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R2016-0259/1
IDA/R2016-0304/1

December 21, 2016

Closing Date: Wednesday, January 11, 2017 at 6 p.m.

FROM: Vice President and Corporate Secretary

Bolivia - Santa Cruz Road Corridor Connector Project

Attached is the Project Appraisal Document regarding a proposed loan and credit to Bolivia for the Santa Cruz Road Corridor Connector Project (R2016-0259, IDA/R2016-0304), which is being processed on an absence-of-objection basis.

Distribution:
Executive Directors and Alternates
President
Bank Group Senior Management
Vice Presidents, Bank, IFC and MIGA
Directors and Department Heads, Bank, IFC and MIGA

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The World Bank

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Report No: PAD1365-BO

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT AND
INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN IN THE AMOUNT OF US$200 MILLION

AND A

PROPOSED CREDIT IN THE AMOUNT OF US$30 MILLION

TO THE

PLURINATIONAL STATE OF BOLIVIA

FOR A

SANTA CRUZ ROAD CORRIDOR CONNECTOR PROJECT

December 13, 2016

Transport and ICT Global Practice
Latin America and the Caribbean Region

CURRENCY EQUIVALENTS
(Exchange Rate Effective June 1, 2016)

Currency Unit = Bolivian bolivianos (BOB)
BOB 6.91 = US$1.00
US$1.00 = SDR 1.40

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ABC	Bolivian Road Agency (*Administradora Boliviana de Carreteras)*
AC	Asphalt Concrete
AIDS	Acquired Immune Deficiency Syndrome
CReCE	Contracts for Rehabilitation and Achievement of Standards (*Contratos de Rehabilitación y Cumplimiento de Estándares)*
CUT	Treasury Single Account (*Cuenta Única Tesoro*)
DBMOT	Design-Build-Maintain-Operate-Transfer
DST	Double Surface Treatment
EMP	Environment Management Plan
EIA	Environmental Impact Assessment
FM	Financial Management
FY	Fiscal Year
GDP	Gross Domestic Product
GRS	Grievance Redress Service
GSA	Environmental and Social Unit in ABC (*Gerencia Socio Ambiental*)
HDM-4	Highway Development and Management Model
HIV	Human Immunodeficiency Virus
ICB	International Competitive Bidding
IADB	Inter-American Development Bank
IFR	Interim Financial Report
INE	National Statistical Institute *(Instituto Nacional de Estadística)*
IP	Indigenous Peoples
IPP	Indigenous Peoples Plan
iRAP	International Road Assessment Programme
IRI	International Roughness Index
IRR	Internal Rate of Return
M&E	Monitoring and Evaluation
MMAyA	Ministry of Environment and Water (*Ministerio de Medio Ambiente y Agua*)
MOPSV	Ministry of Public Works, Services, and Housing (*Ministerio de Obras Públicas, Servicios y Vivienda*)
NCB	National Competitive Bidding
NPV	Net Present Value
OP	Operational Policy

PBC	Performance-based Contract
PASA	Adaptation and Environmental Oversight Program (*Programa de Vigilancia de Adaptación y Medio Ambiente*)
PDES	Economic and Social Development Plan (*Plan de Desarrollo Económico y Social*)
PDO	Project Development Objective
PPM	Prevention and Mitigation Program
PSIA	Poverty and Social Impact Analysis
QCBS	Quality- and Cost-based Selection
QMS	Quality Management System
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
RSCDP	Road Sector Capacity Development Project
SA	Social Assessment
SBD	Standard Bidding Document
SIAP	Integrated Project Administration System (*Sistema Integrado de Administración de Proyectos*)
SICOES	Government's Contracting System *(Sistema de Contrataciones Estatales)*
SIGEP	Public Management System (*Sistema de Gestion Publica*)
SLIM	Integrated Municipal Legal Services (*Servicios Legales Integrales Municipales)*
SOC	Social Oversight Committee (*Comité de Control Social*)
STD	Sexually Transmitted Disease
TCO	Native Community Land (*Tierra Comunitaria de Origen*)
ToR	Terms of Reference
UNESCO	United Nations Educational, Scientific, and Cultural Organization
VOC	Vehicle Operating Cost
WB	World Bank

Regional Vice President:	Jorge Familiar
Country Director:	Alberto Rodriguez
Acting Senior Global Practice Director:	Jose Luis Irigoyen
Acting Practice Manager:	Gylfi Palsson
Task Team Leader:	Gylfi Palsson

PLURINATIONAL STATE OF BOLIVIA

Santa Cruz Road Corridor Connector Project

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Bolivia

Santa Cruz Road Corridor Connector Project (P152281)

PROJECT APPRAISAL DOCUMENT

LATIN AMERICA AND CARIBBEAN

Transport and ICT Global Practice

Report No.: PAD1365

Basic Information			
Project ID P152281	EA Category B - Partial Assessment		Team Leader(s) Gylfi Palsson
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [ ]		
Project Implementation Start Date 12-Jan-2017	Project Implementation End Date 31-Jul-2021		
Expected Effectiveness Date 28-Apr-2017	Expected Closing Date 31-Dec-2021		
Joint IFC No			
Acting Practice Manager/Manager Gylfi Palsson	Senior Global Practice Director Jose Luis Irigoyen	Country Director Alberto Rodriguez	Regional Vice President Jorge Familiar

Borrower: Plurinational State of Bolivia	
Responsible Agency: Administradora Boliviana de Carreteras (ABC)	
Contact: Noemi Villegas	Title: President ABC
Telephone No.: 591-2-215-9800	Email: nvillegas@abc.gob.bo

Project Financing Data (in USD Million)					
[X] Loan	[ ] IDA Grant	[ ] Guarantee			
[X] Credit	[ ] Grant	[ ] Other			
Total Project Cost:	230.05		Total Bank Financing:	230.00	
Financing Gap:	0.00				

Financing Source	Amount
BORROWER/RECIPIENT	0.05
International Bank for Reconstruction and Development	200.00
International Development Association (IDA)	30.00
Total	230.05

Expected Disbursements (in USD Million)

Fiscal Year	2018	2019	2020	2021	2022
Annual	50.00	83.00	65.00	25.00	7.00
Cumulative	50.00	133.00	198.00	223.00	230.00

Institutional Data

Practice Area (Lead)

Transport & ICT

Proposed Development Objective(s)

The Project Development Objective (PDO) is to improve transport accessibility along the road corridor between San Ignacio de Velasco and San Jose de Chiquitos.

Components

Component Name	Cost (USD Millions)
Road Upgrading	225.05
Technical Studies and Project Management	5.00

Systematic Operations Risk- Rating Tool (SORT)

Risk Category	Rating
1. Political and Governance	Moderate
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	High
6. Fiduciary	Substantial
7. Environment and Social	Substantial
8. Stakeholders	Moderate
OVERALL	Substantial

Compliance

Policy		
Does the project depart from the CAS in content or in other significant respects?	Yes [ ]	No [X]
Does the project require any waivers of Bank policies?	Yes [ ]	No [X]
Have these been approved by Bank management?	Yes [ ]	No [X]
Is approval for any policy waiver sought from the Board?	Yes [ ]	No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X]	No [ ]

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	X	
Natural Habitats OP/BP 4.04	X	
Forests OP/BP 4.36		X
Pest Management OP 4.09		X
Physical Cultural Resources OP/BP 4.11	X	
Indigenous Peoples OP/BP 4.10	X	
Involuntary Resettlement OP/BP 4.12	X	
Safety of Dams OP/BP 4.37		X
Projects on International Waterways OP/BP 7.50		X
Projects in Disputed Areas OP/BP 7.60		X

Legal Covenants

Name	Recurrent	Due Date	Frequency
Institutional Arrangements: Schedule 2, Section I, A, 4	X		Continuous

Description of Covenant

Operate and maintain, throughout Project implementation, an accessible grievance redress mechanism, acceptable to the Bank, to address grievances relating to the carrying out of the civil works under Part A of the Project.

Name	Recurrent	Due Date	Frequency
Safeguard: Schedule 2, Section I, D, 1--5	X		Continuous

Description of Covenant

1. The Borrower shall cause ABC to carry out the Project in accordance with the Environmental Impact Assessment/Environmental Management Plan (EIA/EMP), the Resettlement Policy Framework (RPF), the Resettlement Action Plan (RAP) and the Indigenous Peoples Plan (IPP). Except as the Bank shall otherwise agree, the Borrower shall cause ABC to not assign, amend, abrogate or waive the EIA/EMP, the RPF, the RAP and/or the IPP, or any of their provisions.
2. Without limitation to the provisions set forth in paragraph 1 above, for the purposes of carrying

out any works under Part A (except for the construction works of the bypass of San Ignacio de Velasco) of the Project, the Borrower shall cause ABC to carry out the works in accordance with the provisions of the Resettlement Action Plan, including full payment of compensation and/or the provision of relocation assistance to all affected persons, prior to any displacement.

3. Without limitation to the provisions set forth in paragraph 1 and 2 above, and after the final detailed designs of works regarding the bypass of San Ignacio de Velasco have been completed, the Borrower shall cause ABC to, if Involuntary Resettlement is involved: (a) prepare and disclose, prior to commencement of any works, a site-specific resettlement action plan acceptable to the Bank, in accordance with the RPF; and (b) immediately thereafter, carry out said works in accordance with the provisions of said site-specific resettlement action plan and in a manner acceptable to the Bank, including full payment of compensation and/or the provision of relocation to all affected persons, prior to any displacement.

4. The Borrower shall cause ABC to ensure that the proceeds of the Loan are not used for the acquisition of land without the prior written concurrence of the Bank.

5. The Borrower shall cause ABC to ensure that the terms of reference for any technical assistance provided under the Project, shall be satisfactory to the Bank, and to that end, such terms of reference shall require that the advice conveyed through such technical assistance be consistent with the requirements of the Bank's Safeguards Policies and Procedures.

Name	Recurrent	Due Date	Frequency
Technical Audits: Schedule 2, Section II, C	**X**		Continuous

Description of Covenant

In implementing Part A of the Project, as applicable, as determined by the Bank, the Borrower shall cause ABC to: (a) prepare and furnish to the Bank, an independent technical audit (Technical Audit) in form and substance acceptable to the Bank which shall include, inter alia: (1) a description of all the findings and results; (2) a list of proposed measures and actions to be taken to resolve the issues identified under (1) above; and (3) a proposed timeline for the implementation of said measures and actions; (b) afford the Bank a reasonable opportunity to exchange views on such Technical Audit; and (c) thereafter implement such recommended measures, taking into account the Bank's views on the matter.

Conditions

Source Of Fund	Name	Type
IBRD and IDA	Subsidiary Agreement	Effectiveness

Description of Condition

The ABC Subsidiary Agreement has been signed on behalf of the Borrower and ABC.

Source Of Fund	Name	Type
IBRD and IDA	Operational Manual	Effectiveness

Description of Condition

The Operational Manual has been adopted by ABC in a manner acceptable to the Bank.

Source Of Fund	Name	Type
IBRD	Loan Agreement Execution	Effectiveness

Description of Condition		
The Loan Agreement has been signed and delivered and all conditions precedent to its effectiveness (other than the effectiveness of the Financing Agreement) have been fulfilled.		
Source Of Fund	**Name**	**Type**
IDA	Financing Agreement Execution	Effectiveness
Description of Condition		
Financing Agreement has been signed and delivered and all conditions precedent to its effectiveness (other than the effectiveness of the Loan Agreement) have been fulfilled.		

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Gylfi Palsson	Team Leader (ADM Responsible)	Lead Transport Specialist	Team Lead	GTI04
Jose Yukio Rasmussen Kuroiwa	Procurement Specialist	Senior Procurement Specialist	Procurement	GGO04
Lucas Carrer	Financial Management Specialist	Financial Management Specialist	Financial Management	GGO22
Amali Rajapaksa	Peer Reviewer	Senior Infrastructure Specialist	Review	GTI06
Angela Maria Caballero Espinoza	Safeguards Specialist	Social Development Specialist	Social Issues	GSU04
Carlos Alberto Molina Prieto	Safeguards Specialist	Social Development Specialist	Social Issues	GSU04
Carlos Mauricio Navarro Banzer	Team Member	Consultant	Engineering	GTI04
Elena Segura Labadia	Counsel	Senior Counsel	Legal Issues	LEGLE
Hector Miguel Mansilla	Team Member	Consultant	Engineering	GTI04
Juan Carlos Enriquez Uria	Safeguards Specialist	Senior Environmental Specialist	Environment	GEN04
Karla Dominguez Gonzalez	Team Member	Consultant	Gender Diagnostics	GTI04
Kulwinder Singh Rao	Peer Reviewer	Sr Highway Engineer	Review	GTI07
Licette M. Moncayo	Team Member	Program Assistant	Program Support Washington	GTI04
Marco Antonio Joaquin Rodriguez Corrales	Team Member	Consultant	Climate Risk Mitigation	GSU10

Maria Alejandra Velasco	Team Member	Operations Analyst	Country Issues	LCCBO
Maria Marcela Silva	Peer Reviewer	Practice Manager	Review	GTISO
Maria Virginia Hormazabal	Team Member	Finance Officer	Disbursement	WFALA
Melisa Gaitan Fanconi	Team Member	Consultant	Institutional	GEE04
Raul Tolmos	Safeguards Specialist	Environmental Specialist	Environment	GEN04
Satoshi Ogita	Team Member	Sr Transport. Spec.	Greenhouse Gas Analysis	GTI04
Shirley Leigue Gutierrez	Team Member	Program Assistant	Program Support La Paz	LCCBO
Steven Farji Weiss	Team Member	Economist	Socio-economic Diagnostics	GTI04
Vickram Cuttaree	Peer Reviewer	Program Leader	Review	EACPF

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Bolivia	Santa Cruz	San Jose de Chiquitos	**X**	**X**	Road Corridor between San Ignacio de Velasco and San Jose de Chiquitos
Bolivia	Santa Cruz	San Ignacio de Velasco	**X**	**X**	Road Corridor between San Ignacio de Velasco and San Jose de Chiquitos

Consultants (Will be disclosed in the Monthly Operational Summary)

Consultants Required? Consultants will be required

I. STRATEGIC CONTEXT

A. Country Context

1. **Bolivia took advantage of a decade of high commodity prices to generate strong growth and build robust macroeconomic indicators. Boosted by gas and mining exports as well as by rapidly increasing public investment, growth averaged around 4.7 percent per year between 2003 and 2015**. Good economic performance has allowed for a substantial reduction in poverty and inequality. Higher commodity and food prices and a dynamic domestic demand allowed for a rapid increase in revenues and a reduction in unemployment, both in rural areas—where most of the poor are located—and for non-tradable sectors in urban areas, particularly those engaging low-skilled workers. As a result, between 2004 and 2014, the average income of the bottom 40 percent of the population increased by 9.6 percent per year, doubling the average income growth for the whole population. This resulted in strong poverty reduction—from 63 percent of the population in 2002 to 39 percent in 2014; extreme poverty fell from 39 percent in 2002 to 17 percent in 2014.

2. **Despite these positive results and reductions in poverty and inequality, Bolivia still faces numerous development challenges**. The country still has one of the lowest Gross Domestic Product (GDP) per capita levels in the region while other social indicators, which have improved since the 1990s, are still below those in neighboring countries. Despite strong public investment, total investment remains low, as private investment is among the lowest in the region, including critical investments in gas exploration. In 2013, Bolivia launched the 2025 Patriotic Agenda with the goal of eradicating extreme poverty and translating the increasing prosperity of the country into well-being. To operationalize this agenda, the Government has launched a five-year Economic and Social Development Plan 2016–2020 (*Plan de Desarrollo Económico y Social*, PDES), which includes a massive public investment plan.

3. **Since oil prices plummeted in late 2014, Bolivia is facing a less favorable external context, which may put the medium-term macroeconomic framework under pressure**. Because of lower gas export prices, and ensuing lower fiscal revenues, both the current account and fiscal balances turned into sizable deficits in the last couple of years. The current account deficit amounted to 5.8 percent of GDP in 2015, while the fiscal deficit reached 6.9 percent. Similarly, growth decelerated from a peak of 6.8 percent in 2013 to a still robust 4.8 in 2015. In the context of the PDES, the Government is aiming to maintain a strong level of public expenditures to avoid lower growth. The ensuing fiscal deficit is financed by sizable Central Bank loans to public enterprises, higher external public debt, and the buffers accumulated during the commodity boom. The external imbalance is eroding the international reserves, which decreased from a peak of US$15.0 billion in late 2014 to US$11 billion in September 2016 while the Government maintains a de facto fixed exchange rate regime. External and fiscal imbalances are expected to prevail, as no rapid recovery of oil prices is expected, while the Government maintain its expansionary fiscal policy. This policy path may put the medium-term macroeconomic framework under pressure, as buffers are depleted, public debt increases, and if growth does not reach the levels expected by the Government.

B. Sectoral and Institutional Context

4. **Bolivia's transportation network comprises 39 airports, of which 7 are classified as international;** 2,268 km two non-contiguous railway systems, the Paraguay-Parana inland waterway and Lake Titicaca with limited passenger and freight transport; and 74,740 km of national road network. From 1990 to date, the nationwide road network has increased by about 70 percent, promoting connectivity as well as lower costs and reduced travel times for passengers and freight. As a landlocked country, Bolivia uses the seaports of neighboring countries.

5. **The road network consists of the primary network covering approximately 16,000 km; a departmental network with more than 19,000 km; and a municipal network covering about 40,000 km.**[1] With 10 percent of the roads paved and 50 percent dirt roads, the quality of Bolivian roads is lower than in most other countries in the region.[2] Of the primary road network, about 6,000 km are paved, which is an increase of 30 percent since 2006. The growth in traffic volumes on primary network roads during the period 2007–2012 ranges from 4 percent to 11 percent per year, with the largest increases occurring on routes closest to departmental capitals.[3] Of the length of the paved primary road network, 76 percent had average daily traffic of less than 3,000 vehicles, whereof 9 percent was less than 500 vehicles based on the 2010 traffic survey.

6. **The road sector is strategically relevant to Bolivia's economic development. Bolivia is a landlocked country that is challenged by its geography and topograph**y. The main cities and areas of extractive industries along with agriculture tend to be the economic drivers. The primary road network, instrumental in providing efficient transport services, comprises Bolivia's corridors for trade and economic activity and provides socially important integration between Bolivia's regions.

7. **Overall portfolio responsibility for Bolivia's road sector is with the Ministry of Public Works, Services and Housing** (*Ministerio de Obras Públicas, Servicios y Vivienda,* MOPSV), with the primary road network managed by the Bolivian Road Agency (*Administradora Boliviana de Carreteras*, ABC). ABC was formed in 2006 because of the restructuring of a previous road agency and has since been challenged with building its capacities to adequately manage the sector while at the same time absorbing increases in its investment budget.

8. **Strategy.** The country's strategy for the primary road network and on which the prioritized investment program is based, can be summarized as: (a) upgrading the primary road network; (b) preservation of road assets through rehabilitation; and (c) ensuring routine maintenance. ABC maintains the primary road network through a system of community based microenterprises, which in addition to achieving near global routine maintenance, generates about 4500 full-time jobs while addressing poverty alleviation.

[1] *Source:* ABC internal documentation, 2007.

2 Argentina (30 percent), Brazil (12 percent), Chile (21 percent), Colombia (9 percent), Ecuador (15 percent), Paraguay (51 percent), and Peru (18 percent).

[3] Transport and Logistics, Bolivia's Path Towards Competitiveness, World Bank Group, 2014.

9. **Funding.** In 2014, 31 percent of Bolivia's public investment was in the transport sector, representing 5 percent of the total budget. Of this investment budget, nearly US$1 billion was allocated to the primary road network. In the past several years, funding by external financiers has hovered around three-fourths of the investments made, with funding dominated by the Development Bank of Latin America (CAF), the Inter-American Development Bank (IDB), and, until recently, Brazil. While funding for the sector does not appear to be insignificant, in the medium term macroeconomic context it may result in reduced allocations to the sector.

10. **Connectivity.** The Government has made strategic connectivity one of the main priorities for investment planning for the primary road sector. This includes improving connectivity between all of Bolivia's regions, and building up the part of the road network designated as the Bi-oceanic Corridor (*Corredor Bioceánico*, see Annex 7), connecting Brazil to the ports of Arica and Iquique in Chile in the west, as well as Ilo and Matarani in Peru, by a road connection through Bolivia via northern (San Matias) and southern (Puerto Suarez) corridor entry points from Brazil, in the east of the Department of Santa Cruz.

11. **Institutional capacity.** An assessment of ABC's capacities, undertaken in preparation for the Road Sector Capacity Development Project (RSCDP, P144597),[4] identified institutional weaknesses that need to be addressed. Key among those were that fiduciary management and contract management need substantial strengthening. ABC recognizes that addressing some of these capacity challenges in the short and medium term is critical to its mission to efficiently deliver on its mandate overall. Even though the assessment identified that ABC capacities in environmental and social management, including gender, are reasonably robust, the RSCDP is supporting an update of ABC's Social and Environmental Manual to be used in all ABC projects.

12. **Road asset management.** Under the RSCDP (P144597), ABC is launching the first set of multiyear performance-based contracts (PBCs) for preservation of the paved primary road network.[5] In this proposed Project, ABC is considering expanding the use of PBCs using Design-Build-Maintain-Operate-Transfer (DBMOT) contracting for future upgrading of the primary road network. The methodology focuses on outputs and not on inputs and measures what is achieved rather than what is done. Under PBCs, the payments made to the contractor are not based on quantities of works measured by unit prices, but rather on measured outputs reflecting the target conditions of the roads under contract, expressed through contractually defined levels of service.

13. **The Government's effort in addressing these key sectoral issues and agendas is being supported with the proposed Project** along with the two other Bank-financed projects

[4] The RSCDP (PAD1484-BO approved on November 12, 2015), provides US$10 million to developing ABC's capacities. The World Bank is also currently financing the National Road and Airport Infrastructure Project, P122007 (Report No:59305-BO approved on May 5, 2011).

[5] This type of contract was introduced originally in Argentina in the 1990s and a number of countries have since adopted this contractual methodology. ABC has developed a specific model of contracts based on local and international experiences, referred to as Contracts for Rehabilitation and Achievement of Standards (*Contratos de Rehabilitación y Cumplimiento de Estándares*, CReCE). The RSCDP (P144597) is supporting implementation of the first set of these contracts and ABC plans to expand their use over the coming years to eventually cover the whole of the primary paved road network.

mentioned in footnote 4. The relevance of the World Bank Group in the sector is rapidly growing, particularly as it is leading the support for capacity development and PBCs.

C. Higher Level Objectives to which the Project Contributes

14. **The road corridor between San Ignacio de Velasco and San Jose de Chiquitos in Santa Cruz Department was selected for this proposed Project because of its strategic importance for economic development and poverty alleviation at the national and regional levels[6].** The corridor is a critical component of the primary road network in Bolivia's east, where the nation's main agricultural and hydrocarbon productivity is concentrated. The road segment to be supported by the proposed Project is on a north-south axis and connects the two main east-west road corridors from Brazil. As such, in the longer term, the proposed Project will contribute to improved connectivity of the *Corredor Bioceánico* discussed above, with widespread economic development effects. In the near term, the project will improve intra-regional access in four municipalities, San José (Chiquitos Province), San Rafael, San Miguel, and San Ignacio (Velasco Province). In addition to its economic base of agriculture, livestock and forestry, the project area contains sugar mills, oil refineries, silos, agribusinesses related to soy and dairy, and manufacturing of construction materials, furniture, leather, and food products. With the upgrading of the road corridor from gravel to asphalt concrete, travel times and vehicle operating costs will be reduced. This is expected to contribute to further diversification and expansion of production, trade, and services in the adjacent areas. Higher levels of business activities will generate employment and, as a result, increase household incomes and consumption. The four municipalities along the corridor rank low in accessibility and high in poverty, compared with national averages. The poor in the area will obtain direct benefits from the project, as reduced transport costs among the 282 villages and towns, translate into lower prices and availability of the goods and services that the poor consume and higher returns from the goods and services they produce. Moreover, the project will provide poor people with better access to off-farm and seasonal employment opportunities in the area and beyond. The project will also help to build tourism as an economic activity in the region, as Route RF-017 is part of the "Missionary Circuit" (*Circuito Misional*), consisting of churches built during the colonial era and designated a United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Heritage site. The road supported by the project will improve links to the Noel Kempff Mercado National Park, located beyond the project area in the northeast of the Department of Santa Cruz.

15. **The proposed Project supports the World Bank Group's goals of ending extreme poverty and boosting shared prosperity.** Improved transport infrastructure provides an intermediate means of acquiring the assets that sustain livelihoods and enable vulnerable groups to persistently escape poverty. Transport alternatives are limited in Bolivia and sustaining the quality of the road network is essential for efficiency, economy, and reliability of access to markets by producers and manufacturers, access of people to employment opportunities, and the provision of services to all segments of the population, including in remote, rural areas. By removing barriers related to distance, decreasing transport costs, and enabling the integration of

[6] See Annex 5, Economic Analysis and *Estudio y Evaluación Socio-Económica, Carretera San José De Chiquitos – San Ignacio De Velasco*, ABC, Diciembre 2015.

markets, the proposed Project will help mitigate long existing spatial inequalities in this mostly rural and lagging region.

16. **As part of the preparation of the proposed Project, a Poverty and Social Impact Analysis (PSIA) was undertaken.** Focus group discussions conducted with local stakeholders suggest that limited access to markets, services, and jobs throughout the region constitute one of the major constraints faced by the rural labor force. Accordingly, the proposed Project offers immense potential to improve accessibility and mobility to road users, ensuring that over 282 villages and towns that are part of the four macro-communities in the area have access to the regional road network and connection beyond to the main highway corridors. Enhanced connectivity in turn will improve the socioeconomic wellbeing of people residing along the rehabilitated road section. As explained in more detail in Annex 6, the project should result in indirect welfare outcomes for the local population, particularly in terms of local market development, agricultural productivity, household welfare, and employment, and access to services in a catchment area characterized by consistently high poverty rates. Similarly, the project will support key sectors in the regional economy, particularly tourism together with livestock and forestry production, boosting sectoral productivity and providing a more predictable source of income for several low-income families that are employed by these sectors.

17. **The proposed Project adheres to the three selectivity filters outlined in the World Bank Group Bolivia Country Partnership Framework for FY2016–2020,[7] namely:** (a) consistency with the Systematic Country Diagnostic,[8] (b) alignment with the Government's demand for World Bank Group engagement, and (c) comparative advantage of the World Bank Group. Further, the proposed Project supports Pillar 1 on Promoting Broad-Based and Inclusive Growth, and specifically Objective 1 that aims to Reduce Transport Costs and Increase Connectivity of Isolated and Vulnerable Communities to the National Road Network. It also supports Objective 3 on Improving Opportunities for Income Generation, Market Access and Sustainable Intensification and, under Pillar 2 to Support Environmental and Fiscal Sustainability and Resilience to Climate Change and Economic Shocks, Objective 5 on the Strengthening of Institutional Capacity to Improve Public Resource Management and Business Environment.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

18. **The project development objective (PDO)** is to improve transport accessibility along the road corridor between San Ignacio de Velasco and San Jose de Chiquitos.

Project Beneficiaries

19. **The upgrade of the primary road network in the Department of Santa Cruz provides better intra-regional access in four municipalities, namely, San José (Chiquitos Province), San Rafael, San Miguel, and San Ignacio (Velasco Province).** The primary beneficiaries are

[7] Report No. 82173-BO, discussed by the Board on December 8, 2015.
[8] Report R2015-0138, issued on July 1, 2015.

close to 125,000 inhabitants of which 51 percent are considered poor and 62 percent are of indigenous descent, together with businesses and road users who will benefit from improved local connectivity and reduced travel time and vehicle operating costs (VOCs) along the target road. The Indigenous Peoples in the area, Chiquitano and Ayoreo, will improve their livelihoods considering sensitive specific gender issues in each culture. While only DBMOT preparation for improvement in the northern road corridor from Brazil (part of the Bi-oceanic Corridor), is envisioned under the proposed Project, execution of works in the longer term will further enhance benefit to the target population through connections with Brazil. The proposed Project will also contribute to improved road safety for all road users, including drivers of motorized and non-motorized vehicles and passengers and pedestrians of all ages and both genders.

20. **The secondary beneficiaries include local governments, the Departmental Government of Santa Cruz and the central government**. The local governments will benefit from direct and indirect local job creation and the secondary effects of improving the competitiveness of local businesses. The local governments will also benefit with the improvement of the institutional capacities of its departments working on behalf of women, children and youth as part of gender-based violence prevention strategy that ABC will prepare.

PDO Level Results Indicators

21. **Three key results indicators have been selected to measure success in achieving the PDO.** They are detailed in the project's Results Framework in Annex 1.

(a) Travel time along the project area

(b) Vehicle Operating Cost - Cars

(c) Vehicle Operating Cost - Trucks

III. PROJECT DESCRIPTION

A. Project Components

22. **The proposed operation will benefit from efforts financed under the RSCDP (P144597),** to strengthen ABC capacities, particularly on financial management (FM), procurement, and contract management and augments these slightly as it relates to supporting road asset management by introducing the use of PBCs in road contracting in Bolivia.

Component A. Road Upgrading - US$225.05 million (World Bank US$225 million; Borrower US$50,000)

23. **The proposed road upgrading of about 208 km connects the towns of San Ignacio de Velasco and San Jose de Chiquitos in the Department of Santa Cruz.** From a technical standpoint the upgrading of the road is uncomplicated and for the most part will follow the existing alignment and thus largely be within the already established right-of-way. The pavement will be 5 cm thick asphalt concrete (AC), resting on a granular base and sub-base of 15 cm and 25 cm, respectively. Construction of three bypasses will be needed to avoid heavy vehicle traffic in populated areas (San Ignacio de Velasco, San Miguel, and San Rafael) as will

the straightening of alignment by San Diablo hill. Construction includes three small bridges (35 m, 40 m, and 46 m) and a handful of large box culverts will replace existing bridges. Total culverts needed on the length of the route are about 300. The terrain is mostly flat to gently rolling hills. The component will cover cost of feasibility and technical design remaining for one bypass, civil works, estimated cost of price adjustments and variations, supervision, and technical audits, if required. Further, the component will provide support (through the provision of small works, goods, training, and technical assistance, as the case may be) for the implementation and supervision of the Environmental Impact Assessment (EIA)/Environmental Management Plan (EMP), the Resettlement Action Plan (RAP), the Resettlement Policy Framework (RPF), and the Indigenous Peoples Plan (IPP).

Component B. Technical Studies and Project Management - US$5 million (World Bank US$5 million)

24. **This component links with the main investment by financing preparatory activities for upgrading the roughly 300 km San Matias-San Ignacio de Velasco road bi-oceanic corridor connecting with Brazil (northern corridor),** including the preparation of relevant feasibility studies (including technical, economic, environmental, and social aspects) and bidding documents, excluding from the project the upgrading works of the selected road segments. That northern corridor and the investment under Component A form a contiguous stretch of road, more than 500 km in length. ABC has decided that the studies will envision investment under a PBC methodology through a 10-year DBMOT contracting approach. In addition, the component will finance relevant gender studies and PSIAs. Also supported will be provision of support for monitoring and evaluation (M&E) of the project including, among others: (a) the carrying out of the project audits; and (b) the carrying out of capacity-building activities on, among others, road asset management.

B. Project Financing

25. **The total cost of the proposed Project is estimated to be US$230.05 million.** Bolivia has requested that all project costs be financed by the World Bank under IBRD and IDA Scale-Up Facility terms. Additionally, in the unforeseen event of cash resettlement payments and land acquisitions under the proposed Project, the Borrower will finance such payments from own funds.

Project Cost and Financing

Category	IDA Scale-Up Facility (US$)	IBRD (US$)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Goods, works, non-consulting services, consultants' services, training, and operating costs for the project	29,925,000	199,500,000	100%
(2) Front-end fee	75,000	500,000	

TOTAL AMOUNT	30,000,000	200,000,000	

C. Lessons Learned and Reflected in the Project Design

26. **The straightforward design of the proposed Project reflects experience with current and previous World Bank-funded projects in the sector, which have ABC as the implementing entity.** Implementation of these has at times been fraught with difficulties and complexities, especially when the project designs have a number of interlocking activities. Hence, the focus in the proposed Project on only a handful of larger activities is expected to allow ABC, in execution, and the World Bank, in its implementation support, to concentrate its efforts.

27. **Drawing on experience from a number of countries where limited institutional capacities are identified, the very targeted support by the complementary RSCDP (P144597),** aims at addressing constraints comprehensively in key areas of weaknesses, particularly by supporting an integrated FM system, improved planning for rehabilitation of the paved road network, and addressing the deficiencies in procurement and contract management using a multifaceted approach.

28. **Drawing on lessons learned in infrastructure projects where a large influx of workers is expected,** the proposed Project has made a concerted effort in addressing potential risks by use of Guidance Note on Managing Risks of Adverse Impacts on Communities from Temporary Project Induced Labor Influx, dated December 1, 2016.

29. **ABC is moving toward extensive use of PBCs, initially with planned contracts in 2016 for preservation of the established paved primary road network**, but with the intent of using, in the future, a 10-year DBMOT methodology of contracts for new road construction and for roads requiring significant upgrading. In the design of the proposed Project, ABC considered that the investment in the San Ignacio de Velasco-San Jose de Chiquitos road would be under a DBMOT approach, but eventually decided that it would prefer the first such contract be tendered only after specific and thorough preparation. Hence, the proposed Project will support the study for the San Matias-San Ignacio de Velasco road for future investment.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

30. **As the proposed Project's implementing agency, ABC has full responsibility for its technical, fiduciary, M&E, and environmental and social aspects.** ABC is a decentralized entity of the MOPSV and is granted its own legal status and technical, administrative, and financial autonomy. ABC has its headquarters in La Paz and nine regional offices in each of the country's departments; each regional office has a similar organizational structure as the headquarters. The agency has about 340 staff, out of which some 200 positions are based in the regional offices, and is further supported by consultants as necessary. A third of the total staff are engineers, whereof half are based regionally. ABC has a decentralized model for its operation, under which the regional offices have responsibility for operational aspects of project implementation, including contract management and subsequent daily works supervision and

quality control. For larger investments, ABC headquarters takes a lead on operational and fiduciary aspects with the regional offices providing support. For purposes of day-to-day engagement, ABC has a focal person dedicated to World Bank-financed projects who coordinates as needed with various units of ABC.

31. **ABC's centralized Construction Unit carries out the civil works program planning and preparation, as well as M&E.** Bid documents for the civil works were prepared by a qualified outside engineering firm and procurement has been initiated. A private engineering consultancy is being engaged for works supervision. ABC's centralized Administrative Unit handles procurement (with support of the Construction Unit) and FM with some inputs from regional offices. ABC's Environmental and Social Department is responsible for the overall environmental and social supervision of the proposed Project and its compliance with legislation applicable to the sector. It coordinates, working closely with ABC's Construction Unit, all aspects related to planning, preparation of social and environmental studies, M&E, IPP projects, Gender-based Violence (GBV), Human Immunodeficiency Virus (HIV) Acquired Immune Deficiency Syndrome (AIDS)/Sexually Transmitted Disease (STD) prevention measures and compensation programs for resettlement and land acquisition.

32. **Comprehensive support is being provided through the RSCDP (P144597),** for addressing key capacity weaknesses at ABC, particularly in improving systematic FM, technical planning, procurement and contract management. ABC is advancing with the selection for long-term advisory services on procurement, contract management and related risks, which will include sustainable training and contract management certifications regime, and through engaging a procurement advisor for a comprehensive review of ABC internal procurement processes. That project also supports improvement of environmental and social management through updating of guidelines and training to strengthen management related to resettlement and handling of indigenous peoples' issues. ABC, with the advice of the Bank, will conclude its review and updating of its environmental and social manual by end of 2017.

B. Results Monitoring and Evaluation

33. **ABC's existing M&E framework is being strengthened through implementation of the integrated FM information system, in particular through an improvement of fiduciary systems and technical planning.** These activities are, among other things, supported by the RSCDP (P144597). M&E of project activities, based on the PDO-level and intermediate results indicators in annex 1, will be the responsibility of the sub-director of the Construction Unit. ABC will prepare semiannual reports detailing financial and physical progress of all activities. Also, through citizen engagement, ABC supports a system where the beneficiary population of road works are organized to undertake a formal monitoring of the works. ABC has established a Quality Manual in accordance with the requirements of ISO 9001: 2008, which defines the policies, processes, and requirements of the Quality Management System (QMS) implemented in ABC. This QMS comprises the areas of planning, management, research and design, construction, maintenance, preservation, and operation of the primary road network, describing the relationships of authority for the performance of management activities in each of these areas and the responsibilities of key staff members and areas. The World Bank through its implementation support will collaborate ABC in ensure adequate monitoring of progress and achievement of indicators and results, by supporting additional assessment and consultation to

better understand possible gender dynamics of the proposed Project. A Midterm Review will take place around November 2018.

C. Sustainability

34. **The overall level of resources for the road sector has increased significantly in the past 10 years** and the budget allocations that are envisioned in the coming few years for preservation of the network appear sufficient. That said, the annual level of resources required to adequately maintain the primary highway network is currently not known, as Bolivia is only in the initial stages of establishing a road asset management system.

35. **ABC is initiating a PBC approach for preservation of the paved primary network, which entails a long-term commitment to systemic management of the network.** At the beginning of 2017, ABC will bid out the initial PBCs for preservation of the paved primary network. These are referred to as Contracts for Rehabilitation and Achievement of Standards (*Contratos de Rehabilitación y Cumplimiento de Estándares*,CReCE). CReCE are multiyear, lump-sum PBCs entered into by ABC with private sector contractors and which obligate the contractor to undertake all phases of road rehabilitation and maintenance work as a single package, from design and programming of the works, through their execution. The RSCDP (P144597) supports this activity. The San Ignacio de Velasco-San Jose de Chiquitos road would be subjected to CReCE contracting, following its upgrade. A rolling set of multiyear CReCE will preserve the established road network in a systemic manner.

36. **The study to be undertaken as part of this proposed Project advances the performance-based approach further,** as it envisions eventual contracting for an upgrade of a road using the DBMOT.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

37. **The overall risk for the proposed Project is rated Substantial.**

38. While the project design is simple with one large civil works package and associated supervision, institutional capacity risk is deemed High, as these require professional contract management implementation capacity by ABC, which has shown weaknesses in the past. This risk is being mitigated through RSCDP[9] (P144597) support, through which ABC is in the process of engaging a specialized firm through a multiyear contract for comprehensive support to strengthen its capacities in contract management, including with direct support to its staff who manage contracts, repeated training programs for several years, and through building of curriculum and a university program for contract management certification of ABC in the future.

[9] The RSCDP with scheduled closing in June 2020 is implemented in parallel with this proposed Project. Capacity development support under the RSCDP is in procurement and preparatory stages and implementation of activities is expected to commence in early calendar year 2017.

39. **In the recent past, ABC has had difficulties in efficiently planning and executing with quality the procurement of road works; partly because of internal capacity issues but also because of deficiencies in the public procurement framework that ABC is governed by.** In the proposed Project, the associated risk is partially mitigated with ABC using the World Bank's procurement policies, guidelines, and standard bidding documents (SBDs) for the IBRD loan and IDA credit. FM systems, complex implementation arrangements, and budgeting and accounting arrangements are deemed as Substantial risk. Specific mitigation measures have been agreed to, as explained in the appraisal section, and FM will eventually benefit from RSCDP (P144597) support to implementation of an integrated FM information system and procurement from support to strengthening of procurement and contract management capacities. Nevertheless, fiduciary risk is deemed Substantial.

40. **Social risks are rated Substantial as one of the two indigenous groups in the project area is deemed to be vulnerable to a large influx of workers**. The IPP and gender action plans include various activities to mitigate risk to this group. This risk is mitigated further by a set of responsibilities contractually placed on the contractor and supervisor. In addition, coordination with local institutions will support the implementation and sustainability of the IPP projects, GBV and HIV/AIDS/STD prevention strategies during and after project completion.

VI. APPRAISAL SUMMARY

A. Economic Analysis

41. **The project's economic evaluation was carried out through the Highway Development and Management Model (HDM-4) which simulates life cycle conditions and costs and provides economic decision criteria for multiple road design and maintenance alternatives.** Based on the current conditions (initial situation) of the roads, traffic data, characteristics of the vehicles fleet, and unitary costs, HDM-4 simulated deterioration of pavements and variations in VOCs, travel times, as well as other parameters (for instance decrease in road traffic accidents). Under the current economic evaluation, three benefits were quantified: savings due to decreases in VOCs, decrease in travel time costs, and development related benefits (exogenous benefits).

42. **Through HDM-4, comparisons were made to estimate benefits from several alternatives for improvement of the road sections and with a base scenario.** Scenarios for the analysis, with a total evaluation period of 20 years, were defined as follows:

(a) Base scenario, unpaved road with gravel surface, with periodic replenishments of gravel and routine maintenance

(b) Pavement alternatives in double surface treatment (DST) and AC with granular base and sub-base, with future resurfacing with an AC layer of 5 cm thickness after the international roughness index (IRI) reaches 4 m/km for both of the analyzed alternatives

43. **The analysis performed with HDM-4 shows 5 cm AC as a viable solution with acceptable return rates.** The economic analysis, performed with a discount rate of 12 percent yields the following Net Present Values (NPVs) and Internal Rate of Return (IRR).

Table 1. IRR and NPV

Section	Length	Investment		%	IRR	NPV (US$, millions)
		US$/km	Section (US$)			
San Ignacio-San Miguel	40.8	664,391	27,107,153	16.1	18.6	15,202
San Miguel-San Rafael	39.0	702,888	27,412,632	16,3	19.8	18,027
San Rafael-km 117+080	44.2	874,918	38,671,376	23.0	8.4	-9,749
Km 117+080-La Fortuna	43.9	807,863	35,465,186	23.5	11,0	-2,610
La Fortuna-San José	40.0	986,902	39,476,080	21.1	15.7	11,823
Complete Corridor	**207.9**	**808,718**	168,132,426	**100.0**	**14,5**	**32,693**

44. **A sensitivity analysis of the project's main risks was conducted.** With up to 10 percent increase of investment costs and a 10 percent reduction in the benefits of the beneficiaries, NPV decreases to US$10.28 million and yields an IRR of 12.7 percent. If exogenous benefits are reduced up to 50 percent, NPV decreases to US$5.16 million and yields an IRR of 12.4 percent.

45. **Vehicle emissions are assessed by using the HDM-4 simulation together with the economic evaluation.** HDM-4 calculates CO_2 emission through the following steps: (a) estimation of average vehicle speed based on road conditions, traffic level, and vehicle characteristics, and (b) estimation of CO_2 emission from vehicles through the formula as a function of vehicle speed, which is defined in HDM-4. The total emissions in the base and project scenarios are 588,339 tCO_2 and 523,749 tCO_2 respectively over 20 years, resulting in an emission reduction of 56,590 tCO_2 or 9.6 percent as compared with the reference scenario. At US$30 per tCO_2 the improvement in the NPV and IRR is negligible. Through rough-order estimation the Bank assesses that the possible climate adaptation co-benefits from the proposed Project may be about 5 percent, or about US$11 million. Subject to more detailed information, the climate adaptation co-benefits may be re-estimated during execution of works.

B. Technical

46. **To facilitate the analysis of the geometrical design of the road and based on various technical parameters,** the road is divided into five sections although the works are tendered as a single input base works contract. Feasibility and design studies were concluded, reviewed, and concurred with by the World Bank, with the exception of final design for the San Ignacio de Velasco bypass, which is expected to be finalized by April 2017.

47. **The length of the project road is approximately 208 km.** It is on a rolling gravel surface on granular ground, with an average width of 7.00 m with 2.0 m shoulders (in road sections I, II, IIIa, and IIIb) and 2.5 m (Section IV). Topographically, the road is plane and semi-plane and to a lesser extent in rolling areas. The heights above sea level range from 402 m in San Ignacio de Velasco and 282 m in San Jose de Chiquitos, and 397 meters in the San Diablo hills. Geological analysis indicates sandy soils, silt, and clay of medium plasticity, and to a lesser extent, shale rock.[10]

[10] Climate and disaster risk screening of the area indicates 1211 mm average annual rainfall, which may in the future increase by 8 percent. About 10 km of the road experiences occasional flooding (approaching San José de Chiquitos), a problem expected to be eliminated with the road upgrade design.

48. **The road is declared part of Bolivia's Primary Road Network, classified as RF-017, with progressive 0 km located in the town of San Ignacio de Velasco.** Primary route RF-017 connects two other routes of the primary network: (a) a section of RF-004 that goes from San José de Chiquitos to Puerto Suarez and (b) a section of RF-010 that goes from San Ignacio de Velasco to San Matias, both within the Department of Santa Cruz. Annual Average Daily Traffic (AADT), depending on sections, ranges between 160 and 315 vehicles. The estimated AADT upon conclusion of works ranges between 250 and 450 vehicles.

49. **Road improvement will include an AC surfacing for all sections of the road. The improved design considers a width of 7 m along the road with 1.5 m shoulders.** For the pavement design, the American Association of State Highway and Transportation Officials (AASHTO) Method 1993 has been used, as is commonly the case in Bolivia. Slopes vary from 0.12 percent to 6 percent in the early sections, reaching a minimum slope of 0.01 percent and a maximum of 6 percent in small sections of the road. Three small bridges (35 m, 40 m, and 46 m) will be constructed and a few existing small bridges will be replaced by box culverts. About 300 total culverts are needed. Road safety considerations were made in design of the upgrading of the road, including bypasses to avoid intersecting with local traffic, but additionally supervision consultant before construction will do a specific road design safety audit.

50. **The improved road will, for the most part, follow the existing alignment and thus largely be within already established right-of-ways**. Exception to that alignment are three new bypasses to reduce heavy traffic in the populated centers of the towns of San Ignacio de Velasco, San Miguel, and San Rafael, and an improvement of alignment in the southern foothills of San Diablo hill (horizontal and vertical alignment, improving curves and slopes).

C. Financial Management

51. **An FM capacity assessment was carried out to review the adequacy of the FM arrangements of ABC.** ABC is in the process of adopting an integrated FM information system. After the system is in place, likely by end of 2017, a new capacity assessment will be carried out to determine its adequacy to support the proposed Project implementation under its respective components. This discussion spells out the main features of the current FM arrangement for project implementation, which are widely based on the existing capacity and performance under the current and recent World Bank-financed projects.[11]

52. **ABC's FM performance in previous World Bank-financed projects has been considered Moderately Satisfactory; however, there are still key shortcomings that need to be addressed.** Specific measures have been agreed to supplement the existing arrangements to make sure they fully respond to allow timely reporting and provide reliable information for decision-making purposes. Those arrangements mainly include: (a) revised and streamlined processes and procedures, including internal controls, focusing on contract management, approval of progress certificates, and payment processing; (b) implementation of a new information system that allows the compiling of information related to programming and budget execution, to provide ABC with a single and reliable source of information for monitoring and

[11] National Roads and Airport Infrastructure Project (P122007 approved on May 5, 2011) and Road Rehabilitation and Maintenance Project (Report No: 23625 approved on April 16, 2002)

decision-making purposes; and (c) the adjustment to the format, content, and specific arrangements for preparation of interim financial reports (IFRs). These arrangements have been agreed and finalized and are reflected in the Operational Manual.

53. **Based on the information gathered during the capacity assessment,** the proposed Project's FM inherent risk, the control risk, and the overall FM risk are all rated Substantial. This is mainly due to: (a) the shortcoming of the current FM systems; (b) complex implementation arrangements which require that regional offices assume some of the FM activities; and (c) complex budgeting, accounting, and contract management arrangements that require regular reconciliation between Bolivia's integrated FM system (*Sistema de Gestión Pública*, SIGEP) and auxiliary systems that may affect project implementation.

54. **To mitigate the above noted weaknesses and improve the design of the FM arrangements, ABC has agreed to the following:** (a) seek confirmation from the Ministry of Economy and Public Finance on the timeline for implementation of the new Public Management System-Integrated Administrative System for Projects (*Sistema de Gestión Pública-Sistema Integrado de Administración de Proyectos*, SIGEP-SIAP); (b) reflected in an Operational Manual revised internal procedures, including coordination mechanisms with regional offices; and (c) define the content and format of financial reports, including those required from the regional offices, as well as their issuance from an auxiliary information system.

D. Procurement

55. **Procurement activities are carried out by ABC central office.** Procurement risks are related to: (a) ABC's technical and fiduciary teams' inadequate knowledge of World Bank procurement procedures and contract management of large contracts; (b) potential for no offers being received or no offers being awarded for a contract because of the lack of a market response; and (c) timely supply of materials for the civil works. Procurement risk is deemed Substantial.

56. **The risk mitigation measures identified are as follows:** (a) ABC will maintain adequate organizational structures, facilities and support capacity, qualifications and experience of staff that will work in procurement, record keeping and filing systems, procurement planning and monitoring/control systems, and capacity to meet the World Bank's procurement contract reporting requirements; (b) bid documents are elaborated in accordance with World Bank Group standards and guidance; (c) through the support of the RSCDP (P144597), ABC is engaging a specialized firm through a multiyear contract for comprehensive support to strengthen its capacities in contract management, including with direct support to ABC staff who manage contracts; (d) an Operational Manual which, among other things, addresses procurement and contracting procedures; (e) the Loan and Financing Agreements include provisions related to proposed Project implementation from a procurement perspective; and (f) the World Bank will deliver a systematic training program on procurement for the existing and new investment operations and provide close monitoring, particularly during the first two years of project implementation.

57. The contracts with both the road works contractor and the supervision contractually bind these entities to carry out social and environmental mitigation in accordance with the RAP, IPP and EIA/EMP, including mitigations of potential negative effects of labor influx in the region.

58. **The works are being procured through one International Competitive Bidding (ICB) process consisting of a single lot.** For the corresponding supervision contract, one consultant firm contract will be awarded through an international selection process, as will a consulting firm contract for the consulting services related to preparation of a technical study related to an eventual DBMOT bid process for the San Ignacio de Velasco-San Matias road. The procurement and selection process for the civil works and the supervision are in final stages of preparation. Selection of a consultant for the DBMOT study is expected to take place in 2017.

E. Social (including Safeguards)

59. **A Social Assessment (SA) was done during preparation in which gender and intercultural issues were reviewed.** Two IPs, Chiquitano and Ayoreo, were identified and an IPP has been prepared in accordance with the triggered Bank's Operational Policy (OP) OP 4.10. The SA also indicates the presence of irregular occupations within the right-of-way, resulting in the preparation of a RAP and a RPF in accordance with triggered OP 4.12 on Involuntary Resettlement. The SA was published in the Bank's external website on February 04, 2016 and by ABC on January 21, 2016.

60. **The proposed Project's social impacts will be largely positive**. The new road link will improve connectivity in geographically isolated regions of the country thus making access to jobs and services easier for the rural populations. The proposed Project will also stimulate local market development, agricultural productivity, and business activity, which should lead to better trading conditions for both local farmers and consumers. Potential negative impacts are mitigated through IPP activities: strengthening of indigenous identities and cultures to mitigate acculturation; territory management and land protection to mitigate possible illegal occupation by new immigrants and possible increase of deforestation and solid pollution rates; prevention of gender-based violence, unwanted pregnancies, STD including HIVAIDS, and other transmitted diseases.

61. **The Chiquitano people represent around 61 percent of the population in the proposed Project area**. There are 28 Chiquitano communities, 17 of which will be affected by the proposed Project. The Ayoreo people represent 0.066 percent of the total population in the project area. The proposed project will indirectly affect inhabitants of three Ayoreo communities of the Native Community Land (*Tierra Comunitaria de Origen*, TCO), Santa Teresita, located 60 km away from the city of San José de Chiquitos. There are approximately 200 Ayoreo living in this titled territory of 77,545 ha. They follow a seminomadic way of life, with migration pattern between Santa Teresita and the cities of San José and Santa Cruz. The sacred areas of the Ayoreo in the TCO are and will continue to be inaccessible by road access.

62. **An IPP has been prepared by ABC so that both the Chiquitano and Ayoreo can participate in the project benefits and mitigate negative impacts on their culture and territories.** The IPP components are focused on the areas of health, education, basic services (access to water), local economic development, cultural heritage, territory management and land

protection, and infrastructure. The IPP activities have been developed considering gender and cultural particularities of Ayoreo and Chiquitano peoples and focus on achieving results on social inclusion. The free, prior, and informed consultation processes with the Chiquitano and Ayoreo local, regional, and national authorities, lead to broad community support to the proposed Project and to the IPP. ABC will be in charge of the IPP implementation, whose activities will be financed with the Loan and Credit. The supervision is strengthened with a social team with demonstrated experience on community relations issues, indigenous rights, gender, sexual and reproductive health and which will be in charge of its implementation of the IPP projects with additional support of expert entities in the region. The contractor will execute civil works part of the IPP projects.

63. **In compliance with World Bank Group triggered safeguard OP 4.12 and consistent with Bolivian laws, ABC has developed a RAP and a RPF.** Physically affected people and local community authorities were included in public consultations during the preparation of the RAP and RPF in October 2015. The consultations helped define mitigation strategies for fair compensations in the 386 cases of physical impact (agricultural improvements, houses, barnyards, water pipes, fences, kiosks, a soccer field, a bus stop, a school, water connections and a water tank, among the most important ones) in urban areas, in indigenous and non-indigenous rural communities and private farms. In the case of La Fortuna community, 36 families consented to be relocated, two families in the Quituquina community. Land acquisition and expropriation are not needed because the resettlement will take place inside the communities; therefore, no host communities are needed. Accompaniment activities will be implemented until their livelihoods or standard of living have been restored to pre-displacement levels or better. ABC will be in charge of implementing the RAP and RPF and cash compensation will be financed by the counterpart. The RPF was prepared as the final alignment of the bypass in San Ignacio de Velasco is not yet selected and its feasibility studies and design will be financed under the proposed Project. Accordingly, the RPF of the RSCDP (P144597) has been updated to include mitigation measures and monitoring procedures in the event of involuntary resettlement as a result of the design and construction of the bypass in San Ignacio de Velasco which will be moderate and can be readily mitigated, including the procedures for the preparation and implementation of a site-specific RAP if applicable.

64. **Civil society organizations and other stakeholders were consulted during the preparation of the proposed Project**. Consultations with the Chiquitano and Ayoreo for the IPP, were done not only at the national and regional levels but also with the affected communities who participated in prioritizing IPP projects. The consultations that developed the designs of the IPP[12], RAP[13] and RPF[14] respectively, were helpful to build mitigation strategies that consider their interests, potentialities, and needs exposed in the SA. During the preparation of the IPP/RAP the affected stakeholders belonging to some of these organizations were consulted and broad community support to the proposed Project was given; however, some concerns were raised related to possible negative impacts including unwanted pregnancies (hijos de la carretera), road safety, non-appropriate workers' behavior, and citizen security. Considering these risks and concerns, the Grievance Redress Mechanisms for the social

[12] IPP consultation process took place between January and September 2015.
[13] RAP consultations with indigenous and non-indigenous people, were developed in October, 2015.
[14] Consultations for one possible alternative for the San Ignacio bypass took place in September - October 2015.

safeguard instruments (IPP/RAP/RPF), were structured to cover safeguards, and non-safeguards grievances and it was ensured they would be functional for any affected person during the execution of the proposed Project.

65. **Following clearance by the World Bank of the IPP and RAP,** these were published respectively on the ABC website on January 21, 2016, and July 26, 2016, and by the World Bank on its external website on January 26, 2016, and January 28, 2016, with updates on May 25, 2016. The RPF for the construction works related to the bypass of San Ignacio de Velasco was published on July 13, 2016 in the Bank's external website and on July 14, 2016 by ABC.

66. **Gender.** Through the SA and PSIA, the following gender issues were identified: (a) lack of sustainable economic opportunities especially for Chiquitano and Ayoreo indigenous women which relegates them to dependency relationships, which increase the risks to suffer gender-based violence, unwanted pregnancies, HIV/AIDS/STD; (b) Ayoreo women who migrate between TCO Santa Teresita and Santa Cruz and/or San José cities get involved in commercial sex work. As a consequence of matriarchal gender traits still present in Ayoreo society, commercial sex work is not discouraged inside the community; however, this makes Ayoreo population more vulnerable to STD. This situation can be worsened by the labor influx of the Proposed Project; (c) a considerable number of Chiquitano women in the targeted municipalities are single mothers and heads of households as a consequence of suffering different types of gender violence; and (d) weaknesses in mechanisms to report gender violence to the four Integrated Municipal Legal Services *(Servicios Legales Integrales Municipales*, SLIM), located in the proposed Project area.

67. **To develop specific actions to mitigate potential negative impacts, risks and/or enhance benefits, the IPP incorporated a gender focus into all of its activities.** (a) to strengthen economic empowerment of Chiquitano and Ayoreo women the IPP has included: six projects to improve marketing conditions and regional economic opportunities; two projects to improve production capacities with special focus on women; two projects to improve access to basic services and open opportunities to invest their incomes in production; (b) for Ayoreo women, an IPP project to improve the production and commercialization of *garabata* art craft, as an economic alternative to commercial sex work. As for the potential risks related to labor influx and possible increase in HIV/AIDS/STD and tuberculosis in the community, another IPP project is focused on Ayoreo volunteers' training to guide, report, and follow up health treatments and prevention of HIV/AIDS/STD and TB. This IPP project will develop a baseline in coordination with the local health services in the beginning of its implementation; (c) Chiquitana single women will benefit from 5 IPP projects focused on their economic empowerment and the improvement of their livelihoods. GBV prevention activities will be undertaken during these project's implementation; (d) before the start of civil works and periodically during all the project, the contractor's social team will undertake training sessions on the contractor's code of conduct, GBV prevention and HIV/AIDS/STD for all the workers.

68. **The project constitutes a formal Social Oversight (*Control Social*) Committee (SOC), composed of all local civil society organizations, to monitor the implementation of the proposed project.** The project's Grievance Redress Mechanisms, which includes participation by contractor and supervision, will throughout project implementation benefit affected persons. Also, communication, socialization, and transparency about the project, will be shared regularly

with everyone involved or affected to manage expectations and reduce risks. Moreover. This participatory approach will strengthen the social and environmental impact mitigation of the proposed Project based on community organizational capacities.

69. **Labor Influx.** The road works will require a labor influx of approximately 2,000 workers (foreign and Bolivian) in the proposed Project area. These workers will reside during approximately three years in four labor camps, one in each of the four Municipalities in the project area (San José de Chiquitos, San Rafael, San Miguel and San Ignacio). Additional small camps may be set up temporarily for quarries and borrow bits, although it is unlikely workers will reside in these. The proposed Project through its safeguard instruments, institutional arrangements, and contractual obligations, incorporates a comprehensive array of measures to mitigate negative impacts of labor influx on local communities and vulnerable groups (see details in Annex 3). The key mitigation measures include: (i) maintenance by ABC of a well-staffed Environmental and Social Division, (ii) requirements for the Contractor and Supervision Consultant to have adequate staff in charge of environmental and social compliance and measures, (iii) criteria in the proposed project's EIA for site selection of labor camps so as to minimize and adequately mitigate negative impacts, (iv) a requirement for the Contractor to prepare and abide by a Contractor's Environmental and Social Management plan (CESMP), including site-specific provisions for labor camps, (v) strict adherence by the Contractor's personnel to a Code of Conduct, which includes provisions related to gender, minors and HIV/AIDS/STD prevention, among others, (vi) monitoring and enforcement of the Contractor's observance of the Code of Conduct by the Supervision Consultant, (vii) regular mandatory training on the Code of Conduct and HIV/AIDS/STD prevention for every worker, (viii) SOCs for the project organized and operating in each Municipality as provided by Bolivian law, (ix) operation of a project-specific Grievance Redress Committee (GRC) linked to the pre-existing *SLIMs, Servicios Legales Integrales Municipales* and the Defender of Children and Adolescents (*DNA, Defensoría del Niño y Adolescencia)* of each Municipality, (x) operation of a complaint logging and tracking system, (xi) special initiatives to support women's economic opportunities and protections, in particular among women of the two identified indigenous peoples' groups, and (xii) information sessions and media campaigns for local residents and SOCs on the potential effects of the influx of workers, the GRC, the Code of Conduct, and pertinent laws and regulations, with the aim of sensitizing people to report incidents and officials to follow up on these reports.

F. Environment (including Safeguards)

70. **The proposed Project is classified as Category B,** which is the appropriate classification for projects whose potential adverse environmental impacts on human populations or environmentally important areas are site specific, reversible, and can be readily mitigated. The following environmental safeguards have been triggered: (i) Environmental Assessment (OP 4.01) because of identified but limited environmental impacts; (ii) Natural Habitats (OP 4.04) given the presence of natural habitats along the road that could be affected due to change in a very small segment of alignment in the San Diablo hill; and (ii) Physical Cultural Resources (OP 4.11) because the project area includes a town recognized as a global cultural heritage.

71. **The proposed Project does not foresee significant environmental impacts that could jeopardize the natural but intervened environment of its influential project area, mainly**

characterized by livestock and agricultural landscapes. However, some potential adverse environmental impacts might be related to: (a) quality of small groundwater bodies (ponds) along the road used by local populations for multiple uses; (b) quality of aquifers adjacent to campsites and ancillary facilities; (c) pedestrian health due to dust in the town centers along the road; (d) disturbance of minor wild fauna living around ponds; and (e) dust on historical monuments (for example, Jesuit churches).

72. **An EIA, including its constituent EMP,** comprising several environmental mitigation programs such as Adaptation and Environmental Oversight Programs (*Programa de Vigilancia de Adaptación y Medio Ambiente*, PASAs) and Prevention and Mitigation Programs (PPMs), was prepared by the client in 2012 for the road in accordance with Bolivian environmental regulatory requirements**.** Two public consultations were held in 2012 in the four municipal jurisdictions involved in the project area, with participation of key stakeholders that supported the proposed Project during preparation of the EIA. The local population emphasized issues related to hiring of the local workforce, location of ancillary facilities and workers' residences, and codes of conduct for contractors. This EIA was approved by the Ministry of Environment and Water (*Ministerio de Medio Ambiente y Agua*) in 2012 and the corresponding environmental license was issued.

73. T**he EIA was reviewed by the World Bank and updated with specific measures to prevent aquifer contamination caused by digging of wells to obtain water for campsites and works.** Signaling and road safety measures were updated on basis of final technical designs. Site-specific public consultations on the updated EIA, organized by ABC, were held in San José de Chiquitos, San Rafael and San Ignacio de Velasco. Among participants in these consultations were representatives from the municipal government, indigenous groups, residents, and Social Oversight Committees. Most queries made were about payments to local communities for use of borrow pits, compensations to people affected by eventual San Ignacio bypass and the final alignment of the San Ignacio bypass, and implementation of the IPP, among others. No changes to the EIA were proposed by the participants. A printed copy of the EIA is available at municipality offices in the area. An updated environmental license was revalidated by the Ministry of Environment and Water (*Ministerio de Medio Ambiente y Agua*) in February 2016, despite the on-going validity of the original one.

74. **Following approval of the updated EIA by the World Bank Group,** it was published on both the ABC website and by the World Bank on its external website on February 5, 2016 and following further consultations again on December 5, 2016.

G. World Bank Grievance Redress

75. **Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS).** The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has

been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

Annex 1: Results Framework and Monitoring

Country: Bolivia

Project Name: Santa Cruz Road Corridor Connector Project (P152281)

Results Framework

Project Development Objectives

PDO Statement

The PDO is to improve transport accessibility along the road corridor between San Ignacio de Velasco and San Jose de Chiquitos.

These results are at	Project Level

Project Development Objective Indicators

		Cumulative Target Values					
Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target
Travel time along the project area (Hours)	5.00	5.50	5.00	3.50	2.50	2.50	2.50
Vehicle operating cost - Cars (US$/km)	0.37	0.37	0.37	0.29	0.21	0.21	0.21
Vehicle operating cost - Trucks (US$/km)	2.50	2.50	2.50	1.90	1.30	1.30	1.30

Intermediate Results Indicators

		Cumulative Target Values					
Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target
Roads constructed, non-rural (Kilometers) – (Core)	0.00	20.00	100.00	170.00	208.00	208.00	208.00
DBMOT bid documents prepared for San Matias-San Ignacio de Velasco road (Yes/No)	No	No	No	Yes	Yes	Yes	Yes
Direct project beneficiaries	125,000	127,000	129,032	131,097	133,194	135,325	135,325

(Number) – (Core)							
Female beneficiaries (Percentage – Sub-Type: Supplemental) – (Core)	50	50	50	50	50	50	50
Road users satisfied with quality of roads disaggregated by gender and user mode (Percentage)	11	11	11	50	50	70	70
Road users' satisfaction - Male passengers (Percentage – Sub-Type: Breakdown)	17	17	17	50	50	70	70
Road users' satisfaction - Female passengers (Percentage – Sub-Type: Breakdown)	12	12	12	50	50	70	70
Road users' Satisfaction – Male drivers (Percentage – Sub-Type: Breakdown)	6	6	6	50	50	70	70
Social inclusion and gender (Text)	No	Yes	Yes	Yes	Yes	Yes	Yes
Improvement of access to water in indigenous communities (Text – Sub-Type: Breakdown)	0	0	0	4	4	4	4
Training of construction workers on gender, gender-based violence prevention, and HIV/AIDS/STD (Percentage -Text – Sub-Type: Breakdown)	0	100	100	100	100	100	100
Ayoreo women and men trained on HIV/AIDS/STD and tuberculosis prevention, working in their communities (Text – Sub-Type: Breakdown)	0	0	0	10	10	10	10
iRAP surveys completed showing any trends/improvements in road safety along the corridor. (Yes/No)	No	Yes	No	No	Yes	Yes	Yes
Traffic accidents on the San Ignacio de Velasco-San Jose de Chiquitos road corridor reported (Yes/No)	No	Yes	Yes	Yes	Yes	Yes	Yes

Indicator Description

Project Development Objective Indicators

Indicator Name	Description (indicator definition and so on)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Travel time along the project area	Baseline for the indicator is found in feasibility study of the works and measures actual travel time between San Ignacio de Velasco and San Jose de Chiquitos. The same will be measured when the works are completed and the conclusion used as a measure against the achievement of the target.	Baseline and at end of works	Baseline comes from feasibility study and assessment of travel time after works are concluded.	ABC Construction Unit
Vehicle operating cost - Cars	As part of HDM-4 analysis in project preparation VOC is identified. The same will be done in ex post HDM analysis.	Baseline and at end of works	VOC from feasibility study and then ex post HDM-4 analysis	ABC Construction Unit.
Vehicle operating cost - Trucks	As part of HDM-4 analysis in project preparation VOC is identified. The same will be done in ex post HDM analysis.	Baseline and at end of works	VOC from feasibility study and then ex post HDM-4 analysis	ABC Construction Unit.

Intermediate Results Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Roads constructed, non-rural	Kilometers of non-rural roads constructed under the project. Non-rural roads are roads functionally classified in various countries as trunk or primary, secondary or link roads, or sometimes tertiary roads. Typically, non-rural roads connect urban centers/towns/ settlements of more than 5,000 inhabitants to each other or to higher classes of roads, market towns, and urban centers. Urban roads are included in non-rural roads.	Annually	ABC Construction Unit; Supervision reports	ABC Construction Unit

DBMOT bid documents prepared for San Matias-San Ignacio de Velasco road	The objective of Component B of the proposed project is to support ABC in professional preparation for the first DBMOT contract in the country, which in turn may serve as a model for future DBMOT preparation.	Once	ABC Construction Unit	ABC Construction Unit
Direct project beneficiaries	Direct beneficiaries are people or groups who directly derive benefits from an intervention (that is, children who benefit from an immunization program; families that have a new piped water connection).	Baseline, during year 3, and at project conclusion	Baseline identified in PSIA	ABC Construction Unit
Female beneficiaries	Based on the assessment and definition of direct project beneficiaries, specify what percentage of the beneficiaries are female.	Baseline, during year 3, and at project conclusion	PSIA	ABC Construction Unit
Road users satisfied with quality of roads disaggregated by gender and user mode	Road users survey (baseline within PSIA). Condition of roads defined as bad, regular, good, or very good.	Baseline; road user survey during year 3; final road user survey at conclusion of project	PSIA Baseline is weighted average of responses by male drivers, male passengers, and female passengers (survey of 430 travelers did not come across any female driver)	ABC
Road users' satisfaction - Male passengers	Percentage of male passengers that think the road condition at baseline was good or very good: 17% (40% bad condition; 43% regular condition; 17% good condition; and 0% very good)	Baseline; road user survey during year 3; final road user survey at conclusion of project	Road users surveys (baseline within PSIA)	ABC Social and Environmental Unit
Road users' satisfaction - Female passengers	Percentage of female passengers that think the road condition at baseline was good or very good: 12% (44% bad condition; 44% regular condition; 12% good condition; and 0% very good)	Baseline; road user survey during year 3; final road user survey at conclusion of project	Road users surveys (baseline within PSIA)	ABC Social and Environmental Unit

Road users' satisfaction - Male drivers	Percentage of male drivers that think the road condition at baseline was good or very good: 6% (58% bad condition; 36% regular condition; 6% good condition; and 0% very good)	Baseline; road user survey during year 3; final road user survey at conclusion of project	Road users surveys (baseline within PSIA)	ABC Social and Environmental Unit
Social inclusion and gender	The indicator has several sub-indicators intended to capture success or otherwise of social interventions, including those specifically geared at indigenous populations and gender. This umbrella indicator of 'Yes' or 'No' will show whether the aggregate of activities in the project addressing social inclusion and gender have been successfully implemented.	Varies by sub-indicators	Sources will be derived from supervision reports and surveys, implementation of IPP activities and specific SAs.	ABC Social and Environmental Unit
Improvement of access to water in indigenous communities	This indicator will show evidence of changes on accessibility to drinking water, and improvement of infrastructure and living conditions in indigenous communities.	Once, at project end	SA	ABC Social and Environmental Unit
Training of construction workers on gender, gender-based violence prevention and HIV/AIDS/STD	Knowledge improvement of contractors' staff and workers, and subcontractors' staff and workers, following formal training on gender, gender-based violence, and HIV-STD, as measured in surveys conducted during each training.	Annually	Supervision reports	ABC Social and Environmental Unit
Ayoreo women and men trained on HIV/AIDS/STD and tuberculosis prevention, working in their communities	This indicator will show evidence about changes on social exclusion related to access to health services in the Ayoreo community.	Once, at project end	SA	ABC Social and Environmental Unit
iRAP surveys completed showing any trends/improvements in road safety along the	Two International Road Assessment Programme (iRAP) surveys to be undertaken to document trends and/or improvements in road safety along the corridor	Initial iRAP survey to be undertaken within one year of project	iRAP surveys	ABC Construction Unit

corridor		implementation and another iRAP survey upon completion of project		
Traffic accidents on the San Ignacio de Velasco-San Jose de Chiquitos road corridor reported	Verification whether accidents involving at least one vehicle and resulting in injury or fatality are registered	Yearly	Police; ABC	ABC Construction Unit

Annex 2: Detailed Project Description

BOLIVIA: Santa Cruz Road Corridor Connector Project

1. **The PDO** is to improve transport accessibility along the road corridor between San Ignacio de Velasco and San José de Chiquitos.

2. **The IBRD loan and IDA credit will finance activities** that aim at reducing transport costs, travel time, and road fatalities, improving approximately 208 km of the primary road network serving as a connector between the two main corridors coming out of Brazil (San Ignacio de Velasco-San Matias and San José de Chiquitos-Puerto Suarez, each connecting to the state of Matto Grosso in Brazil), which form part of the bi-oceanic corridor network.

Component A. Road Upgrading - US$225.05 million (World Bank US$225 million; Borrower US$50,000)

3. **The estimated cost for this component is US$225.05 million and, aside from cash payments as part of any resettlement, it will be fully financed with the proposed loan and credit proceeds, including remaining feasibility and design of a San Ignacio bypass.** The component includes the improvement of 208 km of the primary road network connecting the communities of San Ignacio de Velasco and San José de Chiquitos in the Department of Santa Cruz. Specifically, the component will finance the pavement of 208 km of the referred corridor along the primary route RF-017 (currently gravel road) with an AC carpet solution (with granulated layers of reduced thickness). Although the development of improvement activities will be carried out largely along the existing alignment of the corridor, works will include construction of three bypasses to avoid the need for heavy vehicles to cross through the cities of San Ignacio, San Miguel, and San Rafael and an improvement in alignment in the area of San Diablo hills; the construction of three small bridges (35 m, 40 m, and 46 m) is also included, as well as replacement and new construction of about 300 box culverts.

4. The main activities to be financed under this component include:

(a) Road improvement works to be contracted through single input-based civil works contract

(b) One consultancy services contract for the supervision of works

(c) Environmental and social interventions associated with the road improvement activities, as stated in the approved EIA/EMP, RAP, RPF and the IPP respectively, with the exception of land acquisition

(d) Technical audits

Table 2.1. Component A. Cost Estimates

Component A	Cost Estimate (US$, millions)
Civil works	168
Supervision	10
Technical audits	2
Quantity and price contingencies	31
Price variation	14
Potential Resettlement Cash Payments	0.05

Location and Physical Description of Project Area

5. **The proposed project location is in the Department of Santa Cruz, in the provinces of José Miguel de Velasco and Chiquitos.** The road is on a north-south axis, connects the two main east-west corridors coming out of and going to Brazil, and crosses four municipalities. The project area is located between three physiographic units: the Brazilian crystalline shields, Serranías Chiquitanas, and Chaco-Beni plains. A total area of 124,206 km^2 benefits directly from the project. The population in the intervention area is estimated to be 124,937 inhabitants, according to the 2012 census.[15]

Table 2.2. Administrative Areas of Road Upgrading

Province	Municipality
José Miguel de Velasco	San Ignacio de Velasco
	San Miguel de Velasco
	San Rafael
Chiquitos	San José de Chiquitos

6. **The road between San José de Chiquitos and San Ignacio de Velasco was built in the 1970s with collaboration and advice of the Government of the United States through one of its cooperation agencies.** Through Supreme Decree S.D. No. 25134 of August 31, 1998, this route was declared part of Bolivia's Primary Road Network, classified as RF-017, with progressive 0 km located in the town of San Ignacio de Velasco. Primary route RF-017 connects two other routes of the primary network: (a) a section of RF-004 that goes from San José de Chiquitos to Puerto Suarez and (b) a section of RF-010 that goes from San Ignacio de Velasco to San Matias, both within the Department of Santa Cruz.

7. **Route RF-017 is part of what is commonly referred to as the Missionary Circuit** (*Circuito Misional*), consisting of churches built during the colonial era by Jesuit missions. The region is an important tourist attraction and is visited by tourists from all over the world. In fact, its historical value is such that today the missions, together with their respective villages, are part of the system of cultural heritage sites designated by UNESCO.[16]

8. **The region of the Department of Santa Cruz has significant agricultural potential, which the upgraded road is expected to help develop**. In terms of economic activity and

[15] INE 2012.

[16] "Between 1696 and 1760, six ensembles of *reducciones* (settlements of Christianized Indians) inspired by the 'ideal cities' of the 16th-century philosophers were founded by the Jesuits in a style that married Catholic architecture with local traditions. The six that remain—San Francisco Javier, Concepción, Santa Ana, San Miguel, San Rafael, and San José—make up a living heritage on the former territory of the Chiquitos." *Source:* http://whc.unesco.org/en/list/529.

production, the department is the most important region in the country, with nearly 29 percent of Bolivia's GDP in 2014.[17] Its main economic activities are oil and natural gas extraction, and sugarcane, cotton, wood, soybeans, rice, wheat, corn, and livestock production. In the area of intervention, there is considerable industrial concentration, including sugar mills, oil refineries, silos and agribusinesses related to soy, dairy derivatives industries, and manufacturing facilities for construction materials, furniture, leather, jellies, and beverages, and more. The large influx of people dedicated to agriculture, trade, and transportation make the San Ignacio de Velasco-San José de Chiquitos corridor very important for the department.

9. **Upgrading of the road corridor is expected to help improve trade activities**, reduce VOCs, develop connectivity between towns, and cultivate a tourist option linking the Noel Kempff Mercado National Park, located in the northeast of the Department of Santa Cruz in the José Miguel de Velasco Province, with the Gran Chaco Kaa Lya National Park, located in the south of the Department of Santa Cruz on the border with Paraguay in the Cordillera Province (Charagua Municipality) and Chiquitos Province (Pailón Municipality and San José de Chiquitos Municipality) and the Natural Integrated Management Area.

10. To facilitate the analysis of the geometrical design of the road and based on various technical parameters, the project is divided into five sections as shown in table 2.3; however, the works are being tendered as a single input-based works contract.

11. **Sustainability of the investment rests on the basis of ABCs management of the routine maintenance of the primary road network, and in particular the system of performance-based contracts with microenterprises engaged in communities around the country.** Routine maintenance activities are adequately carried out throughout the network through 50 unit-price contracts covering individual lengths of about 300 km in the hands of small to medium-size local firms that attend the recurrent maintenance of the pavements (pothole patching, crack sealing, grading of unpaved roads etc.), while nearly 500 micro-enterprises under the supervision of ABC regional engineers take care of miscellaneous activities, such as bush clearing and the cleaning of culverts and other drainage system features.

Table 2.3. Road Sections

Section	Description	Starting Point	Ending Point	Length (Km)
Section I	San Ignacio-San Miguel	-7+000	33+822	40.8
Section II	San Miguel-San Rafael	33+822	72+857	39.0
Section IIIa	San Rafael-km 117+080	72+857	117+080	44.2
Section IIIb	Km 117+080-La Fortuna	117+080	160+940	43.9
Section IV	La Fortuna-San José	160+940	200+936	40.0
			Total	**208**

12. **The length of the project road is approximately 208 km.** It is on a rolling gravel surface on granular ground, with an average width of 7.00 m with 2.0 m shoulders (in Sections I, II, IIIa, and IIIb) and 2.5 m (Section IV). The road (RF-017) has regular passenger and cargo

[17] Departmental GDP, National Statistical Institute (*Instituto Nacional de Estadística*, INE). http://www.ine.gob.bo/indice/general.aspx?codigo=40203.

transport activity, with San Ignacio de Velasco being the most important concentration point. Freight transportation between San Ignacio de Velasco and San José de Chiquitos is mainly done by pickups and rigid trucks of two or three axles. The AADT for the corridor has been calculated for each of the sections as shown in table 2.4.

Table 2.4. AADT 2015 and 2018 by Sections

Section Number	Section	AADT 2015	AADT 2018
I	San Ignacio de Velasco-San Miguel	274	391
II	San Miguel-San Rafael	315	450
IIIa	San Rafael-km 117	160	247
IIIb	Km 117-La Fortuna	160	247
IV	La Fortuna-San José de Chiquitos	233	355

Table 2.5. Vehicles Fleet Characteristics

Section Number	Section	Car	Pickup	Mini to Medium Bus	Large Bus	Medium Truck	2-Axle Truck	3-Axle Truck	Other Vehicles
I	San Ignacio de Velasco-San Miguel	18.7%	25.0%	5.2%	2.1%	4.6%	4.2%	7.4%	32.8%
II	San Miguel-San Rafael	18.1%	28.3%	2.0%	2.4%	3.7%	4.9%	8.2%	32.4%
IIIa	San Rafael-km 117	18.3%	21.1%	3.5%	2.5%	5.7%	9.3%	16.0%	23.6%
IIIb	Km 117-La Fortuna	17.1%	19.4%	3.3%	3.3%	5.5%	9.5%	17.6%	24.3%
IV	La Fortuna-San José de Chiquitos	32.7%	16.8%	2.8%	1.3%	13.7%	4.9%	13.4%	14.4%

13. **Topographically, the road is plane and semi-plane and to a lesser extent in rolling areas.** The heights above sea level range from 402 m in San Ignacio de Velasco to 282 m in San José de Chiquitos and 397 m in the San Diablo hills. Geological analysis indicates sandy soils, silt, and clay of medium plasticity, and existence of shale rock in lesser proportion.

14. **In the project area, the monthly average maximum temperatures vary between 27.5ºC and 32.9ºC in the months from September to January; while the minimum temperatures vary between 14°C and 21°C during the months of May, June, July, and August.** The maximum rainfall in the area varies from 393.7 mm to 330.5 mm from November to March, while the minimum is zero precipitation during the months of June, July, August, and September. Based on the water balance analysis, an overall deficit of water can be expected during the months of June to November, while during the months of December to March there is a runoff of water. A highest relative humidity occurs in the municipality of San Ignacio de Velasco (78 percent), while that in San José de Chiquitos is less than 60 percent. The predominant wind direction is from south to north, with average speeds ranging between 9.27 km/hr and 11–12 km/hr.

Type of Interventions, Technical Justification, Analysis of Alternatives

15. **Feasibility and design studies were reviewed and concurred with by the World Bank Group**. Road improvement will include a 5 cm AC surfacing for all sections of the road, on a 15 cm and 25 cm granular base and sub-base, respectively. The improved design considers a width of 7 m along the road with 1.5 m shoulders. For the pavement design, the AASHTO Method 1993 has been used, as is commonly the case in Bolivia.[18]

16. **The improved road will, for the most part,** follow the existing alignment and thus largely be within already established right-of-ways. Exception to that alignment are three new bypasses to reduce heavy traffic in the populated centers of the towns of San Ignacio, San Miguel, and San Rafael, and an improvement of alignment in the southern foothills of San Diablo hill (horizontal and vertical alignment, improving curves and slopes).

17. **Slopes vary from 0.12 percent to 6 percent in the early sections,** reaching a minimum slope of 0.01 percent (in progressive 165+700), and a maximum of 6 percent in small sections of the road. Construction includes three small bridges (35 m, 40 m, and 46 m) and a handful of existing bridges will be replaced by large box culverts. Total culverts needed on the length of the route are about 300.

18. **Road safety considerations were made in the design of the road,** including the inclusion of bypasses to separate through traffic from local traffic, but additionally a specific road design safety audit will be done by a supervision consultant before construction**.** The purpose of this audit is to ensure that the new design incorporates all aspects of road safety that are recommended for the category of road to be constructed. Aspects of the vertical and horizontal layout of the new highway will be revised from a general point of view, incorporating corrections to the design where necessary and/or traffic calming or preventive works, such as speed bumps or guard rails, improved visibility in curves, redesign of intersections, and so on. Of particular attention is proximity to residential areas, as it is in the case of the towns of San Ignacio de Velasco, San Miguel and San Rafael, to strengthen road safety measures where through traffic and local transit interact.

Economic Evaluation

19. **The improvement of the San Ignacio-San José corridor will be executed through a single input-based contract**. An economic evaluation has been carried out for the complete corridor, as well as for the five sections individually to better understand cost behavior and impacts on each section along the 208 km of the corridor.

20. **Improvement works identified for the corridor (and the different analysis sections) are based on annual traffic densities,** varying from 160 to 315 AADT (in 2015), with an estimated annual traffic growth of 7.2 percent near San Ignacio de Velasco and 8.5 percent near San José de Chiquitos, for all types of vehicles.[19]

[18] For new and rehabilitated roads, ABC uses AASHTO 93 as well as AASHTO 97 for rigid pavements. ABC technical manuals and bid documents specify that these are ABC's official design standards.

[19] Upon completion of the works, the diverted and generated traffic is estimated to result in AADT in the range of 250 to 450,

21. **The project's economic evaluation was carried out through HDM-4,** which simulates life cycle conditions and costs and provides economic decision criteria for multiple road design and maintenance alternatives. Based on the current conditions (initial situation) of the roads, traffic data, characteristics of the vehicles fleet, and the unitary costs, HDM-4 simulated deterioration of pavements and variations in VOCs, travel times, as well as other parameters (for instance decrease in road traffic accidents). Under the current economic evaluation, three benefits were quantified: savings due to decreases in VOCs, decrease in travel time costs, and development related benefits (exogenous benefits).

22. **Through HDM-4,** comparisons were made to estimate benefits from several alternatives for improvement of the road sections and also to a base scenario. Scenarios for the analysis, with a total evaluation period of 20 years, were defined as follows:

(a) Base scenario, unpaved road with gravel surface, with periodic replenishments of gravel and routine maintenance

(b) Pavement alternatives in DST and 5 cm AC on granular base, with future resurfacing with an AC layer of 5 cm thickness after the IRI reaches 4 m/km for both of the analyzed alternatives

23. The analysis performed with HDM-4 shows AC as a viable solution with acceptable return rates The economic analysis, performed with a discount rate of 12.00 percent yields the following NPVs and IRR.

Table 2.6. IRR and NPV

Section	Length	Investment		%	IRR	NPV (US$, millions)
		US$/km	Section (US$)			
San Ignacio-San Miguel	40.8	664,391	27,107,164	16.1	18.6	15,202
San Miguel-San Rafael	39.0	702,888	27,412,634	16.3	19.8	18,027
San Rafael-km 117+080	44.2	874,918	38,671,367	23.0	8.4	-9,749
Km 117+080-La Fortuna	43.9	807,863	39,476,090	23.5	11.0	-2,610
La Fortuna-San José	40.0	986,902	35,465,196	21.1	15.7	11,823
Complete Corridor	**207.9**	**808,718**	**168,132,450**	**100.0**	**14.5**	**32,693**

Sensitivity Analysis of Critical Items

24. **A sensitivity analysis of the project's main risks was conducted.** With up to 10 percent increase of investment costs and a reduction in the benefits of the beneficiaries of 10 percent, the NPV decreases to US$10.28 million and yields an IRR of 12.7 percent. If exogenous benefits are reduced up to 50 percent, the NPV decreases to US$5.16 million and yields an IRR of 12.4 percent.

Greenhouse Gas Accounting Analysis

25. **The greenhouse gases accounting evaluation was conducted to assess impact of the project on CO_2 emission.** Following the economic evaluation, the analysis focuses on the 208 km corridor. The assessment period is 20 years, the same as the one for the economic appraisal. Considering methodological challenges on CO_2 emission assessment in the transport sector including (a) difficulties in definition of project boundaries and reference (base) scenario to specify the project's contributions in CO_2 emission, and (b) unavailability of data and information, particularly related to civil works, the analysis was limited to vehicle emissions on roads under the project, which are known to be substantially more than ones generated by road works. The project's impact on emissions was defined as the difference in emission between project and reference scenarios, which are generally same as the ones envisaged for the economic evaluation.

26. **Vehicle emissions are assessed by using the HDM-4 simulation together with the economic evaluation. HDM-4 calculates CO_2 emission through the following steps:** (a) estimation of average vehicle speed based on road conditions, traffic level, and vehicle characteristics, and (b) estimation of CO_2 emission from vehicles through the formula as a function of vehicle speed, which is defined in HDM-4. The total emissions in the base and project scenarios are 588, 339 tCO_2 and 523,749 tCO_2, respectively, over 20 years, resulting in an emission reduction of 56,590 tCO_2 or 9.6 percent as compared with the reference scenario. At US$30 per tCO_2, the improvement in the NPV and IRR is negligible.

Component B. Technical Studies and Project Management - US$5 million (World Bank US$5 million)

27. **This component links with the main investment by financing studies for upgrading the roughly 300 km San Matias-San Ignacio de Velasco road corridor connecting with Brazil (northern corridor).** That northern corridor and the investment under Component A form a contiguous stretch of road more than 500 km in length. This component will finance feasibility studies (technical, economic, environmental, and social) and preparation of bid documents for upgrading of the corridor. ABC has decided that the studies will envision investment under a PBC methodology through a 10-year DBMOT contracting approach. In addition to these feasibility studies, the component is expected to finance gender studies and PSIAs. The component will also finance proposed project management activities, including financial audits, training, and incremental operating costs for implementation of the proposed project, capacity building for road asset management, and ABC's supervision of all environmental and social safeguard instruments.

Box 2.1. Some Advantages of the DBMOT Contracting Approach

Road asset management utilizing DBMOT, when professionally prepared, has a number of clear advantages over traditional input-based contracting. Some of these include:

- Improved road conditions due to controlled asset management by maintenance of the required levels of service expected by road users and the required quality and strength of an asset
- Significantly reduced exposure of the Government to design and construction risks
- Predictability of expenditure needs due to lump-sum contract price and contractually designed payment mode
- Development of the private contracting industry, because longer-term contract arrangements allow investment in machinery and human resources
- Reduced number of transactions (contracts) to be procured and managed by the road administration
- Better governance in the sector
- Increased satisfaction of road users because of better levels of service and reduced road user costs
- In the long run, leaner and professionally advanced road agencies because of long-term outsourcing of asset management and applied contracting methodologies
- Significant cost savings; it is consistently found that the cost of interventions in PBCs when compared to same interventions under a series of input contracts is frequently 20–25 percent lower.

Annex 3: Implementation Arrangements

BOLIVIA: Santa Cruz Road Corridor Connector Project

Project Institutional and Implementation Arrangements

Project Administration Mechanisms

1. **ABC is the project implementing agency and has full responsibility for the project's technical, fiduciary, and environmental and social aspects.** ABC is a decentralized entity of the MOPSV and is granted its own legal status (*personería juridica*) and technical, administrative, and economic-financial autonomy. As such, the client will prepare following approval by its legislature a Subsidiary Agreement that will be signed between the Borrower and ABC to transfer project funds and obligations.

2. **ABC has its headquarters in La Paz and nine regional offices in each of the country's departments; each regional office has a similar organizational structure as the headquarters.** The agency has about 340 staff, out of which some 200 positions are based in the regional offices, and is further supported by consultants as necessary (at the beginning of 2014, 80 consultants worked in the nine regional offices). Of the total staff, 112 are engineers, with 66 of them based regionally. ABC has recently adopted a decentralized model for its operation, under which the regional offices have responsibility for operational aspects of project implementation, including contract management and subsequent daily works supervision and quality control. In the case of the proposed project, ABC headquarters have been responsible for the technical design of the road upgrading. For the most part, the regional offices have staff numbers that reflect the size of the network under their responsibility and expertize, including engineering, environment, finance and procurement, and administration. Headquarters staff provide specialized technical support, for instance, in bridge and tunnel engineering, as well as support for both technical and safeguard supervision, especially to the smaller regional offices, when there is a peak in civil works in a region.

3. **ABC's Construction Unit carries out the civil works program planning and preparation, procurement, as well as M&E.** Bidding documents for civil works contracts that are financed under the proposed project were developed by ABC with the support of a consulting firm. Works supervision will be carried out by ABC section engineers, with the support of a consultancy firm. For purposes of day-to-day engagement, ABC has a focal person dedicated to World Bank-financed projects who coordinates with various units of ABC.

4. **ABC's Environmental and Social Department (*Gerencia Socio Ambiental,* GSA) is responsible for the overall environmental and social supervision of the proposed Project.** And its compliance with the Environmental Law (Law 1333) and other legislation applicable to the sector and works, including gender (Law 348 *Ley para Garantizar a las Mujeres una Vida Libre de Violencia*). ABC is familiar with the World Bank's social and environmental safeguards and has in place reasonable standards and procedures for establishing right-of-ways and compensations. ABC's socio-environmental management team carries out a social analysis as part of each road-building project. ABC has a national IP specialist who oversees the social analysis and development of the needed social safeguards instruments. ABC's socio-

environmental management team works closely with the Road Construction Unit on all aspects related to planning, preparation of environmental and social studies, environmental compensation programs, and supervision. The GSA at the ABC central office has three staff for countrywide oversight of environmental and social management while 11 regionally based environmental engineers focus on works in their region. In addition, the GSA has 13 staff members addressing resettlement issues and, recently, IPPs were designed because of the previous projects developed with the World Bank. Because the coordination and sharing of environmental documentation is done mostly by hand or using the Internet, processes of managing permits, evaluations, and reports are not very efficient. The GSA complements the supervision of road works with additional environmental consultants on projects as needed.

Financial Management, Disbursements, and Procurement

Financial Management

5. **An FM capacity assessment was carried out to assess ABC's current FM arrangements and a risk is based on the current systems and procedures.** However, ABC is in the process of adopting an integrated FM system. After the system is in place a new capacity assessment will be carried out to determine its adequacy to support project implementation under its respective components. The purpose of this section is to spell out the main features of the FM arrangements, which are widely based on the existing capacity and performance under current National Roads and Airport Infrastructure Project, P122007 (IDA Credit 4923-BO) and the closed Road Rehabilitation and Maintenance Project, P068968 (IDA credit 3630-BO).

6. **ABC's FM performance in previous World Bank-financed projects has been considered Moderately Satisfactory; however, there are still key shortcomings that need to be addressed.** Specific measures have been agreed to supplement the existing arrangements to make sure they fully respond to project needs allowing timely reporting and reliable information for decision-making purposes. Those arrangements mainly include: (a) revised and streamlined processes and procedures, including internal controls, focusing on contract management, approval of progress certificates, and payment processing; (b) implementation of a new information systems that allows the compiling of information related to programming and budget execution, to provide ABC with a single and reliable source of information for monitoring and decision-making purposes; and (c) the adjustment to the format and content and specific arrangements for preparation of IFRs. These arrangements have been agreed and finalized and are reflected in the project's Operational Manual.

7. **Based on the information gathered during the FM assessment process,** the project's FM inherent risk is rated Substantial, the control risk is rated Substantial, and the overall FM risk is rated Substantial. The risk is rated Substantial mainly due to: (a) the shortcoming of its FM systems; (b) complex implementation arrangements, which require that regional offices assume some of the FM activities; and (c) complex budgeting, accounting, and contract management arrangements that require regular reconciliation between SIGEP and auxiliary systems that may affect project implementation.

8. **To mitigate these weaknesses and improve the design of the FM arrangements, ABC has agreed to do the following:** (a) seek confirmation from the Ministry of Economy on the

timeline for implementation of the new SIGEP-SIAP system; (b) prepare draft Operational Manual reflecting revised internal procedures, including coordination mechanisms with regional offices; and (c) define content and format of financial reports, including those required from the regional offices, as well as their issuance from an auxiliary information system.

9. **Organizational arrangements and staffing.** As a decentralized entity, ABC has been granted administrative, technical, and economic autonomy, but it has to comply with Bolivia's FM law (*Ley de Sistema de Administración, Fiscalización y Control Gubernamental* N°1178) in terms of budgeting, accounting, internal controls, funds flow, and financial reporting, which have been complemented with more specific arrangements according to its needs and external financiers' requirements. ABC is in the process of implementing a new structure toward a more decentralized model; thus, it is expected that a regional office (in this case, Santa Cruz) take a more active role in technical and administrative tasks. Within such a framework, while overall FM tasks are under the responsibility of the General Directorate of Financial Management (*Dirección General Administrativa Financiera*), processing of payments will be partly assumed by the regional office. Specific responsibilities for *Regional Norte* and the national office have been reviewed and agreed and are reflected in the Operational Manual focused on fiduciary aspects. Taking into account the number of transactions expected for the proposed project, there is no need to hire any specific staff; however, additional training may be required, in case new staff are assigned to the World Bank-financed project. ABC's FM team includes an FM specialist and an accountant.

10. **Programming and budget.** Similar to other World Bank-financed projects in the Bolivia portfolio, this project will be fully integrated and executed through the national budget, in compliance with local regulations established by the Ministry of Economy and Public Finance (*Ministerio de Economía y Finanzas Públicas*), as well as instructions issued by the Vice-Ministry of Public Investment and External Finance (*Viceminesterio de Inversion Publica y Financiamiento Externo*). Accordingly, project transactions will be accounted for in accordance with Governmental Accounting Standards and would use the Chart of Accounts established by the accountant general's office (*Dirección General de Contabilidad Fiscal*). Project execution will benefit from the use of those well-functioning public financial management elements, including SIGEP and the treasury single account (*Cuenta Única Tesoro,* CUT). These basic arrangements will be supplemented, where needed, to make sure project needs and risks are adequately addressed, mainly as it relates to internal controls, financial reporting, and auditing. Additionally, it has been agreed that the project contract manager will be in charge of preparing the annual operating plan with at least quarterly budget estimates (based on contractors' disbursement schedules), which can be consistently used for monitoring purposes, mainly at the contract level, presenting both estimates and budget execution.

11. **Accounting-information system.** ABC has to comply with the Governmental Accounting Standards. Therefore, the project will use the Chart of Accounts established by the accountant's general office (*Dirección General de Contabilidad Fiscal*). The project will benefit from the use of SIGEP and CUT in U.S. dollars and a *Librata* in local currency to process payments. Preparation of financial statements will follow the cash basis of accounting. SIGEP will be complemented with a parallel accounting system that will allow the recording of expenses by project component/category/contract and the preparation of financial reports and withdrawal applications.

12. **In January 2016, ABC implemented SIGEP,** a new integrated information system, which replaced the former one, Integrated Management System and Administrative Modernization (*Sistema Integral de Gestión y Modernización Administrativa).* This new integrated information system will allow ABC to design and operationalize the SIGEP-SIAP that will allow for annual budget programming, budget execution, and accounting for externally financed activities through integrated modules. Once in place, the World Bank's team will need to review the operation of the SIGEP-SIAP system before it is adopted for accounting of project transactions and the issuance of financial reports.

13. **Processes and procedures.** Overall, processes put in place by ABC comply with local requirements related to administrative and control systems. Within those processes, ABC has put in place detailed procedures to address its specific needs, including those related to contract management, approval and payment of civil works, progress certificates, and supervision contracts. The procedures set for approval of progress certificates and further payment, proved cumbersome and lengthy and usually caused delays and some weaknesses were identified in the past. Those internal processes are being revised to reflect adjustments in structure and delegation of certain tasks to regional offices. However, for project purposes, the following procedures have been agreed upon: (a) approval of progress certificates will be made by the project contract manager—based on the external supervisor's report; (b) the so approved *planilla* will then be submitted to the *Ingeniero de Seguimiento* to start the administrative process of payment and the regional office manager's approval; (c) payment processing up to the accrual stage in SIGEP will be made by the regional office administrative team; and (d) payment will be made by ABC's headquarters either through CUT or a direct payment request. These arrangements, including detailed description of roles and responsibilities, are reflected in the Operational Manual.

14. **Financial reporting.** Taking into account the considerations made in the accounting-information system section, at present, the IFRs would have to be prepared manually on the basis of the auxiliary records, while making sure the required reconciliation process between SIGEP and the auxiliary system is performed. At the time of the assessment, ABC has completed a pilot test of the auxiliary system, which indicated that the information from the system will be available to all ABC units.

15. **As ABC makes progress with the implementation of a new integrated FM system and runs auxiliary systems in parallel during the transition, the actual system used to issue the financial reports would need to be regularly assessed for reliability and consistency.** Those IFRs should specify sources and uses of funds, reconciling items (as needed) and cash balances with expenditures classified by project component/subcomponent/contract; and a statement of investments reporting the current quarter and the accumulated operations against ongoing plans and footnotes explaining the important variances. Draft format and content of the IFRs has been discussed and reviewed with the understanding that the reports will be prepared and submitted to the World Bank on a semester basis, no later than 30 days after the end of each calendar semester. The reports will be prepared in local currency and U.S. dollars.

16. **External audit.** ABC will provide the World Bank with annual audit reports on project financial statements and the management letter. The reports will be submitted to the World Bank,

within six months of the end of the recipient's fiscal year[20] (December 31). The audits should be conducted by an independent audit firm acceptable to the World Bank and under terms of reference (ToR) approved by the Bank. Audit cost will be financed out of loan and credit proceeds and selection will follow standard World Bank procedures. The scope of the audit will be defined by ABC in agreement with the World Bank based on project-specific requirements and responding as appropriate to identified risks. Audit requirements are listed in table 3.1.

Table 3.1. Audit Requirements

Audit Type	Due Date
Project financial statements	June 30
Special opinions	June 30

Disbursements and Flow of Funds Arrangements

17. **Following the general practice of the current portfolio, the following disbursement methods may be used to withdraw funds from the loan and credit:** (a) reimbursement, (b) advance, and (c) direct payment. Taking into account the nature of the activities and the size of the contracts, it is expected that the direct payment option will become the preferred option, mainly to process payments under the civil work contracts. Overall, disbursements from the World Bank will follow standard policies and procedures illustrated in the next table and further described in the Disbursement Letter.

18. **Under the advance method and to facilitate project implementation, a designated account in U.S. dollars will be opened and maintained by ABC as part of the single treasury account system.** In keeping with current arrangements, established by the Vice-ministry of Treasury and Public Credit for the operation, and use of a single treasury account in U.S. dollars (CUT-ME *Cuenta Unica Tesoro Moneda Extranjera*),[21] the designated accounts will be opened and maintained as a separate *Libreta* within CUT in U.S. dollars, which will also operate with a separate *Libreta* within the single treasury account in bolivianos, from which all payments will be processed.

19. **In accordance with Section 5.02 of the World Bank Disbursement Guidelines for Projects,** dated May 2006, the existence of a lapsed loan in the portfolio of Bolivia will not permit the use of the designated account in this project until the lapsed loan is resolved.

20. Loan and credit proceeds will be disbursed against the expenditure categories as shown.

[20] In accordance with World Bank guidelines, the first and last audits may cover a period of up to 18 months.
[21] Supreme Decree No. 29236 dated August 22, 2007.

Table 3.2. Expenditure Categories

Category	IDA Scale-Up Facility (US$)	IBRD (US$)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Goods, works, non-consulting services, consultants' services, training, and operating costs for the project	29,925,000	199,500,000	100%
(2) Front-end fee	75,000	500,000	
TOTAL AMOUNT	30,000,000	200,000,000	

21. **Supervision strategy.** On a preliminary basis, the World Bank plans to perform at least two FM supervision missions per year, while also reviewing the annual audit reports and the semester IFRs.

Procurement

22. **Procurement activities will be carried out by the ABC central office. Procurement risks are related to:** (a) ABC's technical and fiduciary teams' inadequate knowledge of World Bank procurement procedures and contract management of large contracts; (b) no offers being received or no offers being awarded for a contract because of the lack of market response; and (c) timely supply of materials for the civil works. The procurement risk is deemed Substantial.

23. **As the works are being procured through one ICB process consisting of a single lot,** it is foreseen that local firms will not meet the minimum qualification criteria related to the annual turnover, financial capacity, and specific experience related to this size of contract. For the corresponding supervision contract, one consultant firm contract will be awarded through an international selection process, as will a consulting firm contract for the consulting services related to preparation of a technical study related to an eventual DBMOT bid process for the San Ignacio de Velasco-San Matias road in the future.

24. **During project preparation, it was agreed that ABC will maintain adequate:** (a) organizational structures, (b) facilities and support capacity, (c) qualifications and experience of staff that will work in procurement, (d) record keeping and filing systems, (e) procurement planning and monitoring/control systems; and (f) capacity to meet the World Bank's procurement contract reporting requirements.

25. The risk mitigation measures identified are the following:

(a) Bid documents are elaborated in accordance with World Bank Group standards and guidance.

(b) Through support of the RSCDP (P144597), ABC will engage a specialized firm through a multiyear contract for comprehensive support to strengthen its capacities in contract management, including with direct support to ABC staff who manage contracts.

(c) An Operational Manual, which, among other things, addresses procurement and contracting procedures, will be adopted as a condition of effectiveness.

(d) The Loan and Financing Agreements will include provisions related to the proposed project implementation from a procurement perspective.

(e) The World Bank Group will deliver a systematic training program on procurement for the existing and new lending operations and provide close monitoring, particularly during the first two years of project implementation.

26. **Procurement for the proposed project will be carried out in accordance with the World Bank's 'Guidelines**: Procurement of Goods, Works, and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers', and 'Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers', both dated January 2011 and revised July 2014 and the provisions stipulated in the Loan and Financing Agreements. For each contract to be financed by the loan and credit, the different procurement methods or consultant selection methods, the need for pre-qualification, estimated costs, prior review requirements, and time frame, are agreed between the Borrower and the World Bank in a Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

27. **Procurement of works.** Works procured under this project include the construction of roads infrastructure. Packages amounting to under US$5,000,000 in the aggregate may be procured using National Competitive Bidding (NCB) processes. Shopping procedures may be used for contracts of up to US$200,000 (only in emergency cases). Procurement of works by NCB or Shopping methods will be based on bidding documents satisfactory to the World Bank.

28. **Procurement of goods and non-consultant services.** Goods procured under this project would include, among other things: civil construction goods necessary to carry out the project activities and goods (equipment, furniture, materials, and so on) purchased for the project's implementation of each component. Procurement of goods will be done using the World Bank's SBDs for all ICB and bidding documents satisfactory to the World Bank for NCB or Shopping methods.

29. **All procurement notices shall be advertised on the ABC and the Government's Contracting System (*Sistema de Contrataciones Estatales*, SICOES) websites,** and at least one local newspaper of wide national circulation. ICB notices and contract award information shall be advertised in United Nations Development Business online, in accordance with the provisions of paragraph 2.60 of the Procurement Guidelines. Also, invitation letters will be sent to the national (*Cámara Boliviana de la Construcción*) and regional (*Cámara Departamental de la Construcción*) construction chambers.

30. **Selection of consultants.** Consulting firm services may be contracted for technical studies, supervision, audits, evaluations, and other purposes in accordance with the objectives of the proposed project. The procurement of consulting firms will be carried out using World Bank Group standard request for proposals documents. International firms should have the opportunity to participate in all solicitations above US$200,000. Short lists of consultants for services estimated to cost less than US$200,000 equivalent per contract may be composed entirely of national consultants (firms registered or incorporated in the country) in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines. Consulting firms will be selected following Quality- and Cost-based Selection (QCBS) for all contracts in the estimated amount of more than US$200,000. ABC launched the Request for Expressions of Interest on May 15, 2016 (Advance Contracting) with IBRD's 'no objection' and it is expected to result in contract signing by the end of November 2016.

31. **Selection of individual consultant services.** Individual consultant services will be contracted mostly for project management and for technical advice, mainly in the substantive matters of the proposed project, but also for design, supervision, and technical assistance. ToR, job descriptions, minimum qualifications, terms of employment, selection procedures, and the extent of World Bank review of these procedures to contract shall be described in the Operational Manual and the contract shall be included in the Procurement Plan.

32. **ABC and SICOES' website and a national newspaper shall be used to advertise expressions of interest** as the basis for developing short lists of consulting firms and individual consultants and to publish information on awarded contracts in accordance with the provisions of paragraph 2.31 of the Consultant Guidelines and as mandated by local legislation. Contracts expected to cost more than US$200,000 shall be advertised in United Nations Development Business online.

33. **Training.** Training will include expenditures (other than those for consultants' services) incurred by the Borrower to finance logistics for workshops, meetings, social researches and studies, and seminars as well as reasonable transportation costs and per diem of trainees and trainers (if applicable); training registration fees; and rental of training facilities and equipment. Procurement will be done using NCB and Shopping procedures as discussed below.

34. **Operating costs.** The project will finance incremental operational costs of implementing institutions, including salaries, travel costs, and subsistence for missions of project staff (excluding civil servants); also for support staff (soil testers, topographers, drivers, secretaries, and so on) for the establishment and incremental operation of the monitoring and supervision; operation and maintenance of project offices, including utilities and telecommunication and publications; and acquisition, operation, and maintenance of office and field equipment, including vehicles, needed for project activities. These operating costs will be administered in accordance with the World Bank's Procurement Guidelines, as appropriate. Procurement also will be carried out using the World Bank's SBDs or national SBDs agreed with the World Bank.

35. **Operational Manual.** The Operational Manual was prepared, reviewed and discussed during appraisal.

36. **Procurement Plan.** A Procurement Plan covering the first 18 months of project implementation was prepared during Project preparation. The Procurement Plan activities will consider the special nature of the proposed project. It will also be available in the proposed project's database and in the World Bank's external website. The Procurement Plan will be updated semiannually or as required to reflect the actual project implementation needs and improvements in institutional capacity. The Procurement Plan shall set forth those contracts, which shall be subject to the World Bank's prior review. All other contracts shall be subject to post review by the World Bank, except for those contracts terminated by the recipient's agency for which the Borrower shall seek the World Bank's 'no objection' before the proposed termination.

37. **Frequency of procurement implementation support.** In addition to prior review implementation support missions to be carried out by the World Bank, it is foreseen that the World Bank will perform semiannual missions, including field visits for contract implementation and monitoring, and post reviews of procurement actions. Those contracts subject to post review will be reviewed by the World Bank and, based on the findings of these reviews and the proposed ratings, the World Bank may determine the revision of the prior review requirements. Details of the procurement arrangements involving international competition are detailed in the following paragraphs.

(a) Goods, works, and non-consulting services

38. **List of contract packages to be procured following ICB and direct contracting.** It is expected that works will be procured through one ICB process consisting of one single lot.

1	2	3	4	5	6	7	8	9
Ref. No.	**Contract (Description)**	**Estimated Cost (US$, million)**	**Procurement Method**	**Prequalification**	**Domestic Preference (Yes/No)**	**Review by Bank (Prior/Post)**	**Expected Bid-Opening Date**	**Comments**
1	San Ignacio-San José road construction	168	ICB	No	No	Prior	Februar y 2017	

(b) Consulting services

39. List of consulting assignments with short list of international firms

1	2	3	4	6	7
Ref. No.	**Contract (Description)**	**Estimated Cost (US$, Million)**	**Selection Method**	**Review by Bank (Prior/Post)**	**Expected Proposal Submission Date**
1	Consulting services for the supervision	10.0	QCBS	Prior	February 2017
2	Consulting services for the study for the DBMOT	3.0	QCBS	Prior	June 2017

40. Thresholds for procurement methods and prior review are as follows:

Expenditure Category	Contract Value (Threshold) (US$, thousands)	Procurement Method	Bank Prior Review
1. Works	> 5,000	ICB	All
	250–5,000	NCB	n.a.
	< 250	Shopping (price comparison) (only in case of emergency)	n.a.
	Regardless of value	DC	All
2. Goods	> 500	ICB	All
	50–500	NCB	n.a.
	< 50	Shopping	n.a.
	Regardless of value	DC	All
3. Consultant Services	> 200	QCBS	All
	< 200	QCBS, QBS, CQ, FBS, LCS (as per Procurement Plan)	All ToR
	Regardless of value	SSS	All
4. Individual Consultants	> 100	IC	All
	< 100	IC	n.a.
	> 100	SSS	All

Note: DC = Direct Contracting; CQ = Selection Based on Consultants' Qualification; QBS = Quality-Based selection; FBS = Selection Based on Fixed Budget; LCS = Least-Cost Selection; IC = Individual Consultant Selection Procedure; SSS = Single-Source Selection.

41. Additionally, all ToR for consulting services are subject to review and agreement with the World Bank.

Environmental and Social (including safeguards)

Environmental

42. **The proposed project is classified as Category B,** which is the appropriate classification for projects whose potential adverse environmental impacts on human populations or environmentally important areas are site specific, reversible, and can be readily mitigated. The following environmental safeguards have been activated: Environmental Assessment (OP 4.01), Natural Habitats (OP 4.04), and Physical Cultural Resources (OP 4.11).

43. **The proposed project does not foresee significant environmental impacts that could jeopardize the natural but intervened environment of its influential project area, mainly characterized by livestock and agricultural landscapes**. However, some potential adverse environmental impacts might be related to: (a) quality of small groundwater bodies (ponds) along the road used by local populations for multiple uses; (b) quality of aquifers adjacent to campsites and ancillary facilities; (c) pedestrian health due to dust in the town centers along the road; (d) disturbance of minor wild fauna living around ponds; and (e) dust on historical monuments (for example, Jesuit churches).

44. **An EIA**, including its constituent EMP, comprising several environmental mitigation programs such as Adaptation and Environmental Oversight Programs (*Programa de Vigilancia*

de Adaptación y Medio Ambiente, PASAs) and Prevention and Mitigation Programs (PPMs), was prepared by the client in 2012 for the road to meet the Bolivian environmental regulatory requirements. Two public consultations were held in 2010 in the four municipal jurisdictions involved in the project area, with participation of key stakeholders that supported the proposed project during preparation of the EIA and its EMP. The local population emphasized issues related to hiring of the local workforce, location of ancillary facilities and workers' residences, and codes of conduct for contractors. This EIA was approved by the Ministry of Environment and Water (*Ministerio de Medio Ambiente y Agua*) in 2012 and the corresponding environmental license was issued.

45. **The EIA was reviewed by the World Bank and updated with specific measures to prevent aquifer contamination caused by digging of wells to obtain water for campsites and works.** Signaling and road safety measures were updated on basis of final technical designs. The updated EMP has a list of environmental mitigation programs to deal with direct environmental impacts during rehabilitation which have been substantively improved on their objective, scope, training requirements, equipment and personnel, schedule, and budget: (a) campsites set up and operational, (b) conservation of environmentally sensitive areas, (c) exploitation of deposits, (d) exploitation of quarries, (e) revegetation and reforestation, (f) road safety, (g) access openings and habilitation, (h) use of explosives, (i) water resources management, (j) prevention and control of forest fires; (k) solid waste management; (l) hygiene and occupational safety, and (m) closure and restoration of intervened areas.

46. **Site-specific public consultations on the updated EIA, organized by ABC, were held on October 13-14, 2016, in San José de Chiquitos, San Rafael and San Ignacio de Velasco**. Among participants in these consultations were representatives from the municipal government, indigenous groups, residents, and Social Oversight Committees. Most queries made were about payments to local communities for use of borrow pits, compensations to people affected by eventual San Ignacio bypass and the final alignment of the San Ignacio bypass, and implementation of the IPP, among others. No changes to the EIA were proposed by the participants. A printed copy of the EIA is available at municipality offices in the area. An updated environmental license was revalidated by the Ministry of Environment and Water (*Ministerio de Medio Ambiente y Agua*) in February 2016, despite the on-going validity of the original one.

47. **Following clearance of the updated EIA by the World Bank Group**, it was published on both the ABC website and by the World Bank on its external website on February 5, 2016 and again on December 5, 2016.

48. **Physical cultural resources.** This policy was triggered because the project's area is recognized as a global cultural heritage area and should be protected and conserved. It is located in part of the route of the pre-Hispanic Peabirú road (documented by Tonelli 2007). By colonial references, it looks like this road was an inter-oceanic corridor that connected pre-Hispanic commercial sites in the actual territories of Peru and Brazil. The road to be rehabilitated between San Ignacio de Velasco and San José de Chiquitos crosses some of the towns that host the Chiquitania churches and their related nonmaterial cultural colonial heritage. Jesuit reductions of San Ignacio de Velasco, San Miguel de Velasco, and San José de Chiquitos and three other reductions constitute a UNESCO world cultural heritage site funded by the Jesuits between 1696

and 1760. The six population centers of San Francisco Javier, Concepción, Santa Ana, San Miguel, San Rafael, and San José, located in the ancient territory of the Chiquitos IP, still form a living heritage. Improved access and higher number of visitors to these town centers can bring dynamism to the local economy but also can increase challenges of water supply, sewage, and solid waste services provisioned by municipal governments. On the other hand, San Ignacio de Velasco also is the entrance to Noel Kempff Mercado National Park, located to the north of the Bolivia-Brazil border. This national park was also declared a natural world heritage site by UNESCO due to its extraordinary biodiversity. Improved access to these sites due to improved quality of the access roads, if managed properly, could contribute to the sustainable development of the region and maintenance of traditional indigenous practices.

49. **Natural habitats.** This policy was triggered given the presence of natural habitats along the road that could be affected due to change in a very small segment of alignment in the San Diablo hill. Although the natural environment on both sides of the road is mainly characterized by intensive productive agricultural and cattle raising landscapes, there are wild fauna and flora species interacting with those productive landscapes. Thus, along the road to be rehabilitated, the technical design ensures transit of wild fauna from one side to another and minimizes impacts and risks during rehabilitation works and construction of bridges. Natural habitats protection aspects are dealt with in the EIA. Current environmental mitigation programs (for example, PASAs and PPMs) in the EIA are oriented in the right direction. Also, the fact that 300 culverts will be constructed should prevent a barrier effect along the road. Information signaling the presence of wild fauna in this segment is included in the EIA.

Social

50. **The SA, identified that the IP of Chiquitano and Ayoreo populate the project area**. Highland immigrants (Quechua, Aymara, and Afro-Bolivians), represent approximately 1.5 percent of the global population in the area, but do not qualify as IP under paragraph 4 of OP 4.10 because they do not identify collectively as members of a distinct indigenous group; they live in rural or urban areas, indistinctly; they show ethnic affiliation to the Chiquitano communities where they live; they do not show evidence of historical collective attachment to geographically habitats and territories in the proposed project area; and they mostly use Spanish to communicate, although some individuals still speak other indigenous languages.

51. **The IPP also identified the project's possible social impacts on indigenous cultures and the proposed mitigation strategies**. Four criteria to analyze collective vulnerability and social exclusion were developed in the SA: (a) vulnerability of traditional social and cultural structures, which is expressed by the partial or total loss of the language, the social cohesion, and the traditional political structures of the group. Drug use and crime also reveal the breakdown of the social structure. This vulnerability takes into account the loss of cosmogony, beliefs, and rituals surrounding the mythical beings and the precepts that refer to the origin of their ethnic identity; (b) vulnerability to physical and cultural aggression, which considers IP or segments of them, suffering violence in labor relations, gender violence, and ethnic violence. It takes into account labor exploitation and/or paternalistic labor relationships. Mainly, focus on aggression toward women is considered; (c) living space vulnerability is associated with the IP sufficient territorial tenure, which includes vital natural spaces to sustain itinerant production; and (d) demographic vulnerability defined by the access to health and basic services, which is

particularly important for the Ayoreo people considering they are an endogamy minority with limited possibilities of biological and cultural reproduction. It takes into account the lack of public services such as education, health, drinking water, electricity, and others for both Ayoreo and Chiquitano people. Under these criteria, the following results have been achieved.

52. **The Chiquitano and Ayoreo living in the project area are strongly differentiated by their complex cultural systems.** The Chiquitano have been constituted as the product of a process of multiple miscegenation: intracultural (internal indigenous symbiosis) and intercultural (indigenous, European Hispanic) that started in the Jesuit missionary time. This has determined, on one hand, that their identity was built upon the continuity of indigenous traditions and, on the other hand, based on an easy adaptation to other cultures. A factor of continuity throughout its history was the selling of labor. This has developed their adaptation to multiple forms of work, labor oppression, and unequal gender payment. Thus, the Chiquitano communities largely have established their relations in a subordinate position to economically dominant groups.

53. **In contrast, the Ayoreo people situation is more delicate**. The contemporary Ayoreo come from groups who refused to have contact with the Jesuit missions during the colonial time and with the Franciscans in the beginning of the republican time. Unlike the rest of the Ayoreo communities in Bolivian territory that were contacted by evangelists missions in the 1950s and 1960s, Santa Teresita community is the only Ayoreo community semi-settled and evangelized by a Catholic missionary. Unlike the Chiquitano, the Ayoreo have been kept out of the historical processes of labor exploitation in colonial and republican times, being isolated in the bush. As a consequence, Ayoreo society still maintains some matriarchal traits. However, nowadays, lack of means to secure income and processes of urbanization have resulted in Ayoreo migration to urban centers and exposure to discrimination and abuse, leading them to assert themselves as a group of marginality and illegality in social and economic terms. However, the Ayoreo are slowly adapting to global demands while facing difficulties of great magnitude. The regional and national society often considers them unfit for development, to adapt to educational systems, and to have a consistent political representation and the like. This is due to ignorance and the difficulty in understanding the Ayoreo culture, but also due to the lack of to work on new ways to support their development considering the Ayoreo points of view.

54. **The positive social impacts of the project on these communities include reduced costs and travel time, convenience of travel, and improvement of the indigenous communities' interaction with other local inhabitants of the region.** Some other social impacts are economic activity and employment opportunities during the contract period, improvement of marketing conditions for local products, and better access to basic services (water, electricity, health, education). Regarding the cultural patrimonial benefits, the project will allow the revaluation of missional, colonial, and pre-Hispanic heritage through the study of the Peabiru transit route (ethno historically identified to have been near the area of the project; no archeological evidence exists) and the improvement of conditions for cultural tourism development.

55. **Potential negative impacts are bigger for the Ayoreo people because they suffer discrimination from the wider regional society,** including Chiquitano people, who do not understand their nomadic way of living, which consists of short-term horizon of management and planning, wide occupation of the territory with non-permanent bases, and use of natural

resources for familiar and communitarian everyday subsistence. Ayoreo people own a vast territory, which along with their low population density and their low impact land management makes them vulnerable to the potential arrival of new population. This situation might accelerate illegal selling of wood and land lease processes that currently are practiced with their consent, outside the law. Even though Ayoreo people are becoming increasingly sedentary and partake in rural-urban migration, and urbanization processes determined some level of social inclusion in the regional society, they are exposed to more acculturation. Collectively, this leads to loss of community values and social networks. From the individual perspective, women are more vulnerable.

56. **Members of Ayoreo communities, including those from Santa Teresita, move frequently to the city of Santa Cruz and other intermediate cities, like San José.** In an urban context, Ayoreo cultural behavior based on the principles of sharing, socialization of resources, lack of planning, and communal accumulation work against them. For example, (a) the Ayoreo conception of common property and common use of goods is frequently considered by the larger society as stealing; and (b) Ayoreo women's independency and autonomy over their bodies and their sexuality takes them into prostitution at very early ages, which is not negatively judged by their own society. However, this behavior is dragged into the general societal perception of prostitution, exposing them to marginalization, violence, and illnesses. The stigmatization of Ayoreo women has affected their integrity as individuals and as a group; consequently important cultural features such as autonomy of action, decisiveness between mother-daughter, and/or peer-girlfriends relations got weakened.

57. **OP 4.10 - Indigenous Peoples.** The policy is triggered and an IPP has been prepared so that both Chiquitanos and Ayoreo can participate in the project benefits. The result of prior, free, and informed consultation processes is broad community support of the proposed Project and interest in participating in the benefits it brings through the IPP. Considering the gender situation inside Chiquitano and Ayoreo communities, all IPP projects follow a gender approach using the principles of equity[22] and equality.[23]

58. The main strategies for the IPP, defined in consultation with the Chiquitano people are the following:

(a) Economic Development Program for Chiquitano Women (San Miguel). This activity is focused on art and craft.

(b) Equipment: Polytechnic Education Center of San Rafael for Art and Crafts in Wood and Metal. This activity will prioritize rural Chiquitano women's participation.

[22] Equity leads to situations in which both women and men have access to equal opportunities to develop their skills and to make choices that are not governed by gender roles and stereotypes. This does not mean that men and women are perceived as equal; it rather means that their aspirations are equally valued and their rights, responsibilities, and opportunities do not depend on gender.

[23] Equality implies that women and men are treated fairly, taking into account their different roles and needs. This implies the possibility of adopting different strategies for men and women, so that the historical disadvantages of women are compensated and equal opportunities are promoted.

(c) Casa Grande dee la ACISIV. This activity will work on strengthening the organizational development of Chiquitano communities (San Ignacio). This project will prioritize rural Chiquitano women's participation.

(d) Livestock Project for the Communities Of Portoncito, San Antonio, and San Rafaelito de Quituquiña (Municipality of San José de Chiquitos)

(e) Handicraft Project for the Communities of Portoncito, San Antonio, and San Rafaelito de Sutuniquiña (Municipality of San José de Chiquitos). This activity will prioritize rural Chiquitano women's participation.

(f) Drilling Wells for Water Provision (Three communities in the Municipality of San José).

59. The main projects for the IPP, defined in prior, free and informed consultation processes with the Ayoreo people are:

(a) Ayoreo Community's Art House, located in San José de Chiquitos. This activity particularly focuses on providing Ayoreo people decent housing conditions in the urban area while promoting the value of the traditional women-made *garabata* art and craft.

(b) Communitarian indigenous health agents (with expertise to guide, report, and follow up treatments of tuberculosis and HIV-STD). This will focus on prioritizing Ayoreo women's participation.

(c) Communitarian Production Project for Ayoreo community (TCO Santa Teresita). This will be particularly focused on traditional *garabata* fiber made by women to generate constant income through selling their art and craft in the local market. This activity will also strengthen cross-generation mechanisms of enculturation and therefore strengthen women networks.

60. Allowing for the possible illegal occupation of indigenous Ayoreo and Chiquitano territories by new immigrants, a program to improve land management capacities of Chiquitano and Ayoreo indigenous organizations is enabled in the IPP.

61. Considering ethno-historic documented evidence, a research project on cultural pre-colonial heritage is included: Ethno history and Archaeological Research on the Precolonial Peabiru Transit Route.

62. **OP 4.12 - Involuntary Resettlement.** OP 4.12 on involuntary resettlement has been triggered to attend to physical impacts in the right-of-way. Neither land acquisition nor expropriation are needed. Along the corridor, 386 properties were identified as physically affected, of which 339 are individual private property and 47 are communitarian property. Their location is reflected in the matrix below:

Table 3.3. Location of Physically Affected Property

Municipality	Individual	Communitarian
San Ignacio de Velasco	82	7
San Miguel de Velasco	80	13
San Rafael de Velasco	81	17
San José de Chiquitos	96	10
Total	339	47

63. **The RAP process includes methodology and procedures to identify social vulnerability and develop the appraisal of physical assets.** It includes four technical areas: social, infrastructure, legal, and agriculture/forestry. Under these criteria, the evaluation determined different types of physical impacts that will be mitigated by cash compensation (indemnification), replacement, and resettlement, depending on the case.

Table 3.4. Compensation Cases by Municipality

Municipality	Land	Agricultural Improvements	Houses	Barnyard
SIV	64	13	44	
SM	46	35	13	
SR	53	28	14	1
SJCH	47	8	9	2
Total	210	84	80	3

Note: SIV = San Ignacio de Velasco; SM = San Miguel de Velasco; SR = San Rafael de Velasco; SJCH = San José de Chiquitos.

Table 3.5. Replacement Cases and Relocation Cases by Municipality

	Municipality				Total
	SIV	SM	SR	SJCH	
Houses	7	4	11	38	60
Water ponds for animals	1	—	1	3	5
Fence	53	55	51	40	199
Kiosk	—	—	—	1	1
Soccer field	2	—	—	1	3
Bus stop	—	1	1	—	2
School	—	1	—	1	2
Basic services	—	1	—	—	1
Water connection	—	—	1	—	1
Recordatorio[24]	—	7	11	1	19
Reservoirs for animals (Atajado)[25]	1	—	1	3	4

[24] Recordatorios are crosses of different materials placed on the side of the road. They are intended to remind the place and the memory of someone who died in a tragic and unfortunate road accident. A recordatorio is built by the family of the deceased, to reach the consolation of God and help the lost spirit while walking toward the beyond (ABC 2015).

[25] Atajado is an artificial water pond built to accumulate rainwater. It is used specially to feed livestock. An atajado does not have a built material structure, except the walls that the same hole makes in earth. The atajados can be wide, to feed a larger number of cows; however, their depth is no higher than one meter.

Informal road-side memorials	—	7	11	1	19
Water tank	—	2	1	—	3
Electric laying	1	1	1	—	3
Antenna	—	—	1	—	1

Note: SIV = San Ignacio de Velasco; Sm = San Miguel de Velasco; SR = San Rafael de Velasco; SJCH = San José de Chiquitos.

64. **Thirty-six families, one soccer field, and one school in the 'La Fortuna' community located in the municipality of San José de Chiquitos will be resettled inside the area of the same community**. Two families in the Quituquina community from the same municipality will be resettled to the remnant land of each property. In any case, expropriation, land acquisition, and a host community will not be needed; however, accompanying activities will be developed, taking care of the particular social conditions of the families, until their livelihoods or standard of living have been restored to pre-displacement levels or improved, if possible. ABC will be in charge of implementing the RAP and compensation activities will be financed by the counterpart. The RAP does not include yet the resettlement impacts related to the bypass in San Ignacio, because ABC did not complete the design for this area. However, the RPF includes the guidelines to update the evaluation and prepare a RAP once the design is completed.

65. **Civil society organizations (indigenous and non-indigenous) and other stakeholders were consulted during the preparation of the IPP.** Prior, free, and informed consultations to Chiquitano and Ayoreo IP (women and men) were done not only at the national level with their corresponding organizations, but also with local Chiquitano and Ayoreo authorities of the affected communities. These consultations were held between January and September 2015 and wide support to the proposed project and the IPP projects was received. Public consultations with indigenous and non-indigenous people were developed in the preparation of the RAP during October 2015. RAP public consultations discussed different types of compensation, considering the best options to reduce the number of affected people and the preservation and/or improvement of their living conditions. People's opinions related to the RAP measures, were received, discussed, and incorporated as part of the plan. The community's support and active participation is guaranteed for the execution of each plan, maximizing the positive social and economic impacts and mitigating the negative effects.

66. **IPP projects were designed to foster regional economic opportunities,** strengthen indigenous women's economic capacities and opportunities, improve marketing conditions for local products, and provide access to basic services. The mitigation actions of the IPP also focus on the possible sociocultural impacts analyzed under the criteria of social vulnerability identified in the SA. In this order, specific projects were incorporated to strengthen the communitarian sociocultural and economic structures and to promote social inclusion, with a specific focus on health, education, and cultural preservation

67. **"Social Oversight" (*Control Social*) is a coordination body generated through an official communication of ABC to the local actors of a project, to exercise their right to participation and social oversight for pre-investment and investment projects under the responsibility of ABC.** This arrangement is recognized in the IPP. Each organization of the local civil society is asked to choose a representative, according to their uses and customs. Each organization officially communicates the nomination of their representative to ABC, specifying the project that will be accompanied. The regional ABC offices perform the induction of the

formed group, socialize institutional information, bring information on national legislation, and establish the rules for participation and social oversight. ABC also hands out credentials to each member. Thereafter, the relationship between the engineer responsible for the section, contractors, and members of the social oversight body, is established. Then, the need of inspections and/or briefings to perform management is determined. This is done in coordination with members of the social oversight in the specific sections of the road project. After this, a training program for social oversight members is developed, according to institutional and project needs, and social oversight itself. Monitoring is performed under the consideration of its contribution to the regional ABC office for compliance of certain activities, issuing periodic reports to achieve better levels of accomplishment. At the end of the year, the regional management ABC office reports assessment on the implementation of activities, level of participation, and contributions of the Social Oversight platform in the project activities. ABC's transparency unit collects the results of the assessment made by regional offices, consolidates the information, and reports to the executive presidency. ABC also communicates to social organizations about the work their representatives have done during the year.

68. **Following clearance by the World Bank Group of the IPP and RAP/RPF,** these were published, respectively, on the ABC website on January 27, 2016, and February 2, 2016, and with updates on May 20, 2016, and July 13, 2016, and by the World Bank on its external website on January 26, 2016, and January 28, 2016, and with updates on May 25, 2016, and July 13, 2016.

69. **Gender.** The Government of Bolivia has shown a commitment to gender equality, as it is one of the values identified in Bolivia's political constitution. The country already has achieved some progress to reduce the gender gap, for example, in gender parity in education, which is part of the Millennium Development Goals. However, there are still gender disparities that need to be addressed in the country. As indigenous women are in a situation of vulnerability and disadvantage, they are also more susceptible to suffer from any potential negative impacts of the proposed project.

70. **The situation of Chiquitano women in the communities show that there are single women heads of households with children who were either left by their husbands or they themselves abandoned the household after suffering different types of gender abuse.** Besides that, Chiquitano women's work is less valued than men's work, both inside and outside Chiquitano communities. Grandmothers are caregivers of their grandchildren and—like their daughters—had little access to education. Positive changes are only becoming visible in the third generation. In this context, Chiquitana women are still suffering institutional and social violence, especially linked to labor and education issues. The IPP projects, focused on providing better regional economic opportunities, improvement of marketing conditions for local products, strengthening indigenous women's technical training and economic capacities, represent an important opportunity to support women's economic empowerment, especially for single mothers who are heads of households.

71. **Ayoreo women who move frequently to the cities of Santa Cruz and San José are getting involved in commercial sex work at very early ages and are stigmatized and exposed to discrimination, violence, and illnesses, including HIV/AIDS/STD.** The IPP projects can make a positive impact to change these conditions. For instance, in the area of

health, the projects will train Ayoreo communities, especially women, in HIV/AIDS/STD and tuberculosis prevention, follow-ups, and treatments. This training program aims to provide them with knowledge and skills that could help reduce their demographic vulnerability. Moreover, the IPP project that will provide Ayoreo people decent housing conditions in the urban area will raise their self-esteem, while reevaluating the traditional *garabata* fiber, made by women. The IPP Communitarian Production Project for Ayoreo community (TCO Santa Teresita) based on the formal Bolivian educational system will also be crucial to generate constant income for Ayoreo women through the production of *garabata* fiber and art and craft. This will give Ayoreo women the chance to avoid commercial sex work as an economic opportunity to generate cash. This IPP project will also strengthen cross-generation mechanisms of enculturation.

72. **The historical context of labor exploitation and traditional submission in Chiquitano culture, leads to vulnerability to different kinds of violence, especially against Chiquitano women whose gender role conditions are linked to submission, compliance, and sacrifice**. For Ayoreo women, the situation is different. Because their contact with western society is recent, inside their communities, they still hold high levels of self-determination; however, their recent arrival to urban centers and their need to obtain money to get adjusted to a new context, dragged them into commercial sex work and consequently into sexual violence, putting them at risk of getting HIV/AIDS/STD. To give proper attention to women victims of violence, including Chiquitano and Ayoreo women, there are SLIMs in the proposed project area that have the competencies to address cases of violence against women. However, municipalities in the project area do not fully promote women's rights and do not recognize the gender-based discrimination issues mentioned before. The improvement of the road might open opportunities to improve accessibility to SLIMs; therefore, Chiquitano and Ayoreo women can receive proper orientation and attention to cases related to gender-based violence.

73. **In sum**, job discrimination and violence suffered by Chiquitano women and gender violence faced by Ayoreo sex workers, are both problems in which the ethnic component is the main indicator of gender discrimination. Considering indigenous women are fundamental for the economic subsistence of their communities, the IPP constitutes an important opportunity to promote and develop gender equity and equality and to address specific gender-based violence issues for Chiquitano and Ayoreo women in the regional context.

Labor Influx

The following matrix describes the potential impacts and mitigation measures related to labor influx under the project:

CROSS-CUTTING ISSUES	
Elements	**Measures**
Assess the magnitude of labor influx, relevant contextual factors, and related legal &	• There will be four labor camps, one in each of the four Municipalities in the project area (San José de Chiquitos, San Rafael, San Miguel and San Ignacio). Approximately 2,000 workers (an as-yet undetermined mix of foreign and Bolivian) would reside in the four camps over three years. Unskilled workers are expected to be largely recruited locally in the project area. Many may choose to continue living in their homes, except where work sites are far away from their towns or villages, in which case they

institutional framework	would reside in the labor camps, as would workers from outside the immediate road alignment. • A SA was carried out during project preparation, in which gender and intercultural issues were treated. • An IPP was prepared in accordance with OP 4.10, focusing on two identified IP groups in the project area, the Chiquitano and the Ayoreo. Consultations with both groups were conducted at the national, regional levels and community levels; the results of these were used for identifying IPP projects and preparing the RPF and RAP. • An EIA of the project was prepared. Site-specific public consultations on the EIA, organized by ABC, were held. • The Bank team and ABC jointly reviewed and took into account the pertinent Bolivian legal framework, including Constitutional provisions and specific laws concerning the rights of Indigenous People, property rights, preservation of and access to natural resources, the rights of women and their freedom from violence, the rights of children and adolescents, requirements for public consultations and participation, anti-discrimination, and social oversight (*control social*) by civil society.
Ensure the capacity of the implementing agency to manage environmental and social impacts	• ABC has an Environmental and Social Division (*Gerencia Socio-Ambiental)*, with sufficient, experienced and qualified staff. • ABC's environmental and social team capacity will be periodically reassessed to ascertain that appropriate staffing is maintained throughout the life of the project, and training will be periodically provided by the Bank on social and environmental safeguards as well as targeted social issues such as labor influx, lessons on GRM and GBV. • ABC is contracting an independent Supervision Consultant for the road works, whose team includes social and environmental specialists who will support ABC in ensuring implementation of all social and environmental activities required in the project.
Contractually bind the Contractor and Supervision Consultant to carry out environmental and social impact mitigation	• The Contractor and Supervision Consultant are explicitly required under their contracts to abide by the provisions of the EIA, RAP, RPF and IPP. • Before works may begin, the Contractor is required to prepare and obtain approval for its site-specific Contractor's ESMP (CESMP) to manage social and environmental risks, including labor influx. • The CESMP must include individual environmental and social impact assessments and management plans for each labor camp, if their siting entails land acquisition or displacement. • The works contract specifies the sanctions that the Contractor will face if the contractor-related provisions of the EIA, RAP, IPP and CESMP are not adhered to, including by sub-contractors. • The Contractor is required to have specific and qualified key staff (Environmental Specialist and Social Specialist) to manage environmental and social mitigation and implement the project's safeguard instruments. Such staff will be required to be on-site or visit the work site at least once per month to verify compliance with and implementation of all mitigation

	measures. Physical works can only commence once these key staff are engaged. • The Supervision Consultant is required to have specific and senior qualified key staff (Environmental Specialist and Social Specialist) to oversee compliance with environmental and social mitigation measures, including addressing community relations, indigenous rights, gender, and sexual and reproductive health.
Establish a mandatory Code of Conduct for workers	• The EIA/EMP (Annex 10) explicitly calls for the Contractor to establish and enforce the employees' Code of Conduct (CoC), including prevention of HIV/AIDS/STCs, prohibition of gender-related violence, treatment of minors, and other behaviors affecting community residents. ABC will review and approve the CoC before physical works commence. • The Contractor is required to implement the CoC. • The Contractor's social team is required to provide training to all workers on the CoC. The training will be annual and applied to 100% of the workers. ABC & Supervision Consultant will monitor compliance. • The Bank will advise on good practice models of CoCs, including sanctions if breached. • Each worker's contract is to include a clause requiring compliance with the CoC.
Reporting and auditing	• The Supervision Consultant's environmental and social safeguards team will prepare regular reports on the Contractor's compliance with all environmental and social impact mitigation plans, and these will be included in the Supervision Consultant's regular reports to ABC. • The Supervision Consultant's environmental and social safeguards team will conduct a quarterly audit of compliance with the EIA, IPP, RPF and RAP to ensure compliance.
SOCIAL IMPACTS	
Potential Adverse Impacts	**Mitigation Measures**
Aggravation or exploitation of social conflicts	SA, EIA, IPP, RPF and RAP have carefully analyzed and taken into account pre-existing cultural or ethnic differences among groups in the project area.
Additional population ("followers")	The project works are not expected to attract population additional to workers.
Increased burden on public service provision, increasing costs to or crowding out the local population	Labor camps will provide their own water supply, electricity, wastewater treatment, solid waste disposal, medical services and transportation services, with no negative impacts on the supply of such services to local residents (see Environmental Impacts section below regarding water resources, waste, etc.).

Resettlement, compensation related to labor camps	• Sites for labor camps in Bolivia are most often on land leased for the duration of project execution, thereby avoiding any land acquisition. • In case land acquisition or displacement of people are unavoidable in the siting of a labor camp, the Contractor must incorporate a Camp Resettlement Plan as part of its CESMP, to be approved by the Supervision Consultant, before any physical activities are undertaken. It will require Bank approval as well.
Increased risk of communicable diseases	• The Contractor's social team is required to provide training to all workers on HIV/AIDS/STD prevention, in coordination with the local health service and with additional support of specialized entities in the project area. The training will be annual and applied to 100% of the workers. ABC & Supervision Consultant will monitor compliance. • ABC will contract with a team of special health promoters for the Ayoreos, including the mitigation of health impacts related to possible contact with workers on the road project. • One IPP project is focused on training of Ayoreo volunteers to monitor, report, and follow up on health treatments and prevention of HIV/AIDS, STDs and TB.
Gender-based violence and misconduct **Illicit behavior and crime affecting the local population**	• The Contractor is required to fully enforce compliance by its workers with the Code of Conduct, including application of sanctions. • The Contractor is required to monitor the entry and exit of all personnel and visitors in and out of the labor camp. • ABC and the Contractor will maintain outreach to local law enforcement and legal services for women, children and teenagers, to facilitate prompt and effective responses when needed. • The Grievance Redress Mechanism (see below) includes a specific mandate to address any kinds of gender-based violence committed under Law No. 348 "*Ley Integral para Garantizar a las Mujeres Una Vida Libre de Violencia*". The project's GRM system will coordinate with the SLIMs and with the *Defensoria del Niño y Adolescencia* of each Municipality. It will make referrals to and observe the protocols of these entities, and will follow up on each case until resolved. • The IPP incorporates a gender focus into all of its activities, considering the lack of sustainable economic opportunities, especially for Chiquitano and Ayoreo indigenous women, whose traditional economic dependency can increase their exposure to gender-based violence and other forms of harassment and mistreatment. • The main gender strategy for Chiquitano women is to implement several projects to strengthen their economic empowerment, respecting their traditional economic activities, social structures, and beliefs. For the Ayoreo women, the strategy focuses on (a) provision of decent living conditions in the urban area of San Jose de Chiquitos; (b) a health project mentioned above under communicable diseases; and (c) promoting a communitarian art and craft production project focused on traditional *garabata* fiber made by women. • To aid ABC's social team and other entities in addressing impacts on sex

	workers, and particularly the vulnerable Ayoreo women, a survey will be carried out early in the project to establish a baseline of data on sex workers in the project area.
Child labor and school dropout	• The works contract includes a clause prohibiting the economic exploitation of minors and employment that is deemed dangerous, which interferes with education and/or risks their health or physical mental, spiritual moral or social development. • The IPP includes two projects (one for the Chiquitano and the other for the Ayoreo) to help prevent children and teenagers from dropping out of school by giving them better educational opportunities. The projects are (a) Polytechnic Education Center of San Rafael for Art and Crafts in Wood and Metal and (b) Communitarian Production Project for Ayoreo community (TCO Santa Teresita). These will be implemented under the national educational system in coordination with local entities with competencies in the field.
Local inflation of prices	As part of the establishment of the labor camps, ABC's and the Contractor's social teams will collaborate to hold consultations with local merchants and other community representatives in the project area to determine an adequate balance between providing commercial opportunities for local people to sell goods to the labor camps versus having some goods bought in bulk periodically in Santa Cruz.
Increased pressure on accommodations and rents	The Contractor is obligated to provide sufficient housing in work camps to accommodate all its workers coming from outside the immediate project area.
Camp-related traffic and road safety	• The EIA provides detailed guidelines for the Contractor on road safety in and around the camps, using signage, traffic control personnel, barriers, lighting, reflectors, proper pedestrian access, proper detours and access roads, and public information. • In reviewing the road design, the Supervision Consultant will undertake a road safety audit. • Contractor's ESMP includes a Traffic Management Plan.
Stakeholder engagement and Grievance Redress Mechanism (GRM)	• The project is establishing a Grievance Redress Mechanism (*Sistema de Atención de Consultas y Reclamos*), overseen by ABC and led by a Committee composed of one representative of ABC's management, one member from ABC's Environmental and Social Division, one representative of the affected people, a professional social specialist of the Contractor's team, and a professional specialist of the Supervision Consultant's team (the GRM will become operational upon engagement of Contractor and Supervision). • ABC will assign a full-time qualified staff member to support the GRM Committee. • ABC will establish and maintain a GRM response protocol and an electronic logging and tracking system for all complaints. • The Contractor will employ an experienced and qualified person as a full-time Community Liaison to manage community relations, inquiries, and

	complaints. • Before the start of civil works in towns along the road alignment, ABC's and the Contractor's social and environmental teams will jointly hold informational sessions for local residents and SOCs on the potential effects of the influx of workers from outside the area, the GRM, the labor Code of Conduct, and pertinent laws and regulations, with the aim of sensitizing people to report incidents and officials to follow up on these reports. • Before the start of works, ABC will prepare and implement a public information campaign covering all pertinent elements of the road project, using TV, radio, local newspapers, signboards, flyers and other media. • ABC will maintain, during the full period of construction, a constantly updated public information campaign to keep the public informed on the project's progress, including a web site providing complete information on physical, environmental, social, and financial elements. • The project's GRM system will work closely with the *SLIMs,* and with the Defender of Children and Adolescents (*DNA, Defensoría del Niño y Adolescencia)* of each Municipality. The GRM mechanism will refer complaints to these entities, as appropriate, and will follow up on each case until resolved. • ABC's social staff will work with each Municipal Government in the project area to establish Social Oversight Committees (SOCs) *(Comités de Control Social),* under Law No. 341, Participation and Social Oversight (*Ley de Participación y Control Social*), specifically for the purpose of allowing civil society organizations to supervise and provide feedback on the execution of the SCRCCP. • During the first year of implementation, ABC will commission a case study of the actual capacities of the SLIM in the Municipality of San Ignacio, where the SLIM is better established and its interaction with the communities is stronger. Based on this study, project funds will provide support to strengthen the referral and counter-referral system and the institutional capacities of SLIMs in the project area. • Also in the project's first year, an assessment will be made by an independent consultant of the capacity of the SLIMs and DNAs of each Municipality and the communities to respond to cases of GBVM and child abuse. • ABC, the Contractor and the Supervision Consultant will meet regularly, and at least quarterly, with the SOCs to provide and receive information on the progress of the project, any problems encountered, and solutions.
Labor conditions	• The Contractor will be required to prepare and obtain approval of an Occupational Safety and Health (OHS) plan for its workers at the work site and in the labor camps. • The EIA provides detailed guidelines on labor health and safety. • The EIA calls for the Contractor to abide by the norms for design, construction and management of labor camps per "Labor Accommodation: Processes and Standards", a Guidance Note by IFC and the EBRD, found at the following link:

	http://www.ebrd.com/downloads/about/sustainability/Workers_accomodation.pdf
ENVIRONMENTAL IMPACTS	
Potential Adverse Impacts	**Mitigation Measures**
EIA-General	• The project's EIA will be incorporated by reference into the works contract and the ToRs of the Supervision Consultant. • The EIA provides for Contractor to implement a program of environmental education for workers and the community.
Labor camps-general	• The EIA provides detailed guidelines for the siting and development of work camps (12.3.1.3.a) to minimize environmental impacts, including locating them at least 2 km from population centers of >500 people and on sites that were previously developed to avoid disturbing flora and fauna. • The EIA (Map 32, *Áreas Óptimas para la Instalación de Campamentos*) presents potential sites for labor camps that fulfill the social and environmental criteria. • The CESMP must include an individual environmental and social impact assessment and management plan for each labor camp.
Waste disposal	• The EIA provides guidelines to prevent the inadequate disposal of solid or liquid wastes from the camps and the work sites. • Site-specific mitigation measures are to be included in the CESMP related to each labor camp.
Wastewater discharges	• The EIA provides guidelines to prevent the discharge of contaminated wastewater or negative effects on nearby ground or surface waters. • Camps are to be located at least 500 m from main surface watercourses. • Site-specific mitigation measures are to be included in the CESMP related to each labor camp.
Increased demand for groundwater	• The EIA calls for water supply at labor camps to be from wells rather than surface water, given the severe scarcity of surface water in the project area. • The EIA includes specific design measures to avoid aquifer contamination by wells at work camps. • The siting of camps at least 2 km from population centers will minimize the reduction of groundwater supply to local residents; even so, the Contractor will be required to regularly monitor groundwater quantity and quality in areas around the camps and take adequate measures taken in case they are affected. • Site-specific mitigation measures are to be included in the CESMP related to each labor camp.
Camp-related land use, access roads, noise	• The EIA provides relevant guidelines. • Site-specific mitigation measures are to be included in the CESMP related to each labor camp.

and lights	
Deforestation, ecosystem degradation, species loss	Site-specific mitigation measures are to be included in the CESMP related to each labor camp.
Closure and site restoration	The EIA includes detailed provisions for work camps' closure and site restoration, including removal of buildings and ancillary facilities, rehabilitation of access ways, removal of all materials and equipment, restoration of the topography to its original state, and replanting of trees and other vegetation.

Monitoring and Evaluation

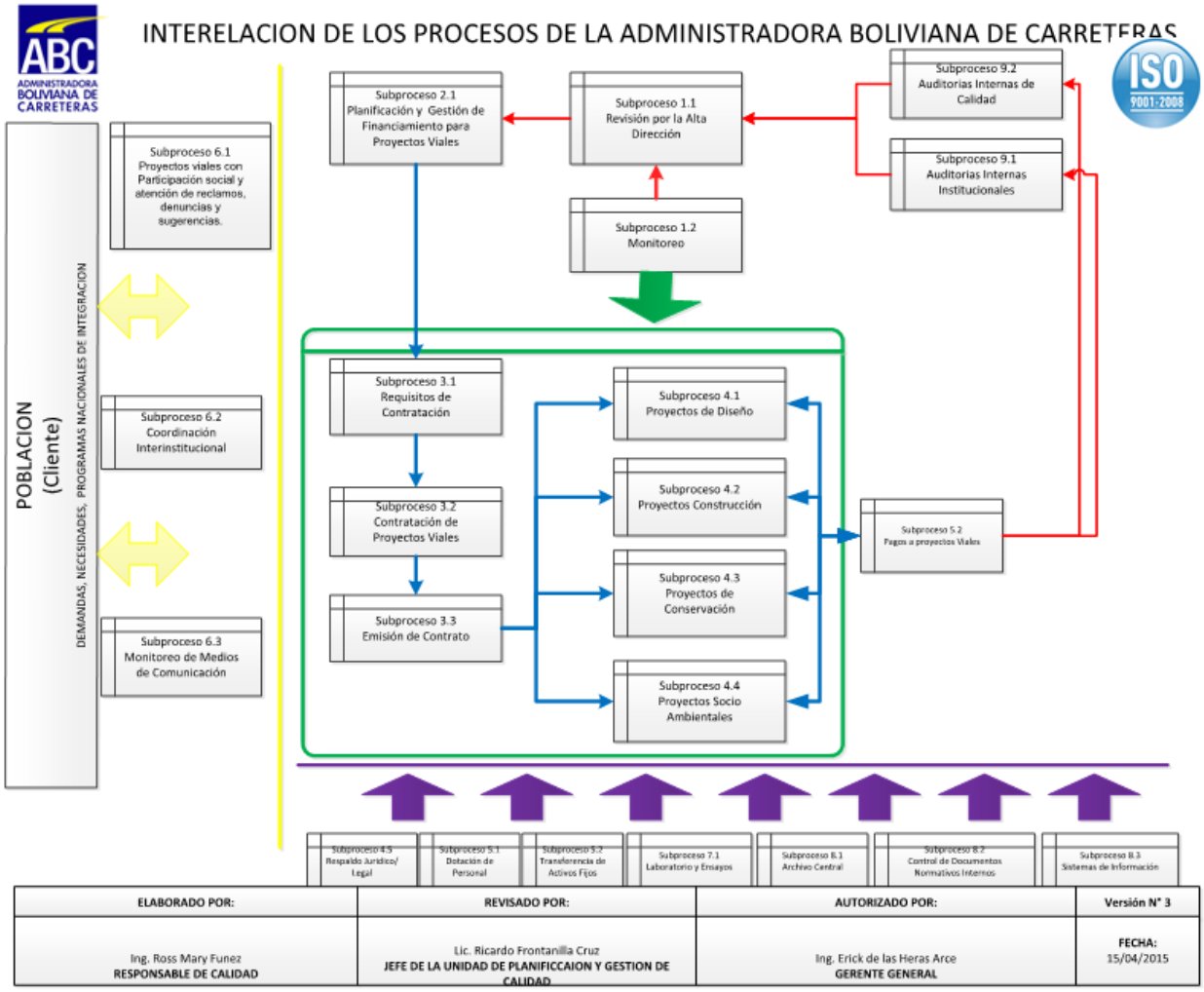
74. **ABC's existing M&E framework is being strengthened through implementation of the integrated FM information system,** in particular through an improvement of fiduciary systems and technical planning. M&E of project activities will be the responsibility of the sub-director of the Construction Unit. ABC will prepare semiannual reports detailing financial and physical progress of all activities. Also, through citizen engagement, ABC supports a system where the beneficiary population of road works are organized to undertake a formal monitoring of the works.

75. **ABC has stablished a Quality Manual in accordance with the requirements of ISO 9001:** 2008, which defines the policies, processes and requirements of the QMS implemented in ABC. This QMS comprises the areas of planning, management, research and design, construction, maintenance, preservation, and operation of the primary road network, describing the relationships of authority for the performance of management activities in each of these areas and the responsibilities of key staff members and areas.

76. **In accordance with the manual, M&E is the responsibility of the headquarters office through the office of the director of technical management,** and includes monitoring compliance with the characteristics of the road projects from the technical, administrative, and legal management perspectives. In this context, the office of the director of technical management has direct responsibility for the monitoring and evaluation of road projects and specifically for: issuing the order to start of construction, accepting the guarantees for advance payments, authorizing certificates of work progress for payments after verification of compliance and conformity of the activities subject to payment, authorizing work orders, authorizing change orders that will not affect the contract, authorizing amendments to contracts for works and supervision, provisional acceptance of the works, final acceptance of works and contract products, closing road projects, and authorizing the devolution of compliance guaranties.

77. **According to these activities under the responsibility of the office of the director of technical management,** the implementation of the proposed project is with the technical director though subprocess 2.1 of the Quality Manual corresponding to 'Monitoring' and the subprocesses of Monitoring and Control (4.1, 4.2, and 4.3), fed with the outputs of different other subprocesses as described in the following diagram and the interaction with several other areas of the institution.

Figure 3.1. ABC Processes Interrelation



78. **ABC is strengthening its capacity to implement mitigation measures in the social sphere.** Its existing Replacement Program (*Plan de Reposición de Pérdidas*) is coupled with the Involuntary Resettlement safeguard (OP 4.12) with regard to the resettlement processes planning and the incorporation of new compensation criteria for physical and economic displacement. Through the Indigenous Peoples safeguard (OP 4.10), ABC has incorporated specific social mitigation strategies for IP and their cultures, through the development of the IPP, which incorporates a collective approach, that allows the reduction of different types of collective vulnerability that could help achieve social inclusion and gender equity and equality, while mitigating any negative effect over indigenous cultures.

79. **The World Bank Group through its supervision will support ABC** in ensuring adequate monitoring progress and achievement of the project indicators and results, by supporting additional assessment and consultation to better understand possible positive social inclusion and gender impacts in the social context. A Midterm Review will be held around November 2018.

Annex 4: Implementation Support Plan

BOLIVIA: Santa Cruz Road Corridor Connector Project

1. Although the project has a simple design with straightforward traditional road execution and consultant selection for supervision and a technical study, recognized weaknesses in procurement and contract management at ABC will necessitate strong results-oriented implementation support by the World Bank Group, particularly during the procurement phase and in the first 24 months of civil work execution.

2. The maturity in policy and strategy dialogue between ABC and the World Bank Group along with clarity and consensus in tactical discussions holds the promise that both will work together to ensure successful implementation of the proposed project. This includes planning of the design developing phases of the upgrading of the San Matias-San Ignacio de Velasco, where a DBMOT approach is envisioned.

Implementation Support Plan

3. **As it is evident that good preparation upstream mitigates risks and undesirable implementation issues downstream,** even in straightforward traditional projects like the one in hand, the focus of the initial months of support has been on ensuring good quality of technical and procurement documents before tendering started. To this end, the World Bank Group has provided advice to ABC on formulating appropriate ToR for different consultancies, drawing on World Bank experience. For a successful start of the project, the World Bank is bringing to the table extensive experience in similar contracting in Bolivia as well as in other countries. For both purposes, the World Bank is and will work closely with client and technical team members to ensure that bid documents are of high quality, as in other recent projects with the World Bank Group; to support this process the World Bank will provide ABC with targeted procurement and contract management support.

4. **During bidding processes,** the World Bank Group is supporting and advising ABC to improve the prospect that selection of consultants and contractors is of good quality and brings value to the client, helping in socialization aspects of the project. Quality upstream preparation, procurement, and contracting significantly improve the chance of successful implementation of the project.

5. **During implementation of project activities,** the World Bank Group plans to conduct two formal support missions per year along with at least one more streamlined mission, aimed at reviewing progress with the client and promptly addressing any deviations from good project implementation. Bank implementation support teams will be fully staffed with relevant environmental and social safeguards specialists (see Table below). In addition to ensuring adherence to e instruments, particular focus will be on ensuring that the comprehensive sets of measures aimed at addressing risks related to temporary influx of laborers is respected. The World Bank Group missions will report on progress—or lack thereof—toward achieving the PDO and component targets based on the Results Framework and other evidence and agreeing with the client's actions to ensure that the project is on track to achieve its objectives as well as outputs.

6. **Throughout the project lifetime**, the World Bank Group expects to have road sector policy and strategy discussions with the client and consult, on occasions, other financial partners working in the sector.

Table 4.1. Main Focus in Terms of Support to Implementation

Time	Focus	Skills Needed	Resource Estimate	Partner Role
First twelve months	Support quality procurement and contracting	FM ; engineer/infrastructure ; social/environment ; procurement; team lead	Staff and consultant time; missions; World Bank Group training provided	Develop and execute
	Contract administration	Engineer/infrastructure; procurement; FM; team lead	Staff and consultant time; missions; World Bank training provided	Execute and market
	Set stage for ongoing consultations	Social/environment/gender; economist; team lead	Staff and consultant time; field work	Facilitate and participate
12–48 months	Contract execution and contract management	Procurement; FM; engineer/infrastructure; team lead	Staff and consultant time; missions; field work	Training/execute
	Social and environment management	Social/environment/gender specialist; team lead	Staff time	Develop and execute; training
	Support capacity development	Engineer/infrastructure; social/environment; economist; FM; procurement; team leader	Staff time	Training/execute

Table 4.2. Skills Mix Required

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Team leader	10	4	Headquarters
Road engineer	5	n.a.	La Paz
Infrastructure specialists	12	n.a.	La Paz
Transport economist	6	1	Headquarters
Social specialists	10	n.a./2	La Paz/Bogotá
Environment specialist	5	n.a./2	La Paz/Lima
Gender specialist	5	1	Headquarters
Procurement specialist	10	n.a.	La Paz
FM specialist	6	n.a.	La Paz
Legal counsel	1	0	Headquarters
M&E Specialist	2	1	TBD

Table 4.3. Partners

Name	Institution/Country	Role
ABC Management	ABC/Bolivia	Project execution
Ministry of Planning Development/Vice-Ministry of Public Investment and External Finance (*Viceminesterio de Inversion Publica y Financiamiento Externo*)	Bolivia	Policy and strategy
CAF, IADB	Bolivia	Consultations

Annex 5: Economic Evaluation

BOLIVIA: Santa Cruz Road Corridor Connector Project

1. **The San Ignacio de Velasco-San José de Chiquitos corridor is part of Route 017 (RF-017) from Bolivia's Primary Road Network.** The corridor is located in the Department of Santa Cruz, between the provinces of José Miguel de Velasco and Chiquitos, having the San Ignacio de Velasco community as the starting point and passing through the communities of San Miguel de Velasco and San Rafael, and finally connecting to the community of San José de Chiquitos. The corridor length is 208 km and it goes north-south.

2. **RF-017 connects two main routes from the primary road network's east-west corridor**, one is RF-004 connecting Puerto Suarez to Santa Cruz City and the other is RF-010 connecting San Matias with Santa Cruz City as well.

3. **To simplify the corridor analysis**, it was divided into five sections, from San Ignacio de Velasco to San José de Chiquitos.

Table 5.1. Length of Road Sections

Route RF 017		
San Ignacio de Velasco	San Miguel de Velasco	41 km
San Miguel de Velasco	San Rafael de Velasco	39 km
San Rafael de Velasco	Km 117+080	44 km
Km 117+080	La Fortuna	44 km
La Fortuna	San José de Chiquitos	40 km
Total		208 km

4. **Currently the corridor is not paved (gravel surface);** thus, designs for the improvement activities had been developed with the characteristics of a paved road.

5. **To evaluate the project feasibility**, alternatives in DST and AC were evaluated, comparing the costs and benefits of both alternatives with transportation costs resulting from the use of an unpaved road, as the corridor currently is.

6. **The studies from the transport demand allowed identification of the flows of the vehicles circulating through the corridor,** traffic diverted from other routes that will start using the road due to lower transportation costs with the improvement of the road, and the generated traffic in the area of influence of the road. Moreover, exogenous benefits were included in the feasibility evaluation, calculated as added value to the existing agricultural production, quantified as an economic value from the increase in production of goods resulting from the road improvement.

7. **The project economic evaluation is based on HDM-4 simulations**, comparing the 'without project' scenario versus the alternatives of road improvement in AC and DST, both 'with project' scenarios.

8. **Based on the conditions of an unpaved road, the 'without project' scenario,** benefits were quantified for the 'with project' scenario, calculated by the HDM-4 software as reductions

in the travel times and operating costs of vehicles. The exogenous benefits were incorporated using one of the software features to analyze this kind of economic flow.

9. **To evaluate the net benefits of the project, HDM-4 version 1.3 was used,** which simulated the conditions of the life cycle and costs for multiple design alternatives and road maintenance and provides criteria for economic decisions.

10. The HDM-4 software calculates the project benefits comparing each one of the pavement alternatives in contrast to the base scenario, the 'without project' scenario. Scenarios were defined for a 20-year evaluation:

(a) Base scenario, unpaved road with gravel surface, with periodic replenishments of gravel and routine maintenance

(b) Pavement alternatives in DST and AC, with a future resurfacing with an AC layer of 5 cm thickness after the IRI reaches 4 m/km

11. For the economic analysis of the project, a discount rate of 12 percent was adopted.

12. Economic evaluation yields an NPV of US$31,621 million and an IRR of 14.4 percent, for the AC alternative, which is the selected solution for the project.

13. **Although these indicators are slightly lower than the ones yielded by the evaluation with the DST alternative,** the selection of the AC solution is based on the extension of the service period of the road until the time a resurfacing is needed (rehabilitation after the IRI reaches 4 m/km or more). According to the simulations performed in HDM-4, the need for resurfacing with the DST alternative will occur at the 6th year versus the alternative with AC that will occur at the 12th year.

14. Table 5.2 shows the economic unitary costs for the vehicles fleet identified in the corridor and the traffic hypothesis used.

Sensitivity Analysis

15. **A sensitivity analysis was performed for the main risks of the project,** considering an increase in the investment costs and a reduction of the traffic levels. Under this combined scenario, the project yields acceptable values up to a 10 percent cost increase and a 10 percent decrease in traffic flows (AADT), with an NPV of US$9.061 million and an IRR of 12.7 percent. For the exogenous benefits of the project, a reduction of up to a 50 percent can be accepted, for a normal situation in costs and traffic (AADT).

Table 5.2. Vehicles Fleet Characteristics and Unit Costs

	Car	Pickup	Mini to Medium Bus	Large Bus	Medium Truck	2-Axle Truck	3-Axle Truck	Other Vehicles
Unitary Costs								
New vehicle cost (US$/vehicle)	23,310	23,040	65,315	147,000	59,800	113,506	146,235	5.177

		Car	Pickup	Mini to Medium Bus	Large Bus	Medium Truck	2-Axle Truck	3-Axle Truck	Other Vehicles
Unitary Costs									
New tire cost (US$/vehicle)		50	102	157,39	334,52	264.3	310.77	446.66	34.1
Fuel cost (US$/liter)		0.68	0.68	0.82	0.82	0.82	0.82	0.82	0.68
Lubricant cost (US$/liter)		2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
Maintenance labor cost (US$/hour)		1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72
Crew cost (US$/hour)		1.41	1.41	1.61	2.48	1.61	1.61	2.48	1.41
General costs (US$)		441	668	688	1933	1000	1000	1000	100
Interest rate (%)		12.67	12.67	12.67	12.67	12.67	12.67	12.67	12.67
Passenger time (US$/hour)		1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Cargo delay (US$/hour)		0.49	0.49	0.49	0.49	0.49	0.99	1.49	0.49
Utilization and Loading									
Kilometers driven per year (km)		23,000	30,000	33,280	80,000	60,000	80,000	75,000	10,000
Hours driven per year (hour)		1460	1460	1440	1440	1440	1440	1440	400
Service life (years)		10	10	10	10	10	10	10	5
Percent of time for private use (%)		20	20	0	0	0	0	0	100
Number of passengers		5	3	21	54	3	3	3	1
Gross vehicle weight (tons)		1.2	2.18	2.8	13.63	9.1	23.9	40.0	0.2
Equivalent Simple Axle Loads (ESAL)		0.0	0.0	0.17	0.90	0.17	1.08	2.85	0.5
Typical Composition of Vehicle Fleet									
San Ignacio-San Miguel	274 vehicles/ day	18.7%	25.0%	5.2%	2.1%	4.6%	4.2%	7.4%	32.8%
San Miguel-San Rafael	315 vehicles/ day	18.1%	28.3%	2.0%	2.4%	3.7%	4.9%	8.2%	32.4%
San Rafael-Km 117	160 vehicles/ day	18.3%	21.1%	3.5%	2.5%	5.7%	9.3%	16.0%	23.6%
Km 117-La Fortuna	160 vehicles/ day	17.1%	19.4%	3.3%	3.3%	5.5%	9.5%	17.6%	24.3%
La Fortuna-San José	233 vehicles/ day	32.7%	16.8%	2.8%	1.3%	13.7%	4.9%	13.4%	14.4%

Annex 6: Poverty and Social Impact Analysis

BOLIVIA: Santa Cruz Road Corridor Connector Project

1. **This annex provides a summary of key socioeconomic and demographic aspects observed in Bolivia, and more specifically in the immediate and extended area of influence of the Santa Cruz Corridor Connector Project.** While the key objective of the Santa Cruz Road Corridor Connector Project is to reduce transport cost and travel time along one of the strategic land transportation routes in one of the country's most populous departments, the project includes a distinctively developmental and poverty reducing goal owing to its positive socioeconomic impact at the regional level, particularly through the promotion of the towns of San Ignacio de Velasco and San Miguel de Chiquitos as regional centers. Highlighting the findings of the project's PSIA, the annex identifies project beneficiaries, describing their livelihood conditions and critical mobility and accessibility constraints in the project area. Drawing on results, consultations and policy recommendations from the study, the annex concludes by discussing how the poor and bottom 40 percent are likely to benefit from the proposed road rehabilitation and safety interventions.

Poverty and Shared Prosperity in Bolivia

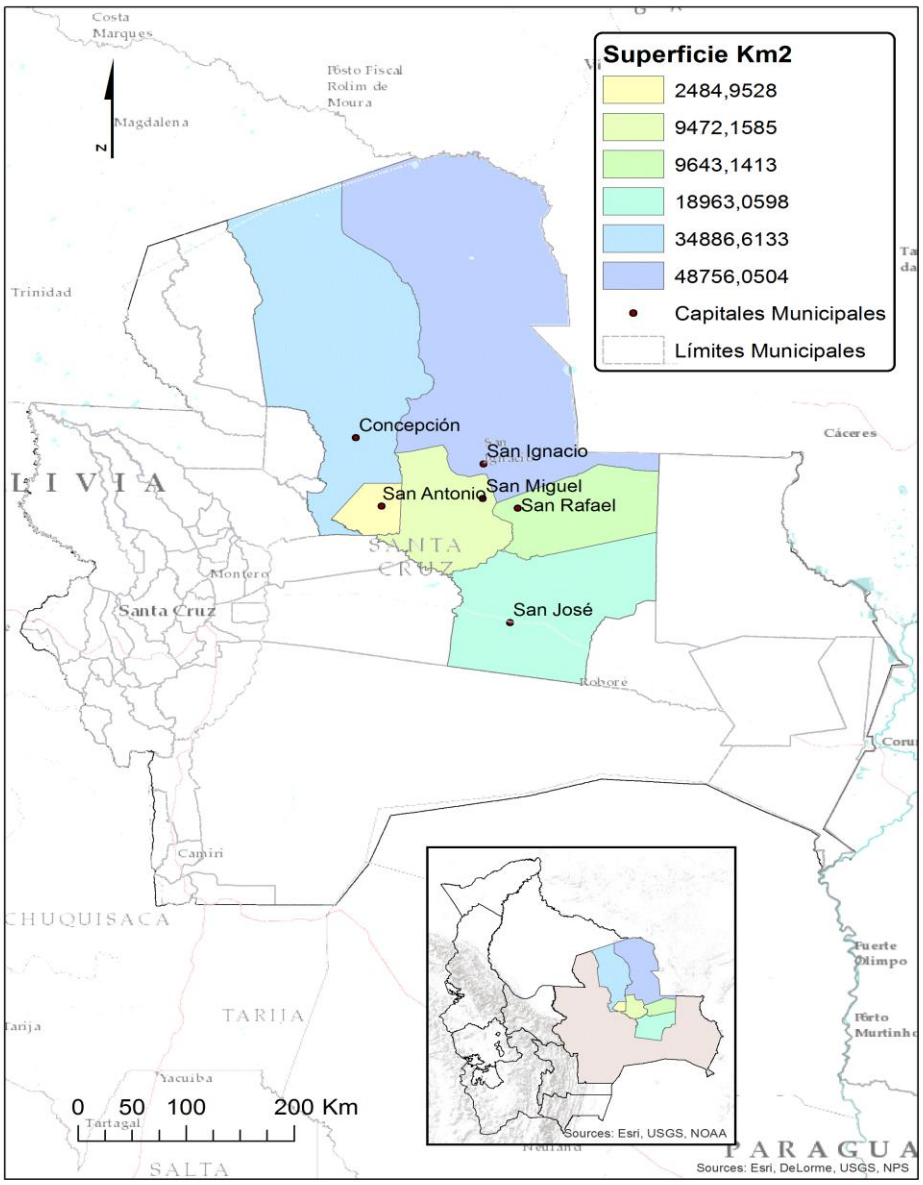
2. **Growth was markedly pro-poor and strongly benefited the bottom 40 percent of the income distribution.** Over the past decade, the average per capita income of the poorest two quintiles rose at a much faster pace than for the population as a whole and faster than the bottom 40 percent in any other country in the Latin America and the Caribbean Region. Average per capita household income grew by 4.6 percent per year between 2002 and 2013, while the average income of the bottom 40 percent increased by 9.4 percent, doubling the average income growth for the whole population. This evolution is at the root of the strong poverty reduction—from 63 percent of the population in 2002 to about 38 percent in 2014; extreme poverty fell from 39 percent in 2002 to 17.8 percent in the same period. The Gini coefficient also decreased from 0.60 in 2002 to 0.49 in 2013.

3. **That said, Bolivia has the highest proportion of people living under poverty in South America and the fourth highest in the Latin America and the Caribbean Region, surpassed only by Haiti, Honduras, and Guyana.** In absolute terms, over 4 million people live below the poverty line and 1.8 million live in extreme poverty. Of this last group over two-thirds (1.2 million) are located in rural areas, according to the 2014 Household Budget Survey. Despite notable improvements in the last decade, regional income disparities persist. In rural areas, the share of people living below the monetary poverty line is close to double the share observed in urban areas, as evidenced by a poverty incidence of 57.6 percent against 30.6 percent in cities. Accordingly, average household income is much lower among the rural population, compared to urban households. Promoting shared prosperity cannot be achieved without improved living standards in all regions.

4. **Existing transport infrastructure deficiencies may be an important driver of poverty in Bolivia**. The road network in the country is still constrained in both coverage and quality, and its condition is unsatisfactory, in part due to lack of maintenance. Road network constraints are considered one of the main reasons for unequal development of the different regions of the

country, and analysis shows that there is an unequivocal inverse correlation between the quality of road infrastructure of a regions and the level of poverty of its population.

Figure 6.1. Project Catchment Area



Project Area of Influence

5. **The project will finance rehabilitation and road upgrading along the San Ignacio de Velasco-San Miguel de Chiquitos national road,** a key regional corridor serving 125,000 inhabitants (mostly in rural areas) and spanning over 208 kilometers. The four municipalities along the alignment of the corridor rank low in terms of accessibility and exhibit poverty levels ranging from 47.7 percent for San José de Chiquitos and 67 percent for San Ignacio to 71 percent for San Rafael and 74 percent for San Miguel, while the share of people living below subsistence

levels is similar throughout the four municipalities ranging from 6 percent to 15 percent.[26] Such levels of moderate and extreme poverty in this sub-region compare unfavorably with the national average and are consistent with rural poverty levels observed elsewhere in the country.

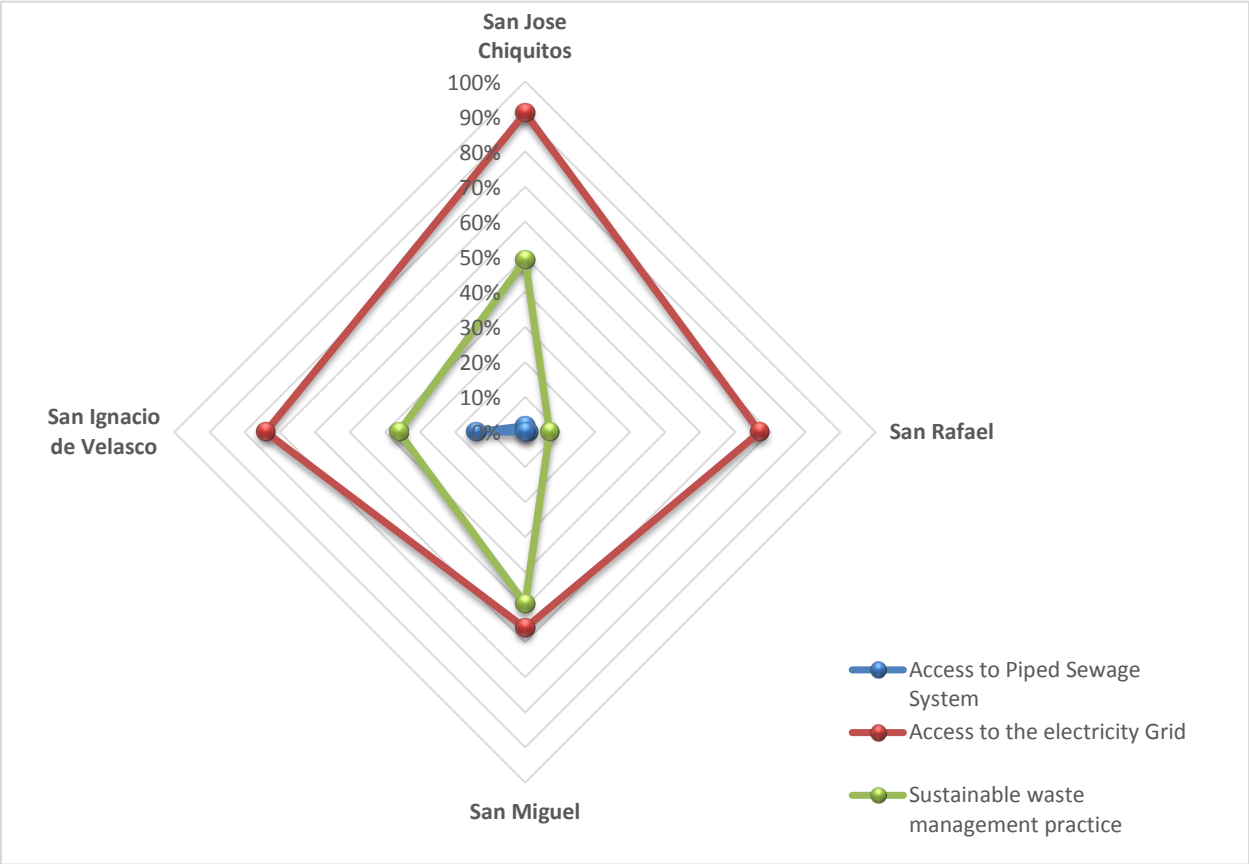
6. **Similarly, limited access to markets in some villages throughout the region constitutes ones of the major constraints faced by the rural labor force.** Indeed, some villages that are connected to the corridor through unpaved rural roads nearby have very low market access indexes, as measured by the time required to reach the largest municipality in the sub-region, the days of road closures, and the physical distance. Accordingly, the project offers immense potential to improve accessibility and mobility to road users along these important roads, ensuring that over 282 villages and towns that are part of the four macro-communities have access to the regional road network and beyond to the country's main highway corridors.

7. **The World Bank financed a PSIA that identified potential social benefits that the project can bring to the target population in the area of influence of the future Santa Cruz corridor by reducing transport costs and travel time and improving road safety.** In this sense, it explored the socio-demographic conditions, mobility patterns (including access to services) and poverty levels of the target population, with an emphasis on the sectors in a situation of vulnerability (IP, women, elderly, and people with disabilities). Qualitative data was collected in the four municipalities that make up the area of influence, namely, San Ignacio, San Miguel, San Rafael de Velasco (Velasco Province), and San José de Chiquitos (Chiquitos Province). The findings are listed in the next paragraph.

8. **Access to education and infrastructure in the sub-region is limited and human development outcomes, particularly in education, raise some concerns**. According to the national census, close to 6,000 school-aged children out of a total of 33,000 (18 percent) are not currently attending school. Such an alarming rate is high by international standards and attributable to several causes, but poor accessibility to schools may be one factor. Similarly, a nontrivial proportion of the population in the four municipalities lacks reliable service of electricity; indeed, the share of population not connected to the grid is as high as 33 percent and 44 percent in San Rafael and San Miguel, respectively. Improved sanitation facilities in the region are inadequate with fewer than 10 percent of the population in the region using the piped sewer system. Finally, waste collection services are ad hoc and coverage is low, with less than 50 percent of solid waste management practices considered sustainable (figure 6.2).

[26] INE 2012. Data obtained through the 2012 Census by the Unsatisfied Basic Needs Index, a measure of multidimensional poverty.

Figure 6.2. Access to Selected Infrastructure Services in Area of Influence



Source: Socioeconomic diagnostic and local development plans.
Note: Sustainable waste management practice includes waste collection and disposal by public entity.

9. **Over half of the labor force is employed by the informal sector, with own-account and household 'domestic' workers dominating**. A significant share of the low-income population resides in the rural peripheries, usually kilometers away from the main towns and in virtual absence of any form of reliable, affordable, and safe transportation. In the absence of off-farm employment opportunities, which sometime are made available by improved connectivity to nearby towns, some groups are either confined to finding low-paying jobs in the agricultural center or informal employment in their immediate proximity or making work-related trips for longer distances and time at the substantial cost to their quality of life. Agriculture, forestry, cattle raising, and hunting are the predominant economic activities in the area with these sectors employing between 38 percent and 49 percent of the population in the project area. The next largest employer in the region is the health and education sectors with 15 percent to 18 percent of the population and then transport-trade and manufacturing sectors with between 7 percent and 11 percent. All of these sectors heavily depend on adequate transport infrastructure links such as the Santa Cruz Road Corridor Connector to realize their full potential as the next subsection will further elaborate.

Expected Project Impacts and Transmission Channels

10. **The importance of infrastructure, particularly transport infrastructure, in economic development is widely recognized in development economics literature.** Where road networks are poorly developed, transportation costs are high, inhibiting investment, innovation, the competitiveness of the private sector in export markets. High transportation costs can also affect households, reducing real incomes, and limiting access to health, education, and employment. Poor road infrastructure also limits the flow of information and access to markets, leading to imperfect competition and misallocation of productive resources[27].

11. **Impacts like improved mobility of goods and people and increased household consumption of local goods and services may be considered short to medium term,** indirect effects while impacts like reduction in costs of inputs and services, increased production of agricultural goods, increased investment in small business development, and employment diversification may take longer to achieve. While such indirect impacts are expected to lead to improved economic wellbeing in terms of household incomes and productivity, they take longer time to materialize and it has proven hard to trace and disentangle such impacts[28].

12. Economic studies of road corridors identify the following direct and indirect transmission channels:

(a) Direct effects: improved accessibility and mobility (reduced travel time and cost and other related cost savings)

(b) Indirect effects: welfare and labor markets impacts (wages, income, and consumption)

(c) Indirect effects: improved economic opportunities (new business development, reduced cost of agricultural/forestry livestock production inputs and outputs)

(d) Indirect effects: improved use (consumption) of education and health services (although access to health and education facilities is usually considered under the rubric of direct effects)

13. **The remainder of this annex focuses on some of the likely direct and indirect impacts**, particularly on welfare outcomes at the household level and expansion of economic opportunities in the project area. By looking at existing constraints in the project area and how the project seeks to address them, it further hypothesizes about longer-term impacts, which could be captured in a follow up impact assessment.

Direct Impacts

14. **The most direct and shorter-term impacts will accrue to both freight and passenger transport companies with inter-regional mobility needs.** Road users will benefit from lower vehicle maintenance and operating costs stemming from better road conditions, as well as from

[27] World Bank 2009
[28] World Bank 2002

the associated improvement in mobility. Captive users of public transport too may benefit from higher inter-regional mobility and reduced travel times when visiting family and friends. It is expected that transportation expenses will fall because of more competitive tariffs for coach services. Among road users and beneficiaries, the project equally targets both men and women.

15. **Road users will benefit from improved connectivity** (particularly from small underserved villages to second tier towns, agglomeration centers, and the capital Santa Cruz), better road condition, and reduced travel time. For instance, the upgrade of the corridor will cut transit time by as much as 50 percent throughout the whole corridor.

16. **Similarly**, the project should make available jobs in construction and maintenance, as well as temporary jobs sectors for providing services at project sites and jobs in roadside services once civil works are completed. The number of direct jobs created will depend on local conditions but several hundred temporary jobs could be created in construction and maintenance in the area of intervention of World Bank-financed works.

Indirect Impacts

17. **The implementation of upgrade and rehabilitation work along the corridor connecting San Miguel de Chiquitos and San Ignacio de Velasco should improve the socioeconomic wellbeing of people residing along the rehabilitated road section.** Besides, from the transport-related outcomes identified in the project's Results Framework, the project should result in other, more indirect welfare indicators for the local population, becoming an important channel for achieving key developmental goals, particularly in terms of (a) local market development, (b) agricultural productivity, (c) household welfare and employment, and (d) access to services.

Business Development and Tourism

18. **While the incidence of transport infrastructure on investment and market development tends to be observable in the medium to longer term,** consultations that were carried out as part of the project's socioeconomic diagnostic demonstrated that the geographic areas around the rehabilitated corridor may witness a diversification of local and trans-border trade, once the road is upgraded. First, the project should facilitate further growth and relocation toward the road of markets specializing in forestry goods and livestock (the two main economic sectors in the area), diversifying the array of options available for the local population and potentially lowering the price of inputs needed in production.

19. **Second, there seems to be some evidence pointing to increased tourism activity along the corridor, with road rehabilitation appearing to be a strong factor in business start-up.** Improved road access from the south of San Ignacio de Velasco will give better access to the UNESCO World Heritage site, Parque Nacional Noel Kempff Mercado, which is about 200 km north of the project area toward the borders with Brazil. Tourism is an important source of revenue for the macro region and transport investments have positively contributed. For instance, once the corridor connecting San Miguel de Chiquitos and the department capital, Santa Cruz, opened, the number of hotel beds in the small municipality multiplied fivefold. While one cannot establish a causal relationship, the municipality's development plan shows that the number of

entities more than doubled from 2008 to 2012, the year in which the road corridor upgrade was completed. Much like it happened with this prior intervention, it is expected that the Santa Cruz road corridor connector will result in significant local market development, potentially increasing levels of investment in the area and thus regional economic growth.

Agricultural Productivity

20. **The agricultural sector will be an important beneficiary from the investment, as farmers in the project area will be able to sell their fresh produce in larger markets at lower transport costs.** Lower transport costs should boost trade in the agriculture sector and this will have direct impacts on the poor if lower transport costs translate into lower prices and availability of the goods and services they consume and the returns they receive from the goods and services they produce. If production inputs and goods can move more freely, the relative prices in both product (final goods and services) and factor (labor, capital, and so on) markets may change. Given that the prevalence of poverty is higher in this region than in most urban centers and the importance of agriculture to poor farmers it is useful to view these changes from the perspective of the farm household as both consumers and sellers of goods and services. Poor farmers can gain if the expansion of the road cuts their transport costs, and allows for an increase of the price they receive in the market for the food or livestock (dictated by a higher demand) they produce and opens up new (maybe nearer) markets for their produce. All farmers and cattle raisers are part of a value chain — they require inputs such as seeds and fertilizers and may use transport services to get their product to market. Improved transport can play a critical role in reducing the price and increasing the variety of inputs available to farmers and cattle raisers; they can also have exposure to new technologies and farming practices that were previously unavailable.

21. **Given emerging trade opportunities and lower transport costs,** some farmers will be able to expand and diversify their consumer base. However, lower transaction costs also means that forestry products and livestock can be sold in markets beyond Santa Cruz or even Bolivia, particularly the larger Brazilian market, which is not fully tapped at the moment.

Household Welfare and Employment

22. **All else equal, reduced transportation costs can help spur productive investment in the project area as investors can take advantage of lower transaction and logistics costs**. In turn, higher levels of business activity should generate employment and, as a result, household income and consumption. Examples in road rehabilitation projects throughout the world depict how short-term and long-term employment opportunities in selected sectors have increased following road rehabilitation. Revitalized local markets can become an essential source of employment opportunities directly in trade and in ancillary services related to trade and operations of local markets such as work as transporters, drivers, security personnel, and cooks. Similarly, small businesses along the road corridor may increase employment opportunities for residents from nearby villages. Finally, as travel/transportation costs fall sufficiently, residents may look for seasonal jobs beyond their communities. Indeed, higher demand from large local producers can incentivize more laborers to take employment opportunities away from their place of residence, particularly in seasonal jobs such as harvesting of local produce, particularly popular staple goods produced in the region such as maize, rice, and yucca. As a corollary, it is

plausible to infer that higher earnings from emerging jobs coupled with lower prices for consumer goods may result in increased real income at the household level due to the intervention.

Access to Services

23. Another important set of social outcomes that arise from transport infrastructure upgrades are those related to improved access to public services. Where transaction costs related to travelling to schools or hospitals falls, utilization should increase with a corresponding improvement in long run outcomes.

24. **The quality of service delivery in these areas is low and the less well-off portion of the population has limited accessibility to social services, particularly health.** Consultations with local stakeholders pointed to a continued absence of qualified personnel in health centers. So villagers are forced to visit hospitals located in the nearest towns when seeking qualified health care. For instance, some 20,000 inhabitants residing in the periphery of San Ignacio de Velasco must travel for up to 2 hours, to receive vital healthcare services that are not provided by the local centers. Despite the district being relatively nearby, the continued deterioration of road infrastructure affects responses in cases of health emergencies. In the rainy months especially, receiving healthcare services is difficult, as the movement of doctors and nurses is affected by road closures due to flooding and landslides. Due to poor road conditions, residents located far from San Ignacio de Velasco center have reported significant delays in receiving health services and ambulances.

25. **One of the key expected impacts resulting from the project is the higher ability that residents of smaller villages will have in reaching municipal hospitals without major impediments.** Village level clinics provide only very basic care and tend to refer the patient to the hospitals. With the current conditions of the road, getting to a hospital that provides more comprehensive medical services can take up to 3 hours for residents in the more remote villages. While an accessibility analysis is lacking for this project, it is expected that better connected markets will result in not only better access to essential services such as hospitals but also increased medical visits on behalf of trained doctors and nurses to the more remote villages. Similar accessibility gains should be observable for schools, universities, and training centers.

Gender Considerations

26. The SA and the PSIA identified the following gender issues:

(a) Lack of sustainable economic opportunities especially for Chiquitano and Ayoreo indigenous women.

(b) Ayoreo women that migrate between TCO Santa Teresita and Santa Cruz and/or San José cities get involved in prostitution activities which makes the Ayoreo population vulnerable to STDs including HIV-STD and tuberculosis

(c) A considerable number of women in the targeted municipalities are single mothers and heads of households as a consequence of suffering different types of gender violence.

(d) Women have deficient or no access to report gender violence due to poor road conditions that prevent them from going to the four SLIMs located in the proposed project area.

27. **Based on the issues identified, gender-based actions will be implemented during all cycles of the IPP projects and during M&E stages of the proposed project.** To develop specific actions to mitigate potential negative impacts and/or enhance benefits, the IPP incorporated the following actions: (a) mainstreaming of a gender approach in all IPP projects including gender-based violence prevention; (b) several projects aimed at: improving regional economic opportunities, improving marketing conditions for local products and access to basic services, and especially, strengthening indigenous women's economic capacities; (c) a health project focused on Ayoreo volunteers' training to guide, report, and follow up health treatments and prevention of HIV/AIDS/STD and tuberculosis; and (d) workshops for project workers on gender-based violence prevention and HIV/AIDS/STD prevention.

Road Safety Considerations

28. **Safety is another critical concern and the relatively high number of injuries in the country undermines income growth of the poor, with devastating consequences for their livelihoods, earnings, and prospects for escaping poverty.** Road safety constitutes a major problem for Bolivia, as the number of accidents with either fatal casualties or serious or light injuries has increased significantly over the years. Young males are the main victims of road traffic fatalities in Bolivia. Indeed, in 2010, Bolivia reported 1294 fatalities, of which 76 percent were working age males who are often the primary breadwinners within low-income households. At 19.2 deaths per 100,000 population, Bolivia is significantly higher than several of its neighbors including Argentina (12.4), Peru (15.4), and Chile (11.5).

29. **Road safety considerations included in the project design are anticipated to have a positive distributional outcome.** In Bolivia the majority of road traffic fatalities are among males who are often the primary breadwinners of low-income households; there is a clear rationale for improving road safety on equity grounds. The costs and impacts due to road crashes are a higher burden for poor people. The expected road safety interventions envisaged under the project such as improved engineering and signaling are aimed at reducing the number of road-related deaths and injuries. However, additional efforts in transportation planning, including asset management and routine maintenance, are needed to reduce the road crash problem for poor people who are among the main group of road users in Bolivia.

Conclusion

30. **In sum,** consultations with low-income households, women, and relevant stakeholders carried out in the context of the socioeconomic diagnostic suggest that the Santa Cruz Road Corridor Connector Project is expected to have largely positive impacts on their livelihoods. Besides, from the transportation-related outcomes such as reduced travel times, costs, and increased road user satisfaction, the rehabilitated road link will contribute to the following benefits:

(a) Increase productivity and earnings of enterprises and farms where the members of these households are employed, especially in the forestry, agriculture, and tourism sectors. Hence, the project could potentially lead to improved employment stability and incomes of those already employed.

(b) Ensure more seasonal stability of the agricultural, livestock and forestry sectors owing to improved supply chains and transportation links. This would help level out the existing high fluctuation in production, which currently makes revenue streams more volatile.

(c) Simulate the creation of new enterprises, including hotels and restaurants, while at the same time boosting the construction industry. This would result in a potentially high number of job opportunities in both skilled and low-skilled professions with forward linkages to other well-established sectors, particularly handicrafts.

(d) Increase economic and cultural exchanges between the provinces of Chiquitos and Velsaco and the rest of the country and beyond, together with better information flows within the region as well.

(e) Enhance access to improved education and health facilities in other provinces, particularly higher education and the technical and vocational training system.

31. **Table 6.1 provides a detailed account on the expected impacts,** identifying groups that are likely to benefit from the project. While the road rehabilitation may have some potentially negative effects on selected groups, the overall social and distributional impact will be largely positive, directly enhancing access to opportunities for the poor and the bottom 40 percent through increased mobility, lower freight costs for both producers and consumers, and reduced travel times.

Table 6.1. Impact Assessment of Proposed Intervention for Different Stakeholders

Project Stakeholders /Sector	***Main Benefits and Advantages***	***Main Costs and Disadvantages***	***Other measures required***
Local Traders and Merchants	• Reliable deliveries all year round • Lowering of transport costs • Greater comfort when travelling	• Potential increased competition from traders outside the area who could relocate • Increased availability of goods may result in lower selling prices and thus lower revenues • Potential increase in violence and crime	• Ensure fair competition from other traders who may relocate their activity • Police should increase over time and protect citizen security
Households in the Area	• Reliability and increased frequencies of services all year round • Lower fares and significant time savings in inter-regional travel. • Creation of jobs in the area	• Increased competition in the labor market and possibly lower wages • Potential 'brain drain', with local population migrating to Santa Cruz and abroad • Increased insecurity and rise in	• Ensure that bus services are affordable, safe, and reliable all year round • Develop parallel strategy to keep the qualified labor force in the region • Ensure flexibility in

	that could increase income generation sources • Easier access to higher education institutions, training and vocational centers, and improved health facilities • Strengthening of social networks and social capital • Creation of new enterprises resulting in more employment options • Lower prices for consumer goods that are brought from Santa Cruz and elsewhere in Bolivia. • Increase in productivity and earnings for firms, which translates into higher incomes for households • More comfort for inter-regional trips	crime • Migration to the city by younger members may affect intra-household economy	timetables • Ensure that temporary job opportunities are available for both men and women • Transport services need to improve, particularly transfers to schools and hospitals
Chiquitano and Ayoreo Communities	• Increased attention and interest on Chiquitano and Ayoreo culture from other regions because of the improved railway link • Potential job creation during the road construction phase • Demand for their products (yucca, plantain, rice, and citrus fruit) may increase at the same time improving their income • Land value increases are expected following project completion resulting in higher asset prices and thus wealth for Chiquitana communities with land ownership	• In the medium to long term, indigenous customs may be affected and eroded due to adoption of other non-autochthonous customs • Young women may become pregnant and later abandoned by workers and visitors • Foreseen increases in land ownership automatically affect Ayoreo and other communities with no land plots in the region, potentially exacerbating poverty • Enhanced access to health and education services, as ambulances may be able to reach remote rural communities and teacher absenteeism will drop substantially, particularly in the rainy season	• Safeguard Chiquitano and Ayoreo values, customs, and tradition to avoid social and culture erosion • Ensure that local men are employed during the construction phase and that any assault on women is punishable • Increase police presence in the area • In the case of the Ayoreo community, they do not see added benefit in opening the Santa Teresita-San José-Santa Cruz de la Sierra link, which is where they traditionally tend to travel • Need to ensure that Ayoreo and Chiquitana communities have access to jobs and markets and that land value increases may not force them out of the region

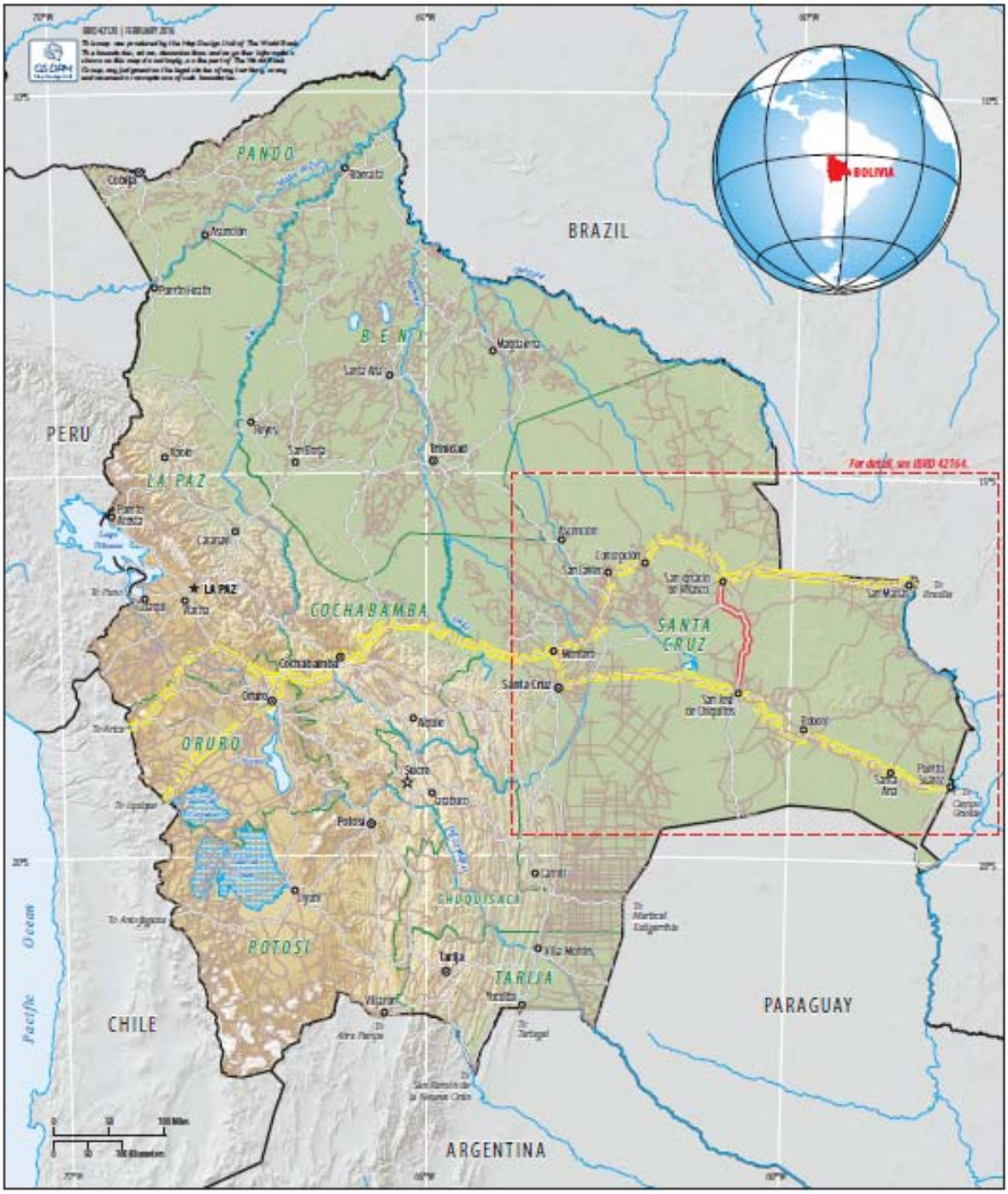
Farmers/Livestock Producers/Forestry Sector	• Lower costs and faster delivery times to major markets in the region • Reduction in prices for supplies/inputs (pedigree cattle, small machinery, vaccines for livestock, refrigeration equipment, and fertilizers and seeds) • Enhanced market development in meat and poultry industries • Avoiding wholesale dealer services to sell; instead selling the products themselves • Better quality of produce given lower transit times and, in the case of cattle industry, lower stress for animals associated with poor road condition • Higher prices for production resulting in higher revenues	• Increased competition with farmers/forestry sector and cattle raisers from outside the region • However, risks of this competition and a drop in income could be compensated with higher sales volumes, and lower expenses for transportation of supplies, and lower expenses for transportation • Time and money expenses for preparation of shipping documents for loading and unloading	• Need to improve supply chains and ensure that produce arrives fresh to main markets. • Development of infrastructure architecture to improve roadside services along the corridor.
Craftsmen	• An increase in supplies from outside the region and, as a result, increase in the volumes of sales of their production both outside the region and within the region • Improve the stability of employment for women, who are overrepresented in this industry • Future development of tourism and an increase in the demand for their arts and crafts • Creation of new enterprises, including handicraft enterprises, and, as a result, new jobs at these enterprises	• Increased competition with counterfeit products imported to the region from other departments in Bolivia and beyond • Higher levels of contraband	• Need to ensure maximum safety along the road and prevent contraband • Need to promote local merchandise and tourism
Motor Carriers	• Increased demand for experienced motor carriers and higher incomes for those who find a job • Less congestion on motor highways • Higher volumes of exchange of consumer goods and food products between the	• May experience higher competition as other coach services start operating in the region • Higher speeds may result in more accidents	• Need to promote road based transport services by designing routes and frequencies in a way that maximizes efficiency with little or no impact on jobs or revenues for motor carriers • Road safety interventions

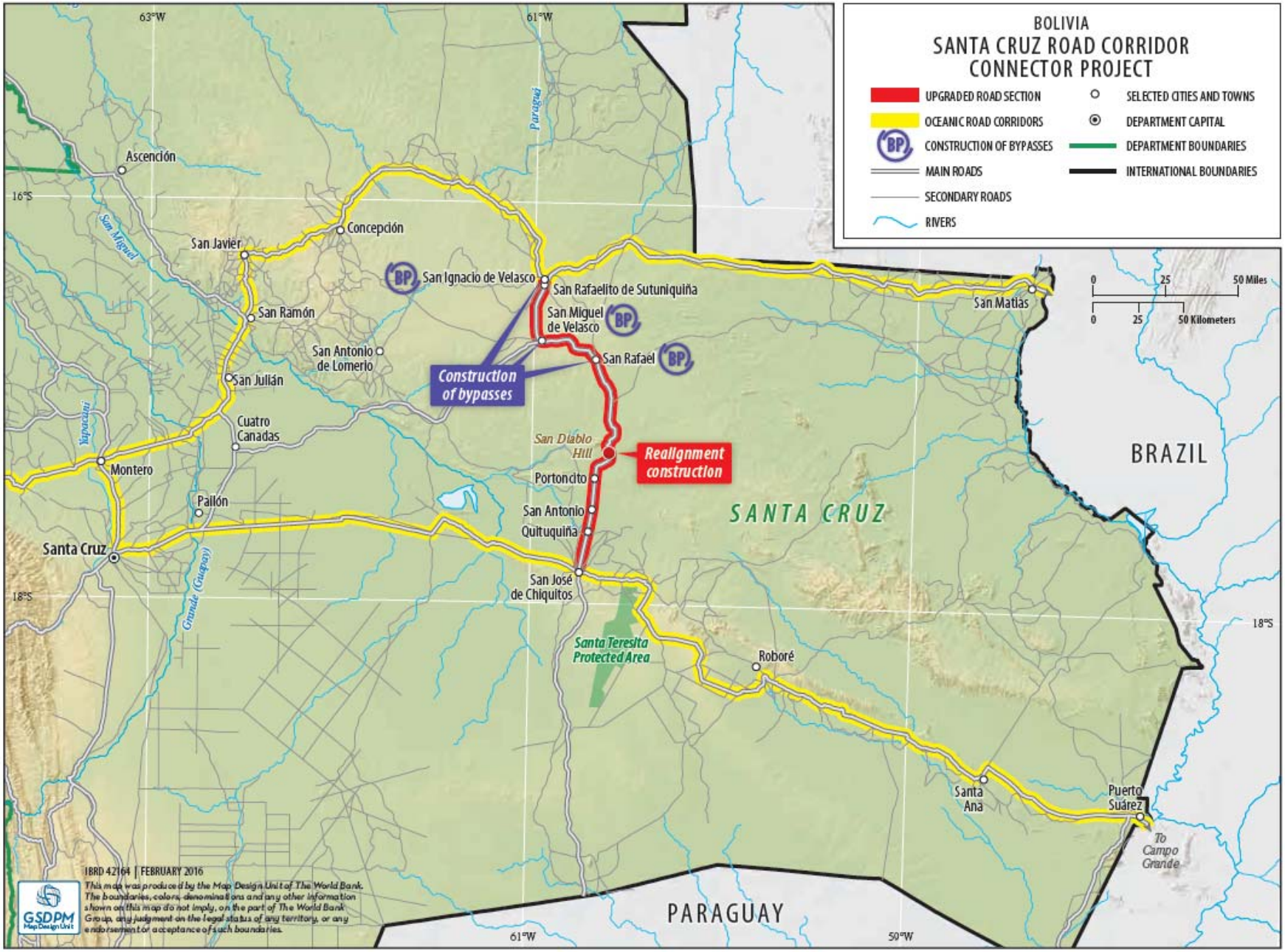
	provinces of the country • Increase in the number of hotels and travel agencies • Reduced demand for fuel in the country, and, as a result, stable availability of it, and lower expenses of motor carriers		need to accompany road rehabilitation
Lodging and Restaurant Industry	• The Chiquitano Circuit will have increased tourism, therefore expanding revenue for existing hotels and restaurants • Improved accessibility in the corridor will mean more business development opportunities	• Increased competition for existing businesses with hotels/restaurants coming from outside the region	• Need for better regulation in the hotel industry

Annex 7: MAP

BOLIVIA: Santa Cruz Road Corridor Connector Project

BOLIVIA
SANTA CRUZ ROAD CORRIDOR
CONNECTOR PROJECT




BOLIVIA
SANTA CRUZ ROAD CORRIDOR CONNECTOR PROJECT
UPGRADED ROAD SECTION
OCEANIC ROAD CORRIDORS
CONSTRUCTION OF BYPASSES
MAIN ROADS
SECONDARY ROADS
RIVERS
SELECTED CITIES AND TOWNS
DEPARTMENT CAPITAL
DEPARTMENT BOUNDARIES
INTERNATIONAL BOUNDARIES
63°W
61°W
50°W
16°S
18°S
Ascención
San Javier
Concepción
San Ignacio de Velasco
San Rafaelito de Sutuniquiña
San Miguel de Velasco
San Rafael
San Matías
San Ramón
San Antonio de Lomerío
San Julián
Cuatro Canadas
Montero
Pailón
Santa Cruz
Portoncito
San Antonio
Quituquiña
San José de Chiquitos
Roboré
Santa Ana
Puerto Suárez
To Campo Grande
Construction of bypasses
Realignment construction
San Diablo Hill
Santa Teresita Protected Area
SANTA CRUZ
BRAZIL
PARAGUAY
Paraguai
San Miguel
Yapacani
Grande (Guapay)
0 25 50 Miles
0 25 50 Kilometers
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