel to the LRT routes, the operational contracts of private sector operators of those bus routes will be cancelled as soon as the LRT is operational. In response to queries on whether this cancellation will lead to social disorder from protests by these private operators, whose livelihood will be terminated, the AE informed the independent TAP that robust engagement of these important stakeholders has been carried out. Discussions were held with these private operators while this project was on the drawing board and they were made to realize that their operations cannot compete effectively with the LRT along that route because that mode is more comfortable, is faster and will avoid traffic congestion on the roads within GAM. The independent TAP understands that they are willing to go along with the route cancellation plan as they will be offered alternative operations routes in the public bus route restructuring activities. These stakeholders are also aware that public bus route restructuring will be carried out by a different agency and that the eventual outcome of their being offered alternative routes is outside the control and scope of INCOFER.

43. The independent TAP is of the opinion that stakeholder engagement of this project is robust and has covered all the different types of stakeholders' whose views should be considered in the development of this kind of transport infrastructure.

1.5.4. Executing capacity of the executing entity

44. As stated in the funding proposal, the executing entity for this project INCOFER[26] and the Government of Costa Rica acting through the Ministry of Finance for the purposes of channeling GCF proceeds. INCOFER is an independent statutory corporation established to operate the country's railway network. It has administrative autonomy, legal personality and own assets. Within INCOFER, an entity has been put in place to support and assist the institution in all activities related to the concession, the monitoring of the feasibility studies, the bidding

[26] See loan contract – [CABEI. (2020). *Contrato de Prestamo No. 2241*.

stage of the concession, compliance with conditions precedent, the design stage and the construction stage. INCOFER will submit to CABEI quarterly reports on the physical execution of the project, compliance with the environmental management plans and in general the compliance with the obligations of the concessionaire contained in the respective contract. CABEI will realize biannual supervision missions and will also contract an external supervision entity. Using this in-house entity, INCOFER has completed the first engineering design and feasibility study of the LRT as part of preparing this funding proposal and delivered the same for initial review of some of the concessionaire companies, one of which will be selected to implement the project.

45. A capacity assessment of INCOFER was conducted by CABEI. The assessment concluded that the institution has full capacity to oversee the concession contract for the LRT and NMT. The institution carries out internal audits periodically and is subject to audits by the Auditor General and the Ministry of Planning and Economic Policy. Its financial management is in accordance with national regulations and audited financial statements have been provided. INCOFER complies with all national laws regarding procurement and no inconsistencies over the past six years have been found. An LRT executing unit, with a team of dedicated experienced consultants, will support and assist INCOFER in all activities related to the follow-up of the LRT feasibility studies, from the analysis of the technical and legal studies to progress in the delivery of partial and final reports. The consultants will provide technical advice to INCOFER in all matters related to the structuring of the financing of the LRT and subsequently provide the necessary technical support as required by INCOFER.

46. The Government of Costa Rica is the beneficiary of the grant for component 2 and the concessional loan of GCF. The grant for component 3 goes to INCOFER. The private concessionaire receives a one-off payment of USD 550 million (in 2 tranches) – from the concessional senior loan from GCF (USD 250 million) and from the senior loan from CABEI (USD 300 million), against terminated LRT construction and lines ready for operations. This one-off payment is not a loan or an investment in the SPV but a payment for compliance with the concession contract. The GCF contribution and its concessionality fully flow to the Government of Costa Rica and reduce its financial burden. In addition, it has been estimated that the Government of Costa Rica will have to designate a net sum of around USD 110 million per annum[27] for payment of services to the concessionary (apart from the USD 550 million as partial recognition of the investments) (IDOM, 2020, pp. 8-9). This must be provided as part of the government annual budget each operational year of the LRT. Given the weak fiscal situation of Costa Rica, the ability to raise this fund from budgetary provision remains a hanging risk that may negatively affect project success each operating year.

1.5.5. The capability of the accredited entity

47. The AE for this project will be CABEI, a supranational development bank focused on Central America, which was founded in 1960. The bank's objective is to promote the economic integration and the balanced economic and social development of the Central American region. Costa Rica is one of the founder members of CABEI. During the period 2010–2018 CABEI approved total projects worth USD 13 billion, of which USD 3.3 billion USD was in Costa Rica. CABEI holds the best credit rating in Latin America.[28] It had a total authorized capital of USD 7 billion, USD 11.6 billion of assets and a return on equity of 6.9 per cent as at the end 2019.[29] CABEI requires that its operations comply with environmental and social standards, based on international best practices, aligned with its Environmental and Social Policy. In the transport

[27] Total of around USD 150 million per annum minus income USD 40 million received from farebox.
[28] As at September 2019: Standard & Poor's AA/Stable/A-1+; Moody's Aa3/Stable/P-1; see https://www.bcie.org/en/investor-relations/credit-rating.
[29] https://www.bcie.org/fileadmin/bcie/english/files/news-and-media/publications/institutionales/CABEI_Institutional_PPT_ENG_APR2020.pdf.

sector, CABEI has realized financing of road infrastructure and has focused recently on improving urban mobility, as well as regional integration through support for railway projects, among others. Within this framework, it is developing a regional plan for sustainable urban mobility, along with funding for various public transportation initiatives.

48. CABEI has realized various PPPs in Costa Rica, including Ruta 27, Windfarm Valle Central, Altos de Magdalena. CABEI will also have two supervising entities for the loan, one contracted by the Government of Costa Rica and one directly contracted by CABEI through an international tender, in order to have sufficient external technical know-how during the entire process of PPP structuring and implementation.

49. Based on the analysis presented in sections 1.5.1–1.5.4 above, the independent TAP considers that the country ownership of this LRT project submission can be ranked as high.

1.6 The Efficiency and effectiveness *Scale: Medium to high*

1.6.1. Financial structure

50. The proposed project is requesting grant and debt financing from GCF and other co-financing from sources to the amount of USD 1,873.3 million. The GCF contribution amounts to USD 271.3 million made up of a grant of USD 21.3 million and a concessional senior loan of USD 250 million. The complementary co-financing will come from the following sources: USD 300 million from CABEI sourced as a senior loan; and USD 1,302 million from a concessionaire (to be selected after the GCF approval of its fund through a competitive bidding process), which will be sourced as concessionaire equity of USD 250 million and a senior loan of USD 1,052 million (with terms known after the bidding). The appropriation and terms of these funds were discussed in an earlier section of this report (see table 1 and para. 8 above).

51. The breakdown of the funding contribution from these sources, the types of fund and the total that will be provided for the project, is presented in Table 3.

Table 3: Breakdown of project funding

Number	Source	Type of fund	Amount (USD million)
1.	**GCF financing**		
a.	GCF	Grant	21.3
b.	GCF	Senior loan	250.0
Subtotal GCF			**271.3**
2.	**Co-financing**		
a.	CABEI	Senior loan	300.0
b.	Concessionaire	Equity	250.0
c.	Concessionaire	Senior loan	1,052.0
Subtotal co-financing			**1,602.0**
Project total funding			**1,873.3**

52. The total fund requested from GCF is about 14.48 per cent of the total fund required for implementation of the programme. As a percentage of total LRT project funding, GCF requested contributions can be summarized as follows:

(a) Grant funding: is 1.14 per cent; and

(b) The senior loan: is 13.34 per cent.

53. The grant funding from GCF has been earmarked as follows:

(a) About 93.9 per cent of the GCF grant funding will be spent or on the activities of Component component 2, covering that will cover: Urban urban Integration integration with NMT and Connectivityconnectivity/Accessibility accessibility activities; and.

(b) The balance of 6.1 per cent, which is the GCF grant has been earmarked for Capacity capacity-Building building and Gender gender Measuresmeasures.

1.6.2. Co-financing, leveraging and mobilizing long-term investment

54. The USD 271.3 million requested from GCF will be complemented by USD 1,602 million from CABEI and the selected concessionaire. The senior loan from GCF as well as the sum from CABEI are expected to flow to the Government of Costa Rica, which will enable it to pay the CAPEX bridging fund to the concessionaire, which should in turn leverage private investment of USD 1,302.0 from the private sector concessionaire as a member of the PPP investment. This will yield an indicative leveraging ratio between public investments (CABEI and GCF financing) and private investments of about 1:2.4. This can be considered an effective and efficient use of funds for the LRT project.

55. Other key performance indices of the financing scheme of this project can be summarized as follows:

(a) The approximately 86 per cent co-financing funds will be co-financed basically through private sector capital (around 70 per cent) and through a loan from CABEI (around 16 per cent);

(b) The GCF loan has a lower interest rate than the CABEI loan, which is important for the Government of Costa Rica as it reduces fiscal spending;

(c) GCF financing ensures the project viability and assists in the crowding in of private capital through the PPP;

(d) The concessionaire will receive a subsidy of slightly less than 60 per cent through funds provided through senior loans from CABEI and GCF to the Government of Costa Rica as a CAPEX bridging fund (neither equity nor debt) to make the project financially feasible for the concessionaire;

(e) Using only the CAPEX of the LRT, a financial analysis showed that the project can deliver an economic internal rate of return of about 26 per cent.[30]

56. The independent TAP is of the opinion that these financial performances discussed in paragraphs 53–54 above are an indication of the sound cost-effectiveness of the project when compared with benchmarks of similar projects recently funded by GCF.

1.6.3. Cost-efficiency

57. The project is expected to deliver about 7.62 $MtCO_2eq$ of GHG emission reductions over the lifetime of the project. The efficiency metrics that will be delivered by this project intervention were estimated as follows:

(a) Total project financing = USD 1,873.3 million;

(b) Requested GCF amount = USD 271.3 million;

(c) Expected lifetime GHG emissions = 7,622,805 tCO_2eq;

(d) Estimated cost per tCO_2eq ((a)/(c)) = USD 246/tCO_2eq; and

[30] The economic benefits are the justification for realizing subsidies as without these the LRT would not be established.

(e) Estimated GCF cost per tCO_2eq ((b)/(c)) = USD 36/tCO_2eq.

58. The independent TAP concludes that the GCF mitigation cost of USD 36/tCO_2eq, as presented above, when compared with other mitigation projects funded by GCF is high. However, when the external benefits of the project due to time savings, positive health and environmental impacts, vehicle operating costs savings and reduced accidentality are added to the project's benefits, this may represent excellent value for money. The possibility that a concessionaire may not be identified and selected in time after the GCF funding approval has been given by the Board remains a tangible risk to the cost-effectiveness of this project. However, given the number of international private sector transportation infrastructure developers who have registered their interest in this project, the independent TAP is of the opinion that this remaining risk may turn out to have only a marginal impact on the success of the PPP investment.

59. The independent TAP therefore concludes that the efficiency and effectiveness of implementation of this proposed project will be moderately high.

II. Overall remarks from the independent Technical Advisory Panel

60. The independent TAP recommends that the Board approve this LRT project proposed for implementation in the GAM area of San Josée, Costa Rica.

Response from the accredited entity to the independent Technical Advisory Panel's assessment (FP166)

Proposal name:	Light Rail Transit for the Greater Metropolitan Area (GAM)
Accredited entity:	Central American Bank for Economic Integration (CABEI)
Country/(ies):	Costa Rica
Project/programme size:	Large

Impact potential
Thanks for the review. We have no further comment to add.
Paradigm shift potential
Thanks for the review. We have no further comment to add.
Sustainable development potential
Thanks for the review. We have no further comment to add.
Needs of the recipient
Thanks for the review. We have no further comment to add.
Country ownership
Thanks for the review. We have no further comment to add.
Efficiency and effectiveness

Thanks for the review.

We are aware that the mitigation cost compared to other GCF mitigation projects are relatively high. As also mentioned by the iTAP the project has however significant positive sustainable development benefits improving air quality, health, social well-being, accessibility to affordable mobility for the poor and liveability of the city. Transport mitigation projects tend to be more complex and have higher GHG mitigation costs than interventions in the energy or industrial area.

Overall remarks from the independent Technical Advisory Panel:

Thanks for the review.

Transport contributes almost one-quarter of the current global energy-related GHG emissions and is growing faster than any other energy end-use sector. GHG emissions from transport are anticipated to rise from today's levels by nearly 20% by 2030 and close to 50% by year 2050 unless major action is undertaken. Limiting the global temperature increase to below 2 degrees Celsius requires changing this transport emissions trajectory and GCF interventions in the transport sector. The project goes beyond establishing solely an urban mass transit system but builds a comprehensive new mobility system integrating public transport with non-motorized transport and with components of transit oriented development. Long-term structural changes are thus possible towards ultra-low carbon emission mobility in the larger urban zone of the metropolitan area.

grütter consulting

Gender Analysis and Action Plan

Funding proposal for the Green Climate Fund for the passenger express train in the Greater Metropolitan Area of Costa Rica

Customer	Central American Bank for Economic Integration
Version	07
Date	29/04/2021
Responsible	Nathyeli Acuña
Review	Jürg Grütter and Verena Arauz
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Acronyms and Abbreviations

CGR	General Comptroller of the Republic
COSEVI	Road Safety Council
COVID-19	Coronavirus Disease
ECLAC	Economic Commission for Latin America and the Caribbean
ENSSR	National Survey on Sexual and Reproductive Health
GDI	G Development Indicators
GIZ	German Society for International Cooperation
HDI	Human Development Index
ILO	International Labor Organization
INAMU	National Women's Institute
INEC	National Institute of Statistics and Census
OECD	Organization for Economic Cooperation and Development
PIEG	National Policy for Effective Equality between Women and Men
WEF	World Economic Forum

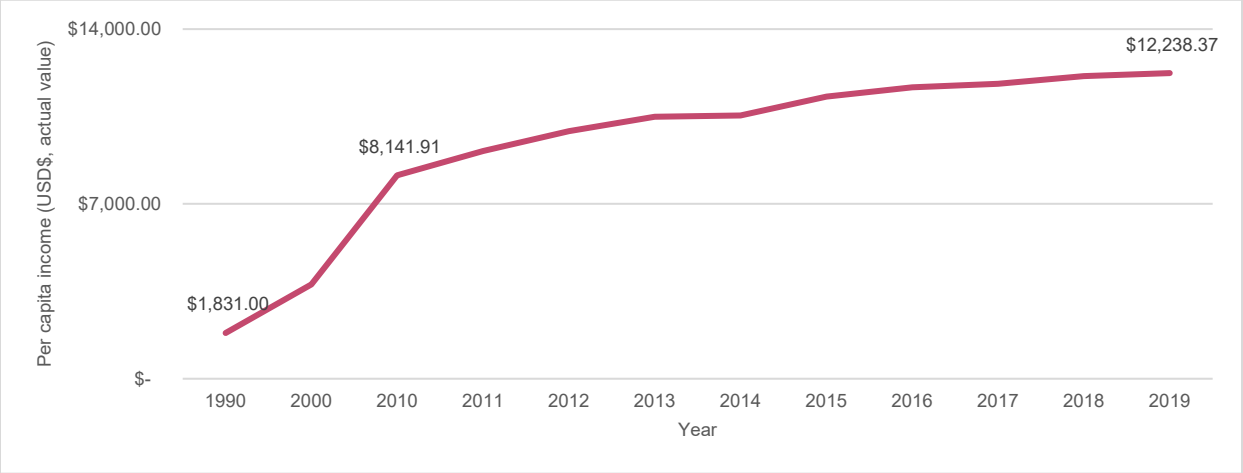
Content

1. Introduction

Costa Rica has made great advances in gender issues over the last few decades. This has responded to some extent to the granting of rights and other social and economic advances in the country. The country has registered a sustained increase in per capita income and human development levels, which allows for better access to services, opportunities and a higher level of quality of life.

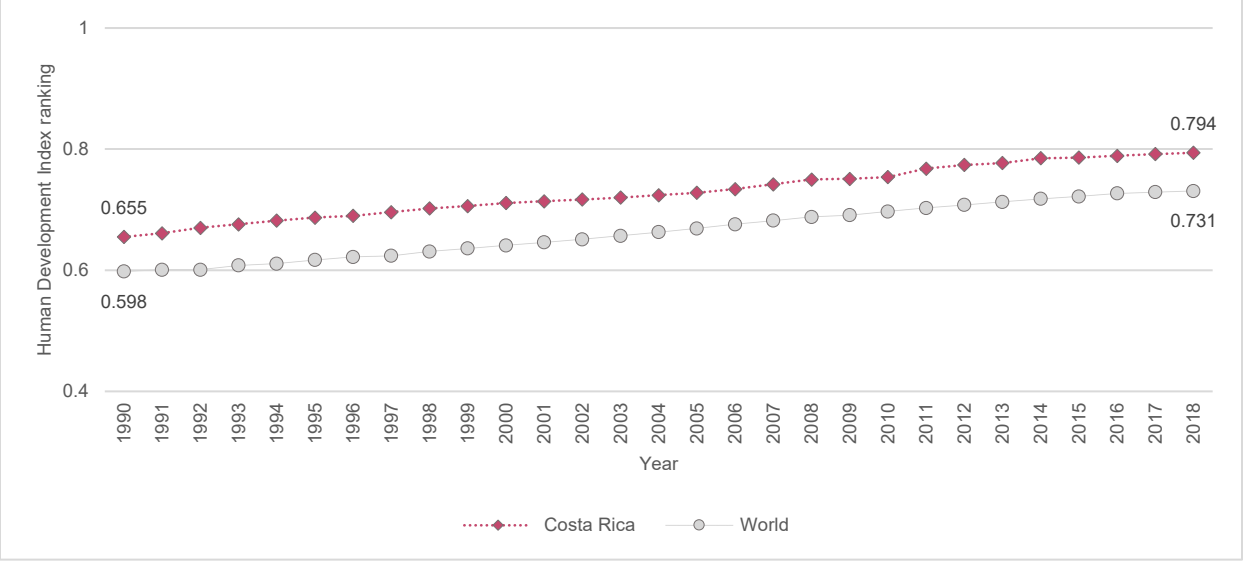
For example, from 1990 to 2019, the country has increased the per capita income of its inhabitants almost 7 times, as shown in Figure 1 (World Bank, 2020). Also, the Human Development Index (HDI) ((United Nations Development Programme (UNDP), 2020) presents an upward trend since 1990, where the country went from having a medium to high level of development, surpassing the average level at the global level, as shown in Figure 2.

Figure 1: Per capita income behavior in Costa Rica (1990-2019, USD)



Source: Own elaboration with data from (World Bank, 2020)

Figure 2: Human Development Index Costa Rica and the world (1990-2018)



Source: Own elaboration with data from HDI 2020

In addition to social progress, Costa Rica enjoys political stability, given the uninterrupted nature of its democracy since 1948, the longest in Latin America. In the last 15 years, economic growth has averaged 4%, a trend that is higher than the 3.8% of the region and the Organization for Economic Cooperation and Development (OECD) countries. The country has changed its trade matrix from being an agro-exporting country to diversifying its production and offering skilled labor (OECD, 2017). This has led to an improvement in the quality of jobs in the country, where both men and women have benefited.

Poverty has a female face. Although the country has good economic and social performance, poverty levels are concentrated in female-headed households with a higher proportion of members, including children and the elderly. According to the OECD there is an increase in income inequality because skilled worker wages and contributory pensions grew more (OECD, 2017).

Costa Rica has focused on the institutional and regulatory framework in order to improve the conditions of women, with the aim of having accelerated returns at social and economic levels, however, gender gaps are persistent. According to data from the World Economic Forum (WEF) (FEM, 2019)In the last issue of the Global Gender Gap Report, Costa Rica was ranked 13th out of 153 countries. The country occupies the second best position in the Latin American and Caribbean region, only surpassed by Nicaragua (which is in one of the top 5 positions worldwide). When comparing the country's results in 2006 with those of 2020, there were improvements in all sub- indexes except the health and survival dimensions. In addition, the country made great progress when women nearly doubled their political participation and empowerment, reflecting parity in central government ministerial bodies and achieving a score of 0.84. In addition, there is no gender gap in access to education, but as will be seen below, there stare great differences between the type of training and skills women acquire when compared to men. Finally, a better gender equality situation in the national territory responds mainly to improvements in access to economic opportunities that are reflected in an increase in the participation of women as part of the labor force.

Although Costa Rican women are working at a higher rate than almost two decades ago, there are still barriers to access when compared to men. Only about half of the women who are able to work are included in the active labor force (according to recent data from the National Institute of Statistics and Census (INEC) (INEC, 2020)The net labor participation rate of women at the end of 2019 was 54.1, and this situation worsened with the arrival of the COVID-19 health emergency. By the second half of 2020, 23.3% less women were in the labor market than in the same period in 2019. Men achieved a number 10 percentage points higher (13.8%). The above situation denotes an exacerbated vulnerability on the part of women regarding the quality, stability and productivity of their jobs.

For the pre-COVID-19 scenario, a research study by the State of the Nation Program (2019) concludes that Costa Rican women are not working due to lack of job opportunities. Seventy-six percent of women who work do so in low-productivity sectors. In addition, the 2015 Latinobarómetro report (Latinobarómetro, 2015) shows that gender norms about women's roles in the workplace are far from egalitarian. In Costa Rica, 43% of the population believes that women should work outside the home only if their partner does not earn enough, a much higher percentage when compared to countries such as Chile (20%) or Uruguay (27%).

All of the above means that the closing of the educational gap has not translated into the productive and economic participation of women. According to data from the Economic Commission for Latin America and the Caribbean (ECLAC) (ECLAC, 2013) In Costa Rica, 32.7% of women do not have their own income, three times more than men (10.5%), a percentage slightly higher than the rest of the women in the region (29%). Not having their own income restricts women's autonomy, and therefore limits their decision-making and results in a deterioration or slowdown in the human development indices. Women's economic participation, their sexual and reproductive health, and a life free of violence are women's human rights, which in turn play a key role in the development of countries, contributing significantly to the reduction of poverty and inequality and to the increase of the GDP[1].

The following report will detail the main challenges facing women in Costa Rica. It is mainly an analysis of gender issues in gaps associated with access to the labor market, access to opportunities and services, physical autonomy and decision-making. This diagnosis will make it possible to inform adjacent and direct activities of the investment in the intercity electric passenger train in order to increase gender equality, a necessary condition for achieving higher levels of development in the country.

The following document was created assessing information from:

- *Desk review of different sources of information available online.* These sources range from national statistics, data and reports (such as INEC, UCR, INAMU, Ministry of Health, Ministry of Culture, Ministry of Public Works and Transport, Ministry of Science and Technology, Ministry of Justice, General Comptroller of the Republic, State of the Nation, among others) and international organizations initiatives carried out from or for Costa Rica (Inter-American Development Bank, World Economic Forum, World Bank, United Nations Organization, GIZ, AFD, Latinobarometer, etc.)
- *Consultation with stakeholders*: to ensure synergies and alignment with initiatives that are being designed or implemented in the current area of the project. The following are the organization that were consulted:
    - GEF/UNDP
    - Incofer
    - INAMU
    - Multilevel Technical Table (Office of the First Lady, the National Institute of Housing and Urban Development (INVU), the Institute of Municipal Development and Advisory Services (IFAM) and the National Union of Local Governments (UNGL), the Ministry of Planning, the Ministry of Environment and Energy (MINAE), the Ministry of Finance, the National Registry, the Costa Rican Railway Institute (INCOFER) and the Ministry of Public Works and Transport (MOPT). On the private sector side, the Chamber of Commerce, the Chamber of Construction and the Council for Real Estate Development (CODI) participate, as well as international cooperation actors such as the United Nations Development Programme (UNDP), the German Cooperation Agency (GIZ) and the Global Environment

[1] World Bank studies (2012) indicate that in the first decade of the 21st century, female labor market income reduced extreme poverty by 30% and inequality by 28% in the region. On the other hand, Cuberes and Teignier (2016) conclude that if female labor participation in Latin America and the Caribbean were to reach the level of male labor participation, per capita GDP would be 16% higher.

Facility (GEF), and representatives of the academic sector and civil society (urban collectives, development associations, impacted population).

The reader can also find a list of civil society organizations that work in the country. This list does not pretend to be exhaustive, but it includes relevant information about the leverage and scope of each institution.

2. Background

Costa Rica has been committed to closing gender gaps for almost half a century. For more than 45 years, the Costa Rican government has generated institutional actions that promote gender equality. For example: (i) in 1974 the Office of Programs for Women and the Family was created within the Ministry of Culture, (ii) since 1990 the country has had the Law for the Promotion of Real Equality for Women, (iii) in 1998 the National Women's Institute (INAMU) was created as an autonomous and decentralized institution led by the Minister for the Status of Women.

Costa Rica has a consolidated regulatory framework to empower women and close gender gaps. One of the most recent advances is the creation and implementation of the National Policy for Effective Equality between Women and Men (PIEG) and its 2018-2030 action plan, as a follow-up to the PIEG 2007-2017. The implementation of the PIEG seeks to generate inter-institutional coordination at both the public and private levels, focusing on areas such as employment, health and education. The PIEG focuses on four strategic areas: (i) mainstreaming of equal rights, (ii) time distribution, (iii) wealth distribution and (iv) power distribution; and it also seeks to expand access to opportunities for women in multiple sectors, including public transportation and climate change.

INAMU acts as the coordinator of the PIEG and due to its role as the Ministry of Women, it is responsible to engage with other ministries and institutions to work towards gender equality. The PIEG 2018-2030 stablished 4 strategic area to ensure efficiency during the implementation of the Policy.

- Coordination: INAMU is the responsible of the coordination of the PIEG. The execution of the PIEG is responsibility of the central Government, public institutions and Municipalities.
- Policy level: A High Commission is formed, it includes the participation of authorities of the Executive Power (Ministry of Public Education, Ministry of Labor, Ministry of Health and Rectory of the Social Sector, Ministry of Finance, Ministry of National Planning), Legislative Assembly, the Judicial Power, the Supreme Electoral Tribunal and the Municipalities. These institutions need to appoint their representatives as advisers or consultants to participate of the comission. Its main function is to provide follow-up, support and political incidence for the advancement in compliance with the results of the PIEG and its action plans.
- Technical level: INAMU leads this structure, and it has representatives from institutions ans sectors that are linked to the implementation of the PIEG. INAMU and the representatives hold periodic meetings every 2 months.
- Local level: Local governments throughout the Development Regional Councils will be in responsible to implement the PIEG.

At the local level, the INAMU coordinate with the Municipal Governments to ensure the application of the PIEG, created the *Oficinas Municipales de la Mujer* (Women's Municipal Officies, OFIM). In 1996, the National Government created the OFIMs. Across the entire territory, there are 67 OFIMs out of a total of 81 municipalities. They act as local affirmative mechanisms for advancing women's rights and are part of the municipal structure. They carry out actions in different thematic areas, such as attention to domestic violence, promoting women's rights, entrepreneurship, economic rights, citizen participation and political rights, health, and recreation. Also, they carry out actions to promote a gender mainstreaming approach across the municipal work. The authorities develop gender equality policies and discuss them to create programs and incorporate the gender perspective within the municipality's budgetary structure. INAMU provides support and technical advice to these instances and has promoted municipal policies as a strategy for gender mainstreaming. (INAMU, 2021). OFIMs have limited resources and most of their work is focusing in addressing cases of domestic violence.

Despite these efforts, women are still underrepresented within policy and decision making. The National Government has made an effort to ensure gender parity within the cabinet, (Rivera, 2018) however, that does not translate to other policy making structures. For instance, a third of the total decision-making position with the national government, public institutions management and the Parliament are held by women (as opposed to the 66 percent held by men). (FEM, 2019) There is not recent data on how the public institutions promote and retain women for leadership positions. Also, women leaders in the private sector and underrepresented: only 15 percent of top management positions belong to women, while 85 percent belong to men. (FEM, 2019)

Also, data from the ECLAC (ECLAC, 2020) indicates that only a third of the judges are women (33.3% in 2018), less than 1 in 5 mayors are women (14.8% in 2018) and less than half of city councilors (45.6%) are represented by women. This represents a constraint for women to be involved in decision making at all levels, including decisions at a local level (e.g.: women are underrepresented as mayors) where a lot of programs and policies are designed and implemented. Without a full representation, women's needs are not being able to be addresses as they are unable to fully enjoy access to opportunities and participate as agents of change.

Less traditional sectors for women, such as transport, still have significant gender gaps. In Costa Rica, nearly 60% of public transport users are women, yet there are very few women in decision-making positions or as employees in the sector, and only 10% of bus driver positions are held by women. This figure is lower when it comes to cab drivers, where women represent less than 10% of the drivers in this service[2] . In the case of the passenger train in the Metropolitan Area, there is only one woman on the staff who operates this means of transport[3], who serves as an assistant to the train driver. In order to promote gender equality and address persistent gaps in the transportation sector, it is important that projects that support initiatives such as the Greater Metropolitan Area LRT include actions that include the gender perspective and propose indicators that measure concrete results. To achieve the above, it is necessary that these operations have a gender perspective from their design (at the level of diagnostics, proposed

[2] Cosevi (2020). Open data.
[3] Journalistic note. Amelia Rueda (2019).

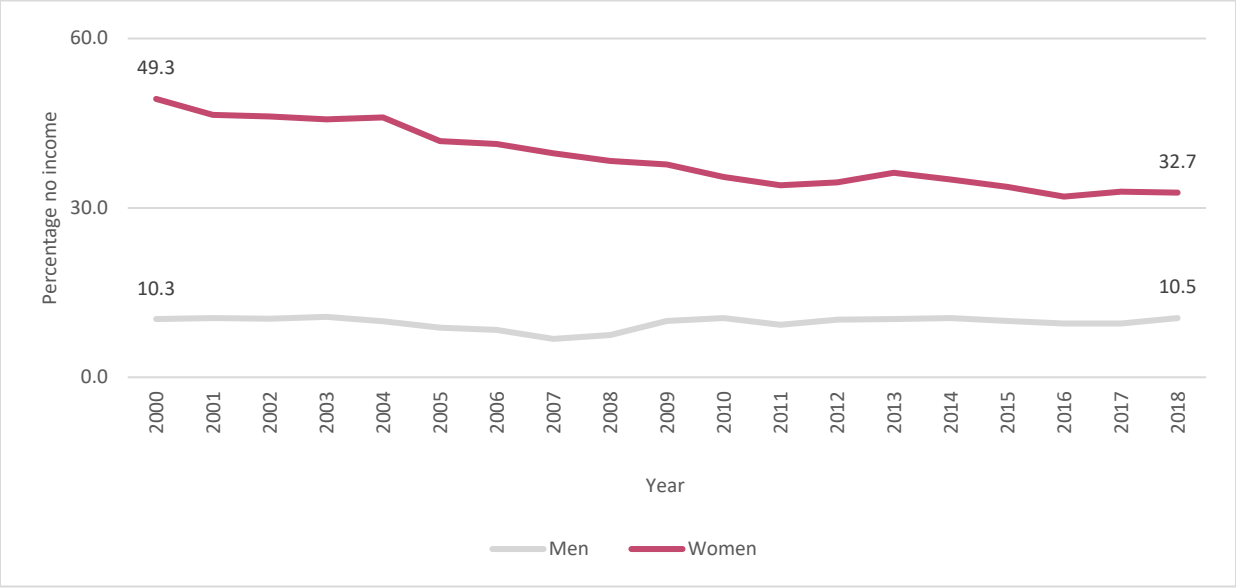
activities and measurement of results), in order to improve the inclusion of women in all spheres: decision-making, service providers and users of the proposed services, and that their implementation be through an action plan.

There are sensitive gaps in the production of information that make it impossible to quantify more precisely the gaps and challenges women face. There are mainly deficiencies in recognizing the geographic characteristics of the population and there is only the possibility of using the 2011 Census (INEC, 2011) to understand the differences at the cantonal level of the various indicators. For its part, there is a wide lack of statistics related to physical, psychological and sexual violence that impacts the lives of women in both public and private spaces. In the absence of sources of information that systematically collect data and gaps, it is not possible to implement solutions that address specific problems, or to deal with them in the most efficient manner with tailored solutions that prevent or address their incidence.

3. Economic Participation of Women in Costa Rica

32.7% of women in Costa Rica have no income of their own[4], compared to 10.5% of men. Women also face greater complications in rural areas, where 42.8% (11.3% of men) of women have no income, a higher number than in urban areas (29.4%; and 10.2% of men) (Figure 1) (CEPALSTAT, 2020). Although the gender gap is wide, the country has achieved a progressive reduction since the beginning of 2000, where nearly half of the women did not have their own income.

Figure 1: Percentage of men and women without own income (Costa Rica, 2000-2018)

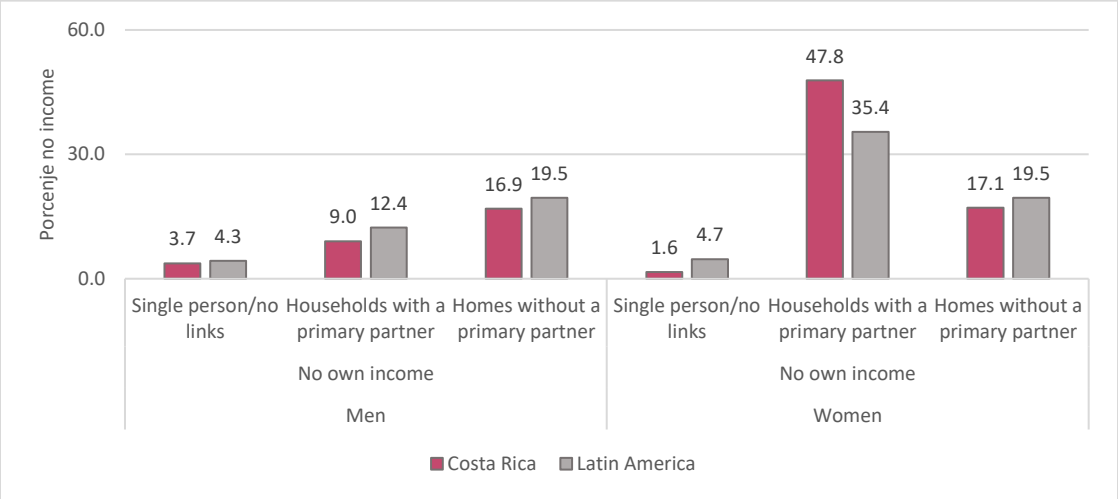


Source: Own elaboration with data from CEPALSTAT 2020

[4] Proportion of the female (male) population aged 15 years and over not receiving individual monetary income and not studying (according to their activity status) in relation to the total female (male) population aged 15 years and over not studying The result is expressed as a percentage.

Without income, women are at a disadvantage due to the loss of their autonomy to access goods and services, limiting their living conditions and therefore being more affected by poverty than men. According to ECLAC data (CEPALSTAT, 2020) in Costa Rica, 47.8% of women in couples do not have their own income, five times more than men in couples (Figure 2). This also responds to cultural patterns and gender norms revealed by the Latinobarometer (2015): 43% of the Costa Rican population considers that women should only work if their partner's salary is not sufficient.

Figure 2: Percentage of men and women without own income by household type (Costa Rica, 2013)



Source: Own elaboration with data from CEPALSTAT 2020

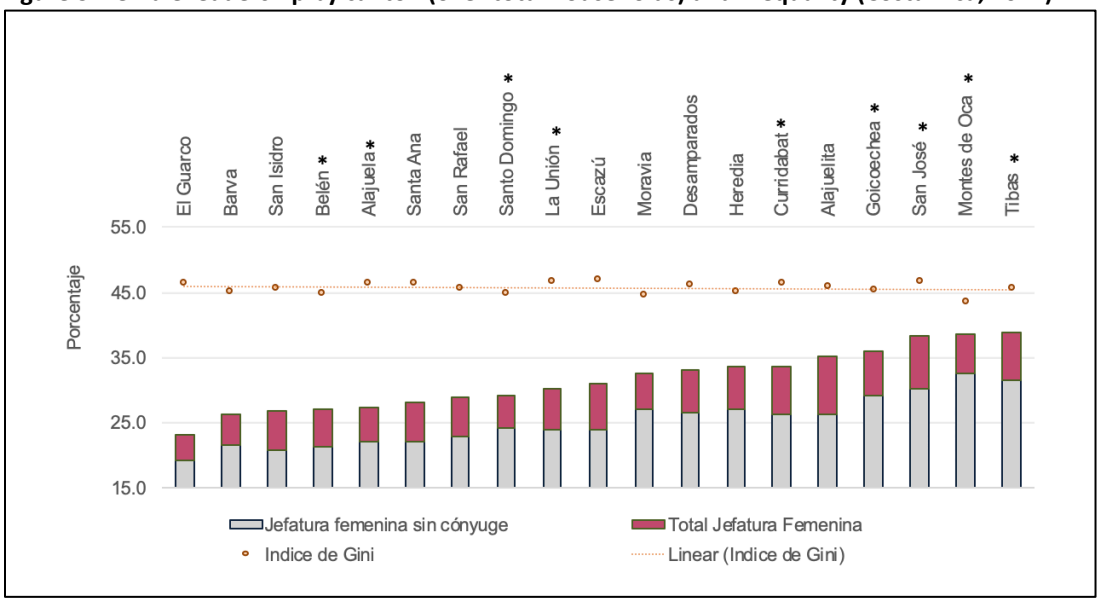
The proportion of women without income in the country is slightly higher than the average recorded for the region. For example, according to data from 2014, for every 100 men aged 20 to 59 living in poor households, there were 125 women of the same age group in a similar situation. The female poverty index in Costa Rica is higher than the average for Latin America (118.2) and for countries such as Honduras (100.7); Guatemala (101.9); El Salvador (103.8) and Nicaragua (104.3), although it is exceeded by the Dominican Republic (132.3), Chile (136.7) and Uruguay (142.5) (Benavente M.C., 2014).

Poverty also tends to belong to female-headed households. According to INEC data for 2019 (INEC, 2020), poverty is concentrated in about 20% of the population, and about 6% of the population lives in extreme poverty. The area with the highest proportion of poor households is the Brunca Region, where 1 out of every 3 households is in poverty and 9.2% live in extreme poverty. In the case of the Central Region, 17% of households are in poverty and 4.32% in extreme poverty. Between 2018 and 2019, there was a slight increase in the number of households led by women, from 39.94% to 41.01%. By 2019, 48% of all poor households are headed by women, and 49.38% of all households in extreme poverty. In other words, there is a higher proportion of poor households that are led by women than by men. There are more women heads of household in urban areas (44.42% of total households) than in rural areas (32.02%), yet more than half of poor households in urban areas are headed by women (51%) and 54% of households in extreme poverty. In the case of the Central Region, the pattern is repeated: more than half of poor households are headed by women (50.3%) and extreme poverty hits these families hardest (53.43%).

There are territorial differences associated with the multidimensionality of poverty and female head of household. For some of the cantons in the area affected by the Passenger Train (identified with * in Figure

3), compared with other neighboring cantons, the percentage of households headed by a woman (whether or not she has a spouse) varies. Among the cantons with the highest percentage of women heads of household are Tibás, Montes de Oca and San José, which are in the area affected by the passenger train, and among those with the lowest percentage, cantons such as El Guarco, Barva or San Isidro (cantons not affected by the means of transportation). By superimposing these data on household headship with other data on inequality (Gini index, see Figure 3), or even poverty (poverty gap or severity), it can be seen that, although there is not a strong correlation, the cantons with a higher percentage of female headship are usually associated with a lower Gini index. However, the relationship between households with at least one deficiency and female labor occupation at the canton level is unequivocal and negative. Specifically, the correlation between these two variables is -0.63. In other words, as female labor occupation increases, there will be a lower degree of shortages in households. This is a simple explanation that describes that the higher the employment rate, the higher the hypothetical employment rate, which could mean adding an extra income to the household that would serve to mitigate basic deficiencies. As an approximation, this exercise makes it possible to analyze how different types of indicators vary with respect to the effect on the train; however, it should be noted that the difference may not necessarily be due to the neighboring railway infrastructure, but rather to the proximity of the city centers.

Figure 3: Female leadership by canton (over total households) and inequality (Costa Rica, 2011)



Source: Own elaboration with data from Census 2011, INEC (2020)

There are diverse characteristics that, when correlated, can explain territorial characteristics with respect to the head of household. This explanation becomes even stronger when it is verified that the correlation between variables of the same branch is also high, as can be seen in the following table that summarizes various correlations.

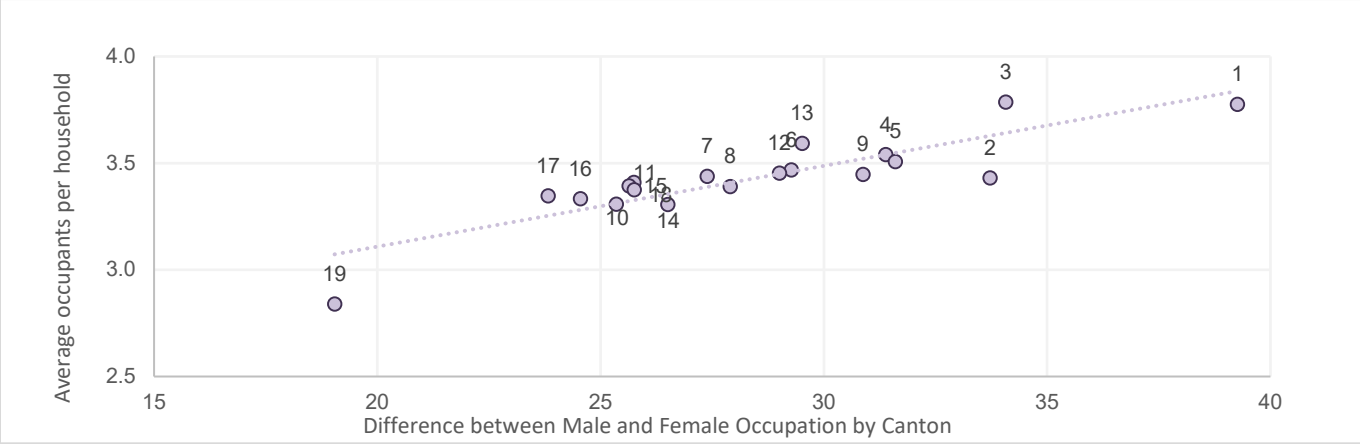
Table 1: Correlation coefficient between variables

	Poverty Gap	Severity of poverty	Average members per household
of households with at least one deficiency	0,90	0,90	0,78
Difference Occupation (Male - Female)	0,90	0,90	0,76
Female Occupation by canton	-0,84	-0,83	-0,74

Source: Own elaboration with data from Census 2011, INEC (2020)

Those cantons with the greatest difference between male and female employment tend to be poorer and have more severe poverty. Conversely, cantons with higher female employment tend to have a smaller poverty gap and severity of poverty. There is also a significant negative relationship between female employment and occupants per household, which indicates, taking into account existing data, that more female employment leads to fewer household members, characteristics associated with the fertility rate per woman and entry into the labor market. By calculating some of these characteristics, this trend is confirmed (Graphs 4, 5 and 6).

Figure 4: Average members per household and occupation by canton (Costa Rica, 2011) [5]:

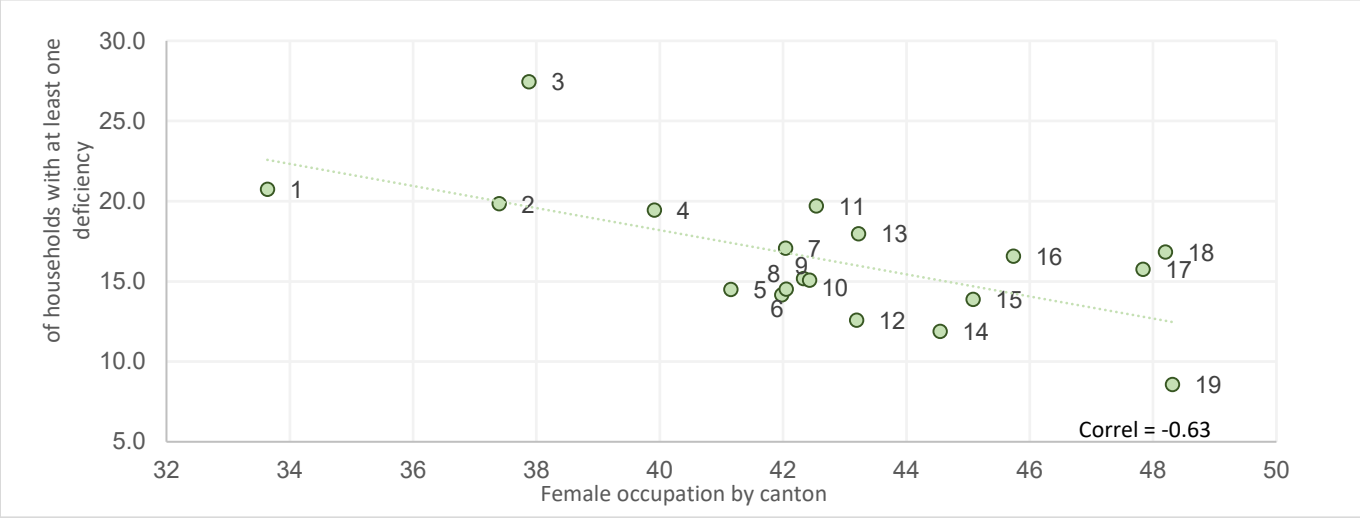


Source: Own elaboration with data from Census 2011 (INEC, 2020)

[5] List of cantons:

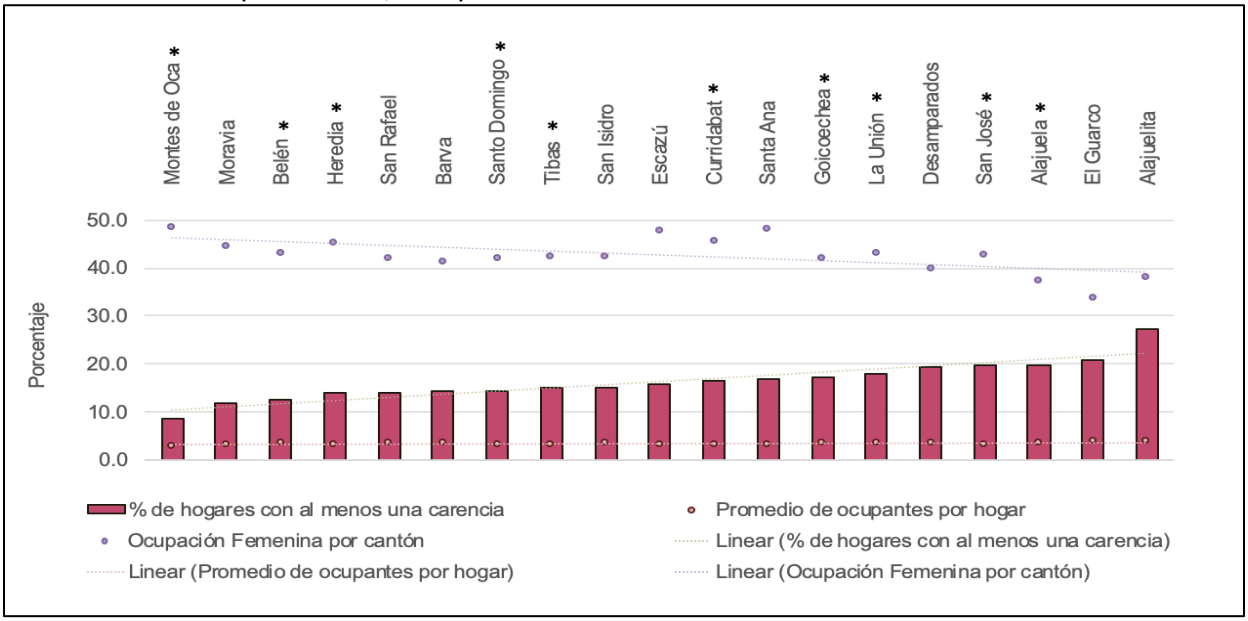
1 = El Guarco
2 = Alajuela*3 = Alajuelita
4 = Homeless5 = Barva
6 = San Rafael
7 = Goicoechea*8 = Santo Domingo*9 = San Isidro
10 = Tibás*11 = San José*12 = Belén*
13 = The Union*14 = Moravia15 = Heredia
16 = Curridabat*17 = Escazú18 = Santa Ana
19 = Montes de Oca

Figure 5: Households with at least one deficiency and female occupation (Costa Rica, 2011)



Source: Own elaboration with data from Census 2011 (INEC, 2020)

Figure 6: Ratio of households with shortages, average number of inhabitants per household and female labor force (Costa Rica, 2011)



Source: Own elaboration with data from Census 2011 (INEC, 2020)

On the other hand, there are cultural patterns and gender norms that extend into time-use behaviors and the sexual division of labor. The use of time in unpaid work is one of the main barriers for women to enter the labor market under equal conditions and obtain their own income. According to data from the National Survey on the Use of Time (2017) [6](INEC, 2017) on average, women in Costa Rica spend more than twice as much time as men on unpaid domestic work (33 hours and 38 minutes per week vs. 13 hours and 26 minutes per week, respectively). The tasks that demand the greatest investment of women's time

[6] The Time Use Surveys (TUS) allow us to know how women and men distribute their time in their daily activities, in addition to investigating topics such as unpaid domestic work, free time, personal needs, among others.

are related to food and care. Only 46% of children between the ages of 3 and 5 in Costa Rica attend daycare centers or pre-school education; while in OECD countries the average is 84%. (OECD, 2017). In addition, the gender gap is exacerbated for the 20-35 age group, where women perform this type of work up to three times more than men (39 hours compared to 13 hours and 40 minutes). Also, the age group where they spend the most hours in unpaid work is women between 36 and 54 (about 41 hours a week).

Women, then, have less time to get and keep a job. The net participation rate of women in 2020 is 44% (6 percentage points lower than that registered during the period of 2019), while the male rate is 71% (4 percentage points lower than the previous period). During the emergency of COVID-19, this situation aggravated unemployment for men, but especially for women. While the unemployment rate for women was around 15% during 2019, for the same period in 2020, women's unemployment reached 30%, both figures higher than men's (10% during 2019 and 20%) after the situation of confinement and economic slowdown caused by the effects of the global pandemic (INEC, 2020).

In working age, there are more women out of the workforce than men. In the country, the number of women of working age (1,988,531) is very similar to the number of men (2,001,318). However, the number of women in the labor force (885,967) is almost half that of men (1,410,663). On the other hand, the number of unemployed men (281,939) is only slightly higher than the number of women (269,434). This means that in relative terms, although the sizes of the male and female populations are similar, women have a greater chance of facing barriers to access the labor market (willingness, ability, etc.) and also of being unemployed (INEC, 2020).

Women have less access to social security than men. Of the total number of women in the workforce, 27.9% do not have social security, a percentage slightly higher than the 25.2% registered for men. During the COVID-19 emergency, nearly 46% of women ceased to have access to the right to social security, a proportion greater than the 21% fewer men who did so. Without access to social security, women tend to enter conditions of poverty and extreme poverty during the elderly stage in greater proportion than men.

During the COVID-19 emergency, women with lower levels of education have been the most affected by unemployment. According to INEC data (INEC, 2020) when looking at the educational levels of those who lost their jobs during the global pandemic, 54% of women with incomplete primary or lower levels of education lost their jobs compared to the previous period, a much higher figure than 24% for men. For their part, 10.3% of women with university degrees were also affected by unemployment, but men in the same situation were less affected by the phenomenon (9.9%).

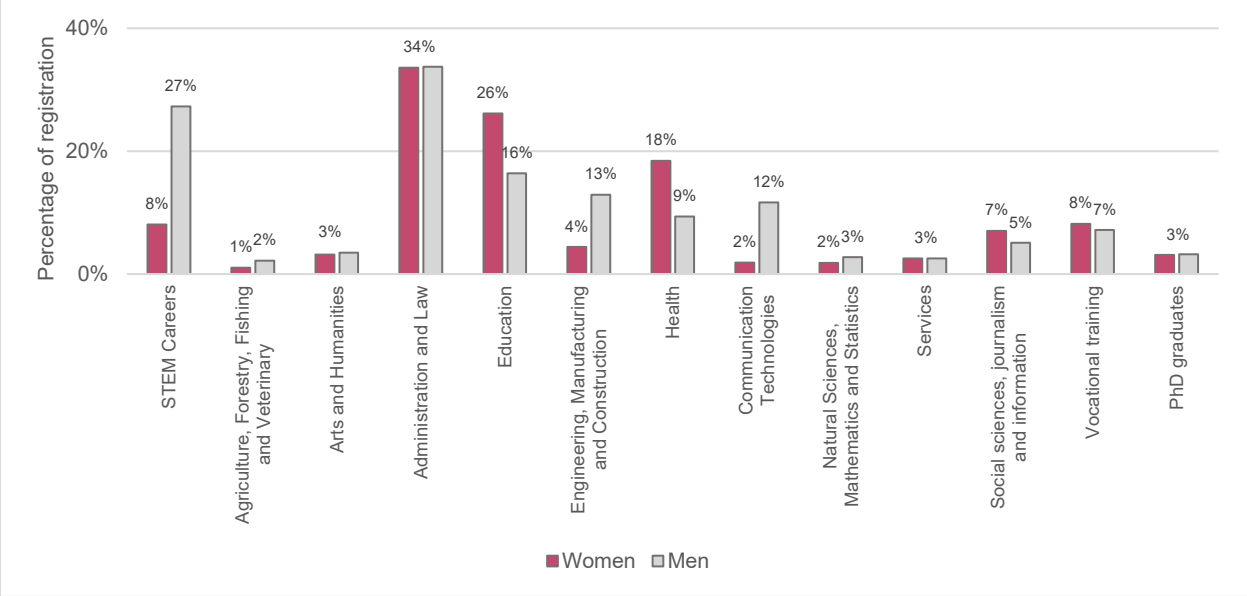
In addition to the economic slowdown and the increase in unemployment as a result of the emergence of COVID-19, there are other reasons why women are unable to access the labor market. For example, women report that they have to take on a greater proportion of household tasks than men.

Access to opportunities to reach the most productive jobs is limited for women and responds to patterns that are present throughout women's life cycle. According to WEF data (WEF, 2019) as a result, the gender education gap is closed in the country. In general terms, almost 100 percent of the population is literate (97.9 percent of women and 97.8 percent of men), and for the primary, secondary and tertiary education cycles, women attend with the same incidence or more than men (96.3 vs. 96.4; 84.3 vs. 80.7; and 60.7

percent vs. 50 percent). However, when an analysis is made of access to different fields and, in particular, those careers or professions that are more productive, women have less opportunities than men.

When women pursue professional careers, they focus on lower productivity sectors or fields of care. According to WEF data (FEM, 2019)In the country, the majority of women enrolled in tertiary education do so primarily in the health sciences or in the field of education, both of which are related to care and gender roles. The gap between men and women in more productive fields such as those associated with science, technology, mathematics and engineering has reduced spaces for women: only 8% of women decide to opt for this type of career (Graph 7).

Figure 7: Percentage of men and women according to university enrollment (Costa Rica, n.d.)

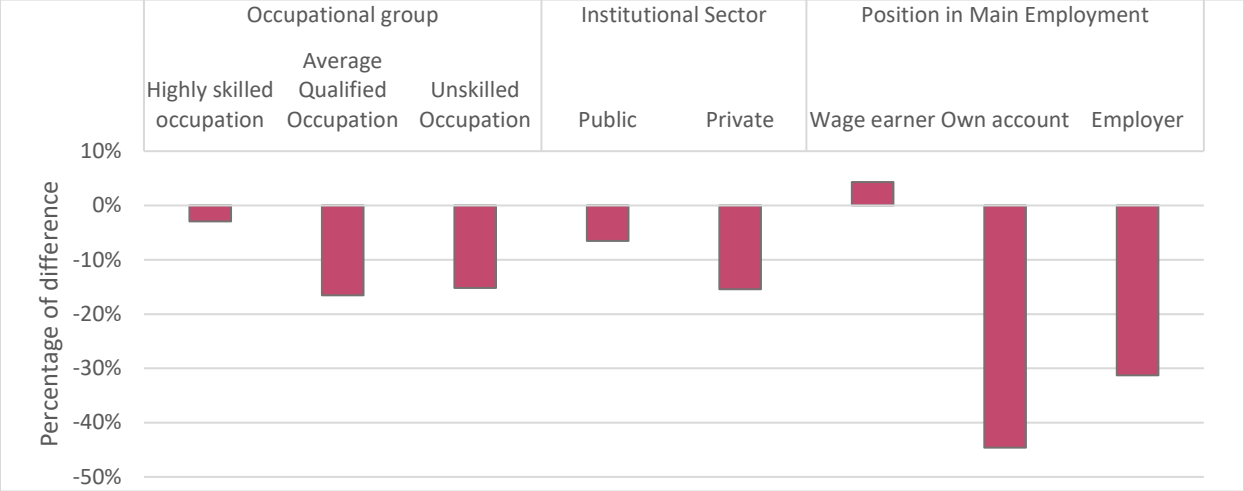


Source: Own elaboration with WEF data (2020)

There are barriers to entry to the STEM sectors from early stages of the life cycle and this is reflected in the jobs that are occupied by women. In Costa Rica, only 44% of science and technology researchers are women, a lower proportion than in countries such as Trinidad and Tobago (55%), Argentina (51%) and Uruguay (48%) (Science and Technology Indicators Network, 2017). Data from the National Learning Institute (INA) show that women are very little integrated into specialties such as vehicle mechanics (7% of students are women), telecommunications and telematics (20%), electricity and electronics (6%). In addition, women make up 32% of the total number of students enrolled in engineering careers and 36% of the graduates (State of the Nation Program, 2019).

The lower quality of women's jobs, coupled with problems of discrimination, makes it difficult to close the gender wage gap. In relation to labor income, women earn on average about 90% of what men earn (INEC, 2020). There are important differences in the types of jobs men and women hold. For example, the income received by self-employed women is 45% lower than that received by men in the same condition. Also, in both public and private sector jobs, women earn less than men (7% less and 15% less, respectively). Women in lower-skilled positions receive an average of 15% less than men in the same position. It is important to note that, in addition, salaried women earn an average of 4% more than men. (Chart 8)

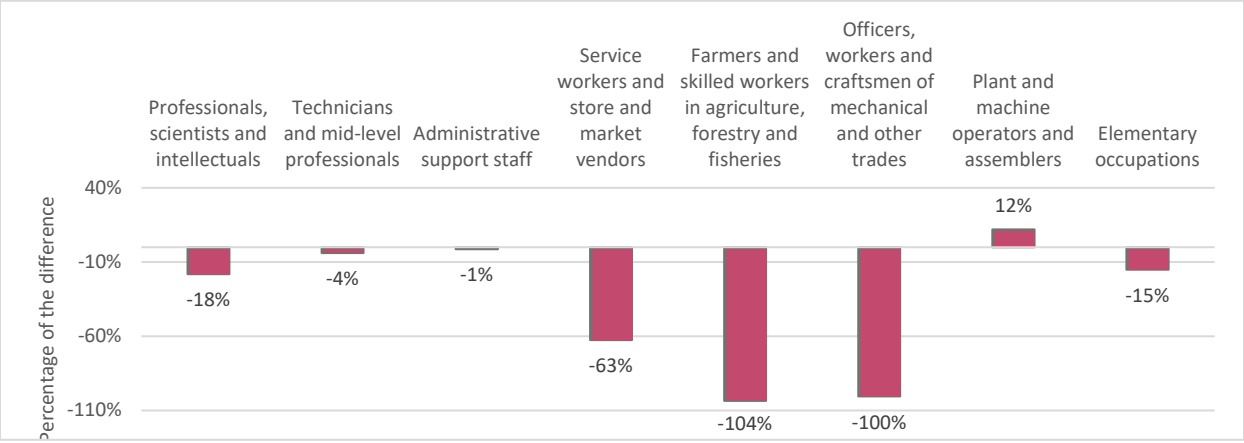
Figure 8: Average income difference between men and women (Costa Rica, 2020)



Source: Own elaboration with data from INEC (2020)

For almost all occupational sectors, women receive lower income than men. According to INEC data, there are sectors where women receive less than half of what men do (Figure 9). This is a situation that expels women from considering these types of niches or categories of employment.

Figure 9: Average income difference between men and women by occupational sector (Costa Rica, 2020)



Source: Own elaboration with data from INEC (2020)

Women's ventures tend to be less productive and less profitable than those of men. Women entrepreneurs are mainly concentrated in micro and small enterprises in commerce, services, and manufacturing (there is little representation in high-productivity sectors or STEMs), and have lower profitability than those owned by men. In the case of Costa Rica, according to data from the *Enterprise Survey* (World Bank, 2020)In Costa Rica in 2010, the percentage of firms with female owners is 43.5%, which is very similar to the regional average (43%). However, only 15.4% of firms have women in senior management positions, a lower percentage than that recorded for peers in the region (21.8%).

In Costa Rica, the transport sector, one of the most productive sectors, employs very few women directly or indirectly, and presents barriers at all levels for them. According to the Inter-American Development Bank (IDB) (IDB, 2016) in the country, less than one-fifth (17%) of the human resources employed in the

transport sector are women, slightly more than the 15% recorded for the Latin American and Caribbean region. In addition, according to data from the Costa Rican Road Safety Council (COSEVI), 100% of drivers in Costa Rica (COSEVI, 2020)Only 30% are women. In recent years, men have received a leave of absence almost twice as often as women. This gap is greater when analyzed by the type of license drivers have for productive work. Only 10% of licensed bus drivers are women, and between 7% and 12% of airport and regular cab concessions are owned by women (although this does not mean that they are the drivers of the vehicle). Currently, there are no female drivers in the railroad sector and only one woman is in a technical position within INCOFER.

Other sources of information denote the same problems and gaps in women's access to the labor market. According to Valeria Lentini (Lentini, Valeria, 2020) as a result, sectoral job segregation is present in all sectors globally. Sectors such as construction, transportation, logistics and communications networks are predominantly represented by men, while third-party care sectors such as education, health and other social services are dominated by women. This situation is further exacerbated when the consequences of the health emergency caused by COVID-19 are analyzed, in which 33% of Costa Ricans will see high negative impacts on their jobs (ILO, 2020), but particularly for some of the sectors where women are more prominent. Table 2 shows the population at risk and the projections on the impact of job losses and female participation by sector.

Table 2: Workers at risk from a sectoral perspective

Economy Sector	Current impact of the crisis on economic production	Female participation in sectoral employment
Public Administration	Low	39,1%
Teaching and health	Low	61.4%
Agriculture, livestock and fishing	Medium-Low	13.1%
Construction	Medium	1,9%
Others 1/	Medium	18,4%
Financial and insurance brokerage	Medium	52,7%
Professional and administrative support activities	Mediu,	33,3%
Transport and storage	Medium-High	12%
Communication and others 2/	Medium-High	38,4%
Households as employers	High	89,2%
Manufacturing Industry	High	28,1%
Trade and repair	High	39,9%
Hotels and restaurants	High	63,3%

1/ Includes mining and quarrying, electricity, gas, steam and air conditioning supplies, water supplies, sewage disposal and waste and pollution management.
2/ Includes information and communications, real estate, arts, entertainment and recreation, activities of extraterritorial organisations and bodies, and other service activities.
Source: ILO (2020)

The consequences of the COVID-19 emergency exacerbate women's vulnerability. According to the ILO (ILO, 2020) as a result, women experience a dual vulnerability as they work in sectors most affected by the economic slowdown brought about by the pandemic (services) and as they perform front-line jobs in response to the pandemic (e.g., nurses). Eighty-seven percent of women who do work are in the tertiary sector, up from 59 percent for men. On the other hand, women have less access to social protection

services and carry a disproportionate workload in the care economy (particularly the closure of study or care facilities).

4. Advances in Women's Sexual and Reproductive Health

Costa Rica's historical investments in the health sector have succeeded in offering its women a better quality of life thanks to the contributions made in the area of sexual and reproductive health. In particular, the country has reduced the maternal mortality rate, the fertility rate, the incidence of adolescent pregnancy and births to undeclared parents. This is due to a multidisciplinary social security system that is also coordinated with other relevant actors in health, education and social assistance.

The fertility rate has been systematically reduced for decades. While in 1960 women averaged 6.7 children, by the 1980s this figure had dropped to 3.58 children per woman. By 1995, women had an average of 2.58 children, and by 2010 this number was 1.88. Currently, women have an average of 1.77 children (World Bank, 2020).

The maternal mortality rate is one of the lowest in the region, yet inequalities persist within the country. While the maternal mortality rate in Latin America and the Caribbean is estimated at 74 deaths per 100,000 births, in the country this figure is estimated at 27 maternal deaths per 100,000 births. This figure has been on a downward trend since 2000, when there were 40 deaths for every 100,000 births. The provinces of Limón and Alajuela have a higher proportion of deaths of this type than other provinces (INEC, 2020).

Costa Rica has committed to a comprehensive agenda in order to contribute to the reduction of the number of adolescents who become mothers and has managed to reduce its incidence in recent years. According to data from the INEC (INEC, 2020)In 2010, 18.7% of births in the country were to women under 19, but by 2019 this figure had fallen to 12.5%. In the provinces of Puntarenas and Limón, the data is higher than the national average (15% for each, respectively).

The presence of a pregnancy during adolescence and teenage motherhood are associated with the initiation of sexual relations. Despite the existence of a law that prevents this, inappropriate relationships (adolescent - adult) are recorded that limit the autonomy of young women. According to the National Survey of Sexual and Reproductive Health (ENSSR) of the Ministry of Health and Central American Population (Ministry of Health and CCP, 2016) by the year 2015 (SSRS-15), the average age of sexual debut for women over 15 is 17, and for men it was 16.

Women who had their first sexual relationship between the ages of 10 and 14 reported that their partner was at least 5 years older than them by 59.6%, and men older than 20 reported that their partner was 5 to 10 years younger than them by 8.5%. This means that in many of these cases these girls and adolescents had sexual relations with older men, a fact that constitutes a crime in Costa Rica[7] . Additionally, according to data from the X Population Census and VI Housing Census of 2011-INEC (INEC, 2011)In the case of girls,

[7] The Costa Rican Criminal Code provides an express prohibition on sexual relations with persons under the age of 15, even when there is alleged consent by the victim, and considers sexual relations with girls under the age of 13 to be rape (Articles 156, 157 and 159 of the Criminal Code).

8.6% of girls and adolescents between 12 and 19 years of age and 2.6% of their male peers have ever lived in a marital relationship of some kind, which has a negative impact on their chances of development: 74.5% of girls and adolescents who declare that they are or have ever been in a union do not attend the educational system, compared to those who are not or have ever been in a union (17%). In addition, among those who are or have been in a union, 88.3% declare that they do not work, and of these 57.3% only do unpaid domestic work (United Nations Population Fund (UNFPA, 2018)).

A key element in assessing the possibility of women in Costa Rica to decide about their own bodies is the study of contraceptive prevalence. The three most widely used contraceptive methods in Costa Rica place the responsibility for contraception exclusively on women, and none of them protect them from sexually transmitted infections. The only method that does provide such protection, the male condom, has registered a sustained decrease in its use, reaching only 10% among men and 9.2% among women in union (ENSSR-15).

In 2015, 77.8% of women aged 15-49 in Cost Rica use some form of contraception, a slight decrease from the figure for 2010 (82.2%). The most used method is female sterilization (25.5%), followed by oral contraceptives (22.7%) and injectable contraceptives (9.2%) (ENSSR-15). The incidence of the use of contraceptive methods varies according to age group, educational level and geographical area. The vast majority of unmarried adolescents do not use any contraceptive method (only 24.6% report using some method); 76.2% of unmarried women who do not live in the central region say they use a contraceptive method and only 37.9% of unmarried women whose educational level is up to secondary school.

5. Violence Against Women in Costa Rica

The specific data on violence against women is outdated and has not been followed up. The last specific survey on this topic - the National Survey on Violence against Women (ENVCM) - is from 2004[8]. Information has been collected in other instances, however, this impedes temporal and regional comparability. Efforts to replicate the 2004 survey are still scarce, although institutions at different levels such as INAMU, INEC and the Research Center for Women's Studies of the University of Costa Rica have become involved in promoting the agenda for generating data and information on this issue.

The 2004 specialized survey on violence against women shows that 57.7% of the women surveyed reported having been the victim of at least one incident of physical or sexual violence at some point in their lives since the age of 16; 24.2% reported having suffered 4 or more such incidents. For women between the ages of 25 and 49, this percentage was higher (62%), although the situation during women's childhood and early adolescence is not much different: 48% of the women surveyed reported having suffered some type of abuse before the age of 15.

The couple and the family are the areas where women have historically been most exposed to violence. 45.5% of women report having experienced physical violence in these areas, 38.2% sexual violence and 49.6% psychological violence from their partner (ENVCM 2004). According to ENSSR 15, in public spaces, close to 80% of the women surveyed state that they have suffered a situation of violence at some time.

[8] ENSSR collects information on physical and sexual violence and harassment.

In the student or work environment, close to 70% of the female population reports having suffered some type of sexual violence (almost always or always), in the case of men, the percentage is 60%[9] .

The public transport sector also concentrates high levels of violence. The presence of acts of violence against women inhibits them from accessing public transport and other services provided by the use of buses, trains or cabs. According to data from INAMU (2019), Costa Rican women constantly experience sexual harassment, sexual violence and other types of violence while they are users. The perpetrators are usually men who use violence against women. The effects of this type of behavior result in economic losses for families and societies by not being able to safely access their jobs or other services outside the home. There are limitations with respect to the generation of data and statistics that show the magnitude of the problem of violence against women in the facilities and services offered by INCOFER. There is evidence for other countries that most acts of sexual harassment of violence against women in public transportation occur inside buses and trains, yet there is very little disaggregated information on the incidence of acts of violence or sexual harassment against women for different modes of public transportation.

As in other areas, there is a lack of and limited information about women's safety and experience on public transport. In a survey conducted by the School of Statistics of the University of Costa Rica in the "Actualidades Survey" (University of Costa Rica, 2015) it is concluded that about 62% of women in the country face some form of violence in public spaces (a figure almost double that of men at 33%), this also includes situations that occur while using public transportation services. National authorities have made progress in creating new norms and protocols that seek to prevent and address this type of violence. INAMU and other relevant government institutions, such as the Ministry of Public Security, the Ministry of Public Works and Transport, and other organizations are acting to implement a protocol for the prevention of sexual harassment applicable to all public spaces, including public transport.

In 2017, in a joint effort, INAMU and Incofer [10]signed an agreement to address and prevent violence against women using the country's train service. The agreement consisted of a campaign to raise awareness about the implications of sexual harassment during train travel and the events of violence experienced in stations. During this initiative, 110 Incofer officials and other officials from companies that provide services to Incofer were trained.

The implementation of the protocol responds to an environment of widespread violence experienced by women. For example, the German Society for International Cooperation (GIZ, 2018) conducted a survey to analyze the state of security in urban public transport. Not only do women feel less safe while using the services (47% of women say they do not feel safe, compared to 42% of men), but they are also more often victims of crime (73% of women were victims of theft compared to 63% of men) and sexual harassment (a result consistent with the information provided by INAMU, about 55% of women compared

[9] In the ENSRR 2016 the question was asked about the frequency (always, almost always, sometimes, almost never or never) of having been exposed to situations that could make the workplace or study uncomfortable. The questions asked about: suggestive looks, approaches to your body, comments about your body or ways of dressing, macho or feminist jokes, caresses, expressions or compliments.

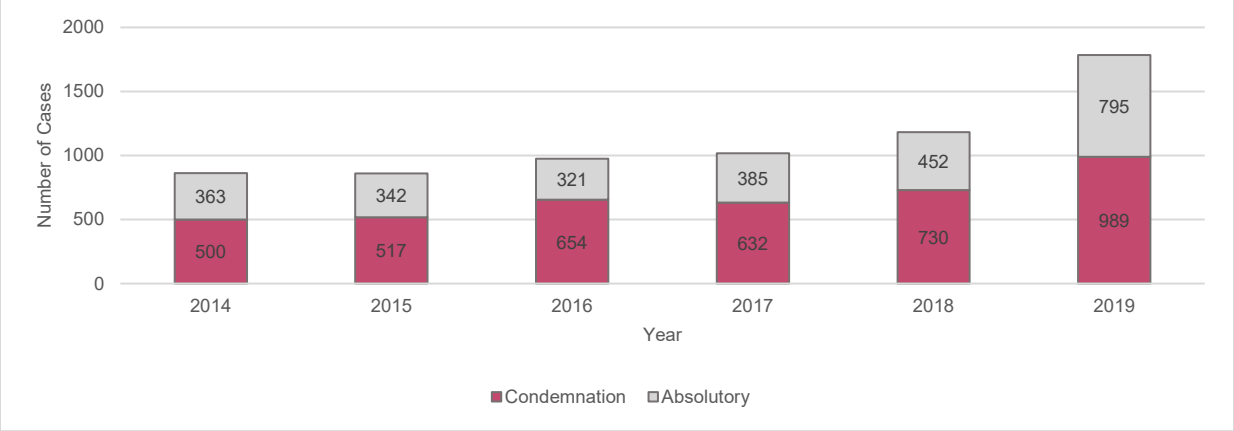
[10] http://www.planovicr.org/noticias/inamu-refuerza-acciones-para-prevenir-el-acoso-callejero-en-el-tren

to 33% of men). In addition, about 35% of women (compared to 23% of men) have been touched without their consent while using public transportation (GIZ, 2018).

Data from the judicial system indicate that complaints of violations of the Law on the Criminalization of Violence against Women (LPVCM) have increased systematically each year, and are among the 20 most recorded crimes in the country[11]. While in 2014 19,284 complaints were registered about this type of infraction, by 2019 the complaints had increased to 22,122. The most important crimes are: mistreatment, failure to comply with a protection measure, offense to dignity, and threats against a woman.

On the other hand, the judicial system has seen an increase in cases with sentences handed down for LPVCM violations since 2014 (Judicial Branch, 2020). This means that in general there is a tendency to report more frequently this type of crime, and an estimate from the authorities to safeguard security and justice for women. (Figure 10).

Graph 10: Number of sentences handed down in adult criminal courts for crimes committed against the LPVCM (Costa Rica, 2014-2019)



Source: Own elaboration with data from the Gender Observatory of the Judiciary (2020)

Drug use and machismo are causes linked to violence against women. ENVCM 2004 reports that in 50% of the cases of physical or sexual violence the aggressor had consumed alcohol or some other narcotic substance. In the case of violence perpetrated by men who did not have a relationship, 34.6% of the incidents report some type of substance. On the other hand, in the survey of Perceptions of the Costa Rican Population on Violence Against Women (National University of Costa Rica, 2013)The study, which was conducted by the National Institute of Statistics and Censuses, reveals that 40% of the population associates MCV with machismo, patriarchal society and unequal power relations between men and women. In addition, 16% of the population mentions cultural patterns associated with upbringing among the causes of MCV.

The effort to improve the collection and systematization of WVC data by improving the administrative records of the institutions that provide services to women victims, conducting specific research, and including specific questions or short modules in more general surveys is noteworthy, however, it does not have continuity. For example, the Third National Youth Survey [12](Council of the Young Person - Ministry of Culture, Youth and Sports, 2018)The results of the survey, which were released in 2019, show that 94%

[11] Statistical Yearbook of the Judiciary 2016.

[12] The third delivery started in November 2017

of the total number of people who claim to have been victims of rape (1.7% of the total sample, 2.5% for the third survey), 96% of the total number of people who claim to have been victims of sexual abuse (2.7% of the sample), and 95% of the total number of people who admit to having suffered sexual harassment (4.4% of the sample) are women. Also, women report the highest prevalence of psychological and physical violence by their partners: 65.8% of those who report that their partner has ever yelled at them, insulted them, and humiliated them are women (8.2% of the sample), in addition to 62.1% of those who report that their partner has ever pushed them, hit them, or done them any physical harm (2.9% of the sample) (Council of the Young Person - Ministry of Culture, Youth and Sports, 2018).

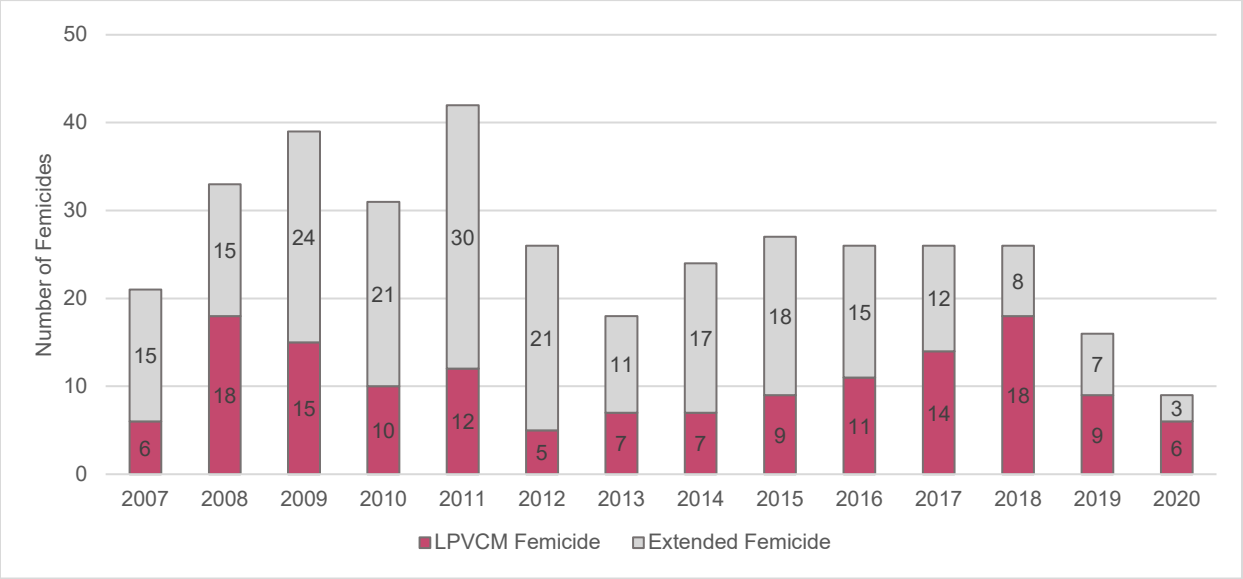
Regarding sexual violence, women report very high percentages of experiencing different expressions of violence, both in the workplace or study, and in other public spaces. The ENVCM 2004, concludes that 38.2% of the interviewed women have experienced some form of sexual aggression after the age of 16, that 27.9% have been touched sexually against their will, and 26% have tried to force them to have sexual relations or have been raped. Rural women report more exposure to sexual violence (50.4%) than urban women (44.6%).

According to the data on the entry of sexual crimes in the adult criminal prosecutor's offices, the five most prevalent sexual crimes are: sexual abuse against minors and incapable persons, rape, sexual relations with minors, sexual abuse against minors and incapable persons (attempt to), and sexual abuse against adults.

The Judicial Branch and INAMU have made an additional effort to keep a detailed count of the femicides that have occurred in the country under both categories. For example, in the year 2019, 9 femicides were committed according to the LPVCM and 7 additional ones according to the Convention of Belem do Pará [13]addition, there has been a reduction in this type of violence since 2015 (Figure 11) (Judicial Branch, 2020).

[13] The deaths of women at the hands of their spouses or current partners are classified as femicide by Article 21 of the Law on the Criminalization of Violence against Women (LPVCM). The expanded definition of femicide also includes violent deaths of women due to their gender, where there was no marriage or union relationship. For example, these are deaths during courtship, after a divorce or after the termination of a de facto union. Also, those that occur in the public sphere, as a result of sexual assault.

Figure 11: Registered Femicides by Type (Costa Rica, 2007-2020)



Source: Own elaboration with data from the Gender Observatory of the Judiciary (2020)

During 2020 (and up to August), there have been 9 deaths of women classified within what has been called extended femicide. In general, femicides in the country are perpetrated by acquaintances of the victims, and in a minority of cases the relationship of the victim is not known. By 2018, the Judicial Branch will (Judicial Power, 2020) reported on the profile of the 26 victims of femicide: the average age of the victims is close to 31, they were living together in de facto union, Costa Ricans; in 65% of the cases the perpetrator was living with the victim, in almost 30% of the cases there was already a history of aggression. In addition, 40% of the homicides against women correspond to femicides. In the vast majority of cases, the femicide weapon corresponds to a firearm or a knife.

Within the group of women most affected by violence, girls and adolescents under 19 years of age should be considered a high-risk population, since the legislation does not protect them, or does so only partially. This is particularly worrying when we analyze the figures related to the establishment of inappropriate relationships, that is, the coexistence of girls and adolescents with adult men and much older than them. Many girls and adolescents who suffer acts of violence are detected in their medical care during their regular visits. Data from the Health Surveillance Directorate of the Ministry of Health for the year 2018 show that the group of adolescents between 15 and 19 years of age is the one with the highest number of reported victims.

Unfortunately, there is no detailed quantitative or qualitative information on the incidence of violence against women or gender-based violence or its characteristics among women belonging to groups that have traditionally been discriminated against, such as indigenous women, women of African descent, women with disabilities, or women of diverse sexual orientation and gender identity and/or expression, all of whom are groups affected by the intersection of various types of inequalities.

6. Barriers for Women in the Transport Sector

In Costa Rica, the public transportation system has improved access to goods and services, and above all, it has improved access to jobs, which has a great impact on women. Data on urban mobility in Costa Rica show that nearly 60% of public transport users are women. When analyzing differences by sex in the use of public transportation, gender roles must be taken into account. For example, women are generally more likely to make more trips on public transport than men because they are responsible for taking children and older adults to schools or care facilities, doing household shopping, and other activities associated with caregiving (IDB, 2016). Worldwide, women are more likely to make shorter but more frequent trips than men. Women's travel patterns are more complex and heterogeneous than those of men. The strong persistence of the care economy in low- and middle-income countries leads many women to make shorter trips both in time and distance. Women are more willing to combine travel, make more domestic trips, and travel with children and more packages than men.

Information about women's patterns, preferences and needs is very limited in Costa Rica. At both the user and service provider levels, there is very little sex-disaggregated information or information showing gender-specific gaps in the country for the transport sector. For example, when analyzing how women behave regarding the use of alternative means of transport, secondary sources of information should be used, not the transport governing bodies. Specifically, according to the State of the Nation Report 2018 ((State of the Nation Program, 2018)In recent years, non-motorized transport has been gaining ground in the country. Only in the capital province there are more than 17 kilometers dedicated to bicycle paths, where approximately 125,500 daily trips are made, which represent 2% of the total number of trips, and only 20% of these trips are made by women.

Women who use transportation in Costa Rica behave similarly to women in other cities around the world. Comparing the scarce data available for the country with international information, based on the IDB reading (IDB, 2016)In Latin America, as in almost every country in the world, public transportation systems have not been designed with women's needs and safety in mind. Gaps also exist in both developed and developing countries. The IDB's 2016 data collection shows that there are data for the case of London in England, where only 57% of women capable of driving have a license, compared to 80% of men. While 18% of men choose to use the bicycle as their most frequent means of transportation, only 12% of women do so. In the same collection, data for cities in South America such as Santiago, Montevideo, Buenos Aires and Bogotá show that women have less access to cars and motorcycles than men (Santiago: 3.7% women vs. 13% men; Montevideo: 25% women vs. 38% men; and Bogotá: 10% vs. 17%). However, women use public transportation more than men (for women and men, Santiago 68% vs. 45%, in Buenos Aires 52% vs. 48%, and in Montevideo 31% vs. 23%). Women also make more trips on foot than men (55% vs. 40% in Santiago and 51% vs. 39% in Bogotá for women and men respectively). And as in Costa Rica, women use the bicycle much less to get around (3% vs. 10% in Santiago and 1% vs. 5% in Bogotá for women and men).

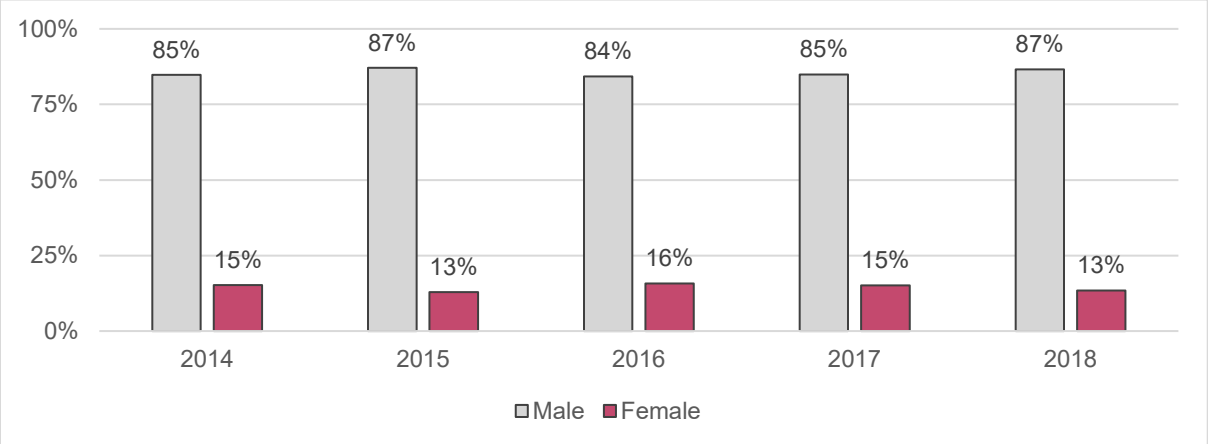
When these data are contrasted with the reality of Costa Rican women (GIZ, 2018)The results are not much different:

- Women generate on average more trips than men (51.4% vs. 48.6%).
- They tend to use the bus a third more than men (36% vs. 27%).
- Only 20% of car trips are generated by women.
- Women have less access to driver's licenses. According to COSEVI's historical data (2020) only 30% of licenses have been issued to women. This shows a greater dependence on the public transportation system.
- Women are also less likely to have access to a private vehicle: 28% of them indicate that they cannot use a private car, this figure is more than 3 times higher than what men indicate (about 8%).
- About 70% of women and 75% of men spend more than one hour a day on public transportation systems, generating economic and efficiency losses.

Women are underrepresented in the transport sector. As mentioned, less than one-fifth (17%) of the human resources employed in the transport sector in the country are women; this figure is slightly higher than the 15% recorded for the Latin American and Caribbean region (IDB, 2016). However, information on the type or quality of jobs is not available. In the last 10 years, men received a leave of absence almost twice as often as women. This gap is greater when analyzed by the type of license drivers have. Only 10% of licensed bus drivers are women and between 7% and 12% of airport cabs and regular cab permits are owned by women. In addition, only 6.2% of traffic police positions are occupied by women

Gender gaps do not only affect women, men die more on the roads. According to information from the Judicial Branch (Judicial Branch, 2019)By 2018, historically, the number of male victims of traffic accidents is almost 6 times higher than the number of women. Most of these cases correspond to collisions, which represent 66% of the victims, followed by outrages (21%). The proportion of these accidents remains relatively constant over the years. There is evidence for other countries that 90% of traffic accidents are associated with human behavior[14], such as cell phone use, alcohol abuse, drowsiness, aggressive behavior and speeding. These are characteristics associated with hegemonic masculinities and therefore it is men who suffer most from the consequences of these.

Figure 12: Proportion of traffic accident victims by sex (Costa Rica 2018)



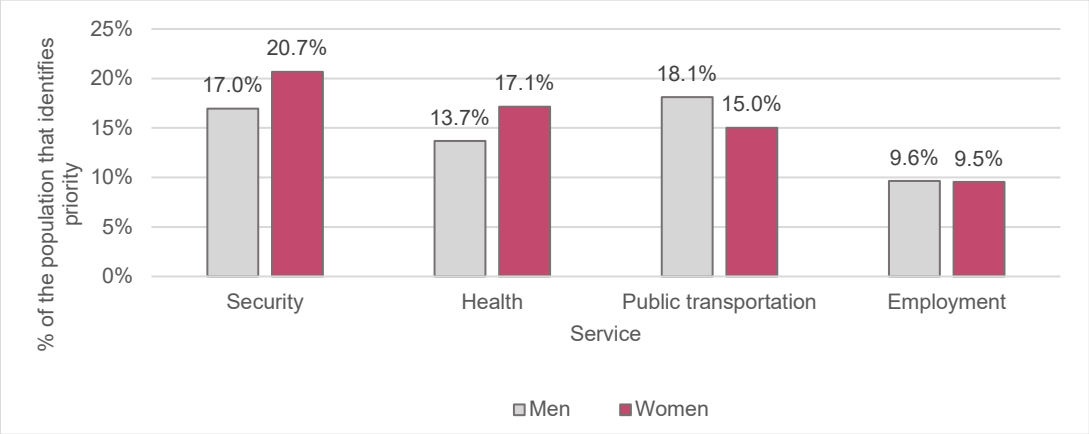
Source: Own elaboration with data from the Judicial Power, 2018

[14] http://www.dgt.es/revista/archivo/pdf/num150-2001P.18-20.pdf

To show efficiency, the public transportation system must guarantee safe spaces and participation of women. As discussed in section IV, women tend to feel more insecure about using the service than men, inhibiting their free use and therefore imposing a barrier to access to different types of markets. The violent practices that women suffer on a daily basis can be perpetuated in new forms of mobility, both unimodal and multimodal, and there is a need to provide tools, infrastructure and protocols for the prevention and care of this type of violence.

The survey conducted by the Comptroller General of the Republic (CGR) (CGR, 2019)reports that women perceive transportation as one of the top priorities in their lives. Figure 12 shows the perceptions of personal priorities in public services, in addition to the main basic services (not included in figure 12). Women placed citizen safety, health and public transportation as their top options. Although men represent less than the total number of users, they placed transportation as the number one priority, this sector is also highly dominated by men, reflecting the need to design and implement actions to attract more women to the challenging and changing sector as users and service providers.

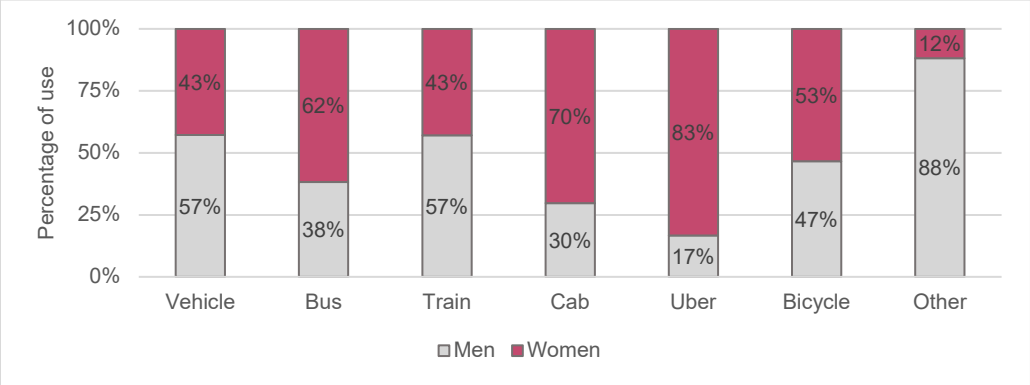
Figure 13: Perceptions of personal priorities for public services (Costa Rica 2018)



Source: Own elaboration with data from CGR, 2019

Women, although in greater need given the lack of driver's licenses, use the train less than men. According to data from the CGR (2019), women are not the ones who use the train most in the country, 57% of users are men and 43% are women. There is no information for the country on why this behavior occurs, but there is information for other contexts: sometimes women desist from using certain types of transportation because of their inconvenience between stations, frequency of travel and safety inside trains and stations. Nevertheless, they may benefit from train connections if the train functions as a substitute for bus routes or reduces travel times on routes that are primarily taken by private vehicles, cabs, or other similar services. Graph 14 shows the distribution of means of transport according to gender. Women use the means of cab, bus, *Uber* and bicycle much more than men. With regard to the bicycle, the information provided is different from that which the State of the Nation had captured, and this discrepancy can be attributed to the different methodological approaches used.

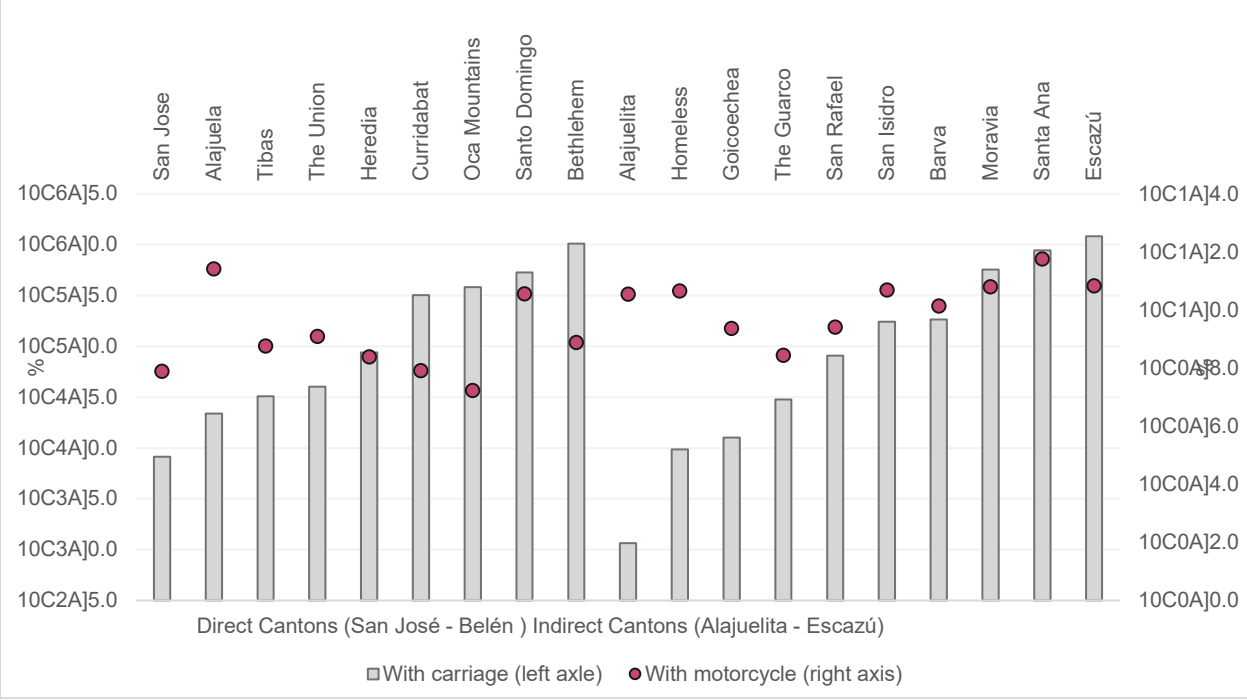
Figure 14: Most used means of transport by sex (Costa Rica 2018)



Source: Own elaboration with data from GCR, 2019

Women depend on the public transport sector for their mobility and, when analyzing the ownership of private vehicles, important differences are found at the territorial level in the cantons served by the train. Ownership of cars and motorcycles varies among cantons. For example, in the direct cantons of Belén, Santo Domingo and Montes de Oca, car ownership per home is over 50% (all cantons where the railway infrastructure is located), while in San José and Alajuela it is over ten percentage points lower (both cantons have direct access to the train but are at the head of the province). These differences are, if possible, more pressing in the indirect cantons: while just over 30% of households in Alajuelita have a car, this percentage is twice as high in Escazú. Motorcycle ownership per household also varies between cantons, although to a lesser extent, and in addition, car and motorcycle ownership per canton does not seem to be correlated (0.09 between -1 and 1) (Figure 15).

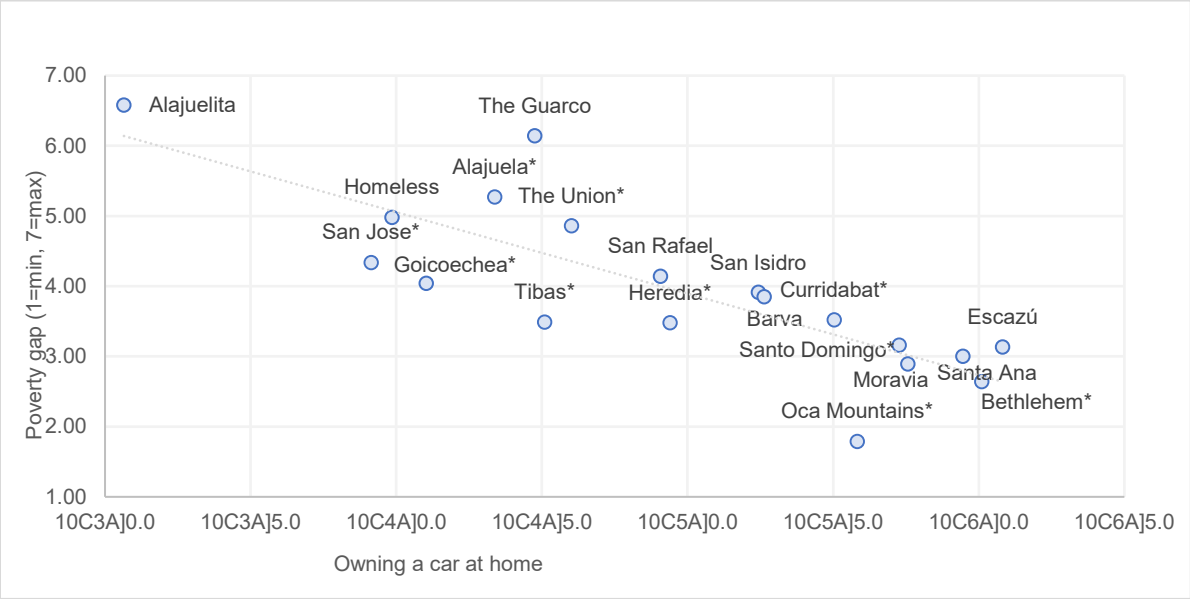
Figure 15: Motorcycle and car ownership by canton (direct and indirect) (Costa Rica, 2011)



Source: Own elaboration with data from Census 2011 (INEC, 2020)

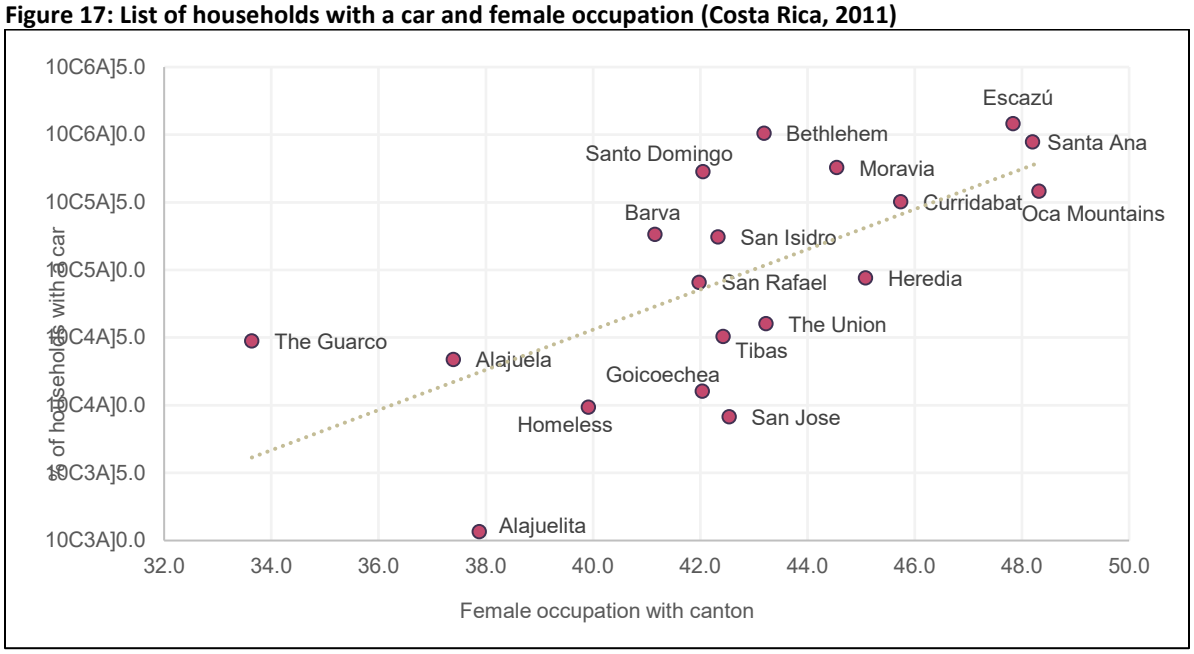
Poverty is a determining factor in access to personal transportation vehicles. A key factor in explaining this variation among cantons is the gap or severity of poverty in the households of each canton. As can be seen in Figure 16 and Figure 17, the cantons with the largest poverty gap tend to have fewer cars, and it is argued that multidimensional poverty measurements can also encompass both aspects of mobility and added factors of poverty. In particular, the case of Alajuelita is an example of the above, since it has the worst poverty gaps, and also the lowest car ownership in the entire series. Other disadvantaged cantons according to the graph are Desamparados, San José and Goicoechea. At first glance, the results do not seem to indicate that there are significant differences between direct and indirect cantons in terms of poverty and car ownership.

Figure 16: Poverty gap and tenure of individual means of transport (Costa Rica, 2011)



Source: Own elaboration with data from Census 2011 (INEC, 2020)

Figure 17: List of households with a car and female occupation (Costa Rica, 2011)



Source: Own elaboration with data from Census 2011 (INEC, 2020)

Head of household and mobility factors at the cantonal level: In addition to these descriptive statistics and the visual inputs associated with them, an analytical regression model, which takes into account head of household and household size, can be useful for understanding the mobility of household members through car or motorcycle ownership.

The estimated models of household headship and mobility are as follows[15] :

$$\widehat{homecar} = \widehat{\beta 0} + \widehat{\beta 1}.jeffem + \widehat{\beta 2}occupy \text{ (1)}$$

$$\widehat{homecar} = \widehat{\beta 0} + \widehat{\beta 1}.jeffemsc + \widehat{\beta 2}occupy \text{ (2)}$$

$$\widehat{homecar} = \widehat{\beta 0} + \widehat{\beta 1}.jefmascfemdif + \widehat{\beta 2}occupy \text{ (3)}$$

$$\widehat{hogarconmoto} = \widehat{\beta 0} + \widehat{\beta 1}.jeffem + \widehat{\beta 2}occupy \text{ (4)}$$

$$hogarconmoto = \widehat{\beta 0} + \widehat{\beta 1}.jeffemsc + \widehat{\beta 2}occupy \text{ (5)}$$

$$\widehat{hogarconmoto} = \widehat{\beta 0} + \widehat{\beta 1}.jefmascfemdif + \widehat{\beta 2}occupy \text{ (6)}$$

Results: While female or male leadership does not clearly explain motorcycle ownership by household, it does explain car ownership in the household, which in turn can influence household mobility.

[15] With the following variables:

- Jeffem = percentage of households led by a woman
- Jeffemsc = percentage of households headed by a woman without a spouse
- Jefmascfemdif = difference in the percentage of households headed by a woman and a man
- Hogarconcarro = % of households with a car
- Hogarconmoto = % of households with a motorcycle
- Occupy = average number of occupants per household

Taking an average canton, for each percentage point more households with a woman in the lead, it can be estimated that the percentage of cars will decrease on average by -1.34 percentage points, and by -1.78 in the case of households with women without a spouse. In other words, taking into account these data[16], it is expected that a canton with 27% of women heading households will have an average of 9 percentage points more cars than one with 20% of women heading households. The difference between households headed by women and men also serves to explain car ownership in the home: for every percentage point more difference between households with a man and households headed by a woman, the number of cars will increase by 0.73 percentage points in a given canton.

A correlation matrix can help to explore preliminarily which pairs of variables are most related to each other. That is, which individual variables have the most influence on other individual variables.

After making the general correlation matrix, all those values that indicate a correlation higher than 0.8 over 1 or lower than -0.8 over -1 have been selected.

In terms of gender, the difference between male and female employment has a high correlation with the poverty gap, average schooling and also the difference in the percentage of male and female heads of household. The latter variable also correlates, but somewhat less strictly, with the poverty gap and average schooling.

	ocupmascfemdif	Poverty Reduction Strategy Paper	average schooling	homecare
Poverty Reduction Strategy Paper	0,8793	1		
average schooling	-0,9136	-0,9116	1	
homecare	0,7359	0,9285	-0,8529	1
homecar	-0,6872	-0,8635	0,8002	-0,8481
gini	0,4464	0,5163	-0,5158	0,6151
jefmascfemdif	0,846	0,6159	-0,6854	0,4427

In other words, what underlies these preliminary calculations is:

- That the greater the difference between male and female employment, the greater the poverty gap and vice versa.
- That the higher the average schooling, the smaller the difference between male and female employment, and the poverty gap, and vice versa.

[16] The series analyzed is small in statistical terms, although the results obtained are solid enough to take into account the relationships obtained. These conclusions should be supported in subsequent studies with larger and more granular series.

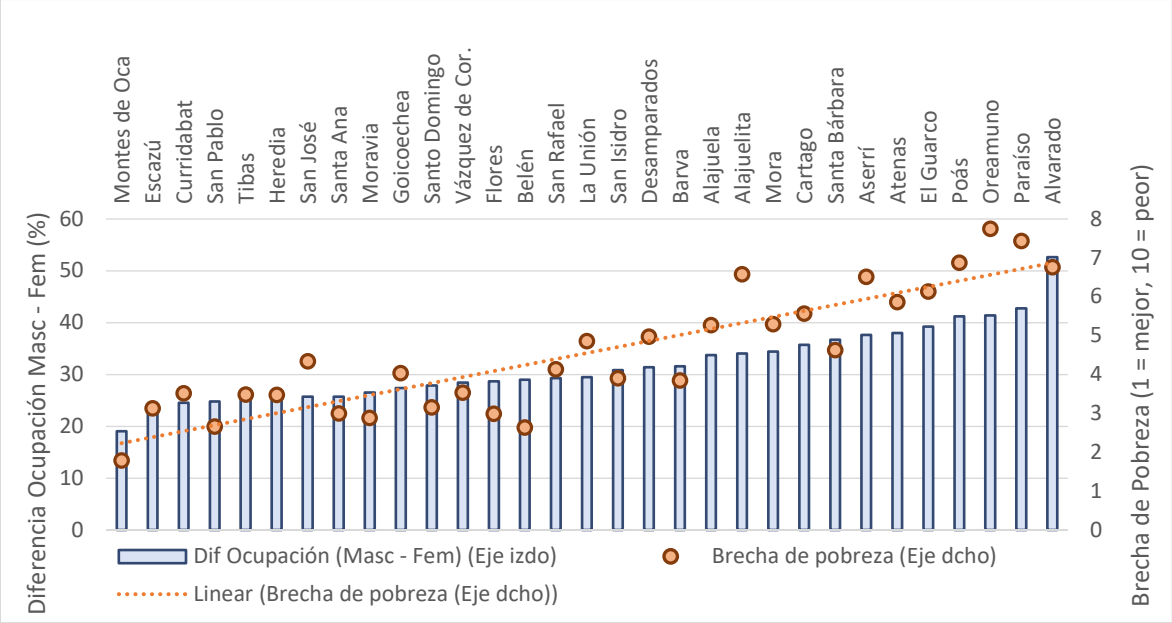
- That households with deprivation are highly correlated positively with high levels of poverty and negatively with schooling Therefore, the greater the level of schooling, the less poverty is assumed, and vice versa.
- That, individually, there is no variable that correlates strongly with the Gini Index, although households with deficiencies do have a correlation greater than 0.5.

This exercise does not explain or pretend to explain the origin or direction of causality, but merely emphasizes that there are significant correlations between some variables.

The relationships between these variables give an indication of which variables to prioritize when performing more complex analyses, both when carrying out graphs and when computing regressions of various types with sets of variables. In addition, some variables may not be individually related but are collectively related, for which more complex explorations are necessary.

Two variables that are interesting to visualize graphically are the difference between male and female occupation at the canton level, as well as the poverty gap. As can be seen in the following graph, the shape of the poverty gap growth line (orange dotted line), coincides with that of the difference between male and female occupations in a canton. In other words, where the difference between employed men and women is higher, the poverty gap will also be higher, in this case, in Oreamuno, Paraíso and Alvarado. A sensu contrario, Montes de Oca, Escazú and Curridabat are the three cantons with the least difference between male and female employment rates, and also have some of the lowest poverty gaps in the country.

Figure 18: Occupation Difference (Male/Female) and Poverty Gap

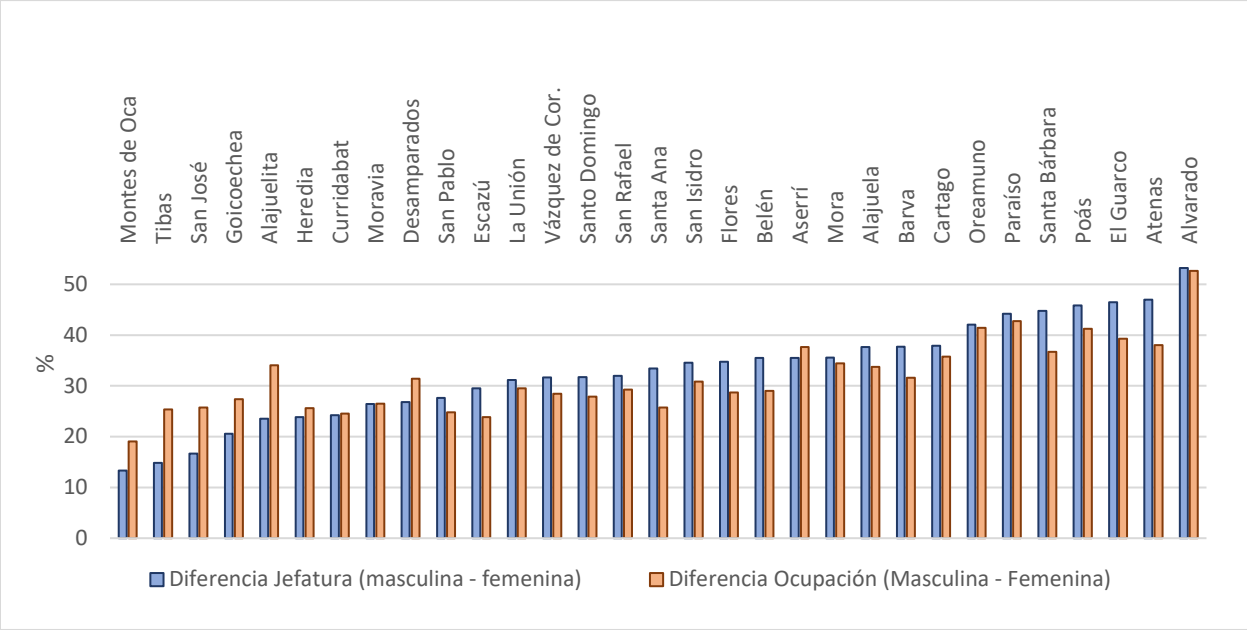


Source: own elaboration

Something similar occurs with the difference between female-headed households and differences in male and female occupation. In those cantons where the difference between male and female heads is less (i.e., where women are more likely to be heads) such as Montes de Oca, Tibás and San José, the difference

between male and female occupations is also less. At the other end of the distribution are El Guarco, Atenas and Alvarado.

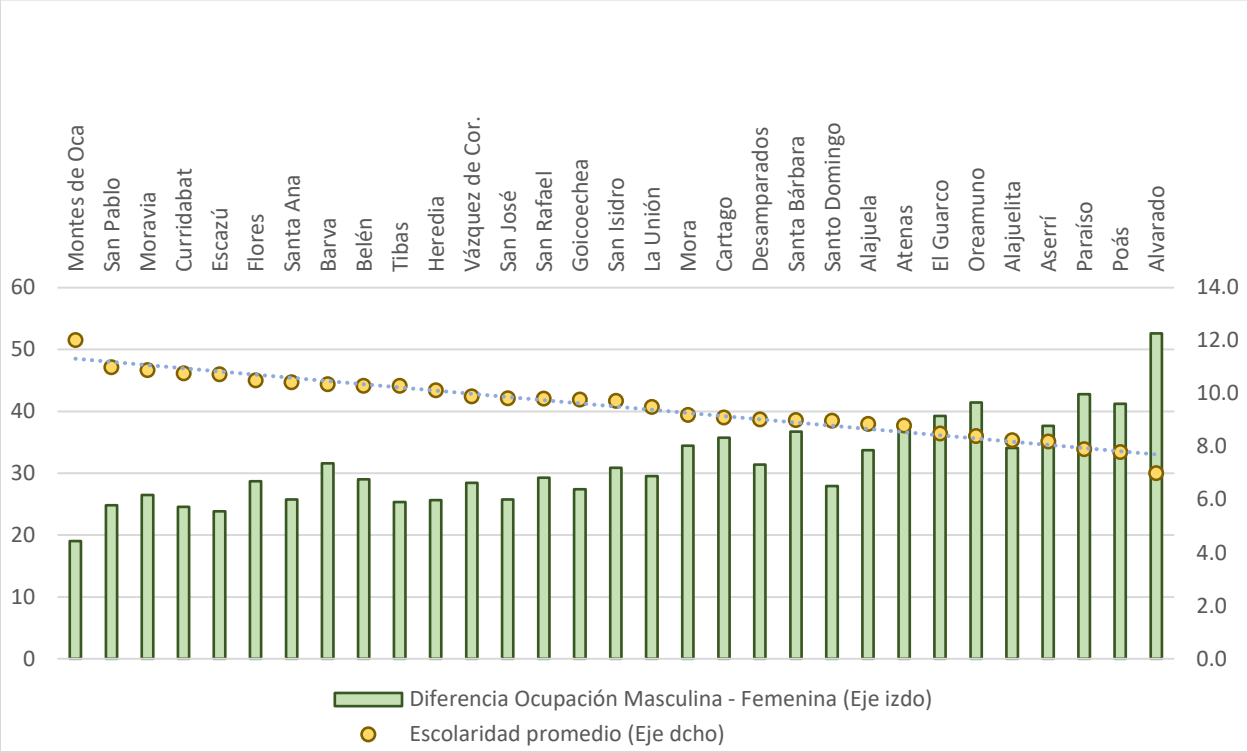
Figure 19: Difference: Male Female Headship vs. Female Occupation (histogram)



Source: own elaboration

There is a negative relationship between average schooling and the difference between male and female employment. In cantons with higher average education, women are more likely to be employed. The negative correlation between these variables is very high (-0.91), although this does not necessarily indicate that there is a direction on the causal mechanism that determines this correlation.

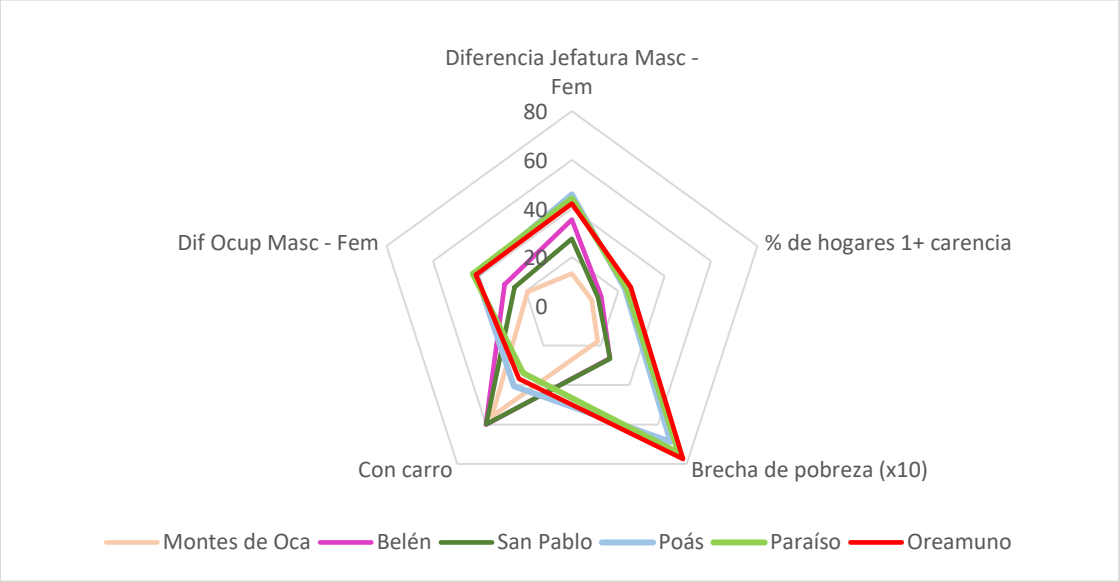
Figure 20: Average schooling vs. difference in male/female occupation



Source: own elaboration

Finally, selecting the three cantons with the largest and smallest poverty gaps, and studying other individually related variables, can help to see what differences exist between these cantons, regardless of the socioeconomic gap. As can be seen in the graph below, which includes five variables, the cantons of Poás, Paraíso and Oreamuno, where there are high poverty gaps, also tend to have households with more deficiencies, more probabilities of having male-headed households, and less probabilities of women being inserted in the labor market than the three cantons with the lowest poverty gap in the sample (Montes de Oca, Belén and San Pablo). In addition, the poorest cantons also have fewer cars, with a difference of almost 20 percentage points with respect to the richest ones.

Figure 21: Cantons with the largest and smallest poverty gaps: profile of critical variables



Source: own elaboration

Without access to private vehicles, women use public transport services more, yet are often excluded for reasons associated with their safety. Sometimes this is a result of high rates of sexual harassment in mass transit systems, a phenomenon that is present worldwide (Osmond and Woodcock 2015; Simicevic, Milosavljevic and Djoric 2016). Affordability of transport is a challenge, as travel expenses consume 30 percent or more of the income of the poor in the region, adding to the already high costs of travel time (Kaltheier 2002; Vasconcellos 2001). As noted in the previous section, nearly 70 percent of women report being assaulted in public transportation systems and on average earn less than men.

The government and other non-governmental actors are implementing actions that contribute to the inclusion of the gender perspective through specific actions that seek to create spaces for women in the sector. Based on a review of GIZ (2018), the following are some of the most relevant initiatives that contribute to closing gender gaps or contribute to the empowerment of women within the sector (table 3).

Table 3: Relevant gender equity initiatives for the transport sector

Project name	Name of the institution leading the process	Type of institution	Gender-Specific Action or Gender Mainstreaming
Women on the move	NGO, MOPT	Government	Working on increasing women's leadership within the sector. Prevention and care of violence against women in public transportation.
Costa Rica's Decarbonization Plan	MINAE	Government	Incorporation of the gender perspective in activities to mitigate and address climate change.

Project name	Name of the institution leading the process	Type of institution	Gender-Specific Action or Gender Mainstreaming
Participation in the Interministerial Technical Committee on Climate Change	MINAE in collaboration with INAMU	Government	Through multisectoral dialogue, incorporation of the gender perspective in different actions that promote attention to climate change
Ecovillas	UN Development Programme	International Organization	Prevention and care of violence against women through the promotion of safe public spaces for women.
Police officers addressing sexual harassment on public transportation	INAMU in collaboration with the Ministry of Public Security and other institutions.	Government	Training and education of police officers to prevent, address and reduce violence against women on public transportation.
Preventing and addressing violence against women on bus/train routes	CANTRANS, Incofer	Private Sector	Through communication campaigns and training of employees and working on prevention and care of violence against women.
Women in Engineering	UCR	Academy	Providing participatory spaces to attract more women to study STEM careers in order to provide economic opportunities for women
Toolkit for transport practitioners	GIZ	Civil Society	Workshops on gender and mobility, addressing violence against women.

The country still needs more data on women's participation in the sector, including information on how many women are in decision-making positions, what percentage women represent as service providers or users of public transportation such as cabs and trains, and what are the perceptions and cases of violence.

Based on the analysis of available information, the transport sector in Costa Rica is still dominated by men in all spheres of decision-making and the provision of transport services, including the train network. Initiatives that consider the gender perspective are dispersed and not institutionalized in the context of Costa Rican transport, and projects such as the one proposed could generate positive impacts on women. Based on the analysis of available information, the transport sector in Costa Rica is still dominated by men in all spheres of decision-making and the provision of transport services, including the train network. Initiatives that consider the gender perspective are dispersed and not institutionalized in the context of Costa Rican transport, and projects such as the one proposed could generate positive impacts on women. Currently, INCOFER has a woman as its executive president. Within the institution's board of directors, 42% (3 of 7 positions, including the executive president) of the positions were awarded to women and 58% to men (4 of 7 positions). There is no public information on the constitution of human resources within INCOFER, which limits the analysis of women's participation within the institute itself. However,

there is a need to open up spaces for women at all technical and decision-making levels of the institution, in order to ensure that the gender perspective is integrated.

7. Gender Action Plan

The following are the considerations that will be taken into account for the development of the gender action plan. This action plan seeks to incorporate activities that will improve women's participation as users and providers of train transportation services. These activities must be led in an inter institutional manner and at different levels of public administration.

Given the proximity of changes of the political cycle to ensure sustainability, and continuity of the project, it is recommended that the new authorities are informed about the project. The implementors of the initiative should consider, if necessary, new approaches that align the proposed activities with the incoming representatives' new priorities. Also, it is recommended to identify technical focal points across institutions that serve as linkages between the new teams and the executors of this initiative. The work with local governments should be leverage as they recently started their new cycle and relevant activities, and plan should be presented and discuss. Periodic meetings, webinars, workshops and monitoring update meetings are also suggested to coordinate, adapt, scale and sustain activities.

In case, an institution is dissolved, the activities should be delegated to another relevant organization that have similar capacities.

Activities related to violence against women are not presented/ pretend to be implemented in insolation. The umbrella project incorporates activities and plan to support the construction of infrastructure that aim to prevent and address violence against women in transport.

After the identification of relevant institutions and initiatives, actions and indicators will be proposed for the following dimensions.

Dimension 1 -Mobility and Safety:

- Consideration of gender-differentiated mobility patterns, including intermodality of different media.
- Prevention of violence against women in public spaces and in train service

Dimension 2 - Accessibility

- Gaps in access to transport systems and means of transport represent a major barrier to women's access to the economic, political and social spheres
- The new or rehabilitated infrastructure should be designed to take into account the needs of women and to safeguard their physical autonomy.

Dimension 3 - Participation

- The possibility of generating direct and indirect jobs for women in the public transport sector, in particular on the train.
- Creating spaces for women to participate at all levels of decision-making.

The CABEI gender specialist will play an important role during the project implementation of the project. The Specialist will make sure the commitments towards gender equality (and aligned across institutions) are being met within the role of CABEI of supervising INCOFER as implementer of Component 3.

Gender Action Plan [17]

Activities	Goals and indicators	Responsibility	Timeline	Approximate budget (US$)
1. DIMENSION: MOBILITY AND SAFETY Violence against women is present in public spaces and the train does not escape from this reality. In order to avoid costs and economic losses, it is necessary to prevent and address the problem in the most expeditious manner. It is proposed to design activities that promote the training of the personnel that will allow them to identify the violence events and provide tools to facilitate the approach of the women to the specific services in case of an attack. On the other hand, it is necessary to have the implementation of communication tools and campaigns directed to men and women in order to prevent and attend to violence against women. For its part, it is necessary to generate information on women's mobility patterns, as well as their specific needs when using the train's transport system and the various intermodal connections.				
1.1 Prevention of violence against women on trains and in other public spaces				
1.1.1 Establish social communication campaigns aimed at men and women to identify sexual harassment practices and other types of violence in trains and waiting stations (these activities will also address risky behaviors that threaten women such as consumption of substances by men as stated in the National Violence Against Women Survey. This activity should be informed with the results of 1.2.2)	Number of communication campaigns generated (Baseline (LB): 0, Target: 4) Number of users who warned about violent practices (Monitor – 53% men, 47% women)[18] Number of graphic pieces (Monitor: (i.e.: this will depend on the spaces they will be placed)	Main responsible: Incofer and Inamu Coordination with: Relevant municipalities, COSEVI	year 4 and 5	US$ 20,000
1.1.2 Training Incofer personnel with the new sexual harassment law	Number of trained staff members (LB: 0, target: 80%; this indicator will be sex-disaggregated)[19]	Main responsible: Incofer and Inamu	year 5	---

[17] See Annex B for a more detail budget allocations.
[18] The targets are calculated based in the GCR information showed in figure 14
[19] Incofer indicates in 2019 that the total number of staff is 53. This excludes contractual and temporary staff. However in 2017, a sexual harrasment training was delivered for 110 employees.

Activities	Goals and indicators	Responsibility	Timeline	Approximate budget (US$)
	Number of evaluations (implementation and report) for trainees on knowledge acquired during training (BL: 0, target: 1)	Coordination with: Ministry of Security, Public Force, COSEVI		
1.1.3 Implementing a rapid reporting system for cases of violence against women	Number of systems designed and implemented (LB: 0, Target: 1) Percentage of staff trained to handle complaints (WP: 0, Target: 80%, this indicator will be sex-disaggregated and aligned with 1.1.2) Number of qualitative evaluations (implementation and report) for trainees on knowledge acquired during training (BL: 0, target: 1) Percentage of cases handled through the system (WP: 0, target: 75%) Bi-annual reports of the evolution of received reports (BL: 0, T: 6)	Main responsible: Incofer and Ministry of Security Coordination with: Inamu, Municipal Offices for Women, Ministry of Security, Ministry of Justice	year 4	US$ 20,000
1.1.4 Establish a complaint mechanism for cases of violence against women that acts automatically	Number of panic buttons implemented in the enhanced spaces (LB:0, Target: 5 - 1 per enhanced space) Number of applications developed for smartphones that allow reporting violence against women (WP: 0, Target: 1)[20] Number of communication campaigns for users to learn about the complaint mechanism (LB: 0, Target: 1)	Main responsible party: Incofer and relevant municipalities Coordination with: Inamu, Ministry of Security	year 4	US$ 120,000
1.1.5 Implement an adequate lighting system that safeguards the safety of users, mainly women	Percentage of improved facilities within stations with adequate lighting (LB:0, Target: 100%) Percentage of areas surrounding the train infrastructure that have improved facilities with adequate lighting (WP: 0, target: 100%)	Main responsible party: Incofer, relevant municipalities	year 5	--- [21]

[20] There is not a lot of evidence on the effectiveness on mobile apps to prevent violence against women (VAW) or to change social norms, however the app mentioned will aim to capture information in situ of VAW, as an action to act fast when women are in danger. The app will provide guidelines to file a complaint and seek for help with the relevant institutions. in coordination with the Justice System. The application needs to be developed after a consultation with possible victims of violence in public transport. It could be either a free app developed for Android and iPhone or a SMS system. In coordination with the Ministry of Security, the app or message will send an alert to police officers/special task force that will be located are around the area of the event. The officers will arrive where the victim is at the moment and they can file the complaint and give assistance to her/him/the. The program is aiming to implement a pilot project at first and then expand, and adapt based on an evaluation

[21] Part of the budget for the construction of the train

Activities	Goals and indicators	Responsibility	Timeline	Approximate budget (US$)
		Coordination with: Costa Rican Institute of Electricity		
1.2 Generation of information on mobility and accessibility patterns with a gender perspective				
1.2.1 Design, implement and analyse a comprehensive multimodal transport pilot survey that gathers information about users, destinations, waiting time, means of transportation, affordability, private transportation use, etc. All information should be disaggregated by sex and presented to show differences between men and women and intersectionality of different population groups A report will be developed and published.	Number of pilot surveys conducted (BL: 0, Target: 1) Number of pilot survey reports (BL: 0, Target: 1) Number of dissemination workshops to relevant stakeholders (BL: 0, Target: 2) Number of published reports (BL:0, Target: 1)	Main responsible party: incofer, MOPT, INEC	year 4	$30,000
1.2.2 Conduct a gender-sensitive evaluation or survey (and its recommendations) at the user level to better understand the different needs and perspectives of women and men in terms of access to services and infrastructure. It will include a violence against violence module. A report will be developed and published.	Number of evaluations/surveys conducted (LB:0, Target:2) Percentage of users surveyed (differentiated by men and women – 47% women, 53% men) (WP: 0, target: 10%) Number of presentations/workshops held (webinars, face-to-face events) in which results and recommendations were presented (WP: 0, Target: 2) Number of published studies with respective recommendations based on the implemented survey (LB:0, Target: 1) Number of qualitative evaluations (implementation and report) for attendants on knowledge acquired during workshop (BL: 0, target: 1)	Main responsible: Incofer together with INEC In coordination with: Inamu, UCR, CGR.	year 5	US$ 50,000 [22]

[22] First year

Activities	Goals and indicators	Responsibility	Timeline	Approximate budget (US$)
2. DIMENSION 2: ACCESSIBILITY It is necessary to ensure that women can access different types of services, not only when using the train or waiting inside the stations, but also the connection with other types of multimodal transport and other public spaces, where they are protected by their physical autonomy. The improved infrastructure should include the necessary spaces to ensure women's comfort and take into account their mobility patterns (accompanied, with shopping carts, or multiple bags or packages, or strollers for children)				
2.1 Improving women's accessibility to other public spaces and other forms of transportation				
2.1.1 To have new infrastructure that ensures designs with a gender perspective in which their physical integrity is protected and allows for adequate use of the infrastructure.	Number of stations with gender-sensitive infrastructure (Target: at least 90% of stations) Number of other services offered by the train service included in the plan that are implementing actions to improve and ensure accessibility for women[23] (WP:0, target: at least 80%)[24] Number of monitoring mechanisms to ensure the gender sensitive infrastructure is being implemented (BL: 0, target: 1) The project has a holistic approach to new infrastructure and has thus not put specific targets and indicators for the infrastructure itself. Examples are: The program will make sure that stops are adequate for women's height, pregnant women or women traveling with kids. Manhole covers and/or rainwater inlets should consider having holes that are not a threaten for women wearing heels or sandals. Also, they will dedicate spaces for pregnant women, and include separated bathroom for men and women (where planned).	Main responsible party: Incofer	year 5	--- [25]

[23] Improvement of ramps, steps, waiting seats in order to have spaces that consider the height and behavior of women (women carrying bags, cars, children, etc.), reservation of spaces for people traveling with children, cars or elderly, improvement of compliance in the granting of spaces reserved for pregnant women, lighting, etc.

[24] .

[25] Part of the budget for the construction of the train

Activities	Goals and indicators	Responsibility	Timeline	Approximate budget (US$)
2.1.2 Improving women's accessibility to non-motorized mobility services	Number of mother and child programs promoting bicycle use (LB: 0, target: 1) Number of bicycle and road safety education programs targeting women (LB:0, target: 1) Percentages of bicycle parking with dedicated spaces exclusively for women (LB:0, target: at least 50%) Number of mothers that are part of the project (BL: 0, target: 500) Number of qualitative evaluations (implementation and report) for women and children on knowledge acquired during training (BL: 0, target: 1)	Main responsible: Inamu and Cosevi In coordination with: Incofer, MOPT, bicycle organization.	year 4	US$ 30,000
3. DIMENSION 3: PARTICIPATION The public transportation system, and in particular the train, must serve as a potential employer of women, not only within institutions such as the Incofer or the MOPT, but must also be able to connect women to employment or entrepreneurial opportunities, whether they serve as providers to the institution or are independent. These jobs must be framed in formality and if possible be technical jobs in the STEM sector. On the other hand, it should be ensured that women are involved in decision making and policy dialogue in order to ensure implementation of programs and policies that take into account their perspectives and views.				
3.1 Generation of direct and indirect jobs for women in the public transport sector, in particular on the train				
3.1.1 Program to attract women to join the Incofer workforce and offer equal conditions to men	Number of programs (incl. assessmetns and actions) to attract women trained in the STEM field designed and implemented (WP: 0, Target: 1) Percentage of total technical positions that are women hired in technical positions (WP: Target: 15% per year 2, 25% per year 4; 40% per year 10)) Percentage of total drivers who are women drivers (WP: 0, Target: 10% per year 2, 20% per year 4; 40% per year 10) Number of mentoring programs for women in the railway sector (LB: 0, Target: 1)	Main responsible party: Incofer In coordination with: Public and private universities, technical training institutes (public and private), Ministry of Labor.	year 5	--- [26]

[26] No specific budget because it is considered a task within the normal responsibilities of Incofer

Activities	Goals and indicators	Responsibility	Timeline	Approximate budget (US$)
3.1.2 To encourage the hiring and provide spaces for women entrepreneurs[27] to be part of the tertiary service providers that the train acquires	Number of programs (incl. assessments and actions) designed and implemented to facilitate access by women entrepreneurs as providers (mechanics, cleaning, collection, food, etc.) for train service (WP: 0, Target: 1) Number of protocols designed and implemented to prevent sexual harassment in the workplace (WP: 0, Target: 1) Number of sexual harassment prevention trainings designed for Incofer staff (LB: 0, target: 1) Percentage of employees trained in workplace sexual harassment prevention (LB: 0, target: 80%) Percentage of total services that are administered by women (WP: 0, target: 45%)	Main responsible party: Incofer In coordination with: National Learning Institute, Ministry of Labor	year 5	--- [28]
3.2 Creating spaces for women to participate at all levels of decision-making				
3.2.1 Establish spaces for women to be promoted to decision-making positions within the activities relevant to the train.	Number of programs designed and implemented for the promotion and participation of women in decision-making (WP: 0, Target: 1) Percentage of total board members and management positions that are women (LB: ; target: 50%)	Incofer	year 4 and 5	US$ 30,000
4. KNOWLEDGE MANAGEMENT				
4.1. Create and disseminate knowledge products				
4.1.1. Create knowledge product on lessons learned and disseminate	Final report on lessons learnt in gender sensitive LRT (WP: 0; target: 1) Disseminate report online (WP: 0; Target:1)	Incofer	Year 4	US$ 30,000
Total budget:				**US$ 330,000**

year 1	year 2	year 3	year 4	year 5	year 6
0	0	0	0	255,000	75,000

[27] According to the definition of the International Finance Corporation (IFC) of the World Bank Group are those businesses where at least 51% of the ownership, the vast majority of operational and management activities are in the hands of women.

[28] No specific budget because it is considered a task within the normal responsibilities of Incofer

Annex A – Civil society organizations

	Name of the Organization	Type of organization	Sector (ie: transport, violence, economic empowerment, rural development)	Scope (short description of main activities)	Flagship project	Website
Transport / mobility	Chicas en cicla	Colectivo	Transport / mobility	Space for women's empowerment through the use of bicycles in recreational cycling	Weekly women-led bicycle rides	https://www.facebook.com/chicasencicla/
	Aconvivir	NGO	Transport / mobility	This groups defends and promotes the rights and duties of all citizens among the different users of our roads, sidewalks and public land spaces in general. 1-Road education through workshops or campaigns. 2- Activities in the public space	The main objective of this ago is to raise awareness among the general population about active mobility, and to teach about violence on the road, as part of this component has positioned the issue of gender-based violence on the road through actions such as ciclidas	http://www.aconvivir.org/contenido/
	Mujeres en movimiento (Red Costa Rica) *	-	Transport / mobility	1- Articulation of organizations or groups that work on mobility and gender issues 2- Provide training processes 3- Research	One of the main achievements has been the participation in training and sensitization processes on the issue of mobility with a gender perspective for different stakeholders and institutions involved in decision making in relation to the transportation sector.	https://mujeresenmovimiento.net/
	Centro para la Sostenibilidad Urbana *	NGO	Transportation/mobility/public space/empowerment	Research processes in relation to mobility and transportation with the cross-cutting axis of gender. Creation of projects related to the improvement of the quality of life in urban centers with a focus on inclusion and human rights.	1- Brigada AntiAcoso: metodología para la creación de espacios públicos libres de acoso callejero. Incluye el componente de capacitaciones, intervenciones en el espacio, distribución de información, entre otros 2- Investigaciones como la Encuesta de percepción sobre el transporte público con enfoque de género (diiTranporte) sobre la situación del transporte público en el país 3- Planes de movilidad sostenible con enfoque de inclusión y derechos humanos.	https://cpcumbana.org/
	Cooperativa de Mujeres Taxistas en la Movilidad	Cooperative	Transport / mobility	Cab transportation service provided by women	Women-led cab transportation services	https://www.facebook.com/Cooperativa-de-Mujeres-Taxistas-en-la-Movilidad-1019734348128717/
	Efecto Boomerang	Social enterprise	Diversity and inclusion in companies	The company's pillars are 1. Communication 2. Training processes for the development of capabilities 3. Innovation and project management	Tips with respect: project to incorporate safety-related tools in the uber platform, gender-sensitive training processes for platform drivers to improve the safety of female users' trips.	http://www.viajesconrespeto.com // https://www.efectoboomerang.com
Public spaces	Penas del Olmo *	Colectivo	Access to public space	Promote and defend women's rights through the creation of alliances and the articulation of work among diverse social sectors. 1-Articulation of different groups, collectives and others in relation to women's rights 2- Innovation through platforms and projects such as Hollaback for the mapping of cases of street harassment 3- Training and dissemination of information on street harassment	HeyHollabackCR : platform for mapping cases of sexual harassment in public spaces throughout Costa Rica	https://heyhollaback.hollaback.org/?libdid=harAR3Z4kRK-oU-BH0wqVWBps17qqFx0dd80e5VdH1Ra5JL1XzDEX8RBLE_Fc // https://www.facebook.com/pdora/?ref=ts
	Acción Respeto *	Colectivo	Empowerment / mobility / public spaces	This organization has used street interventions as a way to raise awareness regarding sexual harassment in Costa Rica. 1- Awareness-raising campaigns 2- Political advocacy 3- Interventions in the public space 4- Workshops.	Political advocacy such as the promotion of the Law against sexual harassment in public spaces in Costa Rica. They have also carried specific interventions in public spaces to raise awareness among the population.	https://www.facebook.com/accion.respeto.cr
	Colectivo caminando	Colectivo	Mobility/ empowerment	Feminist collective that seeks to generate critical spaces, reflection and sorority through art and performative walks 1- Dissemination of information related to different topics concerning to the experience of being a woman in Costa Rica 2- Workshops	Dissemination of information on women's rights	https://www.facebook.com/ColectivoCaminando/
	Acceder*	Citizen association	Empowerment/ Sexual and reproductive rights	The experience of this organization focus on preventing and eradicating violence and discrimination based on gender, sexual orientation and gender identity through 1- Strategic litigation, legal and political advocacy 2-Capacity building 3- Cultural transformation strategies and social leadership to prevent and eradicate violence and discrimination based on gender, sexual orientation and gender identity.	Collaboration with the creation of the law against sexual harassment in Costa Rica. Political advocacy processes. Research related to the situation of sexual and reproductive rights of women, adolescents and girls. Research related to the reality of lesbina, bisexual and non-heterosexual women.	http://www.acceder.co.cr/#:~:text=Asociaci%C3%B3n%20Ciudadana%20ACCEDER%20(Acciones%20Estrat%C3%A9gicas,para%20prevenir%20y%20erradicar%20la
	Fundación Justicia y Género	Foundation	Women's rights	The foundation seeks the incorporation of human rights with a gender perspective in the administration of national and international justice. The Fundación Justicia y Género is an instance that facilitates the creation and exchange of actions and knowledge, under an independent, sustainable structure based on strategic alliances.	Observatorio Justicia y Género: It is a platform that allows access to research on the justice administration system and to legal publications with a gender perspective, allows the identification of good judicial practices to guarantee the enjoyment of human rights. This focuses on the rights of populations such as: Women, People with disabilities, LGBTI Population	http://observatoriojyg.org/

	Name of the Organization	Type of organization	Sector (ie: transport, violence, economic empowerment, rural development)	Scope (short description of main activities)	Flagship project	Website
Access to rights	CEFEMINA	NGO	Eradication of violence/empowerment/access to rights	Works in the defense and promotion of women's rights by: 1- Promoting public policy proposals that improve the condition of women in Costa Rica and guarantee the full enjoyment of their rights. 2- Information and awareness processes on the condition of women and their rights. 3- Strengthening of women and their organizations, as well as their full participation in the economic, social and political life of the country. This with the objective of improving the quality of life of women, especially those from marginalized sectors or in conditions of special exclusion (women with disabilities, adolescent women, Afro-descendant women, indigenous women, migrant women).	1- Training and awareness-raising processes on women's rights, especially those women who are particularly discriminated against due to their condition: women with disabilities, migrant women, adolescent and young women, sex workers 2- Research 3- Business loans for women 4- Sexual and reproductive rights	https://www.cefemina.com/Nueva/?fbclid=IwAR3DjYmeaPJdTA_8zX8LyC1uevLRW4wWPlOyYa7LDa2XEXIh8Usxll6xnw_# https://www.facebook.com/CentroFeministaDeInformacionYAccionCefemina/
	Fundación Género y Sociedad (GESO)	Non profit organization	Social equity	The organization promotes and develops social and cultural projects that incorporate the gender perspective, with the objective of promoting social equity. The main lines of work: 1-Research 2-Advisory to different organizations (in the management and evaluation of public policies, design and evaluation of programs and projects). 3- Strategic planning with a gender perspective 4- Training 5-Communication, information and dissemination	Research processes on topics such as public policies, regulatory framework on gender equity, diagnosis of the migratory context, among other research on the Costa Rican reality.	http://www.generoysociedad.com/geso/?page_id=53
	Beso Diverso	NGO	Empowerment/ Sexual and Reproductive Rights/ Public Space	The organization has focused on promoting the full exercise of human rights and the fight against violence and discrimination based on gender identity and sexual orientation. Its pillars have been 1- Workshops and awareness-raising 2- Activities in the public space.	1- Training and sensitization processes related to the experiences of lesbian, bisexual and non-heterosexual women. 2- Activities in the public space in relation to access to rights.	https://www.facebook.com/BesoDiverso/
	Costa Rica Afro	Colectivo	Empowerment/ Access to rights	Is an Afro feminist and anti-racist organization focused on the Afro-Costa Rican cause, whose objective is to make visible the contributions and struggles of the community in addition to advocacy on related issues. 1- To make visible and vindicate the economic, political, social, intellectual and cultural contributions of the Afro and Afro-descendant population in the country. 2- Dissemination of information using academic, artistic and cybernetic media to fight against racism, sexism and machismo experienced by Afro and Afro-descendant women 3- Collaboration and the exchange of knowledge.	1- Training processes 2- Visibilization of the realities of Afro-descendant people.	https://costaricaafro.com/quienessomos/
	Transvida	Association	Empowerment/ Access to rights	The project serves this population in a comprehensive manner, including psychological support, prevention, education, legal support and active participation in national policy to achieve impact on the issue of respect for the human rights of transgender people. Three main axes: 1- Creation of jurisprudence on human rights and identity of Trans Women. 2-Search for attention and opportunities in the field of health and education. 3- Access and dignified conditions for work.	1- Training processes on the rights and realities of the trans population in Costa Rica. 2- Political advocacy	https://transvidacr.org/historia/
	Ni una menos	Social movement	Empowerment/ Access to rights	Movement that brings together several feminist organizations in Costa Rica for the unification of efforts in the processes of visibility of the realities of women in the country, organization of events related to public denunciation processes.	1-Organization of different marches for the claim of women's rights. 2- Visibilization of important information on the reality of women in the Costa Rican context.	https://www.facebook.com/niunamenoscostarica/about/?ref=page_internal
	Mujeres en acción Costa Rica	Social movement	Empowerment/ Access to rights	Autonomous, non-partisan social movement that seeks to defend and strengthen the achievements of women in society.	1- Campaigns to raise awareness of information related to women's rights. 2- Processes of public denunciation of situations of violence against women.	https://www.facebook.com/mujeresenaccioncostarica/about/?ref=page_internal

	Name of the Organization	Type of organization	Sector (ie: transport, violence, economic empowerment, rural development)	Scope (short description of main activities)	Flagship project	Website
Economical Empowerment	Nosotras Women Connecting	Citizen initiative	Empowerment/ leadership/ economic empowerment	The goal of this organization is to work for a world where girls, adolescents and women are in leadership positions, creating solutions for a more prosperous, inclusive and just society for all human beings. Through: 1- Leadership training 2- Training processes for companies	1- Training events for women of all ages on leadership issues. 2- The annual event Nosotras Women Connecting as a platform for the visibility of women's work in different areas. 3- Networking between organizations	https://nosotraswomenconnecting.org/
	Sula Batsú	Social solidarity economy enterprise	Empowerment/ economic empowerment/ STEM	The objective of the organization has been to encourage and strengthen local development by working with organizations, social enterprises, community networks and social movements at national, regional and global levels with a feminist approach. In 4 main areas: 1- Digital technologies for development. 2 Knowledge management. We promote the exchange and collective construction of knowledge, as well as making it free and open. 3- Art and culture for social transformation. 4- Social solidarity economy. We promote a social and solidarity economy as an alternative for development, especially for the most vulnerable populations.	1- Processes to make women in science and technology more visible 2- Research on the technological and digital gender gap.	https://www.sulabatsu.com/
	Chicas al frente	Social initiative	Economic empowerment/ Empowerment	Initiative that holds monthly events, where different women are invited to come to share their wisdom and raise awareness on a specific topic according to an agenda of issues configured under a gender perspective.	1- Training spaces on various topics related to the experiences of being a woman in the country. These spaces are physical and virtual 2- Creation of Networking between different feminist organizations. 3- Feminist economic network: a mapping of services and women providers in the country.	https://chicasalfrente.com/sobre-caf
	Red de mujeres rurales	Women's network	Economic empowerment/ Empowerment	The Rural Women's Network is an organizational space that articulates rural women, in defense of their interests and rights.	1- Articulation and networking spaces 2- Visibilization of the realities of women in rural areas of the country.	https://www.facebook.com/MujeresRurales/

Annex B. Stakeholder Meetings

In the development of the Funding Proposal to be submitted to the Green Climate Fund, several meetings were held with stakeholders regarding the gender issue. In this sense, the following actions were carried out:

1. Meeting June 14, 2020

The objective of this meeting was to identify synergies, coordinate activities, list stakeholders and review sources of information with the ongoing GEF/UNDP study (see file 1). In this regard, it was identified that the Gender Plan developed for the GEF/UNDP study was discussed with different stakeholders.

2. Meeting August 18, 2020

The objective of this meeting was to identify the actions carried out by INCOFER and the National Women's Institute (INAMU) related to gender in the operation of the Train (see file 3):

- INCOFER as part of the Institutional Commission for Gender Equality.
- INCOFER and the National Women's Institute signed an agreement to contribute to the Eradication of Violence Against Women and the Promotion of Respectful Relationships.
- INCOFER and Transfeco y Cía. S.A. personnel were trained on the Prevention of Sexual Harassment in Public Spaces". Advertising was installed on passenger train cars internally and externally "Campaign for the Prevention of Sexual Harassment in Public Spaces". In addition, advertising is installed in stations on "Campaign for the Prevention of Sexual Harassment in Public Spaces".

3. Meeting September 19, 2020

Since August 2018 the Multilevel Technical Table (Mesa de Técnica Multinivel, MTM) has been created as a coordination and participation mechanism to define, enable and implement the urban and territorial planning conditions necessary to generate Transport-Oriented Development (TOD), taking as a starting point the area of influence of the TRP project and its stations, as well as the accessibility infrastructure generated by the municipalities, such as sidewalks, boulevards, bike paths and parking lots. The MTM is coordinated by the Ministry of Housing and Human Settlements (MIVAH), as it is the governing body for land management in Costa Rica.

Other participants in the MTM include the Office of the First Lady, the National Institute of Housing and Urban Development (INVU), the Institute of Municipal Development and Advisory Services (IFAM) and the National Union of Local Governments (UNGL), the Ministry of Planning, the Ministry of Environment and Energy (MINAE), the Ministry of Finance, the National Registry, the Costa Rican Railway Institute (INCOFER) and the Ministry of Public Works and Transport (MOPT). On the private sector side, the Chamber of Commerce, the Chamber of Construction and the Council for Real Estate Development (CODI) participate, as well as international cooperation actors such as the United Nations Development Programme (UNDP), the German Cooperation Agency (GIZ) and the Global Environment Facility (GEF), and representatives of the academic sector and civil society (urban collectives, development associations, impacted population).

On September 19, 2020, Grütter Consulting presented to the MTM the progress of the project funding proposal, including the socialization of the results of gender diagnostic and the proposed Gender Action Plan. More than 50 people attended the meeting from entities listed above. Due to covid-19 restrictions, this meeting was conducted through zoom (virtual platform).

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