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Report No: PAD2573

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A
PROPOSED CREDIT

IN THE AMOUNT OF US\$427.98 MILLION

AND A
PROPOSED GRANT

IN THE AMOUNT OF SDR 53.6 MILLION
(US\$72.02 MILLION EQUIVALENT)

TO THE
DEMOCRATIC REPUBLIC OF CONGO

FOR A
TRANSPORT AND CONNECTIVITY SUPPORT PROJECT

May 26, 2022

Transport Global Practice
Eastern and Southern Africa Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective April 30, 2022)

Currency Unit=SDR

US\$1 = SDR 0.74

FISCAL YEAR

January 1 - December 31

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ABBREVIATIONS AND ACRONYMS

AAC	Civil Aviation Authority (<i>Autorité de l'Aviation Civile</i>)
ACE	Congolese Environmental Agency (<i>Agence Congolaise de l'Environnement</i>)
ACGT	Congolese Large Works Agency (<i>Agence Congolaise des Grands Travaux</i>)
AFD	French Development Agency (<i>Agence Française de Développement</i>)
AfDB	African Development Bank
ARPTC	Post and Telecommunications Regulatory Authority (<i>Autorité de Régulation des Postes et Télécommunications</i>)
CCAP	Climate Change Action Plan
CERC	Contingent Emergency Response Component
CI	Infrastructure Unit – <i>Cellule infrastructures</i>
CMU	Country Management Unit
CNPR	Road Safety National Committee (<i>Commission Nationale de Prévention Routière</i>)
COC	Code of Conduct
COPIREP	State-Owned Enterprises Reforms Committee (<i>Comité de Pilotage de la Réforme des Entreprises du Portefeuille</i>)
CPF	Country Partnership Framework
CPSD	Country Private Sector Diagnosis
CSO	Civil Society Organization
DA	Designated Account
DRC	Democratic Republic of Congo (<i>République Démocratique du Congo - RDC</i>)
DTT	Digital Terrestrial Television
EIRR	Economic Internal Rate of Return
E&S	Environment and Social
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impacts Assessment
ESMP	Environmental and Social Management Plan
ESS	Environment and Social Standards
FCV	Fragility, Conflict, and Violence
FM	Financial Management
FONER	Road Maintenance Funds (<i>Fonds National d'Entretien Routier</i>)
GBV	Gender-Based Violence
GEMS	Geo-Enabling initiative for Monitoring and Supervision
GHG	Green House Gas
GIS	Geographic Information System
GRM	Grievance Redress Mechanism
HDM	Highway Development Model
ICAO	International Civil Aviation Organization
ICCN	Congolese Institute for Nature Conservation (<i>Institut Congolais pour la Conservation de la Nature</i>)
ICT	Information and Communication Technology
ICR	Implementation Completion Report
IEG	Independent Evaluation Group
IFRS	International Financial Reporting Standards
IPN	Inspection Panel

IPV	Intimate Partner Violence
IRR	Internal Rate of Return
ISP	Internet Service Provider
M&E	Monitoring and Evaluation
MEDD	Ministry of Environment and Sustainable Development (<i>Ministère de l'Environnement et du Développement Durable</i>)
MFD	Mobilizing Finance for Development
MIPW	Ministry of Infrastructure and Public Works
MIS	Management Information System
MNO	Mobile Network Operator
MONUSCO	United Nations Organization Stabilization Mission in the DRC (<i>Mission de l'Organisation des Nations Unies pour la stabilisation en RDC</i>)
MoU	Memorandum of Understanding
MPO	Macro Poverty Outlook
MPTNTIC	Ministry of Post, Telecom, and New Communication and Information Technologies
NDC	Nationally Determined Contribution
NGO	Non Governmental Organization
NPV	Net Present Value
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OdR	Road Office – <i>Office des Routes</i>
OHADA	Organization for the Harmonization of Business Law in Africa
OPBRC	Output and Performance-Based Road Contract
OVD	Urban Roads Office (<i>Office des Voiries et Drainages</i>)
OVDA	Rural Roads Office (<i>Office des Voies de Desserte Agricole</i>)
P4P	Purchase For Progress
PCM	Private Capital Mobilization
PNN	National Digital Plan (<i>Plan National du Numérique</i>)
PIM	Project Implementation Manual
PIU	Project Implementing Unit
PPP	Public Private Partnership
PPSD	Project Procurement Strategy for Development
PTNTIC	Posts, Telecommunications and New Technologies
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
RRA	Risk and Resilience Assessment
RSSAT	Road Safety Screening and Appraisal Tool
RVA	Airport Authority (<i>Régie des Voies Aériennes</i>)
SAPMP	Southern Africa Power Market Project
SCD	Systematic Country Diagnostic
SCPT	Congolese Company of Post Offices and Telecommunications (<i>Société Congolaise des Postes et Télécommunications</i>)
SCTP	Commercial Company of Transport and Ports (<i>Société Commerciale des Transports et des Ports</i>)
SEA/SH	Sexual Exploitation and Abuse / Sexual Harassment
SEP	Stakeholder Engagement Plan
SNCC	National Railway Company of the Congo (<i>Société Nationale de Chemin de Fer du Congo</i>)

SNEL	Electricity National Company (<i>Société Nationale d'Electricité</i>)
SOCOF	Congolese Fiber Optic Company (<i>Société Congolaise de Fibre Optique</i>)
SOE	State-Owned Enterprise
SOP	Series of Projects
SPC	Shadow Price of Carbon
SSA	Sub Saharan Africa
TPM	Third Party Monitoring
USF	Universal Service Fund (<i>Fond de Services Universel</i>)
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNDP	United Nation Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations International Children Emergency's Fund
VRU	Vulnerable Road Users
WACS	West African Submarine Cable
WHO	World Health Organization



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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Congo, Democratic Republic of	DRC Transport and Connectivity Support Project	
Project ID	Financing Instrument	Environmental and Social Risk Classification
P161877	Investment Project Financing	High

Financing & Implementation Modalities

☐ Multiphase Programmatic Approach (MPA)	☒ Contingent Emergency Response Component (CERC)
☒ Series of Projects (SOP)	☒ Fragile State(s)
☐ Performance-Based Conditions (PBCs)	☐ Small State(s)
☐ Financial Intermediaries (FI)	☐ Fragile within a non-fragile Country
☐ Project-Based Guarantee	☒ Conflict
☐ Deferred Drawdown	☐ Responding to Natural or Man-made Disaster
☐ Alternate Procurement Arrangements (APA)	☐ Hands-on Enhanced Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date
23-Jun-2022	30-Jun-2027

Bank/IFC Collaboration

No

Proposed Development Objective(s)

The Project Development Objective (PDO) is to provide resilient, safe, and sustainable connectivity in and between selected provinces in Kasai region and Eastern part of DRC, and to increase the transparency of FONER, RVA, and the Regulatory Authority of Post, Telecommunications, and ICT.

**Components**

Component Name	Cost (US\$, millions)
Sectoral governance for improved connectivity	39.00
Transport and digital connectivity improvement program	405.00
Environmental and social measures	56.00
Contingent Emergency Response Component	0.00

Organizations

Borrower:	Democratic Republic of Congo
Implementing Agency:	Cellule Infrastructures

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	500.00
Total Financing	500.00
of which IBRD/IDA	500.00
Financing Gap	0.00

DETAILS**World Bank Group Financing**

International Development Association (IDA)	500.00
IDA Credit	427.98
IDA Grant	72.02

IDA Resources (in US\$, Millions)

	Credit Amount	Grant Amount	Guarantee Amount	Total Amount
Congo, Democratic Republic of	427.98	72.02	0.00	500.00
National PBA	427.98	72.02	0.00	500.00



Total	427.98	72.02	0.00	500.00
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Expected Disbursements (in US\$, Millions)

WB Fiscal Year	2022	2023	2024	2025	2026	2027	2028
Annual	0.00	100.00	100.00	100.00	100.00	95.00	5.00
Cumulative	0.00	100.00	200.00	300.00	400.00	495.00	500.00

INSTITUTIONAL DATA

Practice Area (Lead)

Transport

Contributing Practice Areas

Digital Development

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

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



COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

☐ Yes ☒ No

Does the project require any waivers of Bank policies?

☐ Yes ☒ No

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Relevant
Cultural Heritage	Relevant
Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants

Sections and Description

The Recipient shall, no later than thirty (30) days after the Effective Date, or such later date as agreed by the



Association, establish, and thereafter maintain throughout Project implementation, a steering committee ("Strategic Steering Committee"), chaired by the MIPW, with terms of reference, composition and powers acceptable to the Association and defined in the PIM, to provide overall strategic guidance and oversight and approve the Annual Work Program (Schedule 2, Section I, A, 5.)

Conditions

Type Effectiveness	Financing source IBRD/IDA	Description The Project Implementation Manual ("PIM") has been prepared and adopted under terms and conditions and in a manner acceptable to the Association (Article IV, 4.01, (a))
Type Disbursement	Financing source IBRD/IDA	Description No withdrawal shall be made for payments under Category (3), until and unless the Association is satisfied that all the following conditions have been met: (i) the additional ESIA/ESMP has been prepared, consulted, adopted and disclosed in form and substance acceptable to the Association; and (ii) the RAP has been prepared, consulted, adopted and disclosed in form and substance acceptable to the Association. (Schedule 2, Section III, B., 1., (b))
Type Effectiveness	Financing source IBRD/IDA	Description The Memorandum of Understanding has been executed in form and substance acceptable to the Association, and is in full force and effect (Article IV, 4.01, (b))
Type Effectiveness	Financing source IBRD/IDA	Description The Biodiversity Management Plan has been prepared, adopted and disclosed in form and substance acceptable to the Association (Article IV, 4.01, (c))
Type Disbursement	Financing source IBRD/IDA	Description No withdrawal shall be made for payments under Category (4), until and unless the Association is satisfied that all the following conditions have been met: (i) the additional ESIA/ESMP has been prepared, consulted, adopted and disclosed in form and substance acceptable to the Association; (ii) the RAP has been prepared, consulted, adopted and disclosed in form and substance acceptable to the Association; and



		(iii) the IPP has been prepared, consulted, adopted and disclosed in form and substance acceptable to the Association. (Schedule 2, Section III, B., 1., (c))
Type Disbursement	Financing source IBRD/IDA	Description No withdrawal shall be made for payments under Category (5), until and unless the Association is satisfied that all the following conditions have been met: (i) the additional ESIA/ESMP has been prepared, consulted, adopted and disclosed in form and substance acceptable to the Association; and (ii) the RAP has been prepared, consulted, adopted and disclosed in form and substance acceptable to the Association. (Schedule 2, Section III, B., 1., (d))
Type Disbursement	Financing source	Description No withdrawal shall be made for payments under Category (6), until and unless the Association is satisfied that all the following conditions have been met in respect of said activities: (i) (A) the Recipient has determined that an Eligible Crisis or Emergency has occurred, has furnished to the Association a request to withdraw financing amounts under Category (2); and (B) the Association has agreed with such determination, accepted said request and notified the Recipient thereof; and (ii) the Recipient has adopted the CERC Manual and Emergency Action Plan, in form and substance acceptable to the Association. (Schedule 2, Section III, B., 1., (e))



I. STRATEGIC CONTEXT

A. Country Context

1. **The Democratic Republic of Congo (DRC) is the largest country in Sub-Saharan Africa (SSA), endowed with rich and diverse natural resources, including minerals critical to today's economy.** DRC has a land surface area of 2.3 million square kilometers and shares borders with the Republic of Congo to the northwest; the Central African Republic to the north; South Sudan to the northeast; Uganda, Rwanda, Burundi, and Tanzania (Lake Tanganyika) to the east; Zambia to the southeast; and Angola to the southwest. Most of DRC's land area is covered by forests (67 percent), including 145 million hectares of rainforest. This represents the world's second largest tropical rainforest, storing eight percent of global forest carbon stocks, the second largest carbon sink globally. DRC has over 80 million hectares of arable and fertile non-forest land, coupled with significant freshwater and internal renewable water resources. Most important to the Congolese economy, however, are the country's significant and diverse mineral and precious metal deposits, to include copper, cobalt, zinc, iron, and uranium in the south; diamonds in the west; and gold in the north. DRC holds about 50 percent of the world's cobalt reserves¹ and is a leading provider of new strategic minerals needed for today's technology, including lithium-ion batteries. DRC is also the world's fifth largest producer of copper, Katanga harboring some of the highest-grade copper deposits globally.

2. **DRC has been unable to convert its ample natural and human resources into sustainable economic growth and shared prosperity.** Weak governance and fiscal institutions, mismanagement of natural resources, and protracted conflict and violence have led to limited progress in building human capital and infrastructure and resulted in economic underperformance and high levels of poverty. Natural resources, primarily copper and cobalt, generate 95 percent of DRC's export earnings, thereby exposing the economy to the volatility of global commodity prices and demand. Economic growth averaged 5.7 percent from 2011 to 2020, while in 2021, growth is expected to have reached 3.6 percent, despite pandemic-related impacts. Growth prospects for 2022 are favorable, with a forecast GDP growth rate of 4.8 percent.²

3. **DRC remains one of the poorest countries in the world.** With a population estimated at 89.5 million people, DRC has the third largest population of poor globally (60 million people). While the poverty rate declined from 94.3 to 77.2 percent between 2005 and 2012 (using the international poverty line of US\$1.90), the latest World Bank projections put poverty at 73.3 percent (2020)³, an increase of 0.7 percentage points compared to 2019.⁴ This recent estimated increase is primarily due to the COVID-19 pandemic. High population growth at more than three percent (and a fertility rate of 6.2 children per woman⁵), coupled with subdued economic growth, means the number of poor is increasing by about 1.5 million every year, and recent economic growth has not been sufficient to reduce poverty. There are also significant disparities in poverty. The highest poverty rates in DRC are found in the central and northwestern provinces largely covered by forest. The highest number of poor, however, are found in the provinces along the east-west corridor (Kongo Central to Haut-Katanga), including Kinshasa, and in the east bordering the Great Lakes (Ituri, North and South Kivu).⁶ These provinces are also areas

¹ <https://pubs.usgs.gov/periodicals/mcs2021/mcs2021-cobalt.pdf>

² World Bank, October 2021: Macro Poverty Outlook

³ World Bank, 2021: *Macro Poverty Outlook, Spring Meetings*, April 2021

⁴ World Bank, 2021: *MPO*, October 2021

⁵ *Institut National des Statistiques (INS), Enquête par grappes à indicateurs multiples, 2017-2018, rapport de résultats de l'enquête. Kinshasa, République Démocratique du Congo*

⁶ Referred to as "leading areas" in the World Bank Group World Development Report 2009: Reshaping Economic Geography



most affected by conflict and violence. About 70 percent of the employed population is engaged in subsistence agriculture.

4. **Fragility, conflict, and violence undermine DRC's progress towards sustainable development and combating extreme poverty.** DRC is ranked the fifth most fragile country among 178 countries and remains fragile due to persistent social, economic, political, and security factors.⁷ Political instability during the 1990s, which culminated in civil war from 1996 to 1997, and from 1998 to 2003, was partly fueled by management of the country's natural resources, also drawing in neighboring countries as well. Conflict and violence, particularly in the East of the country, has affected nearly 40 million Congolese over the past decade⁸ and persist. In 2021, there were 5,515 conflict-related fatalities in DRC. Pervasive use of violence has contributed to an erosion of social cohesion. Over 5.2 million Congolese are internally displaced and the country hosts just over 520,000 refugees. Volatile security situations in neighboring countries (Burundi, Central African Republic, and South Sudan), and the presence of foreign armed groups have contributed to increased tension and risk of conflict and violence. A World Bank 2021 Risk and Resilience Assessment (RRA) identified key drivers of fragility in DRC, including (i) weak governance, corruption, and the role and impact of corruption on the patterns of political and economic governance; (ii) local and regional conflict systems; and (iii) poverty, exclusion, and trauma.

5. **The Greater Kasai and Eastern provinces are areas of DRC with the highest number of poor people and highly complex development challenges.** Since the end of 2016, pockets of insecurity and violence have developed in the former Kasai provinces, highlighting the need for continuous regional and international commitments for peace. Violence in the Eastern provinces is widespread and persistent, with many armed groups active in the Kivus, Ituri, the Ueles, and Tanganyika provinces.⁹ The provinces most affected by violence and poverty are in the west, with an estimated population of 18.8 million (2017) and 12 million poor; the east with a population of 17 million and 9 million poor; and the Greater Kasai, with a total of 15 million persons and 11 million poor (Figure 1). There are significant natural resources in these areas that could allow these regions and their populations to develop, but severe isolation, combined with insecurity and fragility factors, have so far hampered socio-economic development.¹⁰

⁷ World Bank, 2018, Democratic Republic of Congo, Systemic Country Diagnostic

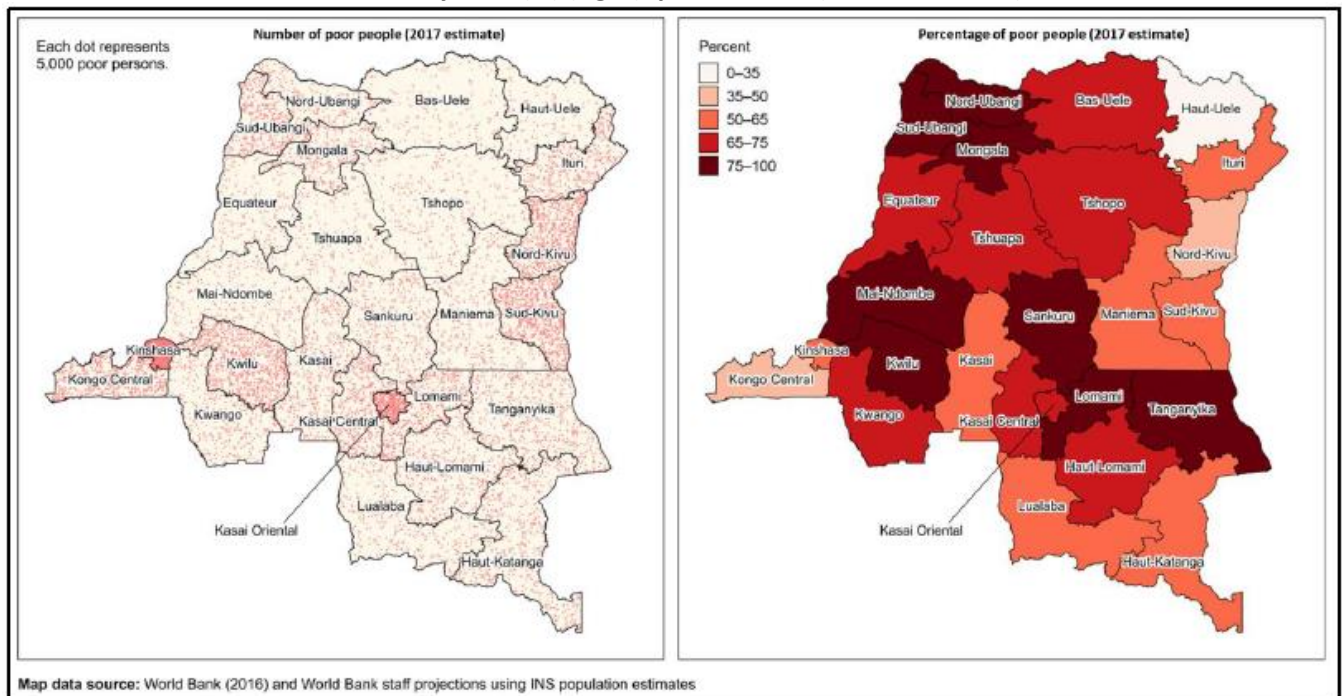
⁸ United Nations Office for the Coordination of Humanitarian Affairs data.

⁹ World Bank. 2018. Democratic Republic of Congo- Systematic Country Diagnostic (English).

¹⁰ World Bank, DRC: An effective approach to territorial development (P164860),



Figure 1: Poverty in DRC – Poverty Density (number of poor, in million) (left) and Poverty Rate (%) (right), per Province (2017 estimated)¹¹



6. **Achievements in health development outcomes are precarious, and DRC has one of the highest rates of gender disparity and Gender-Based Violence (GBV) in the world.** Half of all children in DRC have not received routine immunizations, over 5.2 million people are forcibly displaced, 27 million people are food insecure, and there have been repeated Ebola outbreaks in the past years. DRC's 2020 Human Capital Index score was 0.37—below the 0.40 average for SSA¹², and in 2021, DRC ranked 175th out of 189 countries on the UNDP Human Development Index. Furthermore, there are significant gender disparities, DRC ranking 175th out of 178 countries on the United Nations 2021 Gender Inequality Index. GBV also represents a significant challenge, with half of all women aged 15–49 (52 percent) experiencing physical violence (by any perpetrator)¹³ while one out of four (27 percent) have experienced sexual violence (Box 1).¹⁴ In addition, GBV is exacerbated during humanitarian crises, during which women and girls are more vulnerable to risks of violence and abuse, including those related to sexual exploitation and abuse and sexual harassment (SEA/SH).

Box 1: GBV in DRC

Women and girls in DRC experience high levels of violence. According to the 2013–2014 Demographic and Health Survey¹⁵ for DRC, half of all Congolese women have experienced physical violence (52 percent) by any perpetrator while one out of four (27 percent) have experienced sexual violence. For those having experienced physical violence, the perpetrator was most often a current male partner (56.8 percent).¹⁶ The rate of intimate partner violence (IPV) is likewise elevated (45.9 percent), with approximately one out of three women having experienced

¹¹ Map data source: World Bank (2016) and World Bank staff projections using INS population estimates

¹² https://databank.worldbank.org/data/download/hci/HCI_2pager_COD.pdf?cid=GGH_e_hcpexternal_en_ext.

¹³ At least once since the age of 15 (Demographic and Health Survey, 2013–2014).

¹⁴ Of which 16 percent in the last 12 months (DRC Demographic and Health Survey, 2013–2014).

¹⁵ DRC Demographic and Health Survey, 2013–2014, <https://dhsprogram.com/>.

¹⁶ DRC Demographic and Health Survey, 2013–2014.



IPV in the form of emotional violence (36.6 percent), and a quarter of them (25.5 percent) in the form of sexual violence. In addition, 37 percent of women aged 20–24 were married before the age of 18, compared to six percent of men in the same age group.¹⁷ This is higher than global estimates by the World Health Organization that one out of three women worldwide (30 percent) have experienced either physical and/or sexual IPV or sexual violence by a non-partner.¹⁸

Levels of acceptability of IPV in DRC are also elevated, with three out of four women (74.8 percent) and over half of men (59.5 percent) believing that physical abuse of a wife is justified for at least one specified reason.¹⁹ IPV is seen as justified by the younger female population – over three quarters of women aged 15–29. These statistics reflect socialization and internalization of violence against women as an acceptable norm. In this context, GBV is systematically underreported²⁰, due to fear of stigma or retaliation, limited availability or accessibility of trusted service providers, impunity of perpetrators, and lack of awareness of the benefits of seeking care.

7. Lack of basic infrastructure hampers socio-economic development and growth, deepens the lack of government presence and provision of services, and enhances conflict risks. DRC, a country the size of Western Europe, is almost entirely landlocked. Weak transport infrastructure, combined with high transportation costs, have led to geographic isolation and limited interconnectivity, thereby exacerbating social and economic inequalities across and within provinces and between populations, particularly urban and rural. Only about 10 million of the country's 80 million hectares of arable land are under cultivation—which is affecting the national food-supply system. As a result, food insecurity and malnutrition are widespread: more than 40 percent, or about 5.6 million children under the age of five, suffer from stunting, and 23 percent of children are underweight.²¹ Despite unique hydropower resources, estimated at about 100 GW—it is estimated that only 19 percent of the Congolese population has access to electricity²², while it is estimated that 34 percent of households nationally have access to basic water supply. DRC lacks wired telecommunication infrastructure and therefore relies entirely on cellular networks, with a mobile phone penetration rate of 43 percent. The mobile internet penetration rate is 22 percent—among the lowest in the region. Furthermore, DRC is the most expensive country in Africa for mobile data.

¹⁷ DRC Demographic and Health Survey, 2013–2014.

¹⁸ World Health Organization, *Violence against women prevalence estimates 2018* (published 2021).

¹⁹ DRC Demographic and Health Survey, 2013–2014.

²⁰ <https://www.europarl.europa.eu/EPRS/EPRS-AaG-542155-Sexual-violence-in-DRC-FINAL.pdf>

²¹ DRC Demographic and Health Survey (DHS) 2014

²² World Bank, 2020: Increasing access to electricity in DRC – opportunities and challenges.



Box 2: No Roads, no Development

With roads in disarray, people in DRC are cut off from lifelines that have the power to heal, educate, and reduce poverty. Without mobility, people pay more for essential goods, they are unable to reach healthcare facilities or must travel longer to reach them, and they forgo job and education opportunities that could improve their social and economic wellbeing. Even slight disruptions in transport due to floods or conflict can affect retail prices of food in markets in real time, predominantly impacting the poor.²³ On the other hand, between 2005 and 2012, improved access to the road network was found to contribute to a 13.2 percent drop in observed poverty.²⁴

For example, the journey from Lubumbashi, a hub for mining companies working in the mineral rich area, to Bukama, 450km to the North, takes four days and illustrates the reason behind high transport costs. Truck operators charge US\$1 per kilogram freight, and a driver needs three watchers who spot deep potholes and water-filled gaps on the washed-out path. They dig out the truck when it gets stuck in mud, several times during the perilous journey.²⁵



A truck, assisted by watchers who help dig it out when it becomes stuck, transports goods on a “road” from Lubumbashi to Bukama, 450km to the North (Tele 5 Documentary).

Weak infrastructure and high transport costs isolate entire regions, particularly provinces with high forest cover, shutting them off from domestic, regional, and global markets, sustaining weak service provision, poverty, and fragility.²⁶ This isolation also contributes to malnutrition. Kananga, the regional capital of Kasai-Central and formerly a commercial center with access to the mining belt, including diamond production and large agriculture potential, cannot be reached by road from any major city. Goods come in by plane or by train if it runs. The city is also surrounded by the country’s worst hunger crisis. More than half of all children under 5 are stunted. With no roads, relief agencies like UNICEF struggle to reach them.²⁷ Only 4 out of the 25 provincial capitals in DRC can be accessed by reliable roads from the capital, Kinshasa.²⁸ Air travel is not only cost prohibitive for most of the population but is also risky, as DRC’s airline industry is the most accident-prone in the continent.²⁹ Growth, jobs, improved human capital and climate resiliency in DRC depend in no small part on a reliable road system.

²³ DRC Systemic Country Diagnosis 2018 <https://documents1.worldbank.org/curated/en/171101529346675751/pdf/DRC-SCD-FINAL-ENGLISH-06132018.pdf>

²⁴ DRC Systemic Country Diagnosis 2018 <https://documents1.worldbank.org/curated/en/171101529346675751/pdf/DRC-SCD-FINAL-ENGLISH-06132018.pdf>

²⁵ <https://www.youtube.com/watch?v=ln7Pw-El2xg>

²⁶ DRC Country Partnership Framework FY22-26 <https://documents1.worldbank.org/curated/en/214221646062568502/pdf/Congo-Democratic-Republic-of-Country-Partnership-Framework-for-the-Period-FY22-26.pdf>

²⁷ United Nations International Children’s Emergency Fund (UNICEF) Child Alert, May 2018 https://www.unicef.org/media/48011/file/UNICEF_DRC_Kasai_Children_in_Crisis_2018-ENG.pdf

²⁸ <https://www.bbc.com/news/world-africa-50562593>

²⁹ <https://www.bbc.com/news/world-africa-50562593>



8. **Weak governance has been persistent since independence.** A governance system that is based on exercising power downward under the control of a small group of political elites has hampered the building of a social contract based on a mutually accountable, two-way relationship between the state and citizens. The 2021 RRA highlights that increasing transparency will significantly contribute to mitigating and addressing fragility, conflict, and violence risks. Furthermore, improved governance will strengthen service delivery and efficiency of spending.

9. **DRC is highly vulnerable to climate change—both in terms of risk exposure and low capacity to adapt.** The 2020 ND-GIAN Index³⁰ ranks DRC 177 out of 181 countries, indicating an extreme level of vulnerability to climate change and a low level of readiness to improve resilience. Under the high-emission (business-as-usual) scenario, annual temperatures in DRC are projected to increase up to +4.5°C by the end of the century. Heat waves are projected to become more common and longer lasting. While projections point to no significant changes in annual precipitation, rainfall is projected to become substantially more variable, with a likely increase in frequency and intensity of extreme rainfall events. The rainfall intensity of heavy rain events is likely to increase by as much as 27 percent. The most common climatic disasters are floods, extreme rainfalls, and drought. Excess rainfall is projected to be strongest in the central areas of the country, with increased aridity and droughts forecast for the southern zones. The likelihood of mudslides and landslides, particularly in the country's mountainous areas, is likely to increase.³¹ As such, climate change may exacerbate existing vulnerabilities, including stability and conflict, food security, as well as poverty.

10. **The COVID-19 pandemic has put further stress on an already weak health system and has added enduring socioeconomic impacts, including on poverty.** DRC confirmed its first case of COVID-19 on March 10, 2020. As of May 17, 2022, DRC had 88,123 confirmed COVID-19 cases, of which 1,338 resulted in deaths. Given DRC's poverty and vulnerabilities, COVID-19 may pose risks of increased tension, and it is estimated that impacts from the pandemic led to a slight increase in poverty in 2020. Congolese women and girls have been disproportionately affected by health and socioeconomic impacts from containment measures, as well as from increased risks of GBV. Vaccine rollout has been hampered by vaccine hesitancy and access issues, though the pace of vaccinations has slightly recently increased. Impacts from COVID-19 may be further accentuated by the war in Ukraine. Highly dependent on imported fuel and food items, the increase in oil and wheat prices due to the war will negatively affect the DRC trade balance by an estimated value ranging between 0.7 percent (baseline scenario) and 1.2 percent of GDP (high scenario). Oil revenues are expected to slightly rise, though within a small range estimated between 0.1 and 0.2 percent of GDP. Estimates show that any change in oil and wheat prices will exert strong pressure on household expenditure. If the government decides to support the population, to cover part of the increase in oil and food prices, the fiscal deficit might widen.

B. Sectoral and Institutional Context

11. **Increased connectivity, physical and digital, is critical to boosting socioeconomic development in DRC, while also contributing to stabilization and conflict prevention.** Improving interconnectedness of communities, through strengthened physical and digital connectivity, is a key driver of stabilization through improved access to services and a reduction in exclusionary dynamics. The development of the transport sector in DRC is a critical element of the government's policy to stimulate broad-based economic growth. It is also a key enabler to increase agriculture sector output, improve internal and external trade competitiveness, support mining sector growth, and provide basic access to isolated communities. Equally, strengthening digital connectivity will help expanding

³⁰ The ND-GAIN Index developed by University of Notre Dame ranks 181 countries using a score which calculates a country's vulnerability to climate change and other global challenges as well as their readiness to improve resilience.

³¹ World Bank, 2020, Climate Change Knowledge Portal – Country Profile for DRC



access to broadband network services and geographical reach in the targeted areas of Eastern and Kasai province, enabling a reduction of the cost of last-mile extensions and end-user prices, and creating incentives for the private sector to invest in key segments of the fiber optic network.

12. **The transport network in DRC suffers from major connectivity gaps and bottlenecks.** The country's transport infrastructure is among the sparsest and most dilapidated in the world. Developed during colonial times as a multimodal system, with the Congo River as its backbone and more than 25,000 km of navigable waterways, the Congolese transport system consisted of rivers and railways geared towards transporting natural resources from the South towards Kinshasa (Figure 2). In addition to having one of the largest river networks in the world, DRC has one of the most extensive rail networks in Africa, with close to 3,500 km of rails in the South and formerly 1,000 km in the North (*Chemin de fer des Uélé*), where operations ceased in 2000. However, today neither the waterways nor the railway system is functioning, the railways being in a state of disrepair, suffering from broken-down infrastructure, weak management and governance, and high operational costs. The DRC Multimodal Transport Project (P092537) implemented from 2010 to 2018 aimed to revive the railway sector but did not succeed.³² The commitment to strengthening railway SOE governance is low and there is no clear roadmap to railway reforms. Railway sector challenges run deep and include widespread lack of motivation and poor management practices. Despite a strategic plan for river transport, developed under the FY15 DRC Urban and Transport Review (P144128), no tangible action has been taken. The river transport issues identified by the review remain accurate: (i) poor governance associated with an entangled institutional framework; (ii) dilapidated, unmaintained, and vandalized river transport infrastructure; (iii) weak human resources; and (iv) unsafe and loss-making river transport services.³³ Thus, roads have become the dominant transport mode, carrying more than 90 percent of passengers and freight³⁴, though DRC is one of the few countries in the world that does not have a basic 'backbone' road network that connects across the country (existing roads in yellow in Figure 2).

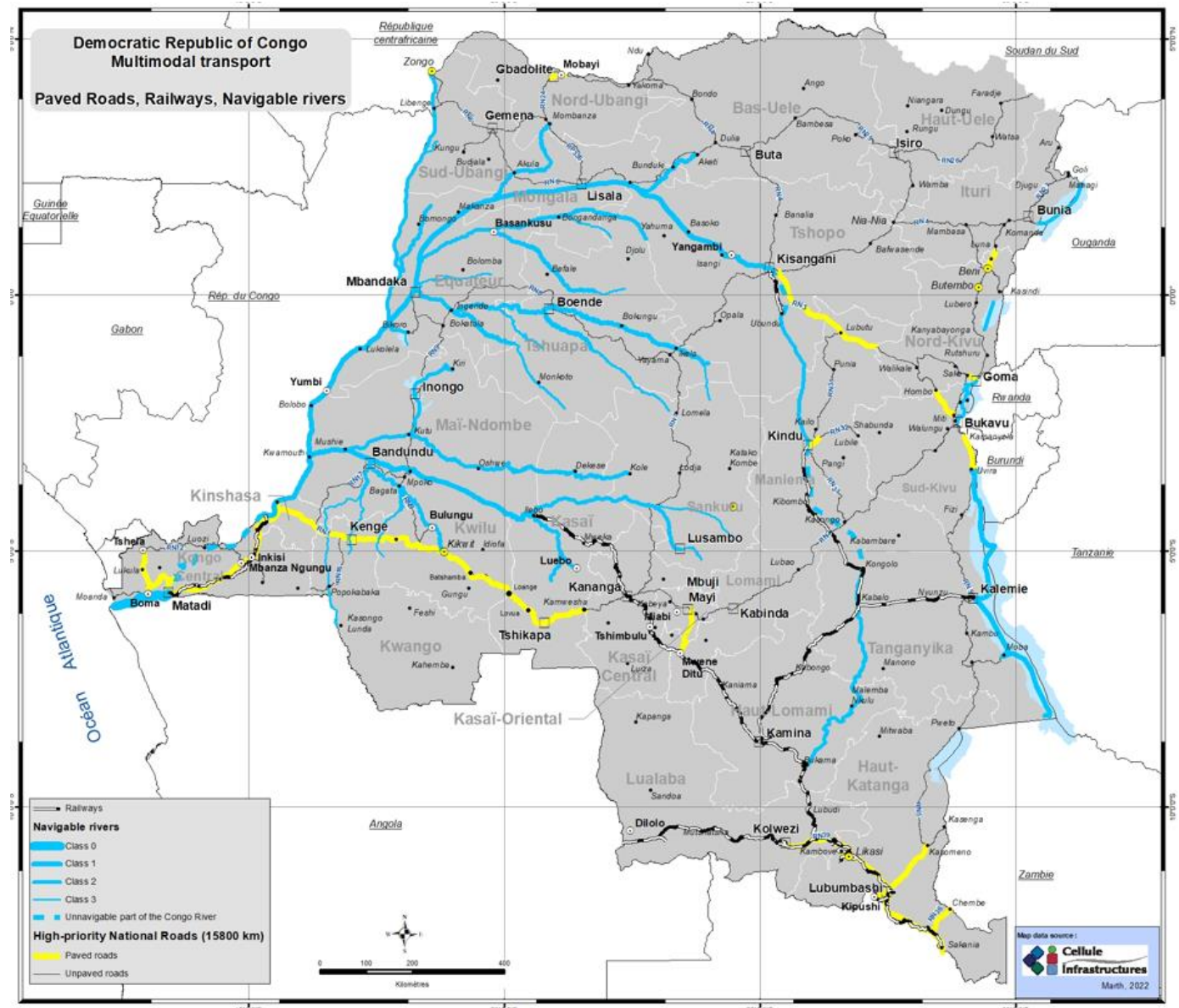
³² Independent Evaluation Group (IEG) – Implementation Completion Report (ICR) Review – DRC Multimodal Transport Project (P092537) <https://documents1.worldbank.org/curated/en/696131557244047823/pdf/Congo-Democratic-Republic-of-DRC-Multi-Modal-Transp.pdf>

³³ DRC Urban and Urban Transport Review – World Bank 2014 [https://worldbankgroup.sharepoint.com/:b:/r/sites/P144/P144128/Shared Documents/Project/Report_1.pdf?csf=1&web=1&e=ZTv6TT](https://worldbankgroup.sharepoint.com/:b:/r/sites/P144/P144128/Shared%20Documents/Project/Report_1.pdf?csf=1&web=1&e=ZTv6TT)

³⁴ It is estimated that 92 percent of freight traffic and 91 percent of passenger traffic are still travelling by roads. *Etude du Plan Directeur National Intégré des Transports en RDC*. September 2017.



Figure 2: DRC Transport Network (Rivers, Railways, Roads)



Transport Connectivity through Road Transport

13. While carrying most of the transport in DRC, road networks have large gaps, are rarely paved, and are poorly maintained. The total “on paper” road network in DRC is about 152,400 km long, but most of these roads are impassable due to poor conditions. Table 1 shows the breakdown of DRC’s road network by road category. Paved roads make up only a fraction of the total road network in DRC, at about three percent. This is less than one third of the paved road percentage in Cameroon and about one eighth of that in Zambia. The public road network density in DRC is only 25 km per 1,000 square kilometer and 0.9 km per 1,000 inhabitants, compared with an average of 204 km per 1,000 square kilometer and 3.4 km per 1,000 inhabitants on the African continent. Only 35 percent of the national roads are in good and fair condition, and this proportion drops considerably when looking at the rural and provincial road network (Table 1).



Table 1: Road Network in DRC

Category		Length in KM	Paved in KM
Roads of General Interests	National roads	20,683	3,330 (16%)
	Provincial roads	37,446	0
Urban Roads		7,400	1,735 (23%)
Rural Roads		86,871	0
Total		152,400	5,065 (3%)

14. **As a result, large parts of the country remain isolated, without road connectivity.** There is no reliable land connection between the national road corridors that run east-west (between the Atlantic and the Kasais) and north-south (along the Great Lakes region), severely impacting the flow of people and goods. Reestablishing connectivity between key urban areas from the capital city Kinshasa across Mbuji-Mayi to the Eastern city of Bukavu will be critical to connecting people and communities, facilitating the transport of rural products, and improving rural population's access to basic services. This will contribute to strengthening national cohesion and reducing the potential for conflict and exclusion (physical and economic).

15. **Over the past decades, the focus of road development in DRC has been on resuming connectivity across the country, with the identification of 15,800 km of high priority roads for targeted rehabilitation and maintenance.** Within these priority roads, over 9,000 km of unpaved roads were targeted for fast reopening, applying reduced technical standards. Through Pro-Routes, over a third of these national roads—3,200 km in total, were rehabilitated and maintained. To ensure speed of works and large coverage, a low-cost design of gravel and spot improvements was adopted.

16. **Increasing climate change impacts are pushing existing gravel roads close to their physical threshold, and urgent climate adaptation interventions are required to maintain hard-earned connectivity.** With rainfall becoming more intense and frequent during wet seasons, flooding and subsequent landslides, as well as mudslides in mountainous areas, will pose increasing risks to the existing road network. Over 97 percent of the current road network is gravel, with nearly no drainage system in place. This makes the network extremely vulnerable to climate impacts as heavy rains can easily flood the gravel roads and make them impassable, thereby further isolating rural communities. The most critical climate change adaptation interventions for the road transport sector in DRC will be to move away from gravel road development, to paved roads and putting in place sufficient drainage systems for flood prone areas and slope protection measures for mountainous areas. Furthermore, dedicated maintenance programs to sustain the level of the roads' physical resilience to climate and natural hazards will be critical. Given the current geographic isolation across the country, building and maintaining climate resilient roads are fundamental to building the resilience of the Congolese population and the economy.

17. **Poor road infrastructure conditions make DRC one of the countries with the highest road safety risk in the region.** The World Health Organization (WHO) estimates that 26,529 people died in road crashes in DRC in 2016 (against only 385 deaths reported in-country, indicating severe underreporting).³⁵ This led to a rate of 33.7 fatalities per 100,000 people, which is one of the highest rates in the world (compared to 21.4 for Nigeria). WHO estimations also indicate that 397,935 serious injuries occurred in 2016. The cost of fatalities and serious injuries amounted to US\$4.2 billion in 2016 or the equivalent of 11.2 percent of DRC's GDP.³⁶ In addition to poor crash reporting, a significant increase in motorbike taxi transport, a lack of vulnerable road user facilities, and poor

³⁵ <https://www.roadsafetyfacility.org/country/democratic-republic-congo>

³⁶ <https://www.roadsafetyfacility.org/country/democratic-republic-congo>



vehicle inspection systems contribute to these figures. DRC is currently far away from reducing road traffic deaths and injuries by at least 50 percent from 2021 to 2030 in accordance with the 2nd UN Decade of Actions for Road Safety 2021-2030, which is also the global target under the Sustainable Development Goals 3.6 and 11.2.³⁷

18. **A multitude of agencies are presently responsible and involved in the governance and management of road networks in DRC.** The Ministry of Infrastructure and Public Works (MIPW) is mandated to manage national road networks through its Road Office (*Office des Routes – OdR*), and urban road networks through its Urban Roads and Drainage Office (*Office des Voiries et Drainages – OVD*). The Ministry of Rural Development and its Rural Roads Office (*Office des Voies de Desserte Agricole – OVDA*) are responsible for the planning and management of feeder roads. In addition, other agencies like the Congolese Large-Scale Works Agency (*Agence Congolaise des Grands Travaux – ACGT*) and the Infrastructure Unit (*Cellule Infrastructures – CI*) are also involved in the implementation of road projects.

19. **The creation, in 2008, of the Road Maintenance Fund (*Fonds National d’Entretien Routier, FONER*) was an important step for increased sustainability in the road sector.** Its establishment was part of the policy dialogue during the preparation and early implementation of the earlier Pro-Routes Project. FONER’s resources are primarily collected from fuel levies. While resources have increased over the past decade, from US\$60 million in 2009 to US\$164 million in 2021 (Table 2), FONER’s resources remain insufficient to cover total road maintenance needs. At present, available resources can finance the annual maintenance of about 50 percent of the 15,800 km high-priority national road network in DRC. A minimum annual budget of US\$200 million will be required to ensure the maintenance of these key national, as well as provincial, urban, and rural roads.

Table 2: FONER’s Annual Budget, 2014-2021

Year	2014	2015	2016	2017	2018	2019	2020	2021
Annual budget in US\$ million	118	122	99	92	92	112	110	164

20. **Given the limited funding available to FONER, it is critical to optimize the efficiency and transparency of available resources.** In theory, the creation of FONER secured regular financing for road asset maintenance, from which rehabilitated or upgraded roads have been prioritized for regular maintenance. However, there are governance challenges linked to the efficiency and transparency of maintenance spending, and in ensuring proper management of funds, including accountability to users and the government (Box 3). Concrete efforts are being made to strengthen transparency in the allocation and use of road maintenance funds, including through the disclosure of annual financial audits and periodic technical audits, and the issuance of annual reports. In the medium-term, an increase in the fuel levy or other sources of financing will be necessary to augment the funding size, aligning funding with financing needs.

Box 3: Road Maintenance Fund Governance Issues

Consistent with the experience of other State-Owned Enterprises and *Etablissements Publiques* across a range of sectors, FONER operates in a highly challenging environment and faces serious operational issues. In line with the experience of many other SSA countries, the performance of the fund has been mixed, with poor financial management, absence of independent audits, extensive use of funds for unauthorized expenditures, diversion of funds, and weak oversight cited as the most common problems.

The Congo Hold-Up investigation³⁸ by international journalists demonstrated that FONER resources were

³⁷ DRC Mortality caused by road traffic injury 2000-2019 – World Bank

<https://data.worldbank.org/indicator/SH.STA.TRAF.P5?contextual=aggregate&end=2019&locations=CD&start=2000&view=chart>

³⁸ <https://www.mediapart.fr/journal/international/dossier/congo-hold>



embezzled in 2015 and 2016. A World Bank-financed external financial audit of FONER for fiscal year 2019 showed significant gaps and inconsistencies in the accounting system and financial statements, to the point that an auditor opinion could not be issued. The Eastern DRC InfraSAP (P172709) delivered in 2020 found that: “FONER resources are inefficiently allocated, and maintenance slow and unresponsive as a result. An overall maintenance program is defined annually without a clear policy of allocation between different road types or condition. Funding is allocated by FONER through a non-transparent process to the various road offices that are charged with managing maintenance contracts.”

More recently, in line with the new CPF’s assessment that there is growing commitment to reforms, authorities have moved to tackle FONER’s governance challenges. The former head of FONER was put on trial in September 2020 and was sentenced to five years forced labor for misuse of FONER resources. The World Bank-financed external financial audit of FONER for fiscal year 2020 was able to provide a qualified opinion³⁹ on FONER for the first time since FONER was established. FONER has also publicly disclosed on their website for the first time their activity report (2020) and the external financial audit reports (2019 and 2020).⁴⁰ FONER’s *President du Conseil d’Administration*, *Directeur Général*, and *Directeur Général Adjoint* (President of the Board, Managing Director, Deputy Managing Director) positions have also been advertised for competitive recruitment for the first time.

The project will support the continuing improvement of FONER’s governance through the periodic preparation and public disclosure of key financial, technical, and managerial information and documents on FONER. This will allow the public, civil society, the communities, and the various central, provincial, and local authorities to have detailed information on the operations of FONER. The project will also finance annual financial and technical audits of FONER, while the road asset management capacity building will help improve planning and implementation of road maintenance. The project-supported organizational audit of FONER will enhance its efficiency and performance while reducing and optimizing its operating costs.

21. The road sector in DRC would benefit significantly from the establishment of a climate resilient asset management system covering the entire road lifecycle. A complete road asset inventory system is needed to enable road authorities to have an up-to-date picture of roads assets and their conditions—a premise for effective, risk-based road sector planning. An asset management system would support road system planning and programming, allow for the setting up or updating of engineering designs of road assets, improve operation and maintenance schemes and contract arrangement, and build readiness for road disruptions and shocks. It will be important to integrate climate and disaster risk resilience into such an asset management system. Furthermore, efforts will be made to help road authorities prioritize limited resources to most critical and vulnerable road sections based on a robust network-level climate vulnerability assessment and criticality analysis. The Pro-Routes Project provided technical assistance that helped the government channel resources mobilized by FONER to road maintenance according to a well-defined, multi-annual program. Further measures could be put in place to ensure maintenance works deliver a well-defined road performance level, including resilience to climate risks.

Transport Connectivity through Air Transport

22. Because of the country’s size and lack of transport infrastructure, air transport is the only transport mode connecting passengers and goods in many parts of DRC, including between Kinshasa and the eastern Great Lakes region. There are 54 airports in DRC, of which five are international (Kinshasa, Lubumbashi, Goma,

³⁹ The auditor, having obtained sufficient appropriate audit evidence, concludes that misstatements, individually or in the aggregate, are material, but not pervasive, to the financial statements

⁴⁰ <https://foner-rdc.com/rappports/>



Kisangani, and Gbadolite). Most of the airport infrastructure is basic, often deteriorating, and non-compliant with International Civil Aviation Organization (ICAO) safety standards. This has resulted in a high incidence of accidents.

23. **Air transport plays a critical role in supporting humanitarian and peacekeeping efforts, including epidemic/pandemic responses.** Air transport is widely used by government agencies and humanitarian organizations to move critical freight and personnel across the country. Humanitarian flights are common as they are often the only mode of transport that allows aid workers to reach remote populations with lifesaving supplies.

24. **Eastern DRC's main international gateway—Goma International Airport, is critical to address geographic isolation.** The airport, which is the second busiest in DRC in terms of aircraft movements and serves as MONUSCO's main air base in DRC, was significantly damaged by the 2002 eruption of Mount Nyiragongo. Following a request from the authorities to re-establish safe and secure operations of Goma airport, World Bank support was provided through the Goma Airport Safety Improvement Project (P153085) from 2015 to 2021. The project aimed to improve the safety, security, and operations of Goma airport.

25. **Goma airport and its immediate vicinity are increasingly vulnerable to flooding risks due to the lack of sufficient drainage within and outside of the airport.** The city of Goma is in the watershed of Kivu Lake and is prone to flooding—which may become more frequent due to climate change. To avoid aquaplaning, operation closures occur often due to extreme rainfall, which may also become more frequent over time. Because of urban sprawl, Goma Airport is now surrounded by informal settlements that do not benefit from any drainage system. The Goma Airport Safety Improvement Project was restructured to initiate the construction of a drainage system in and around Goma Airport, but works were not completed due to insufficient funding. Urgent investments are required to develop the drainage network at the airport and the surrounding urban areas to enhance the climate resilience of airport infrastructure and operations, as well as of communities living at those informal settlements.

26. **The authorities undertook an important step to reform the aviation sector in 2011 when regulatory and operations functions were separated.** An autonomous Civil Aviation Authority (AAC – *Autorité de l'Aviation Civile*) was created to oversee the regulatory function, while the Airport Authority (RVA – *Régie des Voies Aériennes*) was mandated with airport and traffic management functions. Under the Pro-Routes project, some technical assistance was provided to the ICAO to build the capacity of AAC in airport certification.

27. **The Airport Authority RVA, a state-owned enterprise (SOE) established in 1972 to operate DRC's airports, suffers from governance issues.** RVA is the fifth largest SOE in overall turnover (an average of about US\$90 million per annum) and the sixth in staff numbers (about 3,000) in DRC. It has an average net income deficit of US\$20 million and an estimated debt of about US\$100 million. A World Bank-financed audit of RVA for fiscal years 2019 and 2020 showed significant weaknesses in RVA's management information systems (MIS) and internal controls. It cast doubt on the reliability of RVA's financial statements, which departed significantly from International Financial Reporting Standards (IFRS). In addition, RVA did not publicly disclose information about their technical, operational, and financial performance. Moreover, a Congo Research Group (CRG) report published in May 2021⁴¹ points to opaque management procedures around the airport tax collected (in cash) from departing passengers at airports in DRC.

⁴¹ <https://www.congoresearchgroup.org/wp-content/uploads/2022/01/rapport-gec-leyisa-punda-punda-a-leyisa-yo-a-quoi-sert-le-go-pass-depuis-dix-ans-rdc.pdf>



Digital Connectivity through Telecommunication

28. **The digital divide in DRC is stark as access to mobile internet remains unequal between provinces,** ranging from less than 10 percent in remote areas to more than 40 percent in Kinshasa and in the east. The poor state of digital connectivity represents a significant constraint to bridging the access gap, due to elevated prices for internet services and devices, lackluster fiber optic networks, and an outdated regulatory framework.

29. **DRC's telecom sector is still nascent but growing increasingly fast.** Previously public monopolies, the audiovisual sector was liberalized in 1996, and the telecommunications sector was partly liberalized in 2002. These two sectors have experienced steady growth with the expansion of mobile telephony (2G, 3G and 4G), digital terrestrial television (DTT), and the internet, for which demand is rising but is still at a low level, with a mobile internet penetration rate of 26 percent.⁴² Moreover, DRC is fairing significantly lower than its regional and international peers: in the ICT Development Index 2017, ITU 2018, DRC was ranked 171 out of 176 economies.⁴³

30. **In November 2020, the new Telecom Framework Law was promulgated to modernize the regulatory structure of the sector.** The new law further liberalizes the sector and provides a sound legal basis for private investment in fiber infrastructure. It introduces the Universal Service Fund (USF) and the new regulator Post and Telecommunications Regulatory Authority. However, further legislation will be needed to clarify key issues such as infrastructure sharing, to allow for a wider range of business models in the sector, and deal with other emerging issues and industry verticals such as data protection, cybersecurity, and ecommerce.

31. **Telecommunications and data services in DRC are costly.** In relative terms, DRC is the most expensive country for mobile data in Africa, with 1GB of data costing an average of US\$10.71, or 26 percent of the average monthly income (2019). Mobile internet remains the preferred way to access broadband services but is constrained by low coverage rates for 3G (64 percent of the population) and 4G (only 18 percent) services, as well as low mobile phone penetration rates.

32. **The *Plan National du Numérique* (PNN) is DRC's overall vision for the digital economy.** PNN objectives for DRC's transition toward the digital economy require a rapid expansion of reliable broadband infrastructure beyond the two major routes currently linking Kinshasa to Muanda and Lubumbashi. With the new Telecom Law come new opportunities for wholesale operators to directly invest in fiber optic networks: regional backbone operators have already started investing in backbone networks, directly or in partnership with multinationals, in the most profitable areas such as the West to access submarine cables or the Angola market, and Eastern DRC linking neighboring networks and submarine cables on the Indian Ocean shores. This model leverages private investment and brings international expertise while minimizing public investment. Finally, since in some areas some of the fiber infrastructure will likely be owned and/or commercialized by a single operator (operating as de-facto monopoly), the risk that public or private operators abuse their position needs to be mitigated through implementation of regulatory tools to ensure open and nondiscriminatory access to infrastructure while removing obstacles for fiber rollout (e.g., lowering rollout cost by installing ducts). This will maintain competitive pressure and create incentives for operators to engage in appropriate pricing.⁴⁴

33. **Investments in the country's fiber optic infrastructure have been held back for many years due to an unfavorable business and regulatory environment.** For example, the *Société Congolaise des Postes et des*

⁴² Observatoire du marché de la téléphonie mobile – Rapport du 2^{ème} trimestre 2021, ARPTC

⁴³ <https://www.itu.int/net4/ITU-D/idi/2017/index.html>

⁴⁴ Installing several ducts will also help guarantee that an alternative fiber can be installed with lower marginal costs if needed.



Telecommunications (SCPT) maintains a de facto monopoly over the market for international capacity at the landing station and the market for transport of wholesale capacity from the landing station to the capital over the fiber network.⁴⁵ As a result, many gaps persist across the connectivity value chain. The 620 km of fiber optic cable managed by SCPT between Kinshasa and the only DRC landing station in Muanda (West African submarine cable) is poorly maintained, affecting the quality of service across the country. Likewise, the SCPT backbone between Kinshasa and Lubumbashi (the second largest city, close to the Zambian border) has never properly operated due to lack of maintenance.

34. **The Government has looked for ways of securing higher quality connectivity along the key strategic routes, leveraging World Bank financing and private sector investments.** The government has requested IDA financing through two separate projects to build a network parallel to the SCPT while leveraging the private sector in different ways. Under the Southern Africa Power Market Project (SAPMP, P105654),⁴⁶ a 1,700 km fiber optic network between Kinshasa and Kasumbalesa (just beyond Lubumbashi) was built in 2016 along the National Electricity Utility's (*Société Nationale d'Electricité*, SNEL) high-voltage line (using OPGW) through a Public Private Partnership (PPP) between SNEL and the MNOs Airtel, Vodacom, and Liquid, for their own use. Similarly, the recently closed CAB-5 project (AFR RI-Central African Backbone SOP5, P132821) financed 650 km of fiberoptic backbone between Kinshasa and the WACS landing station in Muanda, also to be operated through a PPP⁴⁷ managed by the *Société Congolaise de Fibre Optique* (SOCOF). Under the 2002 Law, these 100 percent public investments were possible and leveraged private operators' expertise, innovation, and agility. The PPP model has helped improve the quality of service for some operators, though the working relationship with public sector entities has been difficult. Arrangements under the new law will open up opportunities for different types of PPPs with additional mobilization of private capital, but will need to continue to favor simplicity, as the process of setting up the PPP arrangements under the cited investments was protracted and complex given the fragility and governance challenges in DRC.

35. **Although the new legal and regulatory framework is expected to bring additional private investment in fiber optic networks, the construction of long-distance infrastructure will remain insufficient and opportunistic, especially in the more fragile and conflicted affected parts of DRC.** First, the general investment climate is not conducive, with, *inter alia*, ad hoc/illegal seizure of accounts, threats, and harassment from government agents. Second, infrastructure investment is costly and risky due to the size and scale of the country, including in remote and conflict-affected areas. In certain geographical areas with lower profitability, complementary public financing will therefore continue to be needed. In these areas, PPPs could, however, be explored, shifting as much as possible to simpler arrangements, increasingly leveraging private sector investment and expertise, for example following gap financing models. So far, only one private company, with financing from a multinational, has deployed long-distance infrastructure. However, this model relies on long-term investors, which do not expect a return on infrastructure, but rather count on selling advertising to future users and extracting value from their usage data.

⁴⁵ Monopoly of the SCPT was removed with Law 013/2002 of 16 October 2002). A temporary exclusivity in some segments of the business (removed in 2008) continues to accord SCPT a de facto monopoly.

⁴⁶ The project (an APL) financed the installation of nine pairs of fiber optic on the ground wire (OPGW) between Kinshasa and Kasumbalesa (1,700 km), three of which are managed through a PPP.

⁴⁷ Construction of this network was completed between 2019 and 2021 and after delays the PPP contract was finally signed in early 2022. The project was initially supposed to rollout more than 2000 km of fiber. However, given the delays in passing the new telecom law, which constrained the ability to further leverage private sector investment, an amount of US\$36 million ended up being cancelled and the project financed only the Muanda-Kinshasa link.



C. Relevance to Higher Level Objectives

36. **The project is consistent with the development constraints identified in the 2018 DRC Systematic Country Diagnostic (SCD)⁴⁸ as well as the priorities and principles of engagement laid out in the WBG FY22-26 Country Partnership Framework (CPF) for DRC (Report No. 168084-ZR) discussed by the Board on February 22, 2022.** Strengthening infrastructure is one of the five SCD priority areas where investment and policy action could provide quick-wins and build cumulative and virtuous cycles to sustain inclusive growth and foster resilience and shared prosperity over the next decade. The proposed project will also support capacity building and sector reforms to build inclusive institutions and strengthen governance, aligned with SCD Priority Area 2. Building on lessons from the past two decades, the CPF makes a move away from historical investments in the multi-modal system (roads, railway, and river transportation across the territory), to specifically focus on improving road connectivity in geographic areas that have high population concentration, many poor, and are affected by conflict and violence. The proposed project is designed and will be implemented in full alignment with the CPF.

37. **The project will complement and develop synergies with other World Bank engagements in DRC.** The proposed project will take advantage of the proposed road works to support the installation of fiber optic infrastructure along targeted roads and complement ongoing efforts to improve access to telecommunications for populations in remote and/or poorly covered areas under CAB-5. By improving transport and connectivity between farmers and markets, the proposed project will also complement the ongoing National Agriculture Development Program (P169021), which aims to improve agricultural productivity and strengthen access to inputs and technologies in the Kasais and Eastern provinces. The provision of safe, resilient, and sustainable connectivity will also support the implementation and contribute to the objectives of the proposed Stabilization and Recovery in Eastern Agency Project (P175834) and the Access Governance and Reform for the Electricity and Water Sectors Project (P173506). The proposed project will create a synergy with the DRC Foundational Economic Governance Reforms Re-Engagement DPO series (P177460) supporting the Government's program of reforms to address DRC's key governance challenges in public finances, market opening and forestry, in order to accelerate inclusive and climate resilient development.

38. **The project activities are aligned with the WBG FCV strategy and the 2021 DRC RRA.⁴⁹** By supporting the development of the two strategic East-West and South-North transport corridors along targeted roads, the project will be an instrument of stabilization and conflict prevention. As highlighted in the 2020-2025 WBG Strategy for Fragility, Conflict, and Violence⁵⁰, the prevention of violent conflict is a long-term process of reinforcing and steering a society's pathway toward peace, requiring that resources to countries affected by FCV offer a structure of incentives and accountabilities for countries to reduce FCV risks. The DRC conflict and security landscape in the East has sharply deteriorated in the past two years. This has led to a worsening of the humanitarian situation, on top of which repeated Ebola outbreaks, the COVID-19 pandemic, a May 2021 volcanic eruption, and impacts from the war in Ukraine (e.g., increased fuel and food prices), have further tested the population's resilience and put additional stress on an already weak service delivery system. As such, the project aims to provide support and investments that will facilitate the provision of and access to services as well as connectivity between and within communities. The project will contribute to strengthening the spatial approach to FCV risk mitigation, which is key

⁴⁸ World Bank. 2018. Congo, Democratic Republic of - Systematic Country Diagnostic (English). Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/171101529346675751/Congo-Democratic-Republic-of-Systematic-country-diagnostic>

⁴⁹ World Bank Group. Democratic Republic of Congo Risk and Resilience Assessment. June 2021.

⁵⁰ World Bank Group Strategy for Fragility, Conflict, and Violence 2020–2025 (English). Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/844591582815510521/World-Bank-Group-Strategy-for-Fragility-Conflict-and-Violence-2020-2025>



to addressing fragility and conflict risks across DRC provinces in a sustainable manner. The project will also target the most poor and vulnerable, being implemented in two out of three major poverty basins in DRC (Kinshasa, the Grand Kasai, and eastern DRC). These are also areas that have been subject to cycles of social and political unrest and conflict.

39. The proposed project will include two activities that were recommended under the joint World Bank – IFC Country Private Sector Diagnostic (CPSD) of 2020: (i) preparation of a short-term sustainable strategy for private sector participation in transport investments; and (ii) identification of opportunities for financially sustainable PPP in the transport sector. By supporting the transparency effort in road maintenance funds and by improving the safety and security in the airport sector, the project is in line with the roadmap defined by the Eastern DRC Infrastructure Sector Assessment Program (InfraSAP) (P172709) as well as the DRC SOE Governance Diagnostic (P167918). The project is also in line with the 2020 Digital Economy for Africa (DE4A) Country Assessment (P172680), which identified the need to improve the fiber optic backbone, promote PPPs and leverage synergies with other infrastructure works (e.g., roads). Finally, the project will work in synergy with the upcoming Foundational Economic Governance Development Policy Operation Series for Green, Resilient and Inclusive Development in supporting critical sector policy reforms.

40. **The project is in line with the Africa region's 2020 framework for an operational response to the COVID-19 pandemic and global crisis.** Project activities will contribute to five out of six areas of intervention in the framework. Specifically, the project will ensure the continuation of lifeline mobility and connectivity (Area 5d) through interventions on key road corridors and a critical airport. By establishing a comprehensive SEA/SH prevention and response mechanism, the project will support the mitigation of project-related risks for violence and abuse affecting women and girls (Area 1f). Through its support to digital development, the project will support the investment in real time data for monitoring and decision-making (Area 1g) and the mainstreaming of digital technology (Area 2c, Area 4d, Area 6d). The project will contribute to reinforcing the logistical preparedness of DRC to deal with the global crisis.

41. **The project supports the WBG approach for Private Capital Mobilization (PCM).**⁵¹ This will include (i) investments in fiber optic related infrastructure which will be managed and operated by the private sector through a PPP; (ii) technical assistance for developing a strategy to increase private sector investment in the transport sector, including via performance-based management contracts; (iii) technical assistance for supporting road sector reforms that would help create a local road sector industry; and (iv) technical assistance for supporting the enabling environment that would improve road, air transport and telecom sectors governance through regular processing of audits and disclosure of audited financial statements as well as annual reports.

42. **To reduce exclusionary dynamics, one source of conflict identified in the 2021 RRA—the project will support investments in transport and digital infrastructure that will strengthen interconnectedness between key urban centers and rural areas and improve access to services.** Physically and digitally connecting the center and periphery will bolster economic development and national cohesion while contributing to stabilization and conflict prevention efforts. It will also facilitate trade for isolated and conflict-affected populations by removing the most prevalent trade constraint which is the inadequate and dilapidated transport infrastructure.

43. **Applying the Green, Resilient, Inclusive Development (GRID) approach 2021, the project will finance climate resilient paved road infrastructure reconnecting Eastern and Western DRC and will continue improving**

⁵¹ The project activities are aligned with the 3 last Tiers of the PCM approach to support economies in maximizing their development resources by drawing on private financing and sustainable private sector solutions.



the security and resilience of airports. The project will support the greening of the transport sector through the definition, adoption, and initial implementation of a road map to progressively decarbonize vehicle fleet. Project impacts on isolated and conflict-affected people as well as on gender gaps will be assessed to monitor the inclusion aspects of the project. Finally, telecom infrastructure will benefit from the “dig once” approach along road rehabilitation and encourage direct private sector investments.

44. **The project is aligned with the WBG’s Next Generation Africa Climate Business Plan⁵², COP26 recommendations for transport, WBG’s Climate Change Action Plan (CCAP) 2025, and DRC’s Nationally Determined Contribution (NDC) to the Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC).** The WBG’s Next Generation Africa Climate Business Plan provides emphasis on strengthening resilience and integrating climate adaptation in sectoral development plans and investments. It highlights the urgency for countries to ramp up climate-smart development which aligns with DRC’s NDC. DRC’s NDC identifies the need to invest in the adaptation of the transport and forest sectors to the impacts of climate change.⁵³ DRC submitted its Nationally Determined Contribution to the UNFCCC in 2016, which outlines the country’s environmental goals and its sustainable development agenda. It published its Third National Communication to the UNFCCC in 2015. With respect to anticipated climate change impacts, DRC’s primary adaptation efforts are focused on the country’s most vulnerable sectors: water resources, agriculture, land use and forestry, sanitation, health, energy, and transport.

II. PROJECT DESCRIPTION

45. **The proposed project is the first of a Series of Projects (SOP) composed of three projects with the objective of providing resilient, safe, and sustainable transport and digital connectivity in and between the Kasai region and the Eastern part of DRC and improving sector governance.** An SOP approach is adequate to support the ambitious program of the Government of DRC to integrate the country by building a sustainable road infrastructure connecting Western and Eastern DRC. To achieve these objectives, the SOP is proposed to rehabilitate over 1,000 km of national roads linking the provinces in the Kasai region and the provinces in the Eastern part of DRC to finalize the East-West link across the country, modernize key transport infrastructure, and improve digital connectivity in order to have a seamless traffic between Western and Eastern DRC along the south frontier of the Congo Basin Forest (Figure 3). This will exclude any road paving inside the Virunga National Park in the North-Kivu province.⁵⁴

46. **The targeted national roads cross active conflict areas and thus will contribute to the stabilization agenda, in coordination with other World Bank interventions in agriculture, electricity, and water sectors and in complementarity with other donors and development partners’ interventions in the road sector.** The SOP will seize the opportunity of road works to install fiber optic ducts along each road segment, and possibly additional works (e.g., fiber optic cables, shelters, and active connectivity equipment), to be determined on a case-by-case basis. Keeping in mind potential investment from the private sector, consultations will be carried out with private sector operators to understand their appetite to invest in some segments of the fiber optic backbone network.

⁵² World Bank. 2020. The Next Generation Africa Climate Business Plan: Ramping Up Development-Centered Climate Action. World Bank, Washington, DC. World Bank.: <https://openknowledge.worldbank.org/handle/10986/34098>

⁵³ Democratic Republic of Congo Nationally Determined Contribution to the UNFCCC, 2017, <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Democratic%20Republic%20of%20the%20Congo%20First/CPDN%20-%20R%20C3%A9p%20D%20C3%A9m%20du%20Congo.pdf>

⁵⁴ A legal covenant will be used to keep unpaved the road inside Virunga National Park.



Finally, by pushing for more transparent operations and change management in both transport and digital sectors, this SOP will improve the sustainability of the investments.

47. **The three projects of the SOP provide a strategic framework to first roll out foundational aspects of improved transport and digital connectivity in DRC and progressively accelerate connectivity between Western and Eastern DRC.** The first project of the SOP will focus on foundational elements of the connectivity agenda, picking up on past World Bank engagements and lessons learned from Pro Routes (P101745) and CAB5 (P132821) projects, and supporting the design of a master plan and provision of technical assistance to sectoral governance that it is critical to project success. The second project of the SOP will aim to start implementing the master plan by scaling up activities on key connectivity infrastructure and implementing more advanced digital connectivity services.⁵⁵ The third project of the SOP will bridge the different segments to launch the full connectivity between the Western and Eastern provinces of DRC. Improvements in sectoral governance achieved as part of an on-going project will constitute a mandatory condition to enter the next project of the SOP. Table 3 below summarizes the approach for the SOP.

Table 3: SOP Overview

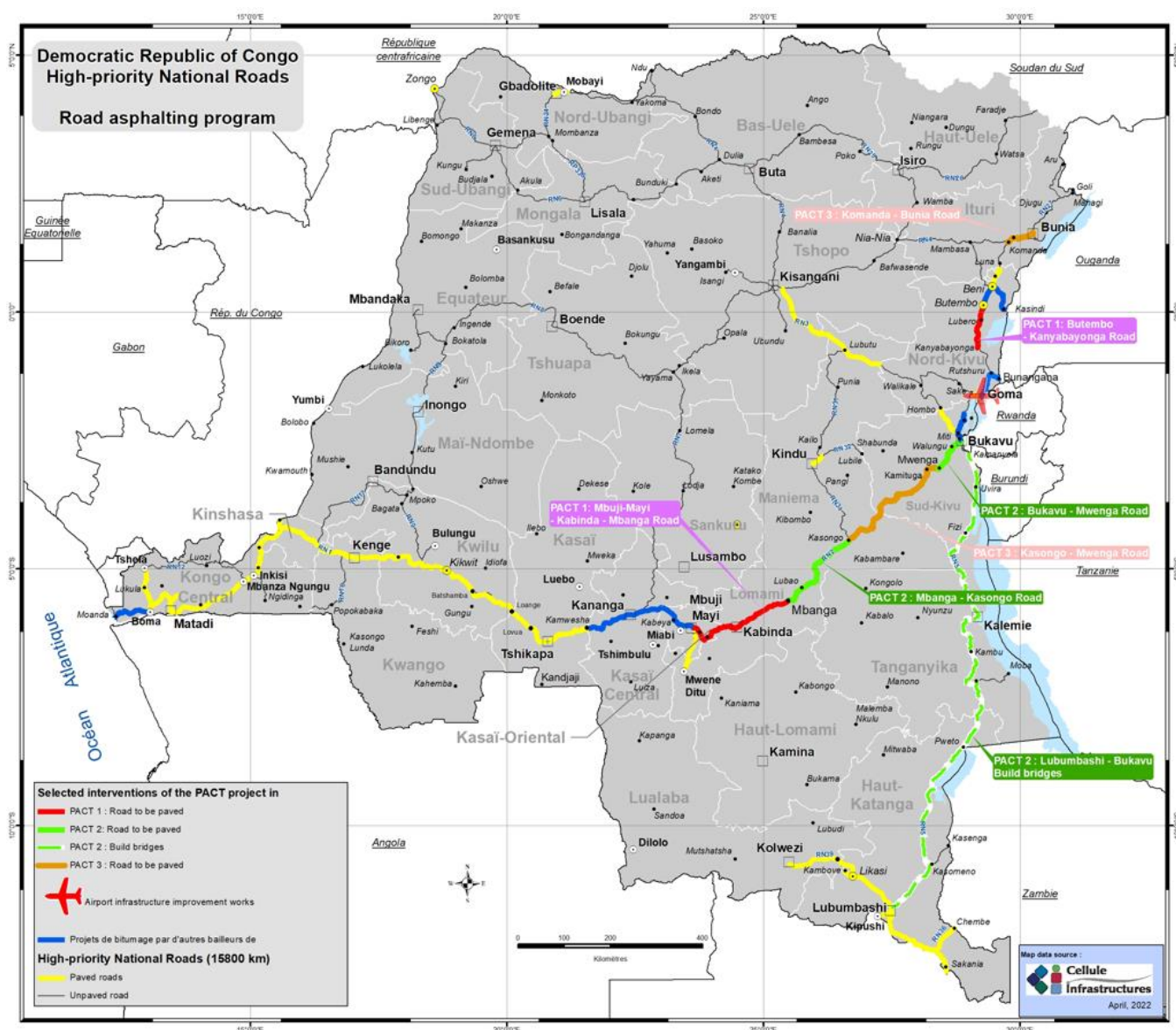
	Project 1	Project 2	Project 3
Objective	To provide resilient, safe, and sustainable connectivity to and within selected provinces in and between the Kasai region and the Eastern part of DRC, and to improve the governance of the road, aviation, and digital sectors		
Geographic Areas	- Kasai region (provinces of Kasai Oriental, Lomami) - Eastern part (province of Nord-Kivu)	- Kasai region (province of Lomami) - Province of Maniema - Eastern part (provinces of Sud-Kivu, Tanganyika, and Haut-Katanga)	- Province of Maniema - Eastern part (provinces of Sud-Kivu and Ituri)
Main activities	- Road connectivity in Kasai Oriental, Lomami, and Nord-Kivu provinces (280 km from Mbuji-Mayi to Mbanga, and 160 km from Butembo to Kanya-Bayonga) - Aviation infrastructure (Drainage and safety works at Goma airport) - Digital infrastructure (fiber optic PPPs along targeted roads)	- Road connectivity in Lomami, Maniema, Sud-Kivu, Tanganyika, and Haut-Katanga provinces (220 km from Mbanga to Kasongo, 120 km from Bukavu to Mwenga, and renovation of road structures between Bukavu and Lubumbashi) - Aviation infrastructure to improve the climate-resilience and safety of major airports in Kasai and the Eastern part of DRC - Digital infrastructure (fiber optic PPPs along targeted roads) and possible complementary investments	- Road connectivity in Maniema and Ituri provinces (340 km from Kasongo to Mwenga, and 80 km from Komanda to Bunia) - Aviation infrastructure to improve the climate-resilience and safety of major airports in Kasai and the Eastern part of DRC - Digital infrastructure (fiber optic PPPs along targeted roads) and possible complementary investments
Timeframe	5 years	5 years	5 years

⁵⁵ The second phase of this SOP is likely to be associated with a Multi-Phased Approach on the digital economy, which is currently at an early stage of preparation.



Amount (US\$ millions)	500	500	500
Other tentative funding	Private capital mobilization, coordination with other donors (AFD – French Development Agency, African Development Bank, European Union)		

Figure 3: Paved Road Network after the Completion of the SOP and Other Partners' Paved Road Projects⁵⁶



48. Stepping up from gravel to paved road investment, the SOP is transformative in adapting DRC's road network to increased climate change risk which is a threat to hard-earned road connectivity across the country. It is the first World Bank-funded project channeling investment for paving national roads in the country, following years of investment in opening more than 3,000 km gravel roads. With the paved surface and other resilient

⁵⁶ Source: Cellule infrastructures, April 2022



designs, the 1000 km+ roads are expected to remain passable throughout the year and withstand potential heavy rainfall and flooding.

49. **In terms of transport connectivity, the first project of the SOP will pave about 440 km of roads from the identified missing road links between Western and Eastern DRC for which technical and environmental studies have been completed and bidding documents are being finalized** (in red on Figure 3). Currently, the level of passengers and freight traffic travelling between Eastern DRC and Kinshasa is close to zero due to the very poor condition of the existing gravel road infrastructure between Eastern DRC and the Kasai regions. In addition, these 440 km of roads will be part of international road corridors connecting DRC with its neighboring countries such as Uganda and Angola. For air transport connectivity, the proposed project will primarily finance the development of urgently needed drainage systems at and around the country's largest international gateway airport, Goma Airport. Such investment is critical for the resilience of airport infrastructure and operations, as well as local communities nearby considering increasing flooding risks.

50. **In terms of digital connectivity, the proposed project will invest in fiber optic ducts and cables along the proposed project roads.** The project will build ducts along the targeted roads and leverage private sector investment for the fiber optic backbone, via a combination of initial public financing and PPPs. In doing so, it will support the Ministry of Posts, Telecommunications, and New Communication and Information Technologies (MPTNTIC) in developing and implementing its national fiber optic backbone master plan strategy (*plan directeur*), under which the fiber optic route along the road from the Kasai region to the province of Ituri through the provinces of Maniema, Sud-Kivu, and Nord-Kivu, is one concrete application. The project will assist the government in putting in place a sector environment that is more conducive to private sector investment, by working with MPTNTIC and the Regulatory Authority of Post, Telecommunications, and ICT to develop the secondary legislation for the new Telecom Law, including developing sectoral taxation that enhances the private sector's contribution to economic growth and innovation. The project will also assist the MPTNTIC to develop a strategy and action plan for the USF, including modalities for financing and operation of the newly built digital backbone. In project 2 and project 3 of the SOP, the project will scale up digital connectivity activities to include additional fiber links and digital services aimed to increase digital inclusion and access to opportunities. For additional fiber links, this may include inter alia support to similar PPP models along other routes (such as RN5 for example) and other complementary investments aligned with the government's Universal Service strategy to be supported (such as fiber related infrastructure, rural connectivity, etc.). For digital services, they may include for example, the deployment of Intelligent Transportation System (ITS) applications, capacity strengthening for cloud-based technology and smart infrastructure, or technical assistance to cybersecurity operations and data protection. These will be discussed with counterparts as part of projects 2 and 3 design and preparation.

51. **Substantial improvement in the transparency, governance, efficiency, and performance of FONER, RVA, and the Regulatory Authority of Post, Telecommunications, and ICT will be necessary for moving forward with the second and third project of the SOP.** This will be assessed through regular public disclosure of technical, financial, and managerial information, and implementation of good management practices. In addition to investment in civil works to build physical and digital connectivity infrastructure, the proposed project will also finance strategic technical assistance to the road, aviation, and digital sectors to enhance the overall governance quality and institutional capacity in DRC.



A. Project Development Objective

PDO Statement

52. The Project Development Objective (PDO) is to provide resilient, safe, and sustainable connectivity in and between selected provinces in Kasai region and Eastern part of DRC, and to increase the transparency of FONER, RVA, and the Regulatory Authority of Post, Telecommunications, and ICT.

PDO Level Indicators

1. Reduction in travel time in the project areas (%)
2. Percentage of project infrastructure integrating climate-resilient adaptation measures (%)
3. Reduction in road crashes along the project roads (%)
4. Increased broadband internet access as a percentage of the population in the project areas (%)
5. Percentage of overloaded trucks along the project roads unloading excess charges (%)
6. Increase in the number of fiscal years when FONER accountability documents are publicly disclosed as a result of the project (number)
7. Increase in the number of fiscal years when RVA accountability documents are publicly disclosed as a result of the project (number)
8. Increase in the number of fiscal years when the Regulatory Authority of Post, Telecommunications, and ICT accountability documents are publicly disclosed as a result of the project (number)
9. Number of isolated or conflict-affected people with improved connectivity as a result of the project (number)

B. Project Components

53. The PDO will be achieved via three components and their related sub-components:

Component 1. Sectoral Governance for Improved Connectivity (US\$39 million IDA equivalent)

54. This component will seek to improve the governance of the road, digital, and aviation sectors.

Subcomponent 1.1. Technical Assistance to Road Sector Governance (US\$16 million IDA equivalent)

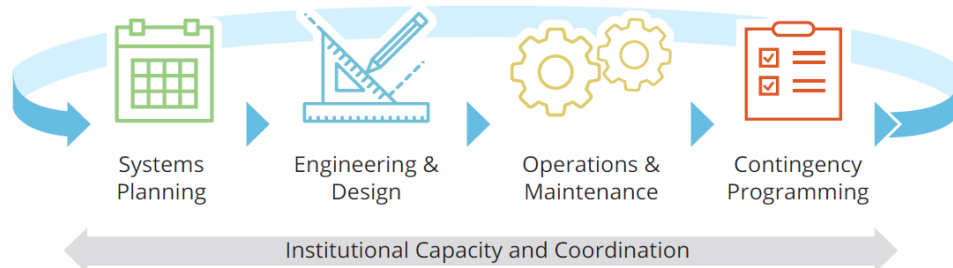
55. To strengthen road sector management and improve the systemic climate resilience of road infrastructure and investment, this subcomponent will finance a series of technical assistance (TA) activities covering three thematic areas: (i) climate resilient road asset management; (ii) effective and sustainable financing; and (iii) road safety, as described below:

- a. **Climate resilient road asset management (US\$10 million IDA equivalent).** This TA will focus on establishing a climate resilient road asset management governing mechanism for the road sector throughout the entire lifecycle of road assets (Figure 4). This includes (i) creation of a road asset inventory database and equipment for modernized road surveys, asset condition monitoring, and related capacity building. This enables the sector to understand and monitor the climate sensitivity of road asset based on their physical conditions; (ii) conducting a network level climate vulnerability assessment for selected roads across DRC, which will be used to inform future road investment planning and prioritization; (iii) development and financing of a strategy and an implementation plan for integrating climate and natural disaster considerations in road and bridge asset design and



management; (iv) market sounding and capacity building for rolling out performance-based contracts and community-based road maintenance schemes with a focus on maintaining the resilience level of road assets; (v) developing an axle load control strategy with implementation plan and pilot program. This is critical to avoid overloaded trucks jeopardizing the structural resilience of roads; (vi) develop a sectoral level climate and disaster readiness and response mechanism, focusing on contingency financing, contracting, and institutional coordination.

Figure 4: Building Climate Resilience Through Lifecycle Transport Asset Management



Source: World Bank, 2017, Resilient Transport in Small Island Developing States

- b. **Effective and sustainable financing (US\$3 million IDA equivalent).** This TA will support improving the efficiency and transparency of road maintenance fund, FONER, by putting into place measures to enhance external and independent financial, organizational, and technical audits of FONER, and subsequently supporting the implementation of a time-bound corrective action plan following these audits. In addition, this TA will also support the strengthening of the performance of the various road agencies (*Office des Routes and OVD*) through the carrying out of organizational and technical audits. Finally, this TA will also finance the preparation of a short-term sustainable strategy for private sector participation in road investments, and the identification of opportunities for financially sustainable PPPs in the road sector.
- c. **Road safety (US\$3 million IDA equivalent).** This TA finances measures to enhance road safety. Activities include commissioning a road safety management capacity review; developing a national road safety strategy and related action plan for implementation, with a particular focus on vulnerable road users; and the creation of a road safety database with piloting activities for data collection and coordination with relevant stakeholders. It will also support the development of a corridor road safety approach which is a multi-sectoral intervention to strengthen road safety.

Subcomponent 1.2. Technical Assistance to Aviation Sector Governance (US\$6 million IDA equivalent)

56. This subcomponent will seek to improve the governance, climate resilience, and private financing attractiveness of the aviation sector. This subcomponent will finance the following activities: (i) external and independent financial, organizational, and technical audits of RVA and the implementation of a time-bound corrective action plan following these audits; (ii) organizational and technical audits of AAC; (iii) a climate vulnerability assessment for key airports in the project targeted areas and a prioritized work plan to address identified vulnerabilities; (iv) a short-term sustainable strategy for private sector participation in airport investments and the identification of opportunities for financially sustainable PPP in aviation sector; and (v) technical assistance to AAC to reinforce their regulatory function to provide support for airport certification.



Subcomponent 1.3: Technical Assistance to the Digital Sector Governance (US\$6 million IDA equivalent)

57. **This subcomponent will be implemented in close collaboration with MPTNTIC, the Regulatory Authority of Post, Telecommunication, and ICT, and the Ministry of Portfolio to strengthen digital sector management and increase private sector investments in digital infrastructure.** It will finance TA activities with a focus on the enabling environment and strategic planning for the development of the telecom sector. This is divided in two thematic areas, namely governance enhancement and PCM. Governance enhancement activities aim to reinforce the legal, regulatory, and normative environment based on the new Telecom Law approved in 2021 and the publication of SOCOF and the Regulatory Authority of Post, Telecommunications, and ICT financial and operational audits. Improving digital sector governance will positively impact the sector efficiency through more optimal market regulation, which will also lead to improved climate mitigation performance via a more relevant use of digital infrastructure, also supported by the USF. PCM will then start early into project implementation with a scoping study conducted in close collaboration with MPTNTIC and the Regulatory Authority of Post, Telecommunications, and ICT. Once priorities have been identified for the deployment of fiber optic backbones, this subcomponent will support TA and a transaction advisor to advise on the best PPP models for each section of the backbone. Upfront discussions with private operators will be part of the scoping study to understand their interest in laying fiber along the selected axis to avoid ending up with empty ducts and/or inactivated fiber. Specific activities include:

- a. **Governance Enhancement:** (i) drafting of the secondary legislation for the new Telecom Law aiming in particular several decrees to be developed in priority to, (a) create the new regulatory authorities, (b) specify the licensing modalities, (c) specify infrastructure sharing arrangements and pricing mechanisms, and (d) describe the new tax structure, including measurable mechanisms to optimize revenue collection and sector growth; (ii) financing of all studies necessary to provide the Government and the Regulatory Authority of Post, Telecommunications, and ICT with an implementable strategy and action plan to deploy fiber optic infrastructure efficiently in DRC, including an analysis on the impact of taxation on sector value added, as well as a proposed normative framework for the construction, reparation and maintenance of fiber optic infrastructure; (iii) supporting the operationalization of the USF, including the draft of its Operational Manual, how the USF can be used to support climate change mitigation and adaptation,⁵⁷ as well as a geographic targeting and cartography of public and private investments on the fiber optic backbone; (iv) updating the SCPT restructuring roadmap and supporting its adoption by the Government⁵⁸; (v) conducting an annual financial and operational audit of SOCOF and the Regulatory Authority of Post, Telecommunications, and ICT to ensure a transparency of operations, with recommendations to strengthen the management of new assets built under the project and operation of the USF; and (vi) capacity strengthening of MPTNTIC, Post and Telecommunication Regulatory Authority (ARPTC) and USF. The Government has already identified 28 priority decrees and ministerial orders that are necessary to implement the new law, and 14 studies and technical assistance needed to support the new regulatory authority. In addition, this subcomponent will finance capacity strengthening and equipment related to the implementation of audit recommendations for SOCOF and the Regulatory Authority of Post, Telecommunications, and ICT. It will also finance the technical monitoring of the

⁵⁷ This manual should identify areas for priority investments under the USF.

⁵⁸ A restructuring roadmap for SCPT was developed under the recently closed CAB5 project and has been pending approval by the Council of Ministers.



CAB5 fiber optic and a workshop for the validation of the first three Decrees of the new Law through retroactive financing.⁵⁹

- b. **Private Capital Mobilization (PCM):** (i) identification of priority geographic areas (at national level) for the deployment of fiber optic backbones under a PPP scheme through the newly created USF; (ii) identification of optimal PPP arrangements through a scoping study for each priority area (i.e., whether more than ducts are needed under public financing);⁶⁰ and (iii) selection and recruitment of a transaction advisor to assist the government in determining needed investments and in concluding PPPs.⁶¹ The decision to finance ducts only or more will depend on private sector appetite as determined on a case-by-case basis.⁶² The associated costs will also be determined during the technical studies and assessments preceding road rehabilitation works. While different types of PCM models can be envisaged, they should follow principles of (i) leveraging and maximizing private sector investment, ownership and expertise; (ii) minimizing the risk to the public sector once the initial investment has been made; (iii) ensuring technical and climate/environmental sustainability through clear maintenance obligations in the contracts; and (iv) establishing mechanisms to ensure competitive and regulated tariffs where appropriate that will allow investors' cost-recovery while avoiding any predatory pricing.

Subcomponent 1.4: Project Management (US\$11 million)

58. This subcomponent will finance the operational costs of the *Cellule Infrastructures* (CI) for coordination and management, including staff costs. It will finance project management and coordination activities, including: (i) salary of key CI personnel; (ii) external financial audits; and (iii) acquisition of office furniture, equipment, and logistics. The subcomponent will also support the CI for the monitoring and evaluation of the project, including use of geo-referencing instruments for monitoring planned and rehabilitated roads, and impact evaluations.

59. This subcomponent will also finance innovative supervision tools (for example, drones and social media monitoring⁶³), communication activities, and the development and use of internet-based tools for remote supervision (such as through geolocating software like Mapillary and GEMS⁶⁴) particularly in hard-to-reach areas, and zones affected by conflict or unrest. Finally, it will finance in-time analysis and information on conflict and insecurity dynamics in the project targeted areas to be aware and sensitive of possible security challenges and potentially harmful actions to quickly adapt, respond, and ensure staff, community beneficiary safety and well-being. This will include accessing information from a variety of sources, including existing mechanisms such as Kivu Security Tracker that provide continual data and information on conflict and insecurity dynamics in Eastern

⁵⁹ A PPP contract under the CAB5 project has been approved. The PACT project will support the monitoring and maintenance of the fiber optic link until the PPP becomes operational.

⁶⁰ These may range from formal PPPs as defined in the Law n°18/016 of 9 July 2018 on PPP, to gap financing models under reverse subsidy auctions for example. PPPs implemented under the project will also be in line with MFD principles to promote competition and innovation in the market. The transaction advisor will need to bear in mind the complex environment in DRC and propose arrangements that are easy to implement and require minimal public sector investment and input.

⁶¹ Under PACT, Public Private Partnerships (PPPs) include a wide range of different schemes: from the simple lease of public infrastructure, to a concession with private sector investment, Build-Operate-Transfer, public subsidy, etc.

⁶² According to recent consultations, the operator Liquid is already building its own infrastructure on road between Mbuji-Mayi and Bukavu.

⁶³ The objective of social media monitoring is to harness social media analytics and remote-based geospatial analysis to identify and monitor for potentially project-associated incidents and other social impacts. The real-time and remote-based social media monitoring has the potential to provide early warning of harm.

⁶⁴ GEMS: Geo-Enabling Initiative for Monitoring and Supervision



DRC. Should similar arrangements be required for the Kasais (bearing in mind the contextual differences between the provinces), this will be considered and resourced accordingly.

Component 2. Transport and Digital Connectivity Improvement Program (US\$405 million IDA equivalent)

60. This component will finance selected physical (road and air) and digital connectivity infrastructure. The construction of digital connectivity infrastructure (e.g., ducts for fiber optic), which will be integrated in the road works, will also be financed under this component. The road rehabilitation civil works (subcomponent 2.1) will include creating trenches alongside existing roads, laying ducts and chambers, and if needed, blowing the fiber optic cable to have an end-to-end optical continuity between technical centers. The project will not finance maintenance and operation costs for the PPPs.

Subcomponent 2.1. Roads Connectivity Improvement (US\$370 million IDA equivalent)

61. **This subcomponent will finance the design and upgrade of priority national roads with a total length of 440 km**, including the 150 km Mbuji-Mayi Kabinda road section, the 130 km Kabinda Mbanga road section, and the 160 km Butembo Kanya-Bayonga road section. The proposed project roads will connect DRC's provinces in the Kasai region and open up progressively the first reliable land connection between the Eastern and the Western parts of the country. This subcomponent will also finance the installation of ducts within the road right-of-way to enable further investments in the fiber backbone made under subcomponent 2.3. SOCOF will advise on technical standards for ducts and will be responsible for managing the ducts.

62. **The road works will include the rehabilitation or the replacement of existing water wells and improve accessibility to social infrastructure.** This will improve access to safe drinking water in the project areas which are facing water access challenges due to climate-induced droughts. In addition, low-cost interventions to improve the accessibility and the quality of existing schools, health facilities, and marketplace infrastructure within 2 km from the targeted roads will also be included.

63. **All project roads will be fully paved, marking a transformational step forward of World Bank's investment in the road sector in DRC compared to the conventional gravel road development.** This change is driven by the need to keep road connectivity open all-year-round and adapting to the increasing climate change risks, particularly heavy rainfall, and flooding. All road pavements will use weather resistant materials to withstand extreme climatic events. Drainage and culverts will be constructed for the first time for these road sections with specific designs to widen the structure to accommodate intense precipitation and run offs. For the Butembo Kanya-Bayonga road section, which is in mountainous areas, embankment slope stabilization measures will be put into place to enhance resilience against erosion, landslides, and mudslides.

64. **The design of the paving and the roads will follow international standards including road safety best practices while maximizing the use of locally available materials.** To avoid or minimize resettlement, the upgraded roads will be mostly 6 to 7 meters-wide single carriageway of two lanes with 1 to 2 meters of shoulders. Wherever possible, the road section crossing cities will be widened for additional lanes to reduce the risk of accidents. A climate vulnerability assessment will be conducted to identify sections of the project road infrastructure that are at risk of climate hazard. Appropriate resilient measures will be implemented.

65. The expected improved connectivity resulting from the paving of the two major trunk roads in the total length of 440 km targeted by the project will be complemented by the improved accessibility resulting from the



rehabilitation of about 4,000 km of feeder roads under the DRC National Agriculture Development Program (P169021) approved on June 25, 2021. The synergy created by these two projects which intervene in the same provinces will create a seamless connectivity between farms and markets.

66. The roads will be designed with a strong focus on speed management and vulnerable road users' safety.

To reduce the probability of crash occurrence and the severity of injury when a collision takes place, road safety audits will be conducted to identify engineering measures to create a safer road. These measures will include raised pedestrian crossings, rumble strips, safety barriers, improved intersections, public lightning, and vertical and horizontal signage. The Road Safety Screening and Assessment Tool (RSSAT) developed by the World Bank will also be applied before the detailed technical design of the roads is finalized to ensure that the targeted roads meet the required road safety standards.

67. A comprehensive approach involving the community living along the road will be undertaken to further improve road safety.

In addition to a safer infrastructure design, this approach called “corridor road safety approach” will bring together all key stakeholders that have a stake in making and keeping roads safe. This includes local communities, the education and health departments, and the police authorities. In addition to a safer road infrastructure design, support will be provided to specific initiatives focused on vulnerable road users, to local health centers in handling post-crash trauma, and to the enforcement of traffic regulations.

Subcomponent 2.2. Aviation Infrastructure Improvement (US\$30 million IDA equivalent)

68. This sub-component will mainly finance drainage development for Eastern DRC's primary international gateway airport, Goma Airport, and its surrounding informal urban settlements in response to existing and increasing flooding risks from climate change. This intervention is urgently needed to prevent further deterioration of airport infrastructure and living conditions of local communities living around the airport by flooding in the absence of drainage. Although the costs of the proposed drainage systems will be determined by the detailed design during project implementation stage, it is estimated to be relatively costly considering the soil condition of the area, which is mainly volcanic soil. The engineering complexity for drainage works in such soil condition is considerably higher. In addition to the drainage network, this sub-component will also finance some safety works to improve airport safety for its certification including the remaining construction works of the new control tower at Goma Airport from the previous Goma Airport Safety Improvement Project (P153085). The cost of the remaining construction works for the control tower is approximately US\$1.5 million.⁶⁵

Subcomponent 2.3: Enabling Digital Infrastructure (US\$5 million IDA equivalent)

69. In line with international good practice, the project will take advantage of the road rehabilitation works to enable installation of fiber optic cables, thereby expanding access to broadband network services and geographical reach. Such an investment will enable a reduction of the cost of last-mile extensions and end-user prices and create incentives for the private sector investment to invest in key segment of fiber optic network. It will provide an enabling infrastructure for the delivery of key services such as climate information services and early warning systems. Whereas the project financing of ducts within the road right-of-way is covered under subcomponent 2.1, this subcomponent will finance the process leading to installation of fiber optic cables in these ducts, any associated technical assistance needed in the process, and where needed, the actual financing of fiber optic infrastructure. The project may consider potential private sector interest to install their own ducts as part of PPP arrangements.

⁶⁵ In a retroactive financing as the works are currently being implemented and financed by the Government of DRC



70. **The transaction advisor hired in subcomponent 1.3 will support the Government in seeking potential partners and designing the most adequate PPP models for each segment of fiber optic ducts installed, to optimize private sector investment and project financing.** The PPPs implemented under the project will be in line with Mobilizing Finance for Development (MFD) principles to promote competition and innovation in the market. They will be implemented in continuity with the project financing of ducts as part of subcomponent 2.1 and will be informed by the technical studies developed as part of subcomponent 1.3. SOCOF, according to its mandate, will manage the PPP contracts for leasing ducts. Whenever possible (i.e., depending on private sector interest and applicable PPP arrangements), the responsibility to maintain and operate ducts and fiber infrastructure, as well as ownership of the asset will be transferred to the private contractor. In cases where priority areas have been identified in technical studies, and private sector interest is not strong enough, project-funded gap financing may be used to complement private sector investment to still pull fiber optic cable in the ducts being built by the project, for example through reverse subsidy auctions.

71. **This subcomponent will also enhance climate adaptation and mitigation by facilitating the establishment of climate information exchange e-services, construction of data infrastructure, and introduction of digital services.** This will be informed by a prior study on climate change adaptation using newly developed fiber optic connectivity. It will especially seek to leverage the new infrastructure created to develop innovative services based on data-driven models such as climate resilience-improving facilities, data sensors and data caches, cloud computing services, internet exchange points, Wi-Fi hotspots or other enabling digital infrastructure and services to expand the digital connectivity ecosystem and facilitate the development of new demand and use-cases.

Component 3: Environment and Social Measures (US\$56 million IDA equivalent)

72. This component will finance measures to support (i) the implementation of environmental and social safeguard measures; (ii) sustainable forest management practices to prevent road-led deforestation; (iii) the reduction of greenhouse emissions from vehicle use; and (iv) gender empowerment.

Subcomponent 3.1 Support the Implementation of Environmental and Social Standards (US\$36 million IDA equivalent)

73. **Activities under this subcomponent will aim to avoid, minimize, reduce, or mitigate the adverse environmental and social risks and any negative impacts associated with activities of the infrastructure works under Component 2.** In addition to implementing the requirements of the Environmental and Social Framework (ESF), and the *Good Practice Note for Addressing Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) in Investment Project Financing involving major civil works*⁶⁶, the proposed project will finance specific investments designed to address some of the very high risks and challenges associated with implementation of the project investments in a very challenging FCV environment, compounded by the COVID-19 pandemic, and in the case of the East, active conflict. This subcomponent will also implement targeted measures developed from the significant expertise acquired and lessons learned from Pro-Routes that led to an Inspection Panel case. Key proposed measures will include:

- a. **Close monitoring of ESF compliance.** As the project will need very close safeguard compliance supervision, periodic site visits will be done by dedicated Environmental and Social (E&S) specialists, including a GBV

⁶⁶ Environmental & Social Framework for Investment Project Financing – Good Practice Note – World Bank, February 2020
<http://pubdocs.worldbank.org/en/741681582580194727/ESF-Good-Practice-Note-on-GBV-in-Major-Civil-Works-v2.pdf>



expert, hired to monitor the implementation and compliance of the project's Environmental and Social Management Framework (ESMF) as well as Contractors' ESMP (C-ESMP). Third-Party Monitoring (TPM) will also be put in place for the implementation of the E&S measures, including the Biodiversity Management Plan, and the SEA/SH action plan. Specific attention will be paid to compliance monitoring of E&S issues associated with ancillary investments (such as quarry sites, asphalt plant, concrete batch plant, borrow pits, crusher plant, and workers' camps).

- b. **Capacity building to prevent and manage safeguard issues.** The proposed project will support the development of a strong capacity building program aimed at training all projects' stakeholders, including contractors, supervision engineers, provincial authorities, and national agencies (such as the *Agence Congolaise de l'Environnement* – ACE). The program will include training on SEA/SH prevention and response.
- c. **Training and monitoring of security and/or military personnel.** The project will require strong E&S risk mitigation measures to prevent abuses, including those linked to SEA/SH, and/or excessive use of force by security and/or military personnel that may be hired by contractors to protect work sites. Such personnel will have to be trained in humanitarian law and will be requested to sign a code of conduct prior to starting their assignment. Military personnel will be selected on the basis that they do not have prior human rights violations, possibly with the help of MONUSCO's joint human rights' office. A specific MoU has already been signed under Pro-Routes between the World Bank and MONUSCO for this purpose and will be extended to the proposed project;
- d. **Two-tier Grievance Redress Mechanism (GRM).** The project will rely on civil society and other community-based entities to manage eventual complaints, including those related to SEA/SH incidents, and to implement periodic communication activities to detect eventual concerns but also to inform beneficiaries of project design and implementation progress.
- e. **Community engagement to mitigate risks.** To support the planned two-tier grievance mechanism, the project will strengthen outreach and relationships with service delivery NGOs, religious and traditional leaders, and community groups that have the trust of local residents and can be avenues for information about the project, measures to prevent GBV, and how to file complaints through GRS channels. Messaging apps like WhatsApp and local radio will also be used to influence behavioral norms for GBV prevention. The project will finance awareness campaigns using local, reputable resources to prevent, mitigate, and manage potential issues.
- f. **Managing SEA/SH risks and supporting SEA/SH survivors.** The project will support the hiring of specialized organizations in the area of GBV prevention and response to support the project during the implementation of the SEA/SH Prevention and Response Action Plan (SEA/SH Action Plan), including but not limited to monitoring SEA/SH risk along the project roads, offering a safe entry point for survivors to report grievances, and assuring the provision of medical, psychosocial, and legal assistance to SEA/SH survivors based on their needs and preferences. The project will likewise establish a dedicated, confidential and independent reporting mechanism or GRM managed by specialized GBV organizations to provide a pathway for survivors to disclose SEA/SH-related complaints safely and confidentially if they wish to do so; and the project will establish requirements for contractors, in line with those identified by the project, to include accountability measures to address SEA/SH risk, including through the application of codes of conduct signed by their employees. These codes of conduct will include provisions for



addressing and sanctioning SEA/SH behaviors and prohibitions against sexual activity with anyone under the age of 18.

- g. **Managing safety during construction.** Construction stage audit and necessary capacity building activities for the client and the contractors will be arranged. Following good international practice, work zone-related safety measures will be applied including speed management, marking, barriers, traffic management, lighting, drivers' qualifications, and vehicle safety.

Subcomponent 3.2. Sustainable Forest Management and Preservation (US\$13 million IDA equivalent)

74. **This sub-component will finance measures to enhance sustainable forest management activities that prevent road-led deforestation along the targeted road areas.** Home to over 145 million hectares of rain forest, DRC has the second largest forest endowment in the world. These forests are of great global importance as the second largest carbon sink. The 160 km Butembo Kanya-Bayonga road section under the proposed project is near to the Virunga National Park. To prevent illegal logging, natural resources smuggling, and large-scale poaching that could follow improved road access, this sub-component will finance a series of activities to improve sustainable forest management (refer to Annex 4).

75. Specifically, this sub-component will support local institutions linked with the Ministry of Environment and Sustainable Development (MEDD) and the Congolese institute for Nature Conservation (ICCN) to implement:
- a. Afforestation of 3,000 hectares of degraded land along the targeted roads.
 - b. Using GIS tools to monitor any induced deforestation impact that could be linked to the project roads.
 - c. Expanding effective regulation enforcement capacity at field offices of MEDD and ICCN for anti-poaching and natural resources management along the project areas through provision of training, equipment, and logistical support.
 - d. Partnering with NGOs, local associations, and local communities to lead information campaigns, public education, and local consultations on sustainable forest management and climate mitigation.
 - e. Supporting MEDD and ICCN to develop and implement a landscape-level land use plan in the project area of influence to guide human and economic activities (i.e., establish functional corridors between protected areas, establish communities' forest, and logging concession).
 - f. Technical assistance to support the production and marketing of improved stoves to mitigate climate change through the reduction of GHG emission.

Subcomponent 3.3. Management of Vehicle Motorization for Emission Reduction (US\$4 million IDA equivalent)

76. **This subcomponent will finance technical assistance to implement vehicle motorization management interventions to reduce greenhouse gas emissions from road transport.** Specifically, it will include activities on (i) developing a roadmap for motor vehicle management in DRC; (ii) gathering data on current motor vehicle stock, fuel consumption and emission factors; (iii) developing policy recommendations on first-use certification or homologation, quality assurance of vehicle parts, periodic technical inspection, on-road enforcement, fuel quality assurance, preventive maintenance and repair industry strengthening, and end-of-life vehicle management; and (iv) developing the analytical underpinning for rolling out fuel economy/emission standards for imported vehicles.

Subcomponent 3.4. Gender Empowerment Activities (US\$3 million IDA equivalent)

77. **While the project will address many gender issues, the project will specifically address women's gaps in livelihoods.** This subcomponent will finance activities to close some of the gender gaps identified in the gender



analysis for this project (see Box 4 for details), including identification and scaling-up of existing local initiatives for rural women and girls in the project areas that promote resilience and empowerment of women; and technical assistance to increase the participation of women in the construction sector as well as in the road maintenance activity. This technical assistance will undertake a diagnostic to establish the baseline, present the constraints to be addressed, and define an action plan including the targeted objectives. The implementation of the action plan will be financed by the project. In the results framework, the project will monitor the number of women with improved incomes due to improved skills and training received through the project gender empowerment activities, with a baseline of zero and expected end target of 4,400 women.

Component 4: Contingent Emergency Response (US\$0 million)

78. A CERC is included in the project in accordance with Investment Project Financing (IPF) Policy, paragraphs 12 and 13, for Situations of Urgent Need of Assistance and Capacity Constraints. This will allow for rapid reallocation of uncommitted funds in the event of an eligible emergency as defined in OP 8.00.⁶⁷ An annex to the Project Operations Manual (CERC Annex) will be prepared to guide the activation and implementation of the CERC. For the CERC to be activated, and financing to be provided, the Government will need (i) to submit a request letter for CERC activation, and the evidence required to determine eligibility of the emergency, as defined in the CERC Annex; (ii) an Emergency Action Plan, including the emergency expenditures to be financed; and (iii) to meet the environmental and social requirements as agreed in the Emergency Action Plan and Environmental and Social Commitment Plan. This component will allow the restructuring and adjusting of the project to respond to any epidemic or pandemic situation.

79. The project cost per component is summarized in Table 4.

Table 4: Table of Costs by Component

Activities	Estimated costs (US\$ millions)
Component 1: Sectoral governance for improved connectivity	39
Subcomponent 1.1: Technical assistance to road sector governance	16
Subcomponent 1.2: Technical assistance to aviation sector governance	6
Subcomponent 1.3: Technical assistance to the digital sector governance	6
Subcomponent 1.4: Project management	11
Component 2: Transport and digital connectivity improvement program	405
Subcomponent 2.1: Road connectivity improvement	370
Subcomponent 2.2: Aviation infrastructure improvement	30
Subcomponent 2.3: Enabling digital infrastructure	5
Component 3: Environmental and social measures	56
Subcomponent 3.1: Support the implementation of Environment and Social Standards	36
Subcomponent 3.2: Sustainable forest management and preservation	13
Subcomponent 3.3: Management of vehicle motorization for emission reduction	4
Subcomponent 3.4: Gender empowerment activities	3
Component 4: CERC	0
Contingent emergency response component	0

⁶⁷ An eligible emergency is defined as an event that has caused, or is likely to imminently cause, a major adverse economic and/or social impact associated with natural or man-made crises or disasters. Such events include a disease outbreak.



TOTAL (US\$ millions)

500

C. Project Beneficiaries

80. Components 1 and 3 will benefit the national and provincial agencies and ministries involved directly or indirectly in the road, digital, and airport sectors. They will receive capacity building and tools to mobilize and oversee private sector investment. The road sector in DRC will be better managed by key staff of these agencies and ministries through the consideration of climate change, road safety, axle load control, forest preservation, and natural resources dimensions. Provincial and local authorities, politicians, civil society organizations, activists, journalists, academics, and the public will also benefit from a more transparent FONER and RVA and the disclosure of technical and financial information on road maintenance and airport management in DRC.

81. Road users, airport users and broadband users will be the primary beneficiaries of component 2. It has been estimated that about 9 million people living in the catchment areas of the targeted roads will be positively impacted by component 2. This includes farmers and traders who will benefit from reduced transport costs, reduced travel time, and more reliable transport infrastructure to move their produce to markets. Airport users including passengers, freight operators, airline companies as well as humanitarian organizations and the UN peacekeeping mission who rely heavily upon air transport to access Eastern DRC will be the primary beneficiaries of the airport activities, along with people living in the immediate vicinity of the airport who will benefit from the improved drainage system. People will benefit from either improved digital infrastructure or new access to mobile and internet services because of the fiber optic infrastructure financed by the project. The roads, airports, and digital investment financed by the project which will result in better connectivity and accessibility are expected to enhance the preparedness of DRC for epidemic and pandemic response. Health care facilities will be better accessed by the local population; health care workers and service providers can reach easier the local communities; and the number of people receiving health information shared via internet will increase.

82. Community inhabitants along the targeted roads will benefit from increased availability of jobs, including road rehabilitation and construction jobs. The local youth along the targeted roads and airports will also benefit not only from temporary jobs during the construction but also from gaining skills and experience.

83. Women will benefit from (i) the SEA/SH risk mitigation activities, including access to services as well as the grievance redress mechanism, that will be put in place along the targeted roads and airports; (ii) better access to water; and (iii) women's empowerment activities, including support to enter male-dominated construction jobs.

84. The private sector will benefit from the various works contracts as well as the improvement in the private sector investment in the road and airport sectors. Road construction firms and contractors as well as the national and provincial authorities will specifically receive capacity building to start implementing performance-based road contracts in DRC. Private internet providers will also be able to invest in the provision of internet services following the PPP in the operation and maintenance of fiber optic infrastructure.

85. Isolated and conflict-affected population in Eastern DRC and Kasai will benefit from improved transport infrastructure that will create more trade opportunities for local producers including women and youth farmers, trade service providers (transporters, etc.), and market vendors including women and youth.

86. The poor population living in a 4 km buffer along the targeted roads (2 km from each side of the road) will have better access to schools, health centers, marketplaces, and water supply because of the low-cost



interventions that will accompany the road works. They are among the population living up to 20 to 30 minutes walking time from the targeted roads whose number is estimated at more than 500,000.

87. Due to the 4,000 km of feeder roads that will be rehabilitated by the ongoing DRC National Agriculture Development Program (P169021) in the same areas as the project, the positive impacts to the general population from the improved targeted roads will go far beyond the 4 km road buffer zone – which is the immediate project catchment area. It will positively impact most of the population living in the three provinces (Kasai Oriental, Lomami, and North-Kivu) targeted by the project.

D. Results Chain

88. The project results framework was developed through a consultative process with recipients, beneficiaries, and the World Bank. The PDO reflects the project's target group (beneficiaries) and the measurable benefits that the target group will accrue through the successful implementation of the project. The project's results framework is therefore, intended to be directly responsive to the PDO and provide a logical framework linking the interventions to the overall objective, as measured through the indicators. This logical framework, or Theory of Change, is illustrated in the figure 5 below. The project results framework does not include indicators to track every applicable or relevant variable, but rather seeks to balance a desire to have representative performance indicators that are directly responsive to the PDO with the practical need to develop indicators that are measurable and realistic given the circumstances of the project locations in the country.



Figure 5: Theory of Change

PDO: to provide resilient, safe, and sustainable connectivity to and within selected provinces in Kasai region and Eastern part of DRC, and to increase the transparency of FONER, RVA, and the Regulatory Authority of Post, Telecommunications, and ICT				
Drivers of fragility: Country with crumbling or non-existent transport infrastructure, governance failure				
Activities	Outputs	Short-Term Outcomes	Medium-Term Outcomes	Long-Term Outcomes
<i>Component 1: Sectoral governance for improved connectivity</i>				
Technical Assistance in the road sector on: - climate resilience - governance and sustainable financing - road safety	Climate resilient road asset management system Governance roadmap in the road sector Road safety action plan and database	Road asset in DRC is managed using lifecycle approach integrated with climate resilience and safety measures Transparency and improved governance of FONER, RVA, and the Telecom Regulatory Authority	Maintenance fund under FONER is used more efficiently	Climate resilient, safe, and sustainable connectivity
Technical Assistance in the aviation sector on: - climate resilience - governance - regulations - private capital mobilization	Climate vulnerability assessment for key airports Governance roadmap in the aviation sector		Overloaded trucks unload excess charges	
Technical Assistance in the digital sector on: - governance - private capital mobilization	Draft legislation for the new Telecom Law Governance roadmap in the digital sector Operationalized USF PPP scheme for backbone fiber optic deployment		Reduction of road crashes Increased access to broadband internet in the project areas	
<i>Component 2: Transport and digital connectivity improvement program</i>				
Upgrading of 440 km of national roads with climate resilient and safety features including the installation of fiber optic ducts and the repair of existing water wells and social infrastructure	440km national roads fully paved with resilient and safety measures 440km of fiber optic ducts constructed Repaired water wells and social infrastructure along the 440 km roads	440km national roads are resilient to climate risks, safe for usage, and fiber-ready Goma airport's infrastructure and operations, and nearby communities are made resilient to flooding risks	Increased accountability of the management in the road, aviation, and digital sector	Improved security and peacebuilding Increased trade opportunities Better access to education and health facilities
Construction of drainage system and safety infrastructure at Goma airport	Drainage system and safety infrastructure constructed at Goma airport		Reduction of road traffic disruption due to climate-related event	
Deployment of fiber optic cable along the 440 km of national roads and leveraging of climate information eservices	Fiber optic cable installed along the 440km roads Digital equipment for climate eservices acquired		Reduction of transport costs	
<i>Component 3: Environmental and Social Measures</i>				
Environment and Social Support	E&S risks prevention and mitigation action plan	Reduction in travel time	Improved access to market and social services	
Forest management and preservation	Afforestation of 3,000 hectares of land Increased capacity in preventing illegal logging			
Technical Assistance on Vehicle management motorization and emission	Roadmap for vehicle decarbonization and safety	Increased transport traffic		
Gender Empowerment	Gender action plan Women received capacity building			
<i>Component 4: CERC</i>				



E. Rationale for Bank Involvement and Role of Partners

89. The World Bank has been the lead partner in terms of lengths of roads rehabilitated and maintained, coverage of geographical areas, and years of engagement in the sector in DRC and is thus well positioned to continue engaging and move the engagement to the next level. Expertise across transport sectors will be needed for the proposed project and will build on experience from previous projects such as the DRC Multi Modal Transport project (P092537); the DRC High-Priority Roads Reopening and Maintenance Project – Pro-Routes (P101745); and the DRC Goma Airport Safety Improvement Project (P153085). In the context of these projects, the World Bank has developed expertise in the road sector and implementation of high-risk projects in a challenging FCV context and has ongoing oversight and understanding of fragility challenges in the project supported provinces. The World Bank’s liaison offices in Goma (for the East) and Kananga (for the Kasais) provide a footprint closer to implementation activities. The World Bank also has the capacity to support the country’s efforts in improving SOEs and can accompany the Government in its commitment to sustain reforms to improve management practices.

90. Financing for the road works as well as the airport infrastructure and equipment investments will rely on public financing. In fact, the traffic volume on the proposed roads will not be enough to attract commercial financing or to support a PPP arrangement and the airport investment is too small and focuses on safety requirements that would not attract commercial financing or support a PPP arrangement. The construction of the ICT infrastructure (ducts and in some cases fiber optics), which will be integrated in the road works, will also be publicly financed while the operations and maintenance will be entirely funded through private financing under a PPP arrangement with telecommunication operators.

91. Other development partners such as the African Development Bank, the European Union, and MONUSCO also invest in the road and aviation sectors in DRC. The proposed roads and airports activities under the project complement these other partners’ on-going operations. In addition, a platform is in place among the different key partners in the DRC transport sector to prepare and issue coordinated policy recommendations to the Government of DRC on sector reforms and improvements.

F. Lessons Learned and Reflected in the Project Design

92. **The proposed project design reflects lessons learned from previous transport and digital operations in DRC, SSA, and globally.** These are critical to the success of this project in Eastern DRC’s FCV environment and include the following:

- **Use of a simple project design in a fragile context: I proposed transport project is primarily a road project targeting two specific roads instead of a multimodal and/or a multi-regions project.** Previous transport operations in DRC and other fragile contexts have shown the importance of limiting the scope of interventions. This lesson has been reflected in the project design as follows: (a) focus on one large, high-quality investment component in focused geographical areas; (b) limited number of investments in both ICT and transport; (c) five-year project implementation period; and (d) continuation of implementation support by the previous PIU *Cellule Infrastructures* within the Ministry of Infrastructures and Public Works with experience in implementing World Bank-financed projects, including the most recent road operation.
- **Addressing climate change impacts through resilient solutions in the design and implementation of the project: Moving from gravel roads to paved roads when improving trunk roads.** DRC is characterized by a



tropical climate with a heavy rainy season that impacts the use of roads and makes accessibility to reach job opportunities, markets, and services irregular, thus adaptation is a key element in road investment in the country. The project is aligned with the corporate and strategic plans on climate including the 2025 Climate Change Action Plan and the Next Generation Africa Climate Business Plan.⁶⁸ The inclusion of climate resilient solution for roads design is integrated in the project to address climate change impact on roads. In addition, adequate and coordinated measures at various levels are required to address climate change impacts on road asset management and will be reflected through the following dimensions: (i) setting of institutional arrangements, development strategies and plans for integrating climate and natural disaster considerations in road and bridge asset management and maintenance activities; (ii) enhancing the capacity of transport authorities in terms of climate risk to the road and airport infrastructure; and (iii) emergency preparedness planning as well as flood and landslide mapping for use in long-term planning.

- **Government's clear commitment to sector reform is required to ensure the sustainability of sector investment:** The project focus on road sector is driven by a clear commitment of the Government to reform the road sector. The Government has recently taken steps to improve governance, as demonstrated by the external financial audit of FONER for fiscal year 2020, which provided a qualified opinion on FONER⁶⁹, and by the competitive hiring of the senior management of FONER. In addition, the current management of FONER has publicly disclosed FONER's activity report for 2020 and FONER's external financial audit reports for 2019 and 2020.⁷⁰ This contrasts with previous transport projects in railway and river sectors which had not seen similar commitment to reforms by the Government. Government's sustained effort to improve sector governance and undertake sector reforms will be assessed regularly to inform the design of the second and third projects of the SOP (Paragraph 99).

- **Simplifying PPP arrangements and leveraging private sector as much as possible.** Previous experience with the CAB-5 project has shown the challenges involved in setting up a workable PPP to manage fiber in a quick, efficient, and transparent manner. Experience from elsewhere (e.g., Burundi under the Regional Communications Infrastructure Project, P094103) also shows that establishment of investment financing vehicles with public and private investment is complex and often fails. While the current project will study the most suitable models for fiber financing, it will follow key principles around maximizing the role of the private sector in financing, ownership, and operations through simple financing arrangements such as gap financing models. It will also do so while working on regulatory and other measures to foster competition and prevent possible abuse of dominant position.

93. **In addition, the design and management of the project E&S mitigation measures are based on the experience gained from Pro-Routes and the associated investigation by the World Bank Inspection Panel (IPN).** The investigation by the IPN in 2017 was carried out after supervision failures and safeguards⁷¹ issues were detected by the World Bank and IPN teams. A robust Management Action Plan was approved by the Board of Executive Directors in September 2017 and has been fully implemented. The IPN investigation of Pro-Routes project has highlighted the following important lessons:

⁶⁸ World Bank. 2020. *The Next Generation Africa Climate Business Plan: Ramping Up Development-Centered Climate Action*. World Bank, Washington, DC. World Bank. <https://openknowledge.worldbank.org/handle/10986/34098>.

⁶⁹ The external financial audit of FONER for fiscal year 2019 did not provide an opinion because of the significant gaps in the financial statements

⁷⁰ <https://foner-rdc.com/rapports/>

⁷¹ The Pro-Routes project applied safeguards as it became effective before adoption of the ESF for all Investment Policy Financing (IPF) projects initiated after October 1, 2018.



- **The importance of a robust supervision strategy, anticipating that World Bank teams may not always be able to travel to visit the worksites because of security restrictions:** Based on the experience of Pro-Routes and other World Bank-financed programs implemented in the targeted areas, it is anticipated that World Bank teams will be constrained to travel to some of the project sites or may have to shorten their visits due to security risks. The partnership between the World Bank and other international organizations, including with UN military forces (MONUSCO), has been strengthened over the past year, and the World Bank now has access to improved information about security conditions in the field. Military escorts and protection equipment are also more easily available to World Bank teams because of this enhanced partnership and new security protocols have been developed by the World Bank's Corporate Security department. The World Bank has also opened two satellite offices in the targeted areas (Goma for the East and Kananga for Kasai)⁷², allowing World Bank teams to count on improved local support and improved information about security conditions on the ground. Finally, in case no World Bank team can visit worksites for a period, remote implementation support arrangements will be put in place as part of project design, including through social media monitoring, GEMS, and partnerships with local CSOs.⁷³
- **The usefulness of partnering with civil society and other community-based entities to monitor implementation and identify eventual issues related to complaints at an earlier stage:** The project will rely on civil society and other community-based entities to manage complaints, including SEA/SH-related, and to implement periodic communication activities to inform beneficiaries of project design and implementation progress and detect eventual concerns. In particular, the proposed project will include a two-tier GRM embedded with communities to collect and manage eventual complaints. A separate mechanism will also be put in place to manage SEA/SH allegations through the contracting of specialized NGOs. Following the World Bank's SEA/SH Good Practice Note recommendations, an independent Third-Party SEA/SH Monitoring (TPM) will be recruited with a higher-level oversight function to confirm that the SEA/SH Action Plan is properly implemented, including the functioning of an independent SEA/SH GRM and adequate referral pathways and service provision for survivors.
- **The need to be able to monitor ESF compliance as close as possible to the worksites:** ESF compliance will not be monitored remotely or through periodic site visits but will instead be ensured by dedicated environmental and social specialists hired by the supervision engineer. Contractors will also be requested to assign and empower a dedicated environmental and social specialist for the monitoring of C-ESMP compliance.
- **The importance of building institutional capacity to better prevent and manage environmental and social risks:** Subcomponent 3.1 under the proposed project will support the implementation of a strong capacity building program to train all project stakeholders, including contractors, supervision engineers, provincial authorities, and national agencies (such as the Congolese Environment Agency – ACE). Strengthening the capacity to manage environmental and social risks will drive improved performance for all transport infrastructure investments. Determined efforts will be made to enhance the low capacity for management of environmental and social risks and impacts of development progress. This will entail ESF capacity enhancement

⁷² A Corporate Security Specialist is based in the World Bank satellite office in Goma, and technical staff may be placed in these satellite offices.

⁷³ The World Bank will rely on social media monitoring of the project. Originally launched to retrospectively analyze the difficulties that occurred during the implementation of Pro-Routes, a social media monitoring pilot has since then been extended to the World Bank's entire portfolio in the DRC to identify in real time of possible problems related to the implementation of projects, as well as to identify the satisfaction of the population vis-à-vis these projects. The pilot combines the analysis of social media posts with geospatial analysis. The project will build its social media monitoring activities on the success and lessons learned from the pilot



programs at identified institutions at both central and provincial levels of government.

- **The necessity to include in project design a comprehensive SEA/SH risk management framework:** The proposed project will include a comprehensive SEA/SH risk management system, building on the experience of Pro-Routes as well as other World Bank-financed GBV prevention and response operations in the DRC and worldwide. This system will include specific measures to: (i) reduce the risk of SEA/SH in the project areas; (ii) respond to eventual SEA/SH allegations and provide specialized services to SEA/SH survivors, in line with a survivor-centered approach; and (iii) assure accountability measures whenever appropriate. The activities related to managing SEA/SH risks and supporting SEA/SH survivors under Subcomponent 3.1 follow the recommendations of the World Bank's SEA/SH Good Practice Note for high-risk operations.
- **The need to put in place strong risk mitigation measures to prevent abuses and/or excessive use of force by security or military personnel:** The project will need to have strong environmental and social risk mitigation measures in place to prevent abuses, including those related to SEA/SH, and/or excessive use of force by security and/or military personnel that may be hired by contractors in order to protect work sites. Such personnel would have to be trained in humanitarian law and would be requested to sign a code of conduct prior to starting their assignment. Military personnel would be selected on the basis that they do not have prior human rights violation, possibly with the help of MONUSCO's joint human rights office. A specific MoU has already been signed between the World Bank and MONUSCO for this purpose.
- **On SEA/SH, lessons learned include: (i) the design of a robust supervision strategy; (ii) partnerships with civil society actors to support the project on implementation of SEA/SH risk mitigation measures; and (iii) strengthening of local organizations regarding GBV prevention and response interventions in general.** Accordingly, an SEA/SH Prevention and Response Action Plan (SEA/SH Action Plan) has been developed and included in the project Environmental and Social Management Framework (ESMF) as an annex. The core measures are presented as follows:
 - ✓ Provisions for drafting codes of conduct that specifically prohibit SEA/SH and outline applicable sanctions and will be signed by all project staff and workers.
 - ✓ Procedures under an independent grievance redress mechanism (GRM) specific to handle SEA/SH grievances safely and confidentially and using a survivor-centered approach, including response and information-sharing protocols and information as to how the project will provide employees and the local population with information on how to report SEA/SH grievances and violations of the code of conduct to the SEA/SH GRM.
 - ✓ Provisions for mapping a holistic package of services (psychosocial, medical, and legal) to which SEA/SH survivors will be referred, including the quality of the services that providers offer.
 - ✓ A training strategy that describes the responsibilities of workers covered by the code of conduct, SEA/SH concepts, prohibited behaviors and sanctions for violations, and specific procedures to manage SEA/SH complaints in an ethical and confidential manner, following a survivor-centered approach.
 - ✓ An awareness-raising strategy that describes how workers and local communities will be made aware of the risks and consequences of GBV, including SEA/SH, the responsibilities of workers under the code of conduct, and procedures to report these kinds of incidents.
 - ✓ Provisions for organizing independent community consultations with women in safe and enabling environments and with female facilitators, which will provide information as to project-related risks for women and feedback on safe and accessible GRM reporting channels for SEA/SH complaints.



- ✓ Provisions for maintaining a GBV Specialist within the PIU as well as for hiring a third-party monitor to supervise implementation of the measures under the SEA/SH Action Plan.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

94. **A Strategic Steering Committee will be established at the central level** to ensure the overall monitoring and overseeing the strategic implementation of the project. The steering committee will be led by the ministry of finance and will have representatives from all the line ministries and provincial authorities involved in the project activities. The PSC will coordinate between the central and provincial governments involved. The terms of reference for the PSC, including the required participants for quorum, will be detailed further in the project implementation manual (PIM) to be prepared by the Borrower prior to effectiveness.

95. **The main project implementing unit will be the *Cellule Infrastructures* (CI).** The detailed composition and role of the PIU will be set forth in the PIM. Key CI staff working on the project will have a performance contract with specific annual objectives that will be evaluated each year. CI that managed Pro-Routes was created by recruiting staff competitively from the private sector and embedding the PIU within the Ministry of Infrastructure. The CI has since established managerial and technical skills capable of managing complex procurements while coordinating various agencies. The staffing of CI will be regularly assessed and adjusted to manage the project activities and associated risks.

96. **CI will have permanent presence in Mbuji-Mayi, Goma, and Butembo** to ensure close monitoring, smooth implementation, compliance with E&S requirements of the construction works (roads, aviation, and digital), and to be in proximity with provincial authorities. Staff in these provincial cities will include engineers, E&S specialists, and security focal points. Coordination and day-to-day management of the works will be undertaken from these satellite offices. World Bank liaison offices in Goma (North Kivu) and Kananga (Kasai Central) will provide implementation oversight and support.

97. In response to the 2017 Inspection Panel Case under Pro-Routes, CI has strengthened its capacity to address SEA/SH risks, environment health and safety, labor conditions, and the grievance mechanism, in accordance with World Bank policies and guidance.

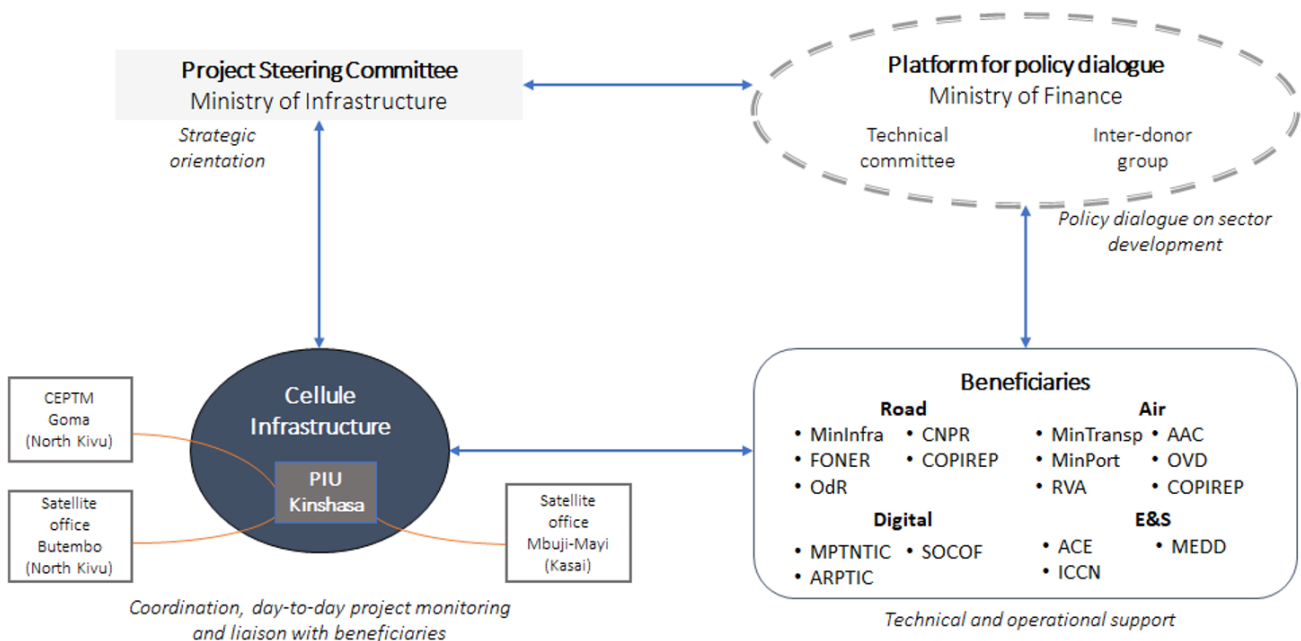
98. **CI will work closely with a range of core partner agencies for the different project subcomponents and will sign a Memorandum of Understanding with them by the effective date** (Figure 6). Subcomponents 1.1 and 2.1 will be implemented in close coordination with Road Maintenance Fund (FONER), Roads Office (OdR), Road Safety National Committee (CNPR), SOE reforms committee within the SOE Portfolio Ministry (COPIREP), and the ministry of infrastructure. SOCOF will be advising on technical standards for burying ducts and will be responsible for managing the ducts. Subcomponents 1.2 and 2.2 will benefit from the technical expertise and support from RVA, AAC, and OVD which are in charge respectively of airports management, civil aviation regulations, and urban drainage system. CI will also sign a Memorandum of Understanding with the Implementing Agency of the Ministry of Transport that oversaw the Goma airport project (P153085). The governance activities of subcomponent 1.2 will also be implemented in close coordination with COPIREP. Subcomponents 1.3 and 2.3 will be implemented in close coordination with the MPTNTIC and the Regulatory Authority of Post, Telecommunications, and ICT, whose support will be critical to pass key policies and decrees in order to fully enforce the new Telecom Law. The Regulatory Authority of Post, Telecommunications, and ICT will also be expected to facilitate the development of



a strategy and action plan for the USF, which will be key to support financing and operation of the newly built digital backbone. In subcomponent 2.3, CI will benefit from the technical expertise and support from SOCOF. SOCOF will also be responsible for managing the PPP contracts, according to its mandate. Component 3 will be implemented in close coordination with ACE, ICCN, and the ministry of environment.

99. **A platform for sector dialogue will be institutionalized at the Ministry of Finance to follow-up on the extensive sector dialogue underpinning the preparation of the project and the entire SOP and to undertake a regular policy dialogue between the DRC authorities, the World Bank Group, and other development partners.** Representatives from the line ministries involved in a specific theme (road maintenance, road safety, etc.), and from the donors and partners (World Bank, African Development Bank, European Union, Belgian Development Agency, Japan International Cooperation Agency, etc.) will be part of the platform. These actors will convene into this platform to address projected developments of the transport and digital sector. The objective of this platform will be to periodically discuss sector policies, strategies, reforms, and priorities. The outcomes of this regular discussion will inform project planning including for later projects of the SOP. The status, quality, and outcomes of this sector dialogue will be covered in supervision Aide-Memoires.

Figure 6: Project Implementation Arrangements



B. Results Monitoring and Evaluation Arrangements

100. **Monitoring and Evaluation (M&E) will be performed through the existing results' framework of CI, which will be further strengthened under the proposed project.** The project implementation period is five years. CI will be staffed with an M&E specialist. An integrated database of local development activities (with geo-localized information) that was set up under Pro-Routes will be used as a tool to monitor project activities.

101. **CI will regularly update the indicators and will produce semesterly and yearly reports as well as a mid-**



term review progress report. Semi-annual M&E report will be submitted to the World Bank as per agreed dates, and in time for regular implementation support missions to be conducted by the World Bank when travel is permitted under COVID-19 guidelines. The progress reports will also include information on compliance with ESF, citizen engagement, and grievance redress. Annual independent financial audits and technical audits will be carried out. A midterm review of the project will be carried out within 36 months after effectiveness to assess the status of project implementation, as measured against the performance indicators. Implementation Completion and Results Report (ICR) will be prepared within six months after the closing date of the project.

102. **The project will build on the successful experience of Pro-Routes to expand the road imagery application, Mapillary, for the monitoring and evaluation of the project.** Pictures of the reopened roads are public and accessible on the internet. The road imagery has become a technical information and decision-making tool for the Ministry for Public Works, providing outputs such as maps, graphs, statistics across the country forming a comprehensive road database updated regularly. The system was designed to support MIPW in supervising the road sector. The map catalogue, produced from this database, allows the monitoring of interventions for rehabilitation, management, and maintenance purposes.

103. The project will coordinate with specialized institutions such as MONUSCO, where they are present to facilitate project supervision and explore the use of smart supervision tools, including use of new monitoring technologies, as well as third party monitoring to address supervision in high-risk locations. The project will address all gaps through the preparation and implementation of the ESCP prepared by the Government and negotiated with the World Bank during the preparation stage of the project. The ESCP will be based on the preparation and implementation of the ESIAs, RPF, and the subsequent associated ESMPs.

C. Sustainability

104. The proposed project has embedded in its design factors and activities that are critical to the sustainability of the infrastructure investment.

105. **Infrastructure design will embed climate adaptation dimensions.** The hazards identified by the climate assessment for the project and the possible increase in frequency and magnitude with climate change could damage the project assets, hence infrastructure design for the project will take this high exposure and potential impact into consideration and incorporate measures to rehabilitate roads, bridges, and airports to climate resilient standards. Climate adaptation measures are embedded in the project via; (a) activities which strengthen climate resilience of road and bridge infrastructure which include upgrading of roads and rehabilitating drainage structures to climate resilient standards; and (b) airport emergency improvements and design of appropriate drainage systems to mitigate flooding of runways and aquaplaning.

106. **The road standards are based on realistic traffic forecasts that will ensure a minimum of 15 years of road life cycle.** To ensure sustainability, the project learned from Pro-Routes approach which implemented spot-improvements on unpaved trunk roads. While this approach was able to reopen a significant length of national roads with a low cost per kilometer, sustainability was an issue because the unpaved roads were unable to withstand the vehicle traffic level resulting from the roads reopening, even with adequate quality and frequency of maintenance.

107. **Effective axle load control where overloaded trucks must unload and pay fines will contribute to the sustainability of the road investment.** Investment in paved road infrastructure is often eroded due to the lack of



effective axle load control. Consequently, there is an urgent need to regulate use of road infrastructure through the adoption of standardized load limits that minimize total transport costs and harmonized overload control systems that effectively regulate road transport operations. Overload control will be undertaken in a holistic and integrated manner with an emphasis on cooperation and partnership rather than confrontation between road authorities and transporters.⁷⁴

108. **Output and Performance-Based Road Contract (OPBRC) will be developed to increase the efficiency and effectiveness of road asset management and maintenance.** This type of contract significantly expands the role of the private sector, from the simple execution of works to the management and conservation of road assets, as the same contractor is responsible for the construction/rehabilitation of the road and maintenance over the entire period of the contract. OPBRC is meant to establish a longer-term PPP in which both parties have long-term commitments. The contractor's focus will not simply be on road construction, but on the integral management of the road asset over a period which should reflect the expected lifetime of the asset.

109. **The transparency of FONER combined with the definition, adoption, and implementation of a governance roadmap under Subcomponent 1.1 will contribute to the sustainability of the road investment by improving road sector governance.** The progress in this area will be closely monitored during implementation as it also constitutes a requirement to move forward in the approval of the second project of the SOP. The same approach will be undertaken in the aviation sector although the airport investment financed by the project is limited in scope and consists mainly of drainage works at Goma airport. In fact, various taxes such as airport passenger taxes and overflight fees that are directly collected by RVA are expected to be used more efficiently in maintaining and operating airports if public transparency exists at RVA. While the project is not the appropriate instrument to support a full package of governance actions recommended by the DRC SOE Governance Diagnostic Report (Table 5), the various external audits financed by the project would provide recommendations to the management and Board of RVA on how to improve the governance and the management of this SOE. A planned Development Policy Operation will provide further support to transparency, governance, and SOE reforms.

Table 5: Policy Recommendations of the DRC SOE Governance Diagnostic Report (P167918)

Legal Framework	Enforce OHADA (Organization for the Harmonization of Business Law in Africa) requirements on corporatized SOEs
	Clarify legal status of SOE assets
State Ownership Function	Assign ownership function to a single dedicated agency
	Carry out a comprehensive inventory of SOE and State equity stakes, and develop a database of SOE data
	Develop capacity for monitoring SOE reporting, external audits and implementation of recommendations arising from audits
Boards of Directors	Establish criteria for merit-based appointments
Transparency, Disclosure, and Controls	Require SOEs to publish their annual financial statements with audit reports on their website, or publish these on government's website
	Require ownership entity to publish annual aggregate report on SOE portfolio
	Remove duplication between statutory and external audits

⁷⁴ ⁷⁴ European Commission Infrastructure Seminar, Addis-Abbaba, October 2013
<https://europa.eu/capacity4dev/file/16092/download?token=fwzJq2zj>



110. **With the expected improvement in the transparency of FONER and RVA, the institutionalization of a platform for policy dialogue will allow for the periodic monitoring of the road and airport maintenance budget and the detailed allocation of road and airport maintenance resources.** Any gaps in maintenance budget and in maintenance activities will be identified through this platform. Corrective action plans will be proposed, discussed, and adopted using the outcomes of the various technical assistance under Component 1. This platform will allow the World Bank to periodically assess and discuss with the Government of DRC on the existing maintenance budget, the rationale behind the allocation of maintenance resources, the periodicity and scope of the maintenance of the transport infrastructure improved by the project, and the solutions to any identified gaps.

111. **The sustainability of the fiber optic infrastructure will be ensured through PPP.** The operation and maintenance of the fiber optic infrastructure, where installed, will be awarded to private telecom operators following an open and competitive selection process. Depending on the type of financing arrangement, the PPP contracts will be managed by the public company SOCOF, as part of its mandate or the Regulatory Authority of Post, Telecommunications, and ICT (for example with regards to USF-type related contracts. Empty ducts (without fiber optic) will be maintained by SOCOF. The model for SOCOF's operation, maintenance and commercialization of ducts and fiber will be defined in the business plan suggested in subcomponent 1.3.

IV. PROJECT APPRAISAL SUMMARY

A. Technical and Economic Analysis

Technical Analysis

112. **The proposed project has three main technical aspects:** (i) focusing on road and airport investments in areas with the maximum number of poor people to ensure inclusion and to improve their access to basic services and economic opportunities; (ii) ensuring complementarity and synergy with other partners' interventions; and (iii) using the lessons learned from past and on-going transport projects in DRC particularly Pro-Routes and the feedback received from the different stakeholders to reduce implementation and supervision risks.

113. **Through road upgrading, focused aviation safety improvements, and fiber optics infrastructure, the project will provide transport access and connectivity in both the Eastern and the Kasai regions⁷⁵, two priority geographic areas of the DRC in the CPF.** Both have strong economic development potential but are also home to a high number of poor people and represent conflict/fragility hotspots. In the Kasai region, the provinces of Lomami and Kasai Oriental are among the provinces with the highest number of poor people in DRC due to poor connectivity and low level of infrastructure investments. In the Eastern region, there is also a high number of poor people but concentrated in more dynamic areas such as cities along the eastern border in the province of North-Kivu. By intervening on the main road corridors, which serve as the backbone of the road network in these two geographic areas, and by providing some funding to Goma airport in Eastern DRC which can be connected with Kinshasa by air transport only, the proposed project will improve accessibility and connectivity to the highest concentration of poor people in very isolated areas.

114. **While the project will finance almost the same activities in Eastern and Kasai regions, implementation will consider the contextual differences between and within these two regions.** For example, Eastern DRC has a

⁷⁵ The Eastern region includes the provinces of Ituri, North-Kivu and South-Kivu; the Kasai region includes the provinces of Kasai, Kasai Central, Kasai Oriental, Lomami, and Sankuru (the latter is not part of the provinces targeted by the project).



very acute conflict and insecurity situation, but a more vibrant and engaged civil society, higher presence of non-government organizations, and private sector partners. Therefore, a Security Management Plan will be a key document in implementing and delivering activities in Eastern DRC. Kasai currently has a lower level of conflict (mostly local level, land disputes) but has historically suffered from prolonged isolation leading to decade-long neglect and underdevelopment, low numbers of non-government organizations (primarily humanitarian and not development orientated) and limited private sector presence and capability. Local capacity building and institutional strengthening are essential during project implementation.

115. The roads will be able to withstand up to 200 trucks per day with a load of 13 tons per axle. This is based on the standards adopted within the East African Community (EAC) and on the existing and forecasted vehicle traffic. Plain concrete will be laid on highly vulnerable road sections while either asphalt concrete or double surface dressing will be used on the remaining road sections.

116. The project will support the first full implementation of axle load control in DRC where overloaded trucks must unload and pay fines. In fact, heavy goods vehicle overloading is a serious problem across much of Sub-Saharan Africa. Such overloading not only significantly accelerates the rate of deterioration of road pavements but, when coupled with inadequate funding for road maintenance, it contributes significantly to poor road conditions and high transport costs. The indicative cost of overloading in East and Southern Africa has been estimated at more than US\$4 billion per annum. This exceeds the amounts being spent on road rehabilitation. Therefore, unless the problem is tackled head on, it will negate the expected benefits from the huge amounts of resources that countries and donors are investing into improved road infrastructure across the continent. The cost associated with vehicle overloading can be avoided through effective control measures.⁷⁶

Economic Analysis

117. The Highway Development and Management Model (HDM-4) was used to undertake the economic evaluation of the targeted roads. HDM-4 simulates life cycle conditions and costs and provides economic decision criteria for multiple road design and maintenance alternatives. The approach used is the cost-benefit analysis of 'with project' or 'without project' scenarios. In the 'with project' scenario, the project improvements comprise upgrading the earth road to paved road standards. Routine maintenance to keep the road passable constitutes the 'without-project' scenario. The analysis is carried out based on homogenous road sections in terms of physical characteristics, traffic, and road conditions. Transport costs consist of the cost of upgrading and maintaining the road infrastructure and the user cost of operating vehicles. The user cost of operating vehicles includes vehicle operating costs (fuel, tires, depreciation, etc.), travel time costs for passengers and freight due to road conditions and traffic congestions, economic costs of road crashes (loss of life, injury to road users, damage to vehicles and roadside objects), and the costs of social and environmental effects comprising of vehicle emissions, energy consumption, and traffic noise. The main economic benefits are savings in vehicle operating costs, travel time costs, road safety costs, and maintenance costs resulting from the road improvements. Project benefits also include savings due to reduction in crash costs and carbon emissions. The upgraded road corridors will result in reduced travel time and vehicle operating costs, thus reducing travel costs.

118. The cost-benefit analysis indicates that the Economic Internal Rate of Return (EIRR) for the paving of Mbuji-Mayi Kabinda road (150 km of which 30 km are concrete roads), Kabinda Mbanga road (130 km), and Butembo Kanya-Bayonga road (160 km) are respectively 13 percent, 15 percent, and 17 percent when a discount

⁷⁶ Guidelines on Vehicle Overload Control in Eastern and Southern Africa – Sub Saharan Africa Transport Policy Program, March 2010
<https://openknowledge.worldbank.org/handle/10986/17778>



rate of 12 percent is used. A sensitivity analysis has been carried out by increasing or decreasing two factors. For the scenario with a 20 percent increase in construction costs, the EIRR are respectively 10 percent, 13 percent, and 14 percent. For the scenario with a 20 percent decrease in traffic volume, the EIRR is 12 percent, 14 percent, and 14 percent. If both scenarios are combined, the EIRR are respectively 9 percent, 12 percent, and 12 percent.

119. **A Greenhouse Gas (GHG) analysis for Low Emissions Transport was carried out using an ex-ante, bottom-up approach.** The methodology used considers the source of emissions to be associated with usage of transport infrastructure. The methodology does not include emissions from construction of infrastructure nor emissions from production and transport of construction materials as these are considered marginal compared to emissions from usage of infrastructure during the economic life of the project. The emission type considered is CO₂ as it is considered to dominate GHG emissions from usage of transport infrastructure during the economic life of project. CO₂ emissions from vehicle operations are a direct function of the quantity of fuel used and its carbon content. Fuel consumption is in turn a function of distance travelled, travel demand, mode share, vehicle fuel economy, occupancy, load factor and speed. The carbon content of the fuel depends on the fuel type.



120. The methodology uses the HDM-4 model to determine baseline emissions (generated in the without-project scenario during the economic life of the project) and gross emissions (generated in the with-project scenario during the economic life of the project). The resultant net emissions due to the project is the difference between gross-emissions and baseline emissions during the economic life of the project.

121. **Use of Shadow Price of Carbon in the economic analysis:** World Bank corporate requirements recommend that projects with approved GHG accounting methodologies present a project economic analysis that includes a low and high shadow price of carbon. The shadow prices of carbon used are consistent with the prices of the high-level commission on carbon prices report led by Stiglitz and Stern and with the core objective of the Paris Agreement of keeping temperature rise to below 2 degrees (Table 6).

Table 6: Shadow Price of Carbon values

Low Shadow Price of Carbon values	High Shadow Price of Carbon values
US\$40/tCO ₂ e in 2020	US\$80/tCO ₂ e in 2020
US\$78/tCO ₂ e in 2050	US\$156/tCO ₂ e in 2050

122. CO₂ cost was determined by multiplying the net emissions “With” and “Without” the project with the shadow price of CO₂ per ton. The resultant EIRR shows that the project remains economically viable with either addition of low or high Shadow Price of Carbon on the emissions generated (Table 7).

**Table 7: Economic Internal Rate of Return (EIRR) with Shadow Price of Carbon**

	Without Shadow Price of Carbon	With Low Shadow Price of Carbon	With High Shadow Price of Carbon
Mbuji-Mayi Kabinda road	13.0%	13.2%	13.4%
Kabinda Mbanga road	15.4%	15.6%	15.8%
Butembo Kanya-Bayonga road	16.9%	16.9%	16.9%
Overall Project	15.1%	15.2%	15.3%

123. These roads rehabilitation can be considered as climate change mitigations since the gross GHG emissions with project are less than those without project resulting in negative net GHG emission. Tables 8 and 9 show overall gross and net GHG emissions with the project are lower than those without project.

Table 8: CO₂ Emissions Over Evaluation Period (tons)

	Gross Without Project	Gross With Project	Net
Mbuji-Mayi Kabinda road	198,670	144,811	-53,859
Kabinda Mbanga road	249,213	186,284	-62,929
Butembo Kanya-Bayonga road	56,269	42,327	-13,942
Overall Project	504,153	373,423	-130,730

Table 9: CO₂ Emissions Per Year (tons per year)

	Gross Without Project	Gross With Project	Net
Mbuji-Mayi Kabinda road	10,456	7,622	-2,835
Kabinda Mbanga Lubao road	13,116	9,804	-3,312
Butembo Kanya-Bayonga road	2,962	2,228	-734
Overall Project	26,534	19,654	-6,881

Gender

124. The project will seek to reduce some of the gender gaps identified. A gender analysis was prepared for the project to review possible gender gaps, which are summarized in Box 4. While there are many gender issues this project is addressing, the project will specifically address women's gaps in livelihoods. The project will seek to support existing local initiatives for rural women and girls in the project areas that promote resilience and empowerment of women. One such program is the Purchase for Progress (P4P) program, implemented in partnership by World Food Program and Food and Agricultural Organization in the eastern part of DRC. The program focuses on empowering 12,500 families of smallholder farmers, with a special focus on women, who receive training on how to run and grow their businesses, from planting to harvest or how to carry out other income-generating activities. Women also receive arithmetic and literacy training and support so that they can sell products like baked goods, livestock, or charcoal. The program has shown success in women being able to make a profit from their agricultural work, being able to reinvest in other activities or improve their living conditions, and in playing a leading role in their communities. The project team will connect P4P implementers to implementers of a novel evidence-based "personal initiative" training, so that an emphasis on building future-oriented behavior and developing an entrepreneurial mindset can be embedded in the P4P program. Recent Africa



Gender Innovation Lab research from Mozambique shows that this training has been highly beneficial for female farmers, enhancing the effectiveness of agricultural extension program and leading to good farming practices. The training also helped foster women's entrepreneurship outside the farm, doubling the share of women running profitable off-farm businesses and generating important additional source of income to households. Moreover, a similar "personal initiative" training for entrepreneurs in Togo was found to be substantially more effective than traditional business training.

125. In addition to the P4P program, the project team will offer support to minimize gender-based barriers that may prevent women from benefitting from the project on an equal footing with men, based on the following findings:

- (i) Research shows that in most countries, female entrepreneurs in male-dominated sectors out-earn female entrepreneurs in female concentrated sectors.⁷⁷ However, a myriad of factors including social norms, unconscious biases, lack of exposure to male-dominated sectors, and time and capital constraints hold female entrepreneurs back from entering more profitable male-dominated sectors. The project will create new job opportunities for women in road rehabilitation by tackling some of these constraints that could help female workers enter into male-dominated sectors, including, in this case, the construction sector. Program options under consideration include (i) increasing women's exposure to male-dominated sectors by encouraging spousal support, apprenticeships, role models and mentors (ii) enhancing women's skills and training by providing adequate training in the construction and roads sector, increasing their information on returns to working in male-dominated sectors and enhancing women's education and socio-emotional skills in general.
- (ii) Women spend significantly more time than men on domestic and caregiving responsibilities, which could limit their ability to benefit from project activities. Preliminary results from an Africa Gender Innovation Lab pilot of community-managed childcare centers in the DRC's Central region found positive results on women's labor force participation and income because of increased access to childcare services. The task team will consider connecting women in the project area to childcare arrangements that could help female farmers in the field, female wage workers participating in road rehabilitation and other women (e.g., female engineers) who benefit from training in male-dominated sectors. These childcare arrangements may include mobile creches.
- (iii) A major barrier to women's economic empowerment in the DRC is their low control over earned income.⁷⁸ Even if women witness increased access to transport and jobs related to road construction and maintenance, they will not fully benefit if resulting income increases are expropriated by their husband or other kin. The project team will increase the availability of private and secure savings mechanisms for women in participating communities, either through P4P or by partnering with local financial institutions.
- (iv) In addition, for women to be directly involved in the project, it is critical to ensure their safety in the workplace. Measures to strengthen women's safety include safe transport, reporting and redress mechanisms sensitive to SEA/SH complaints, and gender sensitization for men in the relevant project activities.

⁷⁷ World Bank. 2022 (forthcoming). "Breaking Barriers: Female Entrepreneurs Who Cross Over to Male-Dominated Sectors." Manuscript. World Bank, Washington, DC.

⁷⁸ World Bank. 2021. Women's Economic Empowerment in the Democratic Republic of the Congo: Obstacles and Opportunities. World Bank, Washington, DC.



126. To measure the impact of the specific interventions that will benefit women, the project includes an indicator in the results framework that will monitor: *Number of women with improved incomes due to improved skills and training received through the project gender empowerment activities*, with a baseline of 0 and expected end target of 4,400 women.

Box 4: Gender Gaps in DRC

The Gender Development Index in DRC is 0.845 (2019)⁷⁹, indicating a women's human development at about 84 percent of that of men, and the value of the Gender Inequality Index of the DRC, 0.617 (2020), which is among the worst five in African countries, also denotes high gender inequality.⁸⁰ Gender disparities remain high primarily due to low indicators on education and health. Articles 43 and 44 of the Constitution stipulate free obligatory education and the eradication of illiteracy. However, girls often drop out of school because of early marriage and pregnancy, which leads to a gender gap in education, also resulting in imbalanced power relations at home, and reproductive health problems.⁸¹ Compared to men, women's literacy, and especially that of young women, is low. In 2015, the enrollment ratio in secondary school was 56.26 percent for boys versus 25.98 percent for girls. For the population aged 15-24, 90.96 percent of males were literate versus 79.71 percent of females. The enrollment and literacy gaps are even higher among the poor and in rural areas.⁸² The legal marriage age is 18 but it is not uncommon for girls in rural areas to get married before reaching 15 years of age. It is estimated that 20 percent of the women aged 15-19, who live in rural areas, are mothers.⁸³

Women's labor is concentrated in the agriculture and the informal sectors. Their participation in technical training is low, and gender norms limit their access to productive assets such as land and capital. For women's business start-ups, in addition to access to skills training and capital, comprehensive support, such as a follow-up service by a mentor or a role model, is important.⁸⁴ Progress in women's social participation is not the same in the urban and the rural areas, or in the east and the west. The young generation in the cities has more gender-equal ideas concerning education and occupations while maintaining a gendered division of labor at home. Because of housework, long distances to travel to school, and sexual harassment by teachers, marriage is prioritized for girls, and they often do not finish secondary education. Schools do not allow pregnant students to come to school.⁸⁵

The issue of gender-based violence against women in the DRC, and especially sexual violence during conflicts, is widely known. The number of incidents is decreasing because of the efforts made by the government and the international community. The number of incidents of sexual violence committed by the army and the police, which have long been a great concern, is also declining. However, violence, including intimate partner violence, is still prevalent.⁸⁶ The United Nations Population Fund (UNFPA) reported an increase in cases of GBV in the second quarter of 2020, compared to the first quarter of 2020 and 2019, suggesting a connection with the COVID-19 pandemic and stay-at home policy measures. This is supported by an impact analysis of the COVID-

⁷⁹ United Nations Development Program – Human Development Reports – Gender Development Index Data 2019

⁸⁰ Country Gender Profile. DRC. Final Report. Japan International Cooperation Agency (JICA). 2017. IC Net Limited March. Accessed through following link: https://www.jica.go.jp/english/our_work/thematic_issues/gender/background/c8h0vm0000anjqj6-att/drc_2017.pdf

⁸¹ JICA. 2017.

⁸² USAID/DRC COVID-SPECIFIC GENDER ANALYSIS. 2020. USAID ACCELERE!1 Distance Learning. September 24. Accessed through following link: <https://banyanglobal.com/wp-content/uploads/2020/10/USAID-DRC-COVID-Specific-Gender-Analysis.pdf>

⁸³ JICA. 2017.

⁸⁴ JICA. 2017.

⁸⁵ JICA. 2017.

⁸⁶ USAID. 2020.



19 pandemic in the DRC from the *Projet de Services D'Appui sur le Terrain*, Field Support Services Project. UNFPA's civil society organization partners reported an increase in intimate partner violence. In Kasai province, girls are reported to face a high risk of early marriage due to the closing of schools. Girls and boys, in particular from the most marginalized groups, likely lack access to electricity and devices such as radio, television and computers. However, girls experience greater challenges in accessing the lessons by radio, reflecting limited access to radios and electricity as well as their increased water collection and other domestic responsibilities. Increased financial pressures may also force women and girls into exploitative relationships to meet basic personal and household needs.

B. Fiduciary

(i) Financial Management (FM)

127. As part of project preparation, a comprehensive FM capacity assessment of CI as the implementing agency was undertaken during appraisal. CI has the staff, experience, and skills to manage projects financed by the World Bank. The conclusion of the assessment is that financial management arrangements within the PIU are acceptable and satisfy the World Bank's minimum requirements as per World Bank Directive and guidance. However, the overall residual risk rating of the project is assessed as Substantial. Given the project complexities, CI would need to establish and continuously improve its capacity with qualified staff and systems. To that end, before effectiveness, CI will be required to develop an adequate project implementation manual. Additional information on the FM assessment is provided in Annex 1.

(ii) Procurement

128. Project procurement activities will be carried out in accordance with the World Bank's procedures specified in the World Bank Procurement Regulations for IPF Borrowers: Procurement in Investment Project Financing Goods, Works, Non-Consulting and Consulting Services dated July 2016 and revised November 2017, August 2018 and November 2020, and any other provisions stipulated in the Legal Agreement. In addition, the implementation of procurement will be in accordance with the "Guidelines on preventing and combating Fraud and Corruption" stipulated in 2.2a of Annex IV of the Procurement Regulations.

129. Goods works and non-consulting services will be procured in accordance with the requirements set forth or referred to in the "Section VI. Approved Selection Methods: Goods, Works, and Non-Consulting Services of the Procurement Regulations", and the consulting services will be procured in accordance with the requirements set forth or referred to in "Section VII. Approved Selection Methods: Consulting Services of the Procurement Regulations".

130. A PPSD has been prepared with World Bank support aiming to ensure that procurement activities are packaged and prepared in such a way to expedite implementation to meet the project's objectives. The PPSD provides the basis and justification for procurement decisions, including the recommended procurement approaches for the project that will be reflected in the Procurement Plan covering the first 18 months of project implementation which was discussed and approved during negotiations. The PPSD identified procurement risks and made recommendations regarding how these risks and their impact could be minimized.

131. The procurement activities will be carried out by CI, a PIU established in the Ministry of Public Civil Works and Infrastructures. CI has intensive experience acquired through preparation and implementation of more than



ten infrastructure projects financed by donors including World Bank. CI has a Procurement Unit led by an experienced Procurement Specialist and comprised of two Procurement Specialists and two Procurement Assistants. A procurement capacity and risk assessment of CI has been carried out by the World Bank. The review included procurement systems such as procurement legislation, procurement organization and staffing, procurement strategies, procurement operations, procurement performance monitoring and measurement, and procurement control and oversight mechanisms. The review has shown that CI has the required procurement capacity and system to implement the project.

132. The detailed engineering studies and the bidding documents of the 280 km Mbuji-Mayi Kabinda Mbanga road as well as the 160 km Butembo Kanya-Bayonga road have been prepared in parallel with the Environmental and Social Impacts Assessment. Additional information on procurement is provided in Annex 1.

C. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	Yes
Projects in Disputed Areas OP 7.60	No

133. The project will improve or replace around 100 existing water wells or existing water supply systems benefiting the local population and reducing gender-based violence risks. The investments will not increase the number of water wells nor the capacity of water supply systems. As such, the project will tap into groundwater which may be connected to the tributaries of the Congo River, which is considered an international waterway as defined in paragraph 1 of the Policy. Given that the scope of these investments is small-scale and concerns existing infrastructure, the volume of water which will be taken from the groundwater will remain unchanged. Consequently, the impacts on quantity and quality of groundwater which may be connected to the tributaries of the Congo River are negligible. The project will not adversely change the quantity or quality of water flows to other riparians and will not be adversely affected by the other riparians' possible water use. The memo seeking the exception to the notification requirement under OP7.50 "Projects on International Waterways" has been approved on February 13, 2022.

D. Environmental and Social

134. The project is implemented under the Environmental and Social Framework (ESF). The following Environmental and social standards (ESSs) are relevant to the proposed investment: ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, ESS7, ESS8 and ESS10. The main considerations to be targeted (grouped by relevant ESS) are described in the ESRS.

(i) Environment

135. **The environmental risk rating is High** based on (i) magnitude and size of planned physical works (paving of Mbuji-Mayi Kabinda Mbanga brownfield road (280 km) including installation of ICT infrastructure within the road right of way; paving of Butembo-Kanya-Bayonga brownfield road (160 km); rehabilitation of bridges, structures, and roads (up to 180 km) to be defined during implementation; drainage works with storm water channeled into Lake Kivu; construction and operation of accommodation camps and induced access roads; construction and operation of crusher, concrete batch and asphalt plants; extraction of raw materials needed for



the construction), (ii) the potential impacts on biodiversity, including on protected species and areas. One of the road sections to be paved passes near the Virunga National Park, which is a UNESCO World Heritage site and a Ramsar wetland site; (iii) potential downstream environmental implications that may arise if technical assistance activities under component 1 (adoption of a strategy for private sector participation in transport investment, adoption of an axle load strategy, adoption of strategy for climate resilient road and bridge asset management, etc.) lead to future investments; (iv) client's capacity to identify and manage E&S risk during construction and operations; and (iv) key environmental risks and impacts.

136. Key environmental risks and impacts are anticipated to result mainly from Components 2 and will include: habitat alteration and fragmentation with 10,438 trees to be cut down, storm water, soil erosion and runoff, hazardous materials and wastes, noise and vibration, air emissions, wastewater, surface and ground water quality, increased water abstraction, traffic safety, fill of wetlands, removal of graves, and workplace safety including Unexploded/Abandoned Ordinance risk. Indirect and cumulative impacts include increasing pressure on native environment and deforestation from changes in accessibility caused by the project. During operation, other E&S risks will include erosion from road cuts and fills risk of landslides; accident risks associated with traffic that may result in spills, injuries or loss of life, and OHS risks associated with maintenance works.

137. To manage E&S risks and impacts, the proposed project includes a dedicated component 3, has earmarked a E&S budget under subcomponent 3.1, and is dedicating subcomponent 3.2 to capacity building in forest preservation and natural resources management. The following instruments have been prepared: an Environmental and Social Management Framework (ESMF), including an annex on SEA/SH Action Plan (SEA/SH AP); and two ESIA/ESMP reports for Mbuji-Mayi Kabinda Mbanga brownfield road (280 km), and Butembo Kanya-Bayonga brownfield road (160 km) under Component 2, were disclosed in their preliminary versions on January 28, 2022. They have been updated, consulted, and redisclosed in-country and in the World Bank external website on April 21, 2022 (ESIA/ESMP reports for Kabinda Mbanga road and for Butembo Kanya-Bayonga road) and on May 4, 2022 (ESMF and ESIA/ESMP report for Mbuji-Mayi Kabinda). The ESMF covers all the project's components and addresses risks and impacts that will become known once site-specific activities and detailed engineering are available including for ancillary works (quarry sites, asphalt plant, concrete batch plant, borrow pits, crusher plant, worker's camp, etc.) that are unlikely to be determined until implementation. Terms of reference and final deliverables for any technical assistance, including feasibility studies to be carried out under the project, will be prepared in form and substance satisfactory to the World Bank and considering the World Bank's environmental and social standards (ESSs) relevant to the project.

(ii) Social

138. **The social risk rating for this project is High.** Key social risks include: (i) the risk of SEA/SH from project workers towards hosting communities and other workers; (ii) resettlement or other temporary or permanent involuntary displacement resulting from project related land acquisition; (iii) risks associated with the fragility and insecurity (driven by conflict and also remoteness) concerns in the targeted provinces, (iv) labor issues, and (v) the potential for social exclusion and impacts on members of vulnerable groups, including indigenous communities in the project's catchment area. ESIA's identifying these risks and proposing mitigation measures for the relevant roads have been prepared by the Client, publicly consulted upon, and disclosed. Similarly, the Client will prepare an Indigenous Peoples Framework that will provide guidance on mitigation and inclusive measures to be adopted by the project.

139. The ESIA's and ESMP's will also include an assessment and measures to manage public health impacts that



will potentially be caused by the project, such as sexually transmitted diseases, and measures to address SEA/SH risks. The ESIA's will also consider current measures related to the Ebola response in particular in the Eastern part of DRC, as well as measures related to the COVID-19 response. The project will include specific interventions (under subcomponent 3.1) aimed at strengthening the overall implementation of E&S activities in accordance with best global standards.

140. A Stakeholder Engagement Plan (SEP) was prepared and disclosed in-country on March 30, 2022 and in the World Bank's external website on May 10, 2020.

141. The Borrower has prepared Labor Management Procedures (LMP) which outline how project workers will be managed in accordance with the requirements of national law and the ESS2. The LMP assessed key potential labor risks and includes measures to ensure that labor is provided on a voluntary basis and will further ensure the health and safety of workers, including prevention of sexual abuse and harassment among workers. The LMP also provides details about grievance redress mechanisms for workers and the roles and responsibilities of contractors and PIUs in managing ESS2, including procedures to denounce SEA/SH incidents. The project will require contractors (both local and international) to develop their own labor management procedure that is acceptable to the project and the World Bank. The provisions will apply to all workers on the project, which is expected to include direct workers, contracted workers, primary suppliers, and community workers (full time and part time). It will also be the responsibility of the contractor to ensure that all workers are fully aware of the terms of employment, remuneration, and grievances and other relevant factors as per the ESS2 and relevant national laws. Per the national laws, no child under the age of 18 will be engaged in high impact construction activities, and no children under the age of 16 shall be employed for low risk/impact activities. The training of the workers and the signing of codes of conduct (COC) will be a condition of employment for all temporary or full-time workers. These COC will include provisions for addressing and sanctioning SEA/SH behaviors and includes prohibitions against sexual activity with anyone under the age of 18. The project will ensure that regular training in local languages is conducted by the contractor for workers on labor provisions, codes of conduct, GBV, including SEA/SH risks and consequences, and the grievance redress procedures. The project level workers' GRM will manage employer/employee related grievances, including but not limited to misconduct, wages, overtime, injuries/accidents, worker relations with neighboring communities, as well as SEA/SH incidents.

142. There are security risks in the project regions of North Kivu, Kasai Oriental and Lomami, which are detailed in the World Bank's own Security Due Diligence Assessment and highlighted in the ESMF, along with proposed mitigation measures that will be fleshed out in site-specific Security Risk Assessments /Security Management Plans to be prepared by the client during project implementation. These range from (i) potential armed attacks against project personnel, assets, and beneficiaries, (ii) criminal aggression/armed robbery, (iii) kidnapping/abductions, (iv) civil unrest/protests, (v) theft/petty crime, (vi) harassment by security personnel or by non-state armed groups including SEA/SH, and (vii) road accidents.

(iii) SEA/SH Risks

143. **The SEA/SH rating for this project is High.** In DRC, prevalence of GBV, including intimate partner and sexual violence, is higher than the regional average at 50.7 percent and 27 percent⁸⁷, respectively. The project implementation areas will cover humanitarian settings, thereby enhancing SEA/SH risks, in addition to difficult access to project zones and limited supervision of female and male workers as well as actions for beneficiaries. Finally, the project shall entail major infrastructure and rehabilitation works, requiring foreign qualified workers,

⁸⁷ DRC Demographic and Health Survey, 2013–2014.



and contracting military support during the implementation of the activities, which will increase the risk of SEA/SH because of the large influx of workers and contractors from outside host communities. The GBV assessments carried out by the project during the preparatory phase have shown that one of the highest risks is the population's lack of knowledge about SEA/SH, which increases the population's vulnerability, in addition to the poor presence of authorities in some project intervention areas, which favors impunity for alleged aggressors and extrajudicial agreements between survivors and perpetrators that put survivors at risk and do not favor redress of incidents of abuse. Several risk mitigation measures will be put in place to adequately prevent, mitigate, and respond to SEA/SH risks and are outlined under the project's SEA/SH Action Plan, which has been integrated into the ESMF and includes the recommendations of the World Bank's SEA/SH Good Practice Note.⁸⁸ Among other measures, the SEA/SH Action Plan includes an accountability and response framework and an awareness-raising strategy, which describes how workers and local communities will be sensitized to GBV, including SEA/SH risks and consequences, worker's responsibilities under codes of conduct, and how to report cases of SEA/SH to the GRM (see Annex 3 on SEA/SH risk and associated mitigation measures for the project).

144. The project might result in temporary and permanent resettlement of populations, or in important physical displacement and economic impacts, and RAPs will be prepared and executed where appropriate. Indigenous Peoples' Plans will be prepared in project zones where there is presence of indigenous communities.

145. For SEA/SH related incidents, the GRM operator will be trained on how to conduct intake of SEA/SH cases safely and confidentially and under a survivor-centered approach. The appropriate channels for managing grievances, which will be safe, confidential, and accessible for SEA/SH survivors and complainants, will be set up. The project will likewise partner with local service providers to ensure that quality basic services are provided to survivors (these include, at a minimum, medical, psychosocial, and legal assistance).

146. In addition to the two-tier GRM to be developed, which will include the management of SEA/SH grievances, the project also will support the hiring of a Third-Party Monitor (TPM) to supervise implementation of the SEA/SH Action Plan. As well, this TPM will verify that measures to prevent and respond to SEA/SH risks along the project intervention areas are in place and functioning and will help provide early warning of problems that may surface. In addition to the TPM, the project will also recruit a GBV expert to oversee SEA/SH Action Plan implementation and develop appropriate SEA/SH-related indicators following best practices to ensure adequate monitoring of risk mitigation measures.

(iv) Citizen Engagement and Project Grievance Redress Mechanism sensitive to SEA/SH complaints (SEA/SH GRM)

147. Local communities and stakeholders were consulted during project preparation. The project has in place a GRM that will be monitored on an ongoing basis and include an online grievance reporting system via the Cellule infrastructures website. During project implementation, grievances arising due to project financed activities will be handled by the relevant village mediation committee, working in collaboration with the grievance focal person appointed by the contractor, or the environmental/social development specialist of CI. Those project-related issues (including land acquisition and resettlement) which cannot be resolved at the community level, will be referred to the district resettlement committee. The project will track grievances and provide the World Bank with a quarterly report on project grievances received with gender disaggregate data and information on how grievances were addressed.

⁸⁸ Environmental & Social Framework for Investment Project Financing Operations – Good Practice Note – World Bank, February 2020
<http://pubdocs.worldbank.org/en/741681582580194727/ESF-Good-Practice-Note-on-GBV-in-Major-Civil-Works-v2.pdf>



148. Consultations with local communities and stakeholders will continue throughout the implementation of the project to ensure communities are adequately informed and their needs, including women and youth, are addressed. Women and girls will continue to be consulted in safe and enabling environments, such as in sex-segregated groups and with female facilitators. Consultation will focus on understanding women's and girls' risks and vulnerabilities, as well as their well-being, health, and safety concerns. Consultations will not seek to interview survivors or solicit information on personal experiences of abuse or violence; they will rather be focused on the generalized risks that women and girls face in the project host communities. Public consultations and stakeholder engagement will be conducted in a manner that follows national and local COVID-19 restrictions in place by the government and minimizes risks posed by conducting public meetings. The project will review constraints and propose diversified means of communications based on the type and category of stakeholders and where physical interaction can be challenging and will be tailored in a sensitive and culturally appropriate manner, especially for women and other vulnerable groups. The project will follow World Bank guidance on COVID-19.⁸⁹ A citizen engagement indicator has been included in the results matrix (Share of GRM complaints and consultation feedback addressed within GRM risk timeline). The project GRM will include specific protocols for handling any allegations of SEA/SH in an ethical and confidential manner, including a referral pathway for survivors facilitating access to holistic care. This will follow procedures based on a survivor-centered approach and will prioritize survivor's safety, confidentiality, and well-being at all times.

V. GRIEVANCE REDRESS SERVICE

149. Communities and individuals who believe that they are adversely affected by a World Bank-supported project may submit complaints to existing project-level grievance redress mechanisms or the World Bank'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 World Bank's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of World Bank 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 World 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/en/projects-operations/products-and-services/grievance-redress-service>. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VI. KEY RISKS

150. **The overall implementation risk of the project is assessed as high. The project will be implemented in highly fragile, conflict affected and remote areas, with limited implementation and supervision capacity.** DRC is emerging from a period of protracted violence and political instability that has deeply affected the country's economic and social foundations, and in the cases of the Kasais, exacerbated decades of neglect and underdevelopment. The last road improvement program financed by the World Bank in the DRC (Pro-Routes) has been confronted with difficult implementation challenges, including supervision failures and GBV.

⁸⁹ World Bank. March 2020. Technical Note: Public Consultations and Stakeholder Engagement in World Bank-supported operations when there are constraints on conducting public meetings.



151. **Although undertaking a project in a context of governance challenges, insecurity and conflict, weak capacity, and inherent fragility and GBV is risky and challenging, the risks of “doing nothing” are higher because the current fragility, instability, insecurity, and conflict are likely to intensify further without connectivity and development.** Reform-oriented actions at the project and government levels are providing the foundation of the project risk mitigation measures. Flexibility has been introduced in the design to make the project adaptable to the risky and volatile environment where it will operate.

152. **Residual project risk remains High although risk mitigation measures have been developed.** The medium- and long-term outcomes of the project is highly dependent on continued political stability, adequate security and improved governance. The detailed risk assessment is summarized below:

- **The Political and Governance risk is High.** Political uncertainties have a negative impact on the investment climate, the decision-making process in government agencies, and overall security in the country. Governance challenges include the predominance of the extractive industry, weak state institutions, corruption, and dysfunctional public services. The fragility and conflict dynamics also vary by province and in turn this may make it challenging to attract contractors and consultants needed for project implementation. In addition, the presidential election which is expected to take place in 2023 may exacerbate political tension. These risks are largely beyond the World Bank’s immediate control and would be managed by the Country Management Unit (CMU) in coordination with the other development partners in the country. The broader World Bank portfolio in the DRC, including a Development Policy Operation supporting governance reforms towards greater transparency and institutional strengthening (P177460) and the ENCORE project aimed at investing in the strengthening of DRC’s governance institutions (P171762) will help mitigate the risks.
- **The Macroeconomic risk is Substantial.** DRC’s economy remains vulnerable to commodity price movements and growth performance of its major trading partners which might be disturbed by geopolitical conflicts and a resurgence of the pandemic. The economic consequences of the Ukraine conflict and associated sanctions on Russia, through rising global food costs and higher oil prices, could exert strong pressure on inflation and on households’ consumption⁹⁰, raising the risk of spillovers to social tensions. Further oil prices increase may lead to an increase in road construction costs due to more expensive bitumen products. Risks at the macroeconomic level are mitigated by the projected strong demand for DRC’s export commodities, which are critical for the global transition towards lower carbon mobility and have experienced large price gains in 2021 and 2022. Project-level mitigation measures include maximizing the use of locally available materials as well as the use of concrete road instead of asphalt road if the price of bitumen products escalates.
- **Sector Strategies and Policies risk is Substantial.** This is because poor governance and reluctance to reforms (as explained in the RRA) will take time to overcome. Given that the reinforcing of axle load control requires transformational change, its implementation may not materialize. Mitigation measures will include the various technical assistance under Component 1 as well as the structuring of the SOP into three projects in which the subsequent project will depend on the performance of the previous project.
- **Institutional Capacity for Implementation and Sustainability risk is Substantial.** This is because CI may be overstretched by the demanding environmental and social management system of the project and by their involvement in other projects. This risk has been well managed so far by allocating additional human resources when needed but does impact on the overall cost of project implementation and supervision. However, additional support and better representation in the field would be provided as need be. Project

⁹⁰ DRC imports 60 percent of its wheat from Ukraine and Russia, which represent 9 percent of food imports.



implementation risks will be mitigated by limiting the geographical scope of the project and by providing increased project implementation support through the new regional World Bank liaison offices in Goma and Kananga.

- **Fiduciary risk is Substantial.** The overall financial management and procurement environment in DRC remains weak. This proposed project will benefit from measures already put in place under Pro-Routes, including recruitment of an accountant and an internal auditor to strengthen the finance, accounting and internal control team. The measures also concern procurement aspects as CI is empowered with a procurement unit with a seasoned procurement specialist complemented by a procurement assistant. A repository put in place under Pro-Routes will facilitate system management. Additional support will be provided as and when needed.
- **Environmental and Social risks are High.** This is because of the importance of tropical forests, natural resources, and biodiversity (one of the road sections is located near the Virunga National Park, which is a UNESCO World Heritage site and a Ramsar wetland site) in the project areas, the existence of vulnerable people and indigenous communities, the magnitude and size of planned physical works, the potential road safety issues, and the conflict and insecurity issues in some areas of the implementing zones. Similarly, contextual and project-specific drivers of risks make the risks of GBV, including SEA/SH, high. The proposed project will apply the new World Bank Environmental and Social Framework as well as the World Bank's SEA/SH Good Practice Note and will likewise apply all the lessons learned and reinforced mitigation measures from the Inspection Panel convened under the Pro-Routes project.
- **Stakeholder risk is Substantial.** This is because of the complex social dynamics in the project areas and the high vulnerability of the beneficiary communities and the physical remoteness of some of the areas. The social communication and consultation activities under sub-components 3.1 would mitigate this risk.
- **Other: The Security risk is High.** The country's volatile security and political situation can make ESF supervision and reporting at the institutional level a continuous challenge. The project will establish enhanced supervision protocols including to monitor any harm on communities, through strong grievance redress mechanisms, regular World Bank's supervision missions and field visits and the use of additional comprehensive mitigation measures that will rely on: (i) the framework agreement with MONUSCO for all World Bank projects in DRC involving military personnel for security protection; (ii) support from the local World Bank offices in Goma and Kananga; and (iii) and the use of innovative supervision instruments (GEMS, social media monitoring) allowing World Bank to supervise and monitor remotely and provide early detection of possible negative reports of project financed activities on communities and livelihoods. Additional mitigation factor also includes the support from the international community to the inclusive political dialogue

153. On SEA/SH, the following project-related risks were identified: (i) high risk of exposure to SEA/SH in areas of intervention, especially humanitarian areas; (ii) significant labor influx; (iii) contracting of security forces; and (iv) intervention areas that are hard to supervise, including difficulty in supervising female and male workers working in proximity. An assessment to identify risks related to GBV, including SEA/SH, has been launched in most of the intervention areas identified by the project. The results have shown a (i) low level of exposure to information on SEA/SH issues, including low level of awareness of SEA/SH among the population, (ii) low level of status of women, as exhibited in Kasai Oriental province where almost 66 percent of men and 72 percent of women still consider it "normal" for a woman to be abused by her husband when she goes out without telling him, neglects the children, argues with him, or refuses sexual intercourse, (iii) leaders' resistance to raising awareness about GBV, including SEA/SH, because it is against their own values, and (iv) high level of applying customary justice principles as a means of resolving GBV-related incidents. Additional information on SEA/SH and environment risks are provided respectively in Annexes 3 and 4.



VII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Congo, Democratic Republic of
DRC Transport and Connectivity Support Project

Project Development Objectives(s)

The Project Development Objective (PDO) is to provide resilient, safe, and sustainable connectivity in and between selected provinces in Kasai region and Eastern part of DRC, and to increase the transparency of FONER, RVA, and the Regulatory Authority of Post, Telecommunications, and ICT.

Project Development Objective Indicators

Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
to provide resilient, safe, and sustainable connectivity, and to increase transparency							
Reduction in travel time in the project areas (Percentage)		0.00	20.00	30.00	40.00		50.00
Percentage of project infrastructure integrating climate-resilient adaptation measures (Percentage)		0.00	40.00	60.00	80.00		100.00
Reduction in road crashes along the project roads (Percentage)		0.00	40.00	45.00			50.00
Increased broadband internet access as a percentage of the population in the project areas (percentage) (Percentage)		0.00	20.00	25.00	30.00		35.00
Share of new subscribers who are women		0.00					35.00



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
(Percentage) (Percentage)							
to provide resilient, safe, and sustainable connectivity, and to increase transparency							
Increase in the number of fiscal years when FONER accountability documents are publicly disclosed as a result of the project (Number)		0.00	1.00	2.00	3.00	4.00	5.00
Increase in the number of fiscal years when RVA accountability documents are publicly disclosed as a result of the project (Number)		0.00	1.00	2.00	3.00	4.00	5.00
Percentage of overloaded trucks along the targeted roads unloading excess charges (Percentage)		0.00	95.00				100.00
Increase in the number of fiscal years when the Regulatory Authority of Post, Telecommunications, and ICT accountability documents are publicly disclosed as a result of the project (Number)		0.00	1.00	2.00	3.00	4.00	5.00
Number of isolated or conflict-affected people benefitting from improved transport infrastructure (Number (Thousand))		0.00	200.00	250.00			300.00



Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	Intermediate Targets			End Target
			1	2	3	
Sectoral governance for improved connectivity						
Fully operational road safety database (Yes/No)		No				Yes
Completion of a climate vulnerability assessment of the targeted roads and airports (Yes/No)		No				Yes
Transport and digital connectivity improvement program						
Roads constructed (CRI, Kilometers)		0.00	110.00	220.00	330.00	440.00
Roads constructed - rural (CRI, Kilometers)		0.00				440.00
Roads constructed - non-rural (CRI, Kilometers)		0.00				0.00
Length of fiber optic deployed (Kilometers) (Kilometers)		0.00	110.00	220.00	330.00	440.00
Number of water wells rehabilitated, repaired, or replaced (Number)		0.00	25.00	50.00	75.00	100.00
Length of ducts installed (Kilometers) (Kilometers)		0.00	110.00	220.00	330.00	440.00
Establishment of digital services leveraging the underlying broadband infrastructure (Yes/No)		No				Yes
Reduction in incidents at Goma airport (Percentage)		0.00				50.00
Environment and social measures						
Surface of afforested zone along the targeted roads (Hectare(Ha))		0.00	1,200.00	1,800.00	2,400.00	3,000.00
Adoption of cleaner emission		No				Yes



Indicator Name	PBC	Baseline	Intermediate Targets			End Target
			1	2	3	
standards for imported vehicle and cleaner fuel standards for DRC (Yes/No)						
Share of GRM complaints and consultation feedback addressed within GRM risk timeline (Percentage)		0.00	100.00	100.00	100.00	100.00
Number of women with improved incomes due to improved skills and training received through the project gender empowerment activities (Number)		0.00	1,100.00	2,200.00	3,300.00	4,400.00

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Reduction in travel time in the project areas	This indicator will assess the reduction of travel time outcome after the completion of each road segment.	After the completion of each road segment.	Supervision consultant reports Field visits	The reduction will be measured by the difference of vehicle travel time before and after the road upgrading works.	Cellule infrastructures
Percentage of project infrastructure integrating climate-resilient adaptation measures	This indicator will assess the climate-resilience of the upgraded roads by monitoring and measuring	every 6 months	Supervision consultant reports Road	The duration and the location of each traffic disruption on the targeted roads will be	Road agency Cellule infrastructures



	the duration of each traffic disruption due to climate-related events. It is assumed that no traffic disruption will be greater than 24 hours after the completion of the road works.		database	collected.	
Reduction in road crashes along the project roads	This indicator will reflect the improvement in road safety. Currently, road crashes data is not available because there is no road crashes data collection system in the targeted roads.	every year	Road safety report Road safety agency	Road crashes statistics will be collected. Number of vehicle crashes with and without fatalities will be compared from one year to another.	Road safety agency. Cellule infrastructures
Increased broadband internet access as a percentage of the population in the project areas (percentage)	Access to broadband internet is defined as the number of unique and active broadband internet subscription, both mobile and fixed, divided by population. Targeted areas are areas in a 15 km radius around the project targeted roads.	Every year	Regulatory Authority of Post, Telecommunications, and ICT	Data collected from operators by the Regulatory Authority of Post, Telecommunications, and ICT	The Regulatory Authority of Post, Telecommunications, and ICT Cellule infrastructures
Share of new subscribers who are women (Percentage)	Share of women who gain access to an active broadband internet subscription in a 15 km radius along the project targeted roads, both mobile and fixed.	Every year	Regulatory Authority of Post, Telecommunications, and ICT	Data collected from operators by the Regulatory Authority of Post, Telecommunications, and ICT	The Regulatory Authority of Post, Telecommunications, and ICT Cellule infrastructures



Increase in the number of fiscal years when FONER accountability documents are publicly disclosed as a result of the project	This is the number of fiscal years when the following annual documents are prepared and disclosed publicly: (i) financial statements; (ii) external financial audit report; (iii) minutes of the Board meeting; and (iv) activity report	Each July 1 after the previous fiscal year (January 1 - December 31)	FONER Government public websites	Use of a checklist to assess the comprehensiveness of the disclosed documents and information. The activity report should contain: (i) the financing maintenance allocation plan approved by its Board of directors, and communicated to the relevant road agencies; (ii) the road maintenance program submitted by each road agency; (iii) the final road maintenance program approved by its Board of directors and communicated to the road agencies; (iv) the list of all signed maintenance conventions and contracts including the amounts; and (v) the progress and completion status of each signed convention and contract;	Cellule infrastructures
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Increase in the number of fiscal years when RVA accountability documents are publicly disclosed as a result of the project	This is the number of fiscal years when the following annual documents are prepared and disclosed publicly: (i) financial statements;(ii) external financial audit report; (iii) minutes of the Board meeting; and (iv) activity report	Each July 1 after the previous fiscal year (January 1 - December 31)	RVA Government public websites	Use of a checklist to assess the comprehensiveness of the disclosed documents and information. The activity report should contain the following information: (i) the total overflight fees; (ii) the total Go-Pass taxes collected breakdown by airport; (iii) the domestic and international traffic volume (passengers, freights, aircraft movement) breakdown by airport; and (iv) the list and amount of all airport maintenance contracts (works and goods) financed by RVA	Cellule infrastructures
Percentage of overloaded trucks along the targeted roads unloading excess charges	To reflect the full implementation of axle load control on each of the two targeted roads: (i) trucks will be weighed; (ii) overloaded trucks will unload excess charge and pay fines.	Every 6 months	Project progress report	The following information will be collected: (i) the number of weighed trucks; (ii) the number of overloaded trucks; (iii) the number of overloaded trucks that unload excess charge;	Cellule infrastructures



				and (iv) the number of overloaded trucks that pay fines	
Increase in the number of fiscal years when the Regulatory Authority of Post, Telecommunications, and ICT accountability documents are publicly disclosed as a result of the project	Number of fiscal years for which the Regulatory Authority of Post, Telecommunications, and ICT has publicly disclosed the following key documents: (i) financial statements; (ii) external financial audit report; (iii) minutes of the board meetings; and (iv) activity report.	Yearly	Publicly accessible government websites	Use of a checklist to assess the comprehensiveness of the disclosed documents	Cellule Infrastructures
Number of isolated or conflict-affected people benefitting from improved transport infrastructure	This is to reflect the number of people living under FCV situation that will benefit from infrastructure improvement from the project	Every year	Project progress report	Estimation of the number of population who lived in an isolated area or in a conflicted-affected zone along the project catchment area	Cellule infrastructures

Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Fully operational road safety database	This indicator will measure the success of the creation and operation of a road	Every year	Project progress reports	Field visit	Cellule infrastructures



	safety database which will collect and aggregate road crashes statistics				
Completion of a climate vulnerability assessment of the targeted roads and airports	This indicator will reflect the completion of the climate vulnerability assessment of the targeted transport infrastructure	Every six months	Project progress report	Monitoring of the corresponding studies	Cellule infrastructures
Roads constructed		Every six months	Project progress report	Field visit	Cellule infrastructures
Roads constructed - rural					
Roads constructed - non-rural					
Length of fiber optic deployed (Kilometers)	This indicator will monitor the length of fiber optic infrastructure constructed along the targeted roads	Yearly	Project progress report PPP contracts signed	Field visit Monitoring of the PPP transaction	Cellule infrastructures
Number of water wells rehabilitated, repaired, or replaced	This indicator monitor the progress of the rehabilitation, repair, or replacement of water wells along the upgraded roads.	Every six months	Project progress report	Field visit	Cellule infrastructures
Length of ducts installed (Kilometers)	This indicator will monitor the length of ducts installed along the targeted roads.	Yearly	Project progress report	Field visit	Cellule infrastructures
Establishment of digital services leveraging the underlying broadband	This indicator monitors whether additional digital	Yearly	Project progress	Field visit	Cellule infrastructures



infrastructure	services have been implemented on the fiber optic routes to leverage the newly built infrastructure		report		
Reduction in incidents at Goma airport	This indicator will reflect the improvement in safety at Goma airport as a result of the project	every year	RVA report	Airport incidents statistics and details will be collected and compared from one year to another	RVA Cellule infrastructures
Surface of afforested zone along the targeted roads	This indicator will monitor the efficacy of the forest preservation measures along the upgraded roads by measuring the afforested surfaces along the targeted roads.	Every 6 months	Project progress report	Field visit	Cellule infrastructures
Adoption of cleaner emission standards for imported vehicle and cleaner fuel standards for DRC	This indicator monitors the adoption by the government of DRC of the proposed cleaner emission standards for imported vehicle and cleaner fuel standards	Every year	Rules and regulations	Project progress report	Cellule infrastructures
Share of GRM complaints and consultation feedback addressed within GRM risk timeline	A citizen engagement indicator, this indicator will monitor that all complaints and negative feedback are addressed within the timeline defined in the GRM framework.	Every 3 months	GRM reports Project progress reports	Data will be collected from the GRM monitoring system	Supervision consultants Cellule infrastructures
Number of women with improved incomes due to improved skills and training received through the project	A gender gap indicator, this indicator will monitor the number of women who will	Every 6 months	Project progress reports	Data will be collected from the implementation report	Cellule infrastructures



gender empowerment activities	benefit improved incomes from gender empowerment activities.			of the gender empowerment activities.	
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ANNEX 1: Implementation Arrangements and Support Plan

Implementation Arrangements

1. **The Project will have a simple implementation arrangement composed of one strategic steering committee and one Project Implementing Unit (PIU).** The strategic steering committee will be led by the Ministry of infrastructure. It will have representatives from the ministry in charge of finances, the ministry in charge of airport, the ministry in charge of digital development, the ministry in charge of environment, the ministry in charge of SOEs, and the provinces targeted by the project (Kasai Oriental, Lomami, and Nord-Kivu). The strategic steering committee's role is to: (i) formulate the strategic directions of the project; (ii) coordinate between the central and provincial authorities involved; (iii) facilitate the administrative procedures necessary for the implementation of the project; (iv) ensure consistency with other interventions; and (iv) to review and approve the project reports and the annual workplan and budget.

2. **Cellule Infrastructures (CI) will be the PIU.** CI was the PIU for the Pro-Routes Project and is among the PIUs of the following IDA-financed projects: (i) DRC Kinshasa Multisector Development and Urban Resilience Project – Kin Elenda (P171141) and (ii) DRC Great Lakes Trade Facilitation Projects (P151083 and P174814). CI is also the PIU of three road projects financed by the African Development Bank. CI has shown a good ownership of the project technical approach and expertise in project management. In addition, CI has been considerably strengthened from the experience in handling an inspection panel case, particularly regarding ESF and GBV management. Consequently, CI will be responsible for the procurement, contract management, financial management, monitoring and evaluation, and ESF measures. CI will prepare an annual workplan and budget and a semesterly progress report and will submit them for the approval of the strategic steering committee. CI will be drafting the terms of references and technical specifications of all project activities in coordination with the supporting agencies.

3. **Cellule Infrastructures will establish presence outside of Kinshasa to better implement project activities.** Staff will be based in Mbuji-Mayi to monitor the activities along the Mbuji-Mayi Kabinda Mbanga road. Staff will also be based in Butembo to monitor the activities along Butembo Kanya-Bayonga road, and in Goma for the Goma airport activities. *Cellule Infrastructures* will sign a Memorandum of Understanding with the Implementing Agency of the Ministry of Transport that oversaw the Goma airport project (P153085) for the implementation of the activities at Goma airport.

Implementation Support Plan

4. **Lessons learned from Pro-Routes inform the implementation support strategy.** This strategy has four elements: (i) strong field presence; (ii) adequate and proactive reporting from the PIU; (iii) social media monitoring; and (iv) geo-mapping and digitalization. This strategy will allow the team to quasi-permanently monitor the project and to react quickly whenever needed.

5. **Strong field presence.** Most of the core project supervision team including the TTLs are based in Kinshasa. Some technical specialists are based in the World Bank satellite offices in Goma and in Kananga (Kasai Central). This will facilitate the monitoring of the project and the dialogue with all the stakeholders involved. Given the high risk of the project, on-going works will be visited at least every 4 months subject to the security situation and the COVID-19 restrictions. The presence of the TTLs as well as the fiduciary team in DRC will also facilitate



the organization of a field visit whenever needed in case of an urgent situation. The limited number of concurrent works will also allow for learning from on-going works and adapting for future works.

6. Adequate and proactive reporting from the PIU. Comprehensive and detailed monthly reports from supervision consultants should be sent to the World Bank team no more than 2 weeks after the end of the month. In addition, protocols will be in place so that the World Bank team is informed in less than 48 hours after the occurrence of any serious or severe incident allegedly linked to the project.

7. Use of technology-based tool to further support project supervision. Social media will be monitored to identify positive and negative reports on the project activities. This monitoring was initiated after the inspection panel case of the Pro-Routes Project to identify potential project risks and issues from social media. It will complement the media monitoring that the World Bank is doing daily. Moreover, the use of GEMS will be expanded to complement or eventually replace the physical verification of the implemented activities.

8. Geo-mapping and digitalization. This approach was also initiated by the CI after the inspection panel case of Pro-Routes to allow the online monitoring and public disclosure of information concerning the progress of project activities. The PIU will continue creating a database of geo-referenced information on project progress that will include time-based photos and videos. In case field visits cannot be undertaken, this will allow the project team to continue monitoring project progress.

9. Team composition. The World Bank supervision team will be composed of the following: (i) transport specialist; (ii) digital development specialist; (iii) gender specialist; (iv) air transport specialist; (v) PPP specialist; (vi) natural resources management specialist; (vi) water supply and sanitation specialist; (vii) environmental specialist; (viii) social development specialist; (ix) GBV specialist; (x) procurement specialist; (xi) FM specialist; (xii) finance officer; (xiii) lawyer; (xiv) communications specialist; (xv) climate change specialist; (xvi) disaster risk management specialist; (xvii) road safety specialist; (xviii) governance specialist; (xix) FCV specialist; and (xx) economist. Most of the core team including the TTL, the fiduciary specialists, and the E&S specialists will be based in DRC. Some will be based in the World Bank satellite offices in Goma and in Kasai.

Financial Management

10. The proposed project is a multisectoral project with a total value of US\$500 million. The overall implementation including fiduciary responsibility will be vested with CI, an established coordination unit within the Ministry of Transport. The overall financial management (FM) inherent risk is considered **High**. The proposed FM risk mitigation measures for this project are considered adequate to reduce the residual risk to **Substantial** and comply with the provisions of World Bank Directive Financial Management Manual for World Bank Investment Project Financing Operations, and World Bank Guidance: IPFs of February 28, 2017. The assessment of the CI revealed that there was adequate FM capacity in place to handle the project. The budgeting, funds flows, accounting, staffing, internal control, and financial reporting were assessed as effective to take up the project transactions.

Country Public Finance Management (PFM) Situation and Use of Country Systems

11. The overall fiduciary environment of the country is weak and fiduciary risk including fraud and corruption is **High**. According to the corruption perception index 2021 of Transparency International, DRC ranked 169th out of 180 countries. The DRC's governance ratings are among the lowest in the world. Budget execution suffers from:



(i) redundant and lengthy steps in budget execution processes, including various political interventions in the approval of commitments and payments; (ii) abuse in the use of exceptional or emergency procedures; and (iii) excessive centralization of budget execution authority in the Ministry of Finance and the Ministry of the Budget. The Public Expenditure and Financial Accountability carried out in 2019 confirmed the shortcomings pointed out above. In addition, the CPF for 2022-2025 has just been approved and poor governance in DRC is flagged as a major concern. To this end, with the support of the donor community, the Government of DRC undertook a series of reforms to strengthen PFM and accountability. Some World Bank financed projects such as Enhance Collection of Revenue and Expenditure Management Project (P171762), Kinshasa Development Project (P171141), and the Eastern DRC Stabilization Project (P175834) were designed to gradually address some governance issues and contribute to improve existing PFM systems. The World Bank's default of using the country PFM system or some aspects of the system provided they are reliable applies to the current project. Since the PFM system is weak and not reliable, a separate project FM system will be set up.

12. Risk Assessment and Mitigation Measures: The main risks that need to be addressed are as follows:

Table 1.1. Risks table

Risk	Risk rating	Risk Mitigating Measures Incorporated into Project Design	Residual Risk
INHERENT RISK	H		H
Country level Poor governance and slow pace of implementation of PFM reforms that might hamper the overall PFM environment.	H	Some PFM reforms being supported or that will be supported by World Bank financed projects: (i) governance component of KIN ELENDA Project (P171141), (ii) Enhance Collection of Revenue and Expenditure Management Project (P171762 - ENCORE), (iii) Eastern DRC Stabilization Project (P175834) under preparation Commitments at the Government top level to tackle corruption and embezzlement of public funds as evidenced by the investigations conducted by the <i>Inspection Générale des Finances</i> followed by sanctions. Capacity strengthening of beneficiary agencies is embedded in the project design	H
Entity level The main project technical implementing agencies FONER, RVA and AAC have limited knowledge of World Bank policies and procedures.	S	- PIM including administrative and FM aspects will clarify roles and responsibilities of the various stakeholders as well as the management of the climate resilience activities. - CI has acceptable financial management arrangements and relevant experience in managing World Bank-funded projects. It will have full FM responsibilities of the project. - The capacity of the project technical implementing agencies will be strengthened on World Bank policies and procedures	S
Project level Project design involves activities executed in multiple sectors (transport, connectivity, environment, governance and climate resilience) and multiple government entities Climate resilient road asset management concept is new to the portfolio, therefore risk that project fund might not be used for the purpose intended	H	- Administrative and FM arrangements including roles and responsibilities will be developed in the PIM. - The PIM will clearly define institutional arrangements, controls procedures, over the management of climate resilience activities	H
CONTROL RISK	H		S
Budgeting The budget preparation and execution process may be delayed given the number of beneficiaries involved in the project implementation. FONER, OVD, Office des Routes, RVA and AAC have limited knowledge of World Bank policies and procedures	H	- Capacity of the key stakeholders will be strengthened - A close follow up will be done by the World Bank and capacity building provided as needed. - The FM section of the PIM will define the arrangements for budget preparation, execution and control. - Analysis of variances between actual performance and budget estimates will be done as part of the review of the quarterly IFR.	S
Accounting		PIUs FM staff capacity will be strengthened	



Risk	Risk rating	Risk Mitigating Measures Incorporated into Project Design	Residual Risk
Some limitation in staff capacity may undermine the project capacity to produce accurate and reliable information on time.	S	- The existing PIU's accounting software (multiple projects and multisite) will be upgraded to address this project specific needs - A detailed project accounting plan (Plan Comptable) will be prepared.	M
Internal Controls and Internal Audit - Internal control system failure to identify material risks; or such risks are not properly addressed. - Internal auditor capacity to assess the effectiveness of risk management and control over climate resilient activities - Payment may be made for work not delivered as project is executed in difficult-to-access areas	S	- CI Internal audit unit will be strengthened, and the audit plan will be reviewed by the World Bank and recommendations will be given. - The PIM will clearly describe comprehensive procedures regarding contracts' management, the assets and inventory's management. - Periodic review of the internal audit reports - Periodic reviews of the risk management and controls over the management of project funds will be carried out by the World Bank as part of the project supervision - Use of technology enabling solutions such as GEMS localization as a confirmation of service delivery.	S
Funds Flow Delays in payment of the suppliers due to the involvement of multiple beneficiaries and a lengthy approval process of the request for payment	H	- Funds flow arrangement, approval standards and disbursement arrangements will be described in the PIM, and the project's staff will be trained on the World Bank's disbursement procedures. - Monthly replenishment of the designated account - The estimated time required to approve the requests for payment (business standard) will be defined in the PIM.	S
Financial Reporting Delays in submitting quality IFRs and financial statements	S	- CI has staff with acceptable qualification and experience to deal with such risk, and the capacity of the PIU STAFF will be strengthened for the preparation of financial reporting - The accounting system is operational to generate financial report on time	S
External Auditing Audit not carried out in compliance with acceptable audit standards, Delays in submitting the audit report and implementing audit reports recommendations	H	- Audit ToRs and short list of independent firms will be subject to the World Bank's review - IFR will be reviewed to enable the project to improve its quality - Close monitoring of the audit recommendations during financial management supervision.	S
Fraud & Corruption Possibility of circumventing the internal control system with colluding practices such as bribes, abuse of administrative positions, mis-procurement, and corruption during project execution	H	- Implementation of the action plan resulting from the functional review of the PIU including risk management - Internal audit risk- based approach	H
Overall FM risk	H		S

Table 1.2. FM Action Plan

Action	Responsible	Deadline and conditionality
Draft and adopt the PIM including the FM section	CI	By effectiveness
Recruit an accountant to strengthen the current capacity of the team	CI	No later than 3 months after the effectiveness date
Reinforce the internal auditor unit at CI (training first and additional staff later)	CI	No later than 6 months after the effectiveness date
Recruit an independent external auditor (financial audit) in line with ToRs approved by the World Bank	CI	No later than 6 months after the effectiveness date

Details of Financial Management and Disbursement Arrangements



13. Staffing. CI PIU will be responsible for fiduciary aspects of the entire project. CI has an FM specialist with acceptable skills, experience and knowledge to manage World Bank funded projects. An accountant will be recruited to reinforce the current capacity to take over the current project activities.

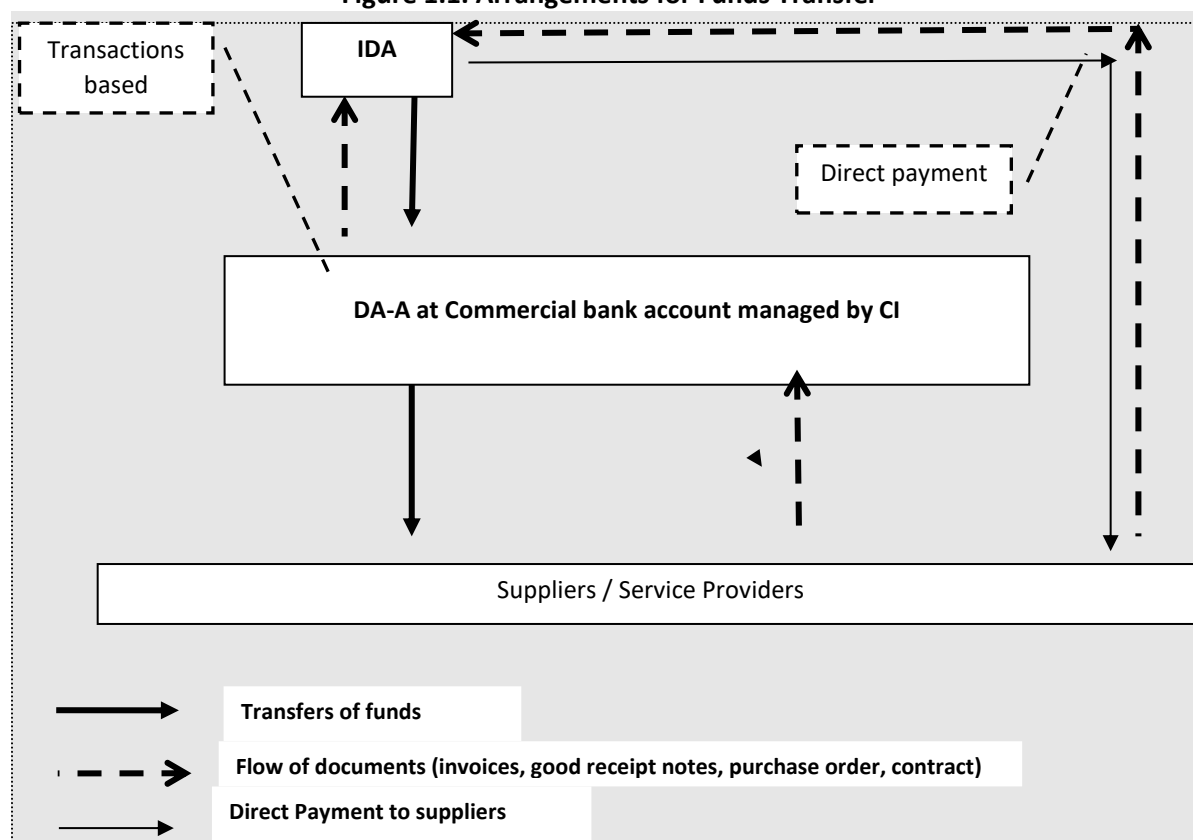
14. Budgeting. CI, together with the beneficiary agencies, will prepare the project annual work program and budget based on information gathered from the stakeholders and the technical team. The technical implementing agency's capacity will be strengthened to enable them to provide reliable information during budget preparation. The budget execution will be monitored on a quarterly basis through the Interim Financial Report and any variances will be explained and remedial measures indicated. The process to identify the activities to be undertaken and the role of the respective parties in the preparation, implementation, and monitoring of the budget will be developed in the PIM.

Disbursement and Flow of Funds Arrangements

15. Disbursements will be made in accordance with the World Bank Disbursement Guidelines for Projects, dated February 1, 2017. The project will disburse based on Statement of Expenditures and one Designated Account (DA) will be opened at a commercial bank acceptable to the World Bank. The DA will be managed by CI. The ceiling of the DA will be stated in the disbursement and financial information letter. The DA will be replenished through monthly withdrawal applications. The other disbursement methods which are reimbursements, direct payments and special commitments will also be available to the Recipient. All project funds will be managed by CI and no subaccount will be opened for any beneficiary agency. The UN advance and/or Commitment mechanism will be available for this project as needed.



Figure 1.1. Arrangements for Funds Transfer



16. Payments to UN Agencies (if any) may be made through UN Advances (with or without a UN Commitment) disbursement mechanism. In case of a contract with a UN agency requiring a UN Commitment, an application for issuance of UN Commitment is to be submitted by CI. Subsequent payments and documentation of expenditures under the contract must be made in accordance with the Commitment Letter to be issued by the Association and the contract between the Recipient and the UN agency. In case of a UN Advance (without UN Commitment), documentation of expenditure should be made once the final invoice is issued and based on the UN Financial Report.

17. Internal Controls and Internal Audit. CI's current internal audit team has the qualification and experience acceptable to the World Bank. The internal audit team at CI will be reinforced with the recruitment of additional staff and training to manage the additional workload. The internal audit team will prepare a risk-based audit plan that will be reviewed and approved by the World Bank. The *Inspection Générale des Finances* (IGF) (General Inspectorate of Finance) has the right to review the project. The internal control systems and procedures will be detailed in the PIM and will include details on payment approval process, segregation of functions, inventory management, human resources and administrative procedures, and asset management.

18. Accounting Policies and Procedures will be documented in the PIM. The assigned accounting system in West and Central African francophone countries (OHADA), will be applicable. The PIU will customize the existing accounting software (TOMPRO) to meet project reporting requirements.

19. Unaudited Interim Financial Reports. The financial management team of the PIU will be required to prepare



an IFR on a quarterly basis. The IFR will include: (i) sources and use of funds; (ii) use of funds per activity; (iii) DA activities statement; and (iv) use of funds according to procurement methods and thresholds. The IFR reports will be submitted to the World Bank 45 days after the close of each quarter.

20. External Financial Audit. The project will be subject to annual audits by an independent external auditor. The project will be required to submit, not later than June 30 of each fiscal year, the annual financial statement audit report. The terms of reference as well as the short list of the audit firms will be reviewed by the World Bank financial management specialist. In line with the access to information policy, the project will comply with the disclosure policy of the World Bank of audit reports (for instance making available to the public without delay after receipt of all reports final financial audit, including audit reports qualified). The World Bank may require separate entity audit reports of some implementation agencies such as FONER and RVA.

21. The following governance and anti-corruption measures will contribute to enhance transparency and accountability during the project implementation: (i) internal audit and external audit; (ii) the PIM will include anti-corruption measures with a specific safety mechanism that will enable individual persons and NGOs to denounce abuses or irregularities; (iii) a strategic steering committee will be put in place to oversee the project implementation; and (iv) measures to encourage participation of civil society and other stakeholders will be strengthened during project implementation. To improve governance the project will contribute or finance the preparation and publication of key documents, technical and financial audits, activity reports to bring transparency in execution of their role/function and in the management of own resource.

22. Implementation Support and Supervision Plan. FM implementation support missions will be consistent with a risk-based approach. The implementation support missions will take place at a minimum twice per year, with more frequency foreseen during the first 18 months of implementation (Table 1.3).

Table 1.3 FM Supervision Plan

FM Activity	Frequency
Desk reviews	
Transaction review, Interim financial reports review	Quarterly
Audited financial statements	Annually
Review of other relevant information such as interim internal control systems reports.	Continuous as they become available
On site visits	
Review of overall operation of the FM system.	Implementation Support Mission
Monitoring of actions taken on issues highlighted in audit reports, auditors' management letters, internal audit, and other reports	As needed
Use of GEMS-enabled tools to collect information during supervision	Implementation Support Mission
Capacity building support	
FM training sessions	Before Project starts and thereafter as needed

Procurement Arrangements

23. Procurement activities will be carried out in accordance with the World Bank's procurement directives. This includes World Bank's procurement regulations for IPF Borrowers (dated July 2016, revised November 2017, August 2018 and November 2020), WBG's Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants (dated October 15, 2006, and revised in January 2011, and July 1, 2016) and any other provisions stipulated in the legal agreement, including strict fiduciary control



mechanisms and application of the World Bank's fiduciary rules.

24. Procurable items under this project includes works, goods, PPP, non-consultant services, and consultants' services' contracts. Components 1, 2 and 3 would include activities related to : (i) consultant services for studies; (ii) technical assistance; (iii) works supervision; (iv) roads paving works including construction and installation of weighing stations; (v) installation of fiber optic ducts with or without fiber optic; (vi) construction of drainage systems in Goma airport; (vii) completion of the new control tower construction at Goma airport through retroactive financing; and (viii) acquisition of equipment to improve airport safety.

25. As per the requirement of the Procurement Regulations, a Project Procurement Strategy for Development (PPSD) sets out the selection methods to be followed by the Borrower during project implementation in the procurement of goods, works, and non-consulting and consulting services financed by the World Bank. The PPCSD describes the overall project operational context, market situations, implementing agency capacity and possible procurement risks. The main risks are related to (i) the delays in the project implementation, (ii) the poor quality of deliveries, (iii) Gender-Based Violence, (iv) the increased insecurity in the project area, (v) the weakness in contract management leading to time and costs overruns, and (vi) the reputation of the country regarding Fraud and Corruption. A local and regional market exists but has limited financial and technical capacity to implement some high value contracts that the project will be financed. Environmental and social studies were conducted under the PPA. The bidding documents for large contract are being finalized and the procurement process will be launched before effectiveness. To attract large international firms and NGOs to ensure success of procurement processes and implementation of these contracts, open international requests for bids shall be made for works, and request for proposals shall be made to firms shortlisted after publication of international request for expression of interest for supervising consultants or main consultant services. The project is rated as high SEA/SH risk which triggers the mandatory application of the contractor disqualification mechanism in the procurement of works. The World Bank Standard Procurement Document with relevant clauses will be used.

26. The procurement activities will be carried out by the Cellule Infrastructures (CI), a Project Implementation Unit (PIU) established in the Ministry of Public Works and Infrastructures. A procurement capacity and risk assessment of CI has been carried out by the World Bank. The review included procurement systems such as procurement legislation, procurement organization and staffing, procurement strategies, procurement operations, procurement performance monitoring and measurement, and procurement control and oversight mechanisms. The details of the assessments, the main risks and mitigation measures are described below:

- CI has intensive experience acquired through preparation and implementation of more than 10 infrastructure projects by donors including the World Bank. Through the implementation of these projects, CI has acquired good knowledge of World Bank procurement procedures. CI has a Procurement Unit led by the head of the procurement unit, and which includes two procurement specialists, two procurement assistants, and one secretary. Given the volume of procurement activities planned under this project, an additional seasoned procurement specialist will be hired.
- The Procurement Risk Assessment and Management System has been finalized based on the assessment. The procurement risk is rated High. The prevailing risk could be reduced to Substantial if the corrective measures identified in the table below are implemented. The PPCSD has made recommendations regarding how these generic risks and their impacts could be minimized (Table 1.4).



Table 1.4 Procurement Risks Mitigation Measures

No.	Issue/Risks	Recommended Mitigation Measures	Responsible and Time Frame
1	CI is already implementing many projects finance by the World Bank and other donors. The additional workload may result in delays in the procurement process	Procurement additional resources for one Procurement Specialist	CI Three months after the effectiveness
2	CI lacks adequate experience of designing and procuring PPP contracts	A transaction advisor will be hired to support CI to prepare the bidding documents for PPP and provide technical assistance during the process	CI One year after effectiveness
3	Local market has limited capacity to implement high value contracts	1) Design the procurement package and documents to interest the local market and attract international firms. 2) International and large diffusion will be done. Advertisement will be shared with diplomatic missions in DRC	CI During procurement phase
4	Weakness of CI on contract management	Training on contract management. In addition, institutional arrangement provides that CI will open satellite offices in Mbuji-Mayi, Goma, and Butembo to ensure close monitoring, smooth implementation, compliance with E&S requirements of the construction works (roads, aviation, and digital), and to be in proximity with provincial authorities, with support of supervising consultant	World Bank / CI / Supervision Engineer Six months after effectiveness
5	Poor quality of bidding documents	Involve the competent technical expertise to provide technical inputs.	CI Supervision Engineer
6	Delays in the project implementation	Bidding documents of main contracts have been prepared with PPA and request of bids for works and request for expression of interest for consultant services shall be launched as soon as possible.	CI /World Bank
7	Gender-based violence (GBV)	Use the World Bank SPD with clauses on gender-based violence	CI
8	Increase of insecurity in the project geographic area	Describe Security issues in procurement documents and ask the Bidders / Consultants to propose a plan to manage it. Increase the collaboration with Local Authorities	CI
9	Fraud and Corruption	1) Training on Identification and Mitigation of Fraud and Corruption in the World Bank financed Operations. 2) Make sure that the Bank's directives in fighting fraud and corruption are included in all	For (1): World Bank / CI Six months after effectiveness.



No.	Issue/Risks	Recommended Mitigation Measures	Responsible and Time Frame
		bidding documents and contracts, and there is mechanism to enforce it for Borrower's staff and for private sector operators. 3) Carry due diligence on World Bank guarantees provided by bidders as bids 'security or advance payment guarantees. 4) For main contracts, carry due diligence on references of bidders/candidates ranked first, prior to contracts award.	For (2), (3), and (4): CI Permanent
10	Project rated high SEA/SH risk	1) Standard Procurement Document, published on April 2021, containing provision on the World Bank's disqualification mechanism for non-compliance with SEA/SH obligations applies 2) Several contracts shall be signed with NGOs to carry training of contractors and consultants on SEA/SH prior to starting the works. Regular sensitization of workers on SEA/SH within contract execution period shall be undertaken. These NGOs will be onboard during contract execution to prevent SEA/SH issues.	CI

27. Operating costs. Incremental recurrent expenditures incurred on account of project implementation, based on periodic budgets acceptable to the World Bank, including, *inter alia*: travel expenditures and other travel-related allowances such as per diems and reasonable accommodation costs; equipment rental and maintenance; vehicle operations (including fuel); local training in the areas of project management, financial management, procurement, and social/environmental measures; etc. Operating expenditures may follow procurement procedures agreed in the Project Manual. Operating costs will not include salaries of civil servants.

28. Fiduciary oversight by the World Bank. The World Bank shall prior review contracts according to prior review thresholds set in the PPSD/Procurement Plan. All contracts not covered under prior review by the World Bank shall be subject to post review during implementation support missions and/or special post review missions, including missions by consultants hired by the World Bank. The World Bank may conduct, at any time, independent procurement reviews of all the project contracts.

29. Filing and records keeping. All records pertaining to award of tenders, including bid notification, register pertaining to sale and receipt of bids, bid opening minutes, bid evaluation reports and all correspondence pertaining to bid evaluation, communication sent to the World Bank in the process, bid securities, and approval of invitation/evaluation of bids will be retained by respective agencies and uploaded in STEP.

30. Procurement plan. A procurement plan has been prepared for the first 18 months of the project. The procurement plan includes the various procurement methods, the estimated costs, prior review requirements, and time frames.

31. World Bank's Standard Procurement Documents. The World Bank's Standard Procurement Documents shall be used for all contracts subject to international as well as national competitive procurement.



ANNEX 2: Sustainability of the Road Investment

1. Key transport sector reforms supported by this first project of the SOP are building on progress to date with creating key sector entities, such as the Road Maintenance Fund (FONER) in 2008 financed primarily by fuel levy; the Civil Aviation Authority in 2011 to separate regular functions from the Airport Authority (RVA) which focuses on managing airports and air traffic; the delegation of most road works to the private sector from predominantly using forced account; and the adoption of a PPP law in 2018. Based on a series of analytics – DRC Integrated Transport Master Plan Study by the AfDB in 2018, DRC SOE Governance Diagnostic in 2019, DRC Country Private Sector Diagnostic in 2020, Eastern DRC InfraSAP in 2020. This first project of the SOP supports 2 key areas of transport reforms: a) transparency of FONER and RVA through annual public disclosure of financial statements, audits, and corrective actions plans subsequent to the audits; and b) reinforcing axle load control with overloaded trucks having to pay fines and unload

2. The sustainability of any road investment can be ensured through the combination of the following four elements: (i) quality of design; (ii) quality of construction; (iii) assets preservation through axle load control / rain barriers; and (iv) adequate maintenance. The table below summarizes the situation of these elements in DRC and the support the project will provide to ensure better sustainability.

Table 2.1. Synopsis Table on Road Maintenance in DRC and the Proposed Project Support

	Strengths	Weaknesses	Support from the project
Quality of design	Road standards for any road project are based on the existing and forecasted vehicle traffic.	- Most of the roads in DRC including key roads were constructed during the colonial era, are unpaved, and cannot cope with the existing vehicle traffic - Existing road network is vulnerable to climate change - Climate change aspects are not incorporated in road standards - Road safety aspects are not incorporated in road standards	- All the roads targeted by the project will be paved - Design of the roads targeted by the project will be based on forecasted traffic, climate change considerations, and road safety requirements - Capacity building and institutional strengthening on climate change and road safety will be provided
Quality of construction	- Most of the road constructions are implemented by private contractors - Most of the day-to-day supervision of the road constructions is done by private firms. - Central, provincial, and local authorities are involved in the supervision of the road constructions	- Weak capacity of the local contractors and firms - Absence of regular technical audits of the quality of construction - High risk of collusion - High risk of corruption	- The selection of the private contractors and supervision firms for the targeted roads will be internationally opened and will follow the World Bank procurement rules - Regular external technical audits of the road construction as well as road maintenance will be undertaken - International contractors and firms will work with local contractors and firms to build their capacity - Capacity building and institutional strengthening will be provided to central, provincial, and local authorities



	Strengths	Weaknesses	Support from the project
Asset preservation	Existence of regulations on axle load control	Total absence of axle load control and rain barriers (unpaved roads): overloaded trucks travel without any restriction on paved and unpaved roads leading to a quick deterioration of the road infrastructure	Technical assistance to prepare and implement a full-fledged axle load control system starting on the roads targeted by the project (overloaded trucks will have to unload and pay fines)
Maintenance	- Existence of a Road Maintenance Fund (FONER) financed mainly by a fuel levy - Existence of independent road agency to manage the road infrastructure (Office des Routes, OVD, OVDA) - Maintenance works can be done by private companies, by force account, and by the communities - Existence of road maintenance manual	- Absence of transparency of FONER - Absence of clear planning for maintenance. Maintenance is done mostly in a curative mode than a preventive mode - Absence of independent technical audits on maintenance	- Support to FONER to prepare and disclose key technical, financial, and managerial documents - Technical assistance to FONER - Capacity building and institutional strengthening in road maintenance planning - - Technical assistance for the implementation of Output and Performance-Based Road Contract - Technical assistance to promote community-based maintenance - Audit of the road agencies

3. The following expected results will contribute to improving road sustainability:

- Annual preparation and public disclosure of FONER annual report, financial statements, statutory audit report, external financial audit report, and minutes of the Board meeting. The annual report should contain: (i) the financing allocation plan approved by the Board and communicated to the road agencies; (ii) the road maintenance program submitted by each road agency; (iii) the final road maintenance program approved by the Board and communicated to the road agencies; (iv) the list of all signed maintenance conventions and contracts including the amounts; and (v) the progress and completion status of each signed convention and contract.
- Adoption of a corrective action plan based on external audits to improve the performance of FONER.
- Implementation of multi-year maintenance contracts after the completion of the upgrading works.
- Reinforcing of axle load controls on the roads targeted by the project, with all overloaded trucks having to unload and pay fines.



ANNEX 3: Gender-Based Violence, Sexual Exploitation and Abuse and Sexual Harassment Risks and Mitigation

1. The context in DRC is marked by significant gender gaps as well as high prevalence rates of gender-based violence (GBV), which represent a significant barrier to women's full engagement in social and economic life in the DRC and remain correlated with violence and insecurity. DRC ranks 149 (out of 153 countries) as measured by the Global Gender Gap Index from the World Economic Forum.^[1] While the revised Family Code (2016) removed several discriminatory provisions in terms of access to land and resources for women and increased the minimum age of marriage for girls from 15 to 18, the legislation is not uniformly enforced, and women still face discrimination regarding labor force participation as well as land and property ownership.

2. As such, the project has identified and assessed key risks for GBV, including for sexual exploitation and abuse and sexual harassment (SEA/SH), in connection not only with the country context for violence against women and girls but also risks related to project interventions. A preliminary SEA/SH risk screening has rated the project as high based on contextual risks and anticipated civil works activities. Large-scale civil works can increase the risk of GBV, including SEA/SH, by a range of perpetrators in the public and private spheres. The project will include a large influx of workers that could increase the demand for transactional sex, including sex trafficking, as well as increase the risk of early marriage in a community where marriage to a male wage earner is considered the best livelihood strategy for an adolescent girl. Community power dynamics could be affected by the project, including the alteration of the power relationship among community members and within households where women may have access to greater income or employment opportunities from which traditionally, they would not benefit, which increases risks of GBV, including SEA/SH. In addition, during resettlement initiatives because of civil works activities, women can be extremely vulnerable to SEA/SH. This is particularly an issue in DRC, where the law does not allow women to own land. While the project will offer employment opportunities for women and girls, the lack of appropriate transportation is a risk factor for SEA/SH, when they are forced to travel to and from work on dangerous and poorly lit roads or via unsafe public transportation. In addition, some areas of intervention are insecure and/or difficult to access, which creates risks for inadequate supervision of female and male personnel on work sites and thereby risks of SEA/SH.

3. Due to the high level of SEA/SH risk, an independent TPM will also be recruited. The TPM will be responsible for conducting oversight of and reporting on the effectiveness of the implementation of the SEA/SH Action Plan. The TPM will offer a channel for early warning of problems that may surface during the implementation of activities under the SEA/SH Action Plan.

4. In addition to a TPM, the project will likewise assure adequate supervision of the SEA/SH Action Plan with the recruitment of a GBV Specialist at an early stage of the project, who will be in place throughout the project life cycle. In addition, appropriate SEA/SH mitigation and response measures will be reflected in all relevant ESF instruments and in procurement documents for effective implementation and costing. Appropriate SEA/SH-related indicators will also be developed in accordance with international standards and best practices^[2] to monitor GRM effectiveness, service referrals, as well as training and sensitization activities.

9. For ease of reference, a summary of the proposed risk mitigation measures under the SEA/SH Action Plan is provided in the table 3.1 below.



Table 3.1 Summary of SEA/SH Risk Mitigation Measures

Measure	Completion date
Adoption and signature of a code of conduct by project personnel and all partners, including contractors and consultants	Immediately after effectiveness (and before civil works activities begin), and throughout project implementation
Operationalization of an independent SEA/SH GRM, including response protocol	As of effectiveness
Purchase and prepositioning of PEP kits in project intervention zones where this coverage does not exist	Within 3 months after effectiveness date
Put in place contracts with NGOs or organizations specialized in GBV prevention and response to: - Conduct service-mapping, including quality of services - Assure provision of holistic service package (medical, psychosocial, and legal) - Train SEA/SH GRM actors, including community-based focal points - Train project personnel and workers on code of conduct prohibitions and applicable sanctions - Conduct awareness-raising sessions for community members - Conduct community consultations with women and other community actors and members as needed	As of effectiveness and throughout project implementation
Third-Party Monitor/Independent Verification Agency contracted	Within 6 months after effectiveness date

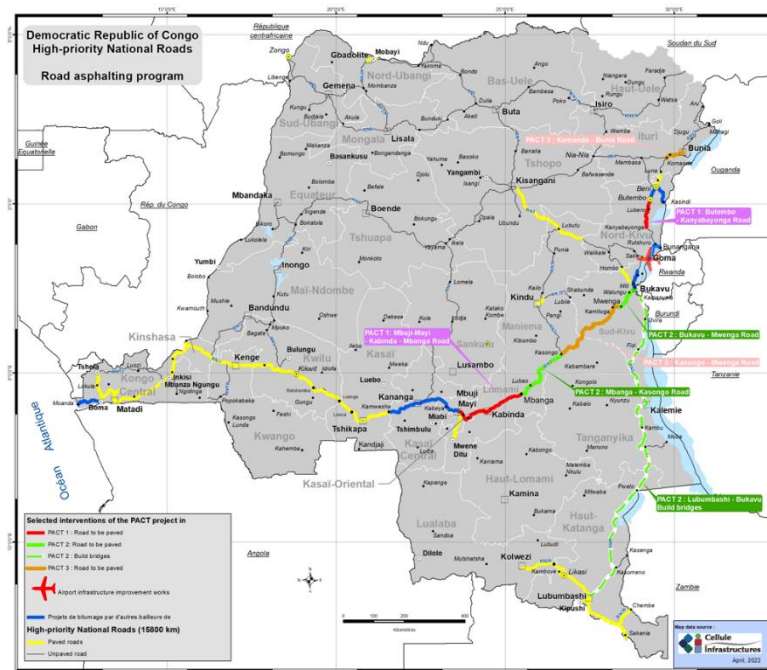
^[1] World Economic Forum, Global Gender Gap Report, 2020. This index measures national gender gaps on economic, education, health, and political criteria.

^[2] WHO Ethical and safety recommendations for researching, documenting and monitoring sexual violence in emergencies (2007); GBVIMS Best Practices, <http://www.gbvims.com/wp/wp-content/uploads/BestPractices2.pdf>.



ANNEX 4: Impact and Mitigation Measures related to Forest Cover and Ecosystems

Map 1 –Roads targeted by PACT



1. As part of its objective to strengthen interconnectedness between key urban centers and rural areas in DRC to bolster economic development and national cohesion and contribute to stabilization and conflict prevention, the World Bank will support paved road infrastructure reconnecting Eastern and Western DRC. The Transport and Connectivity Support Project (PACT, P161877) will implement a SOP with three projects to rehabilitate the +1,000km long RN2 (National Road 2) linking Kasai and Eastern DRC (Map 1⁹¹).

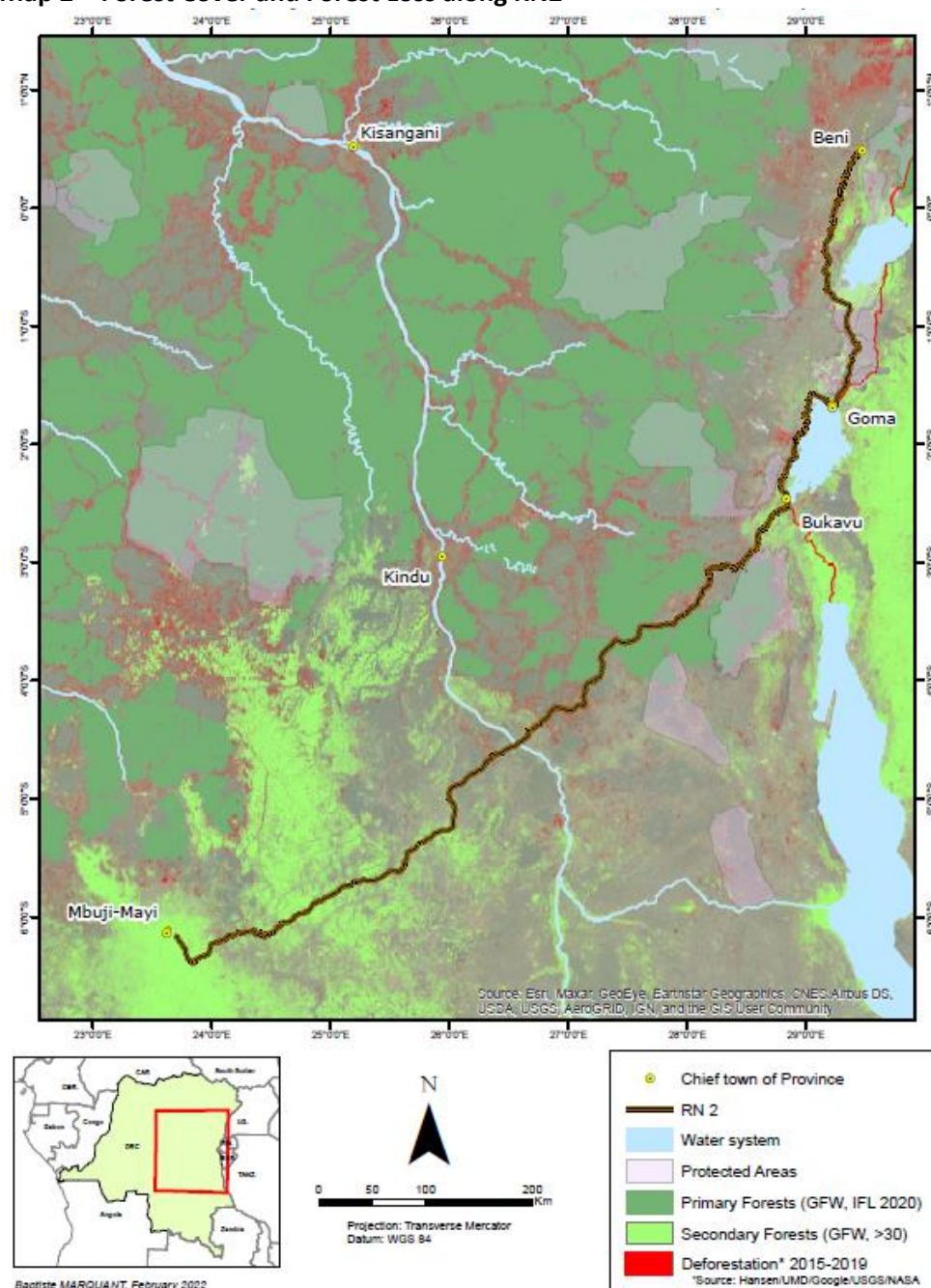
2. The environmental risks and impacts from reopening and paving roads in these provinces must be considered as DRC faces increasing environmental degradation, particularly of its forest resources and ecosystems. Human settlements in the forest

frontiers continue to be the main driver of deforestation in DRC, due to a high reliance on shifting cultivation for food production and charcoal as the main source of energy for cooking. There is still a relatively low pressure from commercial activities. Human settlements also result in increased poaching which, added to habitat destruction, further threatens biodiversity. Road rehabilitation may densify existing human settlements by improving livelihoods opportunities as well as fostering investment in the commercial and industrial areas that would benefit from an improved transportation system. Value chains for food and charcoal, if grown unsustainably, will increase pressure on forest ecosystems in the influence zone of the road. Research shows that most of the deforestation and forest degradation occur within about a 2 km radius of roads.

⁹¹ Source: Cellule infrastructures, April 2022



Map 2 – Forest Cover and Forest Loss along RN2



3. As shown in Map 2, the Mbuji-Mayi Bukavu segment of RN2 runs mostly through areas with high population densities exhibiting high degradation with low or no primary tropical forest cover and crosses the Maniema province with lower population density and the presence of large swaths of intact forest (including protected areas) with ongoing forest loss. The Bukavu Beni road which includes Kanya-Bayonga Butembo road runs along the edge of the Congo Basin Forest massif through South Kivu, North Kivu and Ituri. In these provinces, population and primary forest differ along a west to east axis. RN2 runs through territories with high degradation often adjacent to areas with ongoing high primary forest loss. The road section crossing the Virunga National Park, which is in fair condition, will not be subject to rehabilitation work. It is important to note that even in highly degraded areas, and within influence zone

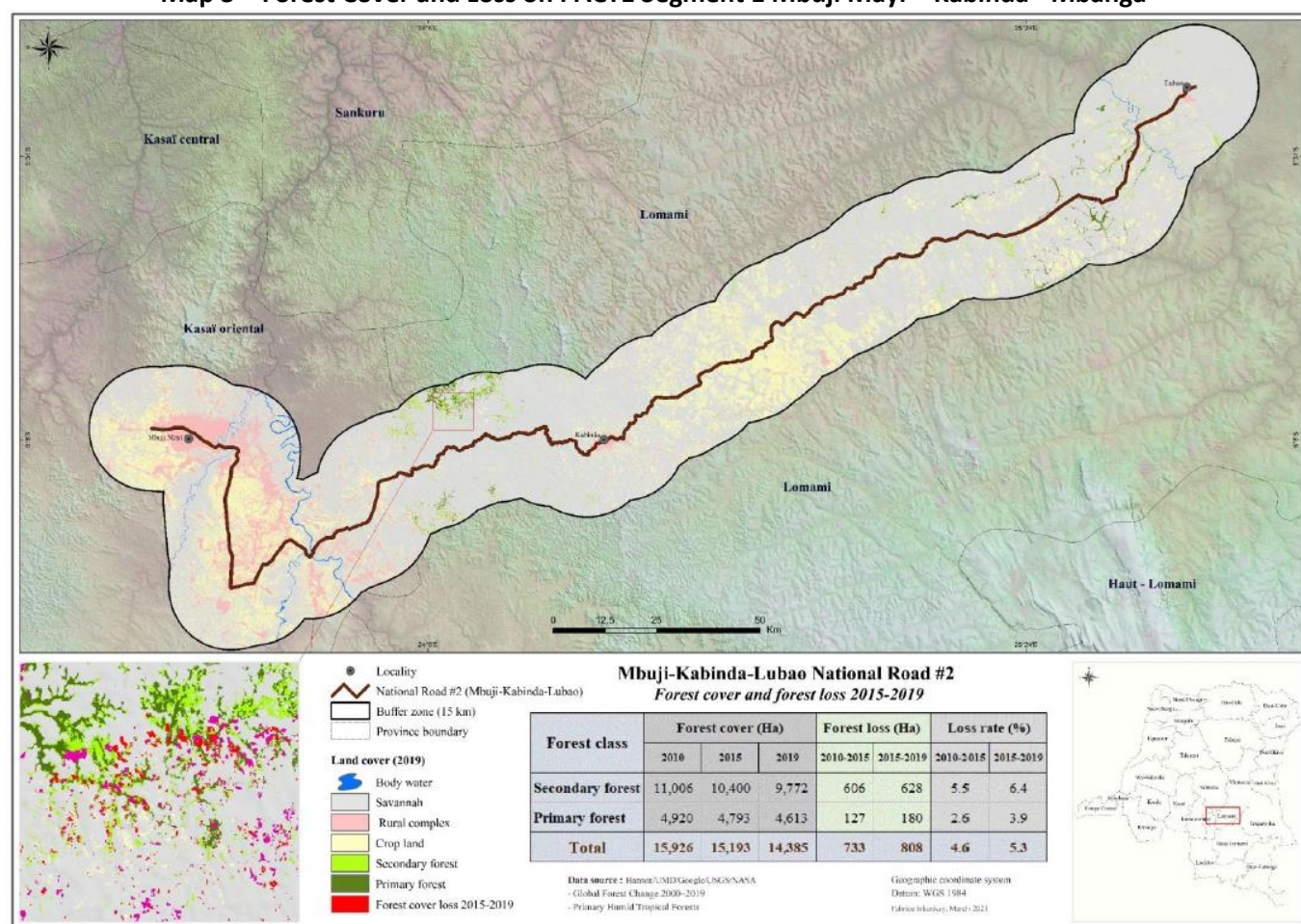
of RN2, some forest galleries with high carbon and biodiversity remains (see map 3 and 4)



Map 4 detailed analyses are therefore needed on aspects such as biomass carbon, endangered species richness, and proximity of protected areas to determine potential impact and related mitigation measures. Such analyses have been done for the 2 segments covered under PACT.

4. Mitigation measures against further forest resources and ecosystem degradation in the influence zone of RN2 mostly rely on (i) design considerations that would modify the transportation system, thereby minimizing or avoiding resource impact, (ii) and supporting alternative and more sustainable livelihoods, including through community based natural resources management, landscape restoration, sustainable agriculture including agroforestry and other improved cropping methods. PACT includes a subcomponent on Sustainable Forest Management and Preservation (US\$13 million) which will support such activities in higher risk areas (“hot spots”). In addition, the DRC Forest and Savanna Restoration Investment Program (US\$300m, P178642) will finance large-scale restoration and conservation investment along the east-west corridor and road network (RN1 and 2). The Access Governance and Reform for the Electricity and Water Sectors Project (US\$600m, P173506) will also contribute to easing the pressure on surrounding forests by expanding access to renewable-based electricity, in turn lowering prevailing reliance on wood as a primary fuel source.

Map 3 – Forest Cover and Loss on PACT1 Segment 1 Mbuji Mayi – Kabinda - Mbanga





Map 4 – Forest Cover and Loss on PACT1 Segment 2 Kanya-Bayonga Butembo

