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IMPLEMENTATION COMPLETION AND RESULTS REPORT

IDA-H9810

ON A

GRANT

IN THE AMOUNT OF SDR 59.8 MILLION

(US\$ 92.1 MILLION EQUIVALENT at approval)

TO THE

Democratic Republic of Congo

FOR A

AFR RI-Central African Backbone SOP5

March 31, 2022

Digital Development Global Practice

Africa East Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective September 30, 2021)

Currency Unit = Congolese Franc

CDF 1,980.44 = US\$1

US\$ 1.40887 = SDR 1

FISCAL YEAR

July 1 - June 30

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ABBREVIATIONS AND ACRONYMS

ACE	Africa Coast to East
AFD	French Development Agency
ARPTC	Post and Telecommunications Regulatory Authority of Congo
CAB	Central African Backbone
CAS	Country Assistance Strategy
CEMAC	Economic and Monetary Community of Central African States
CITCC	China International Telecommunication Construction Corporation
COPIREP	Steering Committee for the Reform of State Portfolio Enterprises
DRC	Democratic Republic of Congo
ESIA	Environmental And Social Impact Assessment
ESIRT	Environmental and Social Incident Response Toolkit
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FA	Financing Agreement
FM	Financial Management
FMS	Financial Management Specialist
GNI	Gross National Income
GRM	Grievance Redress Mechanism
ICR	Implementation Completion and Results
ICT	Information and Communications Technologies
IFR	Interim Financial Report
IPP	Indigenous Peoples Plan
ISR	Implementation Status Report
IXP	Internet Exchange Point
LAN	Local Area Network
LION	Lower Indian Ocean Network
MINPORTFOLIO	Ministry of Portfolio
MINPTNTIC	Ministry of Posts, Telecommunications and New Information and Communication Technologies
MNO	Mobile Network Operator
MOU	Memorandum of Understanding
MPT	Ministry of Posts and Telecommunications
OCPT	Congolese Office of Post and Telecommunication
PAD	Project Appraisal Document
PDO	Project Development Objective
PIU	Project Implementation Unit
PPG	Project Preparation Grant
PPP	Public Private partnership
RAP	Resettlement Action Plan
RCIP	Regional Communications Infrastructure Program
RIAS	Regional Integration Assistance Strategy
SAPMP	Southern African Power Market Project

SCPT	Congolese Post and Telecommunications Company
SNEL	National Electricity Company
SOCOF	Congolese Optical Fiber Company
SOP	Series of Projects
SPN	Public Asset Management Company
SPV	Special Purpose Vehicle
TA	Technical Assistance
TEAMS	The East African Marine System
TTL	Team Task Leader
US\$	United States Dollar
WACS	West Africa Cable System
WAN	Wide Area Network
WARCIP	West Africa Regional Communications Infrastructure Program
WB	World Bank

TABLE OF CONTENTS

DATA SHEET	1
I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES	6
B. ACHIEVEMENT OF PDOs (EFFICACY)	18
C. EFFICIENCY	20
D. JUSTIFICATION OF OVERALL OUTCOME RATING	21
E. OTHER OUTCOMES AND IMPACTS (IF ANY).....	21
II. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME	22
A. KEY FACTORS DURING PREPARATION	22
B. KEY FACTORS DURING IMPLEMENTATION.....	24
III. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME... 	25
A. QUALITY OF MONITORING AND EVALUATION (M&E)	25
B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE	26
C. BANK PERFORMANCE	28
IV. LESSONS AND RECOMMENDATIONS.....	30
ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS	31
ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION	36
ANNEX 3. PROJECT COST BY COMPONENT.....	38
ANNEX 4. BORROWER, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS....	39
ANNEX 5. THE CENTRAL AFRICAN BACKBONE (CAB) PROGRAM AND PROJECT SUMMARY.....	40
ANNEX 6. SUPPORTING DOCUMENTS	44
ANNEX 7. CAB5 BROADBAND INFRASTRUCTURE MAP	45



DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P132821	AFR RI-Central African Backbone SOP5
Country	Financing Instrument
Eastern Africa	Investment Project Financing
Original EA Category	Revised EA Category
Partial Assessment (B)	Partial Assessment (B)

Organizations

Borrower	Implementing Agency
Democratic Republic of Congo	SOCOF - Société Congolaise de Fibre Optique

Project Development Objective (PDO)

Original PDO

The development objective of the proposed project is to contribute to increase the geographical reach and usage of regional broadband infrastructure and to reduce the price of services so that more people in the DRC can access information and communication technology (ICT) services.



FINANCING

	Original Amount (US\$)	Revised Amount (US\$)	Actual Disbursed (US\$)
World Bank Financing			
IDA-H9810	92,100,000	55,721,180	38,092,516
Total	92,100,000	55,721,180	38,092,516
Non-World Bank Financing			
Borrower/Recipient	0	0	0
Total	0	0	0
Total Project Cost	92,100,000	55,721,180	38,092,516

KEY DATES

Approval	Effectiveness	MTR Review	Original Closing	Actual Closing
16-Jul-2014	22-Jan-2015	19-Mar-2018	31-Dec-2019	30-Sep-2021

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US\$M)	Key Revisions
07-Mar-2019	15.21	Change in Results Framework Change in Loan Closing Date(s) Reallocation between Disbursement Categories Change in Institutional Arrangements Other Change(s)
23-Jul-2020	25.08	Change in Results Framework Change in Components and Cost Cancellation of Financing Reallocation between Disbursement Categories
12-Aug-2020	27.92	
22-Dec-2020	31.09	Change in Loan Closing Date(s)
15-Jun-2021	36.10	Change in Loan Closing Date(s)

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Moderately Unsatisfactory	Moderately Unsatisfactory	Substantial



RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US\$M)
01	08-Dec-2014	Moderately Satisfactory	Moderately Satisfactory	1.29
02	10-Apr-2015	Moderately Satisfactory	Moderately Satisfactory	1.39
03	21-Dec-2015	Moderately Satisfactory	Moderately Unsatisfactory	4.83
04	26-Jun-2016	Moderately Satisfactory	Moderately Unsatisfactory	5.49
05	19-Jan-2017	Moderately Satisfactory	Moderately Satisfactory	6.85
06	17-Nov-2017	Moderately Satisfactory	Moderately Satisfactory	10.13
07	13-May-2018	Moderately Unsatisfactory	Moderately Unsatisfactory	11.53
08	01-Dec-2018	Moderately Unsatisfactory	Moderately Unsatisfactory	15.21
09	27-Jun-2019	Moderately Unsatisfactory	Moderately Satisfactory	16.42
10	25-Jan-2020	Moderately Unsatisfactory	Moderately Unsatisfactory	18.58
11	25-Sep-2020	Moderately Unsatisfactory	Moderately Unsatisfactory	29.57
12	14-Dec-2020	Moderately Satisfactory	Moderately Satisfactory	30.98
13	30-Jun-2021	Moderately Unsatisfactory	Moderately Unsatisfactory	38.41
14	30-Sep-2021	Moderately Unsatisfactory	Moderately Unsatisfactory	39.21



SECTORS AND THEMES

Sectors

Major Sector/Sector	(%)
Information and Communications Technologies	100
Public Administration - Information and Communications Technologies	14
ICT Infrastructure	82
ICT Services	3
Other Information and Communications Technologies	1

Themes

Major Theme/ Theme (Level 2)/ Theme (Level 3)	(%)
Private Sector Development	53
Business Enabling Environment	40
Regulation and Competition Policy	40
Jobs	13
Job Creation	13
Public Sector Management	20
Public Administration	20
State-owned Enterprise Reform and Privatization	20
Urban and Rural Development	26
Urban Development	13
Urban Infrastructure and Service Delivery	13
Rural Development	13
Rural Infrastructure and service delivery	13



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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

Context at Appraisal

Background of CAB

1. **The Central African Backbone (CAB) program seeks to provide a comprehensive solution to address connectivity gaps in the Central Africa region.** Launched in 2009, the World Bank's (WB) CAB program was designed to be a regional, fully integrated, end-to-end backbone infrastructure network that links seven Central African countries¹ and provides broadband access to the global network. The overall development objective of the CAB program was to support access to quality and affordable ICT services on open, transparent and non-discriminatory terms, resulting in: (i) lower cost of international broadband capacity and extended reach of backbone networks across the region; (ii) improved government efficiency and transparency through eGovernment applications; and (iii) increased country and regional competitiveness. This would be achieved primarily by creating a regional, fully integrated, end-to-end backbone infrastructure network. This was an ambitious "grand objective" at the time, given the almost complete absence of such infrastructure within or between these countries, and it spawned an impressive series of regional and country projects. Further information on the CAB program and individual CAB projects is provided in Annex 5 of this document. In addition to the CAB program, the WB has continued to actively support the connectivity agenda in Africa through other regional programs such as the Regional Communications Infrastructure Program (RCIP) in Eastern and Southern Africa, and the West Africa Regional Communications Infrastructure Program (WARCIP).

2. **The subject of this Implementation Completion and Results Report (ICR) is the 5th project in the Series of Projects (SOP) and meant to support the Democratic Republic of Congo (DRC).** The project is named CAB-SOP5 DRC (hereinafter referred to as the "CAB5" project) and was approved by the Board on July 16, 2014. It became effective on January 22, 2015.

Context at Appraisal and Sector Context

3. **At appraisal (in May 2014), the DRC was viewed as a country with the potential to become one of Africa's economic powerhouses.** The DRC is the largest country in Sub-Saharan Africa (SSA) with a land surface area of 2.3 million square kilometers (about the size of Western Europe) and had a population close to 75 million with natural resources throughout the country, including petroleum, natural gas, coal, cobalt, diamonds, gold, and copper. DRC also had the potential of becoming a significant producer of hydroelectric power – about 90 percent of domestic consumption of power was hydroelectric. However, the DRC was a low-income country with a GNI per capita of US\$220 (2012) making it one of the poorest countries in the world, with more than 71 percent of the population living under the US\$1.25 a day poverty line (2006). Decades of wars and mismanagement had deeply impoverished its population and destroyed its infrastructure. Human development indicators were strikingly low with the United Nation's Human Development Index ranking it last among 187 countries in 2012. Gender inequality was high and unemployment rates stood at 90 percent among the youth population.

4. **The telecom sector in DRC was vibrant with six mobile network operators (MNOs) – Vodacom, Airtel DRC,**

¹ Cameroon, Central African Republic, Chad, São Tomé and Príncipe, Republic of the Congo, Gabon, Democratic Republic of the Congo.



Tigo DRC, Orange DRC, Africell and SuperCell. Mobile penetration rate was 30 percent in 2010, a dramatic increase from below 1 percent in 2000. However, a mere 2 percent of the DRC population was using the Internet, mainly due to prohibitive prices as a result of high bandwidth cost of about US\$4,000-5,000 per Mbps per month compared to US\$500 per Mbps per month in East Africa at the time. Fixed broadband in DRC had a penetration rate of only 0.4%.

5. **The primary sector legislation in DRC comprised the Framework Law on Telecommunications** (No. 013 of 16 October 2002) and its companion Law No. 014 of 16 October 2002. These laws provided for two structures to manage the ICT sector: the Ministry of Posts and Telecommunications (MPT), later renamed the *Ministère des Postes, Télécommunications et Nouvelles Technologies de l'Information et de la Communication* (MINPTNTIC), and the Regulatory Authority for Posts and Telecommunication (ARPTC). The Congolese Society for Post and Telecommunications (SCPT) was formed as the result of a reform of the Congolese Office of Post and Telecommunication (OCPT) into a commercial company by law No. 08/007 of 8 July 2008. It was mainly focused on wholesale backbone and postal services and did not offer fixed-telephone service.

6. **During the appraisal, several other initiatives were ongoing in DRC**, including: (i) Landing of the West Africa Cable System (WACS) submarine optic fiber cable in DRC in June 2013.² (ii) Installation of SCPT's 650km optic fiber link between Muanda and Kinshasa in 2013,³ which was not yet fully operational at the time of appraisal.⁴ (iii) Construction of SCPT's 3,500 km optic fiber link between Kinshasa and Katanga and Lubumbashi.⁵ (iv) Deployment and commercialization of optic fiber bandwidth capacity between Kinshasa and Lubumbashi laid on DRC's *Société Nationale d'Electricité* (SNEL) energy grid supported by the WB Southern African Power Market Project (SAPMP).⁶ (v) The 17,000 km pan-African optic fiber network was extended to Lubumbashi in southern DRC in 2012 by Liquid Telecom (an independent private wholesale broadband provider) a significant positive development connecting one of DRC's three economic regions to much of the rest of Africa through Zambia.

7. **Further strengthening of the legal, regulatory and institutional framework was needed to align with the evolving needs of the fast-developing ICT sector.** MNOs and other private investors were already providing a range of modern ICT services particularly in major metropolitan areas. However, fixed broadband coverage lagged far behind. A good enabling environment that addressed key barriers was considered essential to secure the scale of investment that was needed to provide adequate nationwide and cross-border broadband backbone coverage.

8. **The WB started a policy dialogue with the DRC Government to review the legal, regulatory and institutional framework according to "best practices"** (no exclusive rights on fiber optic assets, financial autonomy of the regulatory authority, etc.) with the objective that new legislation to align with the needs of the fast-developing

² WACS ran between the UK and South Africa and was completed in 2012. It was initially installed with 10 Gbps technology and an initial design capacity of 5.12 Tbit/s. It was upgraded in 2015 using 100 Gbps technology and upgraded again in 2019. To date, WACS is the only international submarine cable link that has landed in DRC.

³ Constructed by China International Telecommunication Construction Corporation (CITCC) and part-financed with about US\$300 million from the China Exim Bank

⁴ The performance of SCPT's Muanda-Kinshasa cable link was widely considered to be substandard due to installation-related defects. It was alleged in a report from a DRC parliamentary mission in 2015 that the cables were not suitable for subterranean use.

⁵ This additional work started in 2013 and was completed in 2017. This network has been facing major technical issues due to poor maintenance, hence the reason why 3 operators Airtel, Vodacom, and Liquid decided to invest in SNEL's fiber.

⁶ Also called smart grid, modern electrical grids carry fiber optic cables in order to gather information about the behaviors of suppliers and consumers. Since the communication needs of an electricity company are minimal there is usually ample bandwidth capacity left over that can be leased.



sector would be enacted in 2013. Its approval would make DRC eligible for the CAB program.⁷

9. **The DRC Government officially indicated its interest in participating in the CAB program during 2013.** WB support was sought to develop, operate, and commercialize on a wholesale basis key economic clusters (Kinshasa, Lubumbashi, Goma) connected to submarine cable capacity through the quickest routes (WACS for Kinshasa, cross-border connections for the other clusters). These regional clusters would then be linked together in a second phase via national fiber links.

10. **The CAB5 project** was consistent with the Country Assistance Strategy (CAS) 2013-2016 for the DRC and the WB's 2011 progress report on the Regional Integration Assistance Strategy. It was well aligned with the DRC Government's development initiatives, including the 2012-2016 Government's Action Program⁸ and the National Backbone Development Plan of MINPTNTIC.⁹

11. **The CAB5 project was designed to deliver technical assistance (TA), strategic support and capacity building, and institutional innovation, including to promote policy reforms and public-private partnership (PPP) alongside the investment financing.** Disbursement conditions were included in the Financing Agreement (FA) to push for policy reforms in the digital sector. They entailed (i) promulgation of a new Telecom law, (ii) adoption of a restructuring schedule for SCPT (aimed at making it a competitive and financially viable institution), and (iii) creation of a new state-owned holding company to act as a Steering Committee for the project, house the Project Fiduciary Unit, act as owner of the CAB5 fiber infrastructure, and enter into concession contracts with wholesale service providers for the maintenance, management and commercialization of CAB5 fiber infrastructure.

Theory of Change (Results Chain)

12. **A results chain was included in the Project Appraisal Document (PAD), setting out expected results from each of the components.** A theory of change diagram was created for this ICR (Figure 1), based on the results chain, additional information provided in the PAD, and discussions with the project team. It includes key assumptions.¹⁰

⁷ This paragraph and the following paragraph are taken directly from the CAS (paragraphs 114 and 115).

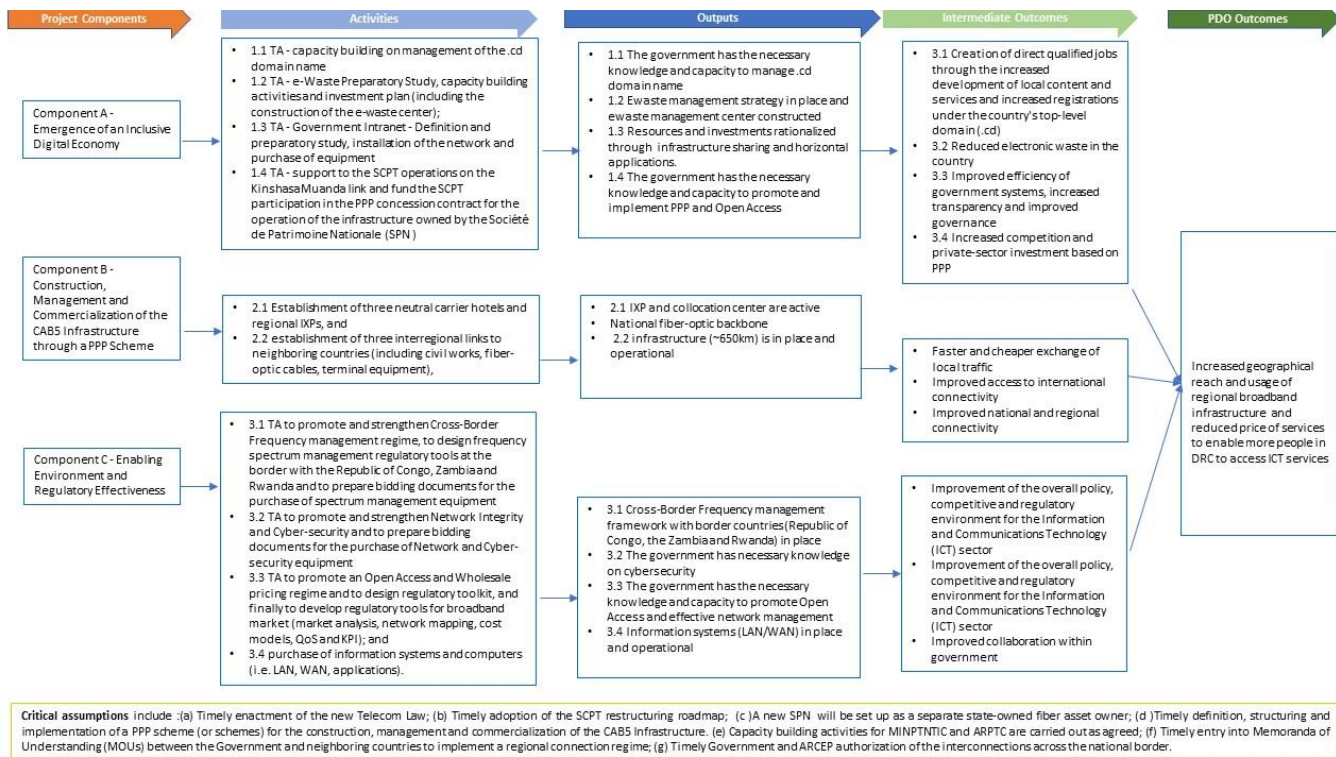
⁸ Programme d'action du Gouvernement 2012 – 2016 – Mai 2012

⁹ Développement des infrastructures en fibre optique haut débit en RDC, Banque mondiale – Ministère des Postes, Téléphones et Télécommunications, Mai 2010

¹⁰ The first three assumptions a), b) and c) were incorporated as disbursement conditions to create some leverage and push for reforms



Figure 1: Retrofitted Theory of Change for CAB5 DRC



Project Development Objectives (PDO)

13. The Project Development Objectives stated in the FA were “to contribute to increase geographical reach and usage of regional broadband infrastructure and to reduce the price of services to enable more people in the Recipient’s territory to access information and communication technology services”.¹¹

14. The PDO statement contained three separate development objectives:

- To contribute to increase the **geographical reach** of regional broadband network services
- To contribute to increase the **usage** of regional broadband network services
- To contribute to reduce the **price** of services.

15. Since it is logical to discuss the price first as a key determinant of usage, the order of the PDOs will be discussed as follows:

- PDO 1: To contribute to increase the geographical reach of regional broadband network services

¹¹ The PAD had virtually identical wording with the same meaning: The Project Development Objective (PDO) is “to contribute to increase the geographical reach and usage of regional broadband infrastructure and to reduce the price of services to enable more people in DRC to access information and communication technology services.”

- b) PDO 2: To contribute to reduce the price of services
- c) PDO 3: To contribute to increase the usage of regional broadband network services

16. Consideration was given to whether the final clause of the PDO statement “to enable more people in the Recipient’s territory to access information and communication technology services” should constitute an additional PDO objective. This was not done for the following reasons: (1) a PDO with multiple objectives implies that though related, each objective can be achieved to a different degree. The final clause appears to be conflated with usage (PDO 3). Although there is a differentiation between usage of regional broadband infrastructure and usage of ICT services, it would not appear differently in the results framework since there is no obvious way to quantify the differentiation; and (2) even if there was a quantifiably differentiated objective, the final clause begins with the words “to enable”, which in plain language is not the same as being required to achieve the objective.

Key Expected Outcomes and Outcome Indicators

17. The following key indicators were used in the PAD to measure achievement of these objectives:

Table 1: Key results indicators for CAB5 DRC

Key results indicator	Unit of measure
Geographic Reach [PDO 1]: <ul style="list-style-type: none"> • Number of kilometers of fiber optic network installed (<i>to the extent it covers or accesses new geography. If duplicating a link that is already there, it should improve capacity or volume of traffic.</i>) • Coverage of broadband mobile network (<i>percentage of population covered</i>) • Impact on telecom sector of technical assistance and capacity building provided through the CAB 5 project. (<i>This could relate to all 3 of the objectives</i>) 	<ul style="list-style-type: none"> • Kilometers • Percentage • Number
Volume of traffic [PDO 3]: <ul style="list-style-type: none"> • Number of Internet subscribers per 100 people • Number of direct project beneficiaries 	<ul style="list-style-type: none"> • Number • Number
Price of Services [PDO 2]: <ul style="list-style-type: none"> • Wholesale National Capacity Transmission Price (US\$/Mbps/month)¹² 	<ul style="list-style-type: none"> • US\$/month/Mbps

Components

18. **The CAB5 included both physical investments and TA which were grouped into three components.** The project’s total IDA financing was US\$92.1 million which was reduced to US\$44.5 million after restructuring. The original CAB5 components are described in the paragraphs below:

¹² The indicator measured the retail price of internet available to consumers and was referred to in the project as ‘Retail Price of Internet Services (per Mbit/s per Month, in US\$)’



Component A: Emergence of an Inclusive Digital Economy (Approved US\$13.2 million, Actual US\$3.68 million)

19. **The Component supported MINPTNTIC to accelerate the emergence of an information society and digital economy in the DRC** and help the country efficiently manage the new infrastructure to be built under Component B. This was done through the following planned activities: (i) capacity building for MINPTNTIC in the management of the .cd domain name; (ii) e-waste (the process of recycling electronic equipment) preparatory study, capacity building activities and investment plan (including the construction of the e-waste center); (iii) preparatory study for the network and purchase of equipment for the Government Intranet, and (iv) support SCPT operations on its existing Kinshasa-Muanda link and fund the SCPT participation in the PPP concession contract for the operation of the infrastructure that was to be managed by the *Société de Patrimoine National (SPN)*, a special purpose vehicle (SPV) – i.e. SOCOF – that would be created for management of public digital infrastructure. It was considered that involvement of SCPT in the PPP would help in securing SCPT’s active cooperation during project implementation.

Component B: Construction, Management and Commercialization of the CAB5 Infrastructure through a PPP Scheme (Approved US\$71.6 million, Revised at Restructuring to US\$24.0 million, Actual US\$28.0 million)

20. **The Component supported Government to deploy interconnected networks to form a regional network** through the following interventions: (i) establishment of three neutral carrier hotels and regional IXPs and (ii) establishment of three interregional links to neighboring countries - WACS for Kinshasa and cross-border links for the two other economic clusters (Goma and Lubumbashi regions). The scope included civil works, fiber-optic cables and terminal equipment. The Component also financed the SPN operating cost for the first two years, including the monitoring and the quality control of the construction. The new infrastructure would provide redundancy to the already existing SCPT link, which had technical shortcomings.

Component C: Enabling Environment and Regulatory Effectiveness (Approved US\$7.3 million, Actual US\$6.5 million)

21. **The Component supported Government to promote sector reforms and regulatory capacity of ARPTC**, to maximize benefits from access to new fiber optic capacity and strengthen the PPP framework established in the components above. It included (i) TA to promote and strengthen Cross-Border Frequency management regime, to design frequency spectrum management regulatory tools at the border with the Republic of Congo, Zambia and Rwanda and to prepare bidding documents for the purchase of spectrum management equipment; (ii) TA to promote and strengthen Network Integrity and Cyber-security and to prepare bidding documents for the purchase of Network and Cyber-security equipment; (iii) TA to promote an Open Access and Wholesale pricing regime and to design regulatory toolkit, and finally to develop regulatory tools for broadband market (market analysis, network mapping, cost models, QoS and KPI); and (iv) purchase of information systems and computers (i.e. LAN, WAN, applications).



Table 2: Funding Allocations to Components¹³

Component Name	Approved Cost (US\$M)	Revised Cost After Restructuring (US\$M)	Actual Cost (US\$M)
Component A - Emergence of an Inclusive Digital Economy	13.20	13.20	3.68
Component B - Construction, Management and Commercialization of the CAB5 Infrastructure through a PPP Scheme	71.60	24.00	28.00
Component C - Enabling Environment and Regulatory Effectiveness	7.30	7.30	6.50
TOTAL	92.10	44.50	38.18

SIGNIFICANT CHANGES DURING IMPLEMENTATION (IF APPLICABLE)

22. **The CAB5 project underwent significant changes during its implementation.** The project was approved on July 16, 2014. It became effective on January 22, 2015 and had an expected closing date of December 31, 2019. The project stalled after effectiveness due to difficulty in fulfilling some of the disbursement conditions defined in the FA, in particular: (i) promulgation of a new Telecom law and (ii) establishment of the SCPT restructuring schedule. These two conditions were meant to ensure that an improved institutional environment was put in place while advancing actions seen as important for sector reform. However, they proved difficult to implement due to the complex political economy. This caused serious delays in implementation that posed a risk to the project objectives, leading to the need to review some of the disbursement conditions, the scope of the project and the project closing date. The project therefore underwent a series of restructurings which impacted the project components, costs, and targets.

23. **Restructuring #1 - March 7, 2019:** By the midterm review that took place in March 2018, no progress had been made on the fiber investment under Component B. The delays in the implementation and disbursement were due to delays in effecting a new Telecom law which was the disbursement condition associated to Component B in the FA. This restructuring was therefore primarily directed at improving the very low disbursement and included the following changes:

- a) **Change in the disbursement conditions and FA.** To jumpstart the construction of the first link without any further delay, expenditure for Category 3 (defined at appraisal as Works for Component B), was split into category 3a (construction of the Western cluster in Kinshasa Region) and category 3b (construction of the eastern and southern clusters in Lubumbashi and Goma Regions) with new disbursement conditions for each category. The disbursement condition for Category 3b would be promulgation of the new Telecom Law, while a new condition for Category 3a was signing a Cooperation Agreement with SOCOF to obtain full Government buy-in for its launch of the PPP. The idea was to have new conditions for each of these two categories and rapidly launch the works on the critical Muanda-Kinshasa link (expenditure category 3a).

¹³ There is a difference in data between the ICR amounts sourced from the portal, and disbursement amounts sourced from client connection due to difference in exchange rate/date when the data was refreshed.



- b) **Extension of closing date.** Due to delays in commencing component B, there was need to extend the closing date by 12 months (from December 31, 2019, to December 31, 2020) to allow for completion of construction of infrastructure links as well as the implementation of the PPP arrangement.
- c) **Reallocation of project costs.** Expenditure was split within and between Components A and B to account for the fluctuation in the SDR exchange rate since the start of the project, the readjustment of the contract value for the construction of the Western cluster and finally to extend the support to SOCOF's operating costs for an additional two years. Details of the reallocation of costs are provided in the table below

Table 3: Disbursement by Category

Category before 2019 restructuring	Allocation before restructuring (SDR)	Category after 2019 restructuring	Cost after restructuring (SDR)
Goods, Works, Non-Consulting services, Consultants' Services, Operating Costs, Workshops and Training for Components A, B and C of the Project, and Works for Components A2 and C of the project	14,200,000	Goods, non-consulting services, consultants' services, Operating Costs, Workshops and Training for components A, B and C of the Project, and works for components A2 and C of the Project	15,308,878
Works for component A4 of the project	1,900,000	Works for component A4 of the Project	1,900,000
Works for component B of the Project	41,100,000	(3)(a) Works for component B (2)(a) of the Project	12,636,000
		(3)(b) Works for component B (2)(b) of the Project	29,400,000
Refund of the Preparation Advance	2,600,000	Refund of the Preparation Advance	555,122
Total	59,800,000		59,800,000

24. **Restructuring #2 (July 23, 2020):** After the partial easing of a key disbursement condition under restructuring #1, promulgation of the new Telecom law was further delayed to the point that completing Component B's civil works (pertaining to the Southern and Eastern Regions) and some activities under Component A would no longer be feasible. The project therefore focused on completing the Western Region (a map of the constructed fiber is provided in the Annex 7), including the recruitment of a private partner for the management of this new fiber optic infrastructure. In parallel, the Government and the WB had been actively searching for additional IDA resources that could help finance an upcoming Covid-19 emergency response Development Policy Operation (DPO), which was under preparation. In this context, the WB identified a few projects with high uncommitted IDA financing, including the CAB5, whose National IDA resources could be freed and potentially reallocated to other activities and projects. The restructuring therefore cancelled part of the uncommitted IDA funds allocated to civil works under Component B, while preserving sufficient funds for the completion of ongoing activities. This restructuring included the following changes:



- a) **Cancellation of uncommitted funds.** SDR 26,346,000 (\$36.4 million equivalent), representing 39.5 percent of initially approved amount of the uncommitted IDA grant proceeds was cancelled for Component B.
- b) **Changes in Components**
- i. Some Component A activities were cancelled. The installation of an e-waste center was cancelled because Government was unable to obtain land for construction of the center. Purchase and installation of equipment for a government intranet was cancelled because the delays in the project did not allow time for acquisition of equipment from the Ministries concerned. While the technical and operational audit of the SCPT fiber was done, the planned rehabilitation works on this fiber could not be carried out under the project, because this activity was tied to the disbursement condition on the adoption of the restructuring schedule for SCPT.
 - ii. Component B was scaled down to cover construction of fiber in the Western region only (Category 3a) while construction of fiber links in the Southern and Eastern Regions (Category 3b) was removed. Aside from the inability to meet the relevant disbursement condition, the Eastern and Southern routes were exceptionally challenging at the time due to security issues and lack of basic infrastructure and services (e.g., roads and electric power) which also prevented other investors from covering and serving the region. The Western region infrastructure link chosen by the project was seen as an option that could be completed within the remaining timeframe of the project. Establishment of three neutral carrier hotels and regional IXPs was also cancelled due to delays in the project. The project retained financing of the SPN operating costs for an additional two years. These changes resulted in change in cost of component B, however cost for component A did not change as indicated in table 4 below:
- c) **Change in Results Framework.** The length of fiber optic link to be installed was reduced from approximately 3,400 km to 620 km, reflecting the length of installed fiber between Kinshasa and Muanda (Western region), in line with the cancellation of uncommitted funds. The “Number of MoUs reached between DRC and neighboring countries to implement a regional interconnection Regime” was removed as there would be insufficient time to sign such MoUs.
25. **Restructuring #3 - December 22, 2020.** The COVID-19 crisis caused DRC borders to be closed between March to June 2020 which made it difficult to import equipment or bring experts from outside the country. In parallel, the selection of the private operator (PPP) to manage the infrastructure (also under Component B) had not been completed. Delays in finalization of the PPP were due in part to uncertainties related to the promulgation of the new Telecom Law and the poor enabling environment that made it less attractive to operators while others saw it as direct competition to their own private investments. Based on this, the project closing date was extended from 31 December 2020 to 18 June 2021 bringing the total cumulative closing extension to 17.5 months. The extension was to ensure the successful completion of the remaining activities under Component B and to allow the WB to remain involved in the review of the contracting of the private operator to manage the new fiber optic network.
26. **Restructuring #4 - June 15, 2021:** Although the Kinshasa-Muanda link (under Component B) was complete, selection of the private operator (under a PPP arrangement) to manage the infrastructure was still pending. Based on this, the project closing date was further extended from 18 June 2021 to 30 September 2021 bringing the total cumulative closing extension to 21 months. The extension was intended to finalize the selection process of recruitment of a private operator to operate and commercialize the infrastructure.

Revised PDO and Outcome Targets

27. **The PDO remained unchanged throughout the project.** One outcome target was revised in the second restructuring, when component B was scaled down, and was maintained until the project closing date of September 30, 2020 (details in the table below)

Table 4: Baseline and Outcome Targets

PDO indicator	Unit	Baseline (Jan 2015) (see note2)	End Target at Approval (Jul 2014))	Revised End Target after restructuring at Final Closure (Sep 2021)	Value at Closing Sep-2021
Impact on telecom sector of technical assistance and capacity building provided through the CAB 5 project	Index (note 1)	0	4	4	3
Geographical reach of mobile services (percentage of population covered)	Percent	25	50	50	64
Access to Internet Services (mobile subscribers)	Subscribers per 100 people	2	20	20	23
Retail price of mobile internet services	US\$ per Mbps per month	2,000	200	200	123
Length of Fiber Optic Network Built	Kilometers	0	3,400	650	620 ¹⁴
Direct project beneficiaries (note1)	Number	0	5 million	5million	0

Note1: The percentage of female direct project beneficiaries was also a key target (50 percent), however this is redundant here since there were no direct project beneficiaries.

Note2: Baseline date was January 2015. This baseline reflected an assumption at the time of appraisal (and this was in fact the effectiveness date of the project)

Revised Components and Component Costs

28. **Two components were revised under the second restructuring** (detailed below):

- a) Component A (Digital Economy) was scaled down due to inability to complete all activities by the closing date of December 31, 2020, which was caused by delays in effecting two disbursement conditions related to the rehabilitation of the SCPT
- b) Component B (Connectivity): Similarly, activities under component B were scaled down due to the pending disbursement condition related to promulgating the new Telecom law.

29. **As a result of the restructuring, the costs associated with Component B were changed**, while the other component costs remained the same, as indicated in restructuring #2.

¹⁴ 650 km was the estimated length of fiber at appraisal, the link was completed at 620 km

Revised PDO and Intermediate Indicators

30. **Several PDO and intermediate indicators were revised** as per restructuring #1 and restructuring #2 (details in the table below) to account for cancellations of some activities under Component A and Component B and for clarity in definition of the indicators.

Table 5: Revised PDO and Intermediate Indicators

	Original PDO indicator	PDO indicators – After Restructuring	Changes
1	Merging two indicators: 1) Impact of World Bank Technical Assistance on telecom sector (composite score 1- low impact to 5 - high impact) and 2) Impact on IT/ITES sector of World Bank Technical Assistance (composite score: 1- low to 5 0 high impact)	Impact on telecom sector of World Bank support through the CAB 5 project (composite score: 0- No impact to 5-high impact)	1) new indicator 2) new targets
2	Access to Internet Services (number of subscribers per 100 people)	Access to Internet Services (number of Mobile Internet Subscribers per 100 people)	1) reformulation specifying that the indicator refers to mobile internet penetration 2) new targets
3	Retail Price of Internet Services (per Mbit/s per Month, in US\$)	Retail Price of Mobile Internet Services (per Mbit/s per Month, in US\$)	1) reformulation specifying that the indicator refers to mobile internet services 2) new targets
4	Geographical reach of mobile services	Geographical reach of mobile services (% population coverage of 3G networks)	1) reformulation specifying that the indicator refers to mobile services and population penetration 2) new targets
5	Direct project beneficiaries (in million)	Direct Project Beneficiaries (number of subscribers served by the fiber optic network of CAB5, million)	1) reformulation [providing a more precise definition of direct beneficiaries 2) new targets
	Female beneficiaries (%)	Direct Project Females Beneficiaries (percentage of subscribers served by the fiber optic network of CAB5)	1) New targets for y6, y7

OUTCOME

A. RELEVANCE OF PDOs

Assessment of Relevance of PDOs and Rating

31. **The relevance of the PDO is rated as High.** The PDO was fully aligned with WB priorities (both at appraisal and throughout implementation) and with DRC's higher-level objectives.

32. **The project was fully aligned with WBG priorities established for DRC.** The WB's Country Assistance Strategy (CAS) 2013-2016 for DRC, discussed by the Board in May 2013, makes specific reference to the CAB5 project



(paragraphs 114 and 115). CAS Outcome 2.3 is: “Improved access to quality broadband network and services at reduced cost.”

33. **The project directly contributes to the Government’s national priorities, including** (i) the 2012-2016 Government’s Action Program¹⁵ based on the 2009 Letter of Sector Policy¹⁶, (ii) the *Plan National de Numerique – Horizon 2025*, (iii) the strategy of the current government, and (iv) the National Backbone Development Plan of MINPTNTIC.¹⁷ This plan comprised five construction phases. The first phase Muanda – Kinshasa (650 km) was built during 2013 but was still not fully operational at the time of the CAB5 project appraisal. The South African Power Market Pool (SAPMP) project contributed to the 2nd phase of the national plan, and the proposed CAB5 project was planned to contribute to the 3rd phase. The CAB5 project was initially planned to finance around 3,400 km of fiber optic backbone, out of the 7,500 km planned in this phase, however due to the restructuring it financed just 620 km of the fiber optic backbone. The construction cost of the originally planned infrastructure (including passive and active equipment) was estimated to be US\$84.5 million. The rationale behind the proposed network design was to provide the DRC with access to international connectivity through the submarine cables running down the coasts of Africa (i.e., West Africa Cable System (WACS), Africa Coast to East (ACE), Seacom, Eastern Africa Submarine Cable System (Eassy), Lower Indian Ocean Network (LIONS), The East African Marine System (Teams)) and to connect the three key economic clusters - Kinshasa (Western Cluster), Lubumbashi (Southern Cluster), Goma Eastern Cluster), including appropriate cross-border connections through Angola, Burundi, Rwanda, Uganda and Zambia.

34. **The PDO remained highly relevant throughout the implementation** and helped support the CAS development objectives. Key outcome indicators for CAS Outcome 2.3 included 2016 targets for increased total broadband penetration (household penetration) and increased international Internet bandwidth, which were consistent with key targets for the CAB5 project. The 2013-2016 CAS had not yet been updated at the closing date of the project, and therefore the 2013-2016 CAS continued to be used for the assessment of relevance at closing.

35. **The WB was in a good position to continue its support for the ICT sector in DRC** with the aid of US\$92.1 million of IDA grant funding. The Bank had provided extensive support to the telecommunications sector of the DRC since 2004 through a series of technical assistance activities, including: (i) assisting in the creation and operation of the regulator, ARPTC (Private Sector Development Competitiveness Project 2004-2008), (ii) policy dialogue to support the adoption of the Letter of Sector Policy in FY09, FY10 and FY11; (iii) supporting MINPTNTIC to develop an ICT Strategy, ICT Policy and Broadband Strategy; and (iv) supporting the revision of the legal and regulatory framework identified as key actions in the ICT Strategy and Policy documents.

36. **At the time of the project appraisal, the project had been designed to be rolled out on a PPP basis** based on the CAB model. Other donors such as the *Agence Française de Développement* (AFD) had been interested in providing parallel financing to establish complementary backbone infrastructure under the CAB5 Project.

¹⁵ Programme d’action du Gouvernement 2012 – 2016 – Mai 2012

¹⁶ Déclaration de politique Sectorielle – Décembre 2009

¹⁷ Développement des infrastructures en fibre optique haut débit en RDC, Banque mondiale – Ministère des Postes, Téléphones et Télécommunications, Mai 2010



B. ACHIEVEMENT OF PDOs (EFFICACY)

Assessment of Achievement of Each Objective/Outcome

37. **The overarching development objective for the CAB5** was “To contribute to increase geographical reach and usage of regional broadband infrastructure and to reduce the price of services to enable more people in the Recipient’s territory to access information and communication technology services”. The ICR assesses the efficacy as **Modest**.¹⁸ The rationale for the assessment is further outlined below.

38. **This section disaggregates the PDO into three parts** and provides the evidence for its achievement using the key indicators. The aggregate efficacy rating for the CAB5 is based on the evaluation of each PDO outcome, assuming they are broadly of equal importance.

PDO 1: To contribute to increase the geographical reach of regional broadband network services

39. **Achievement of PDO 1 is rated as Modest.**

a) **Number of kilometers of fiber optic network installed**

i. The indicator was achieved at 100 percent after the partial cancellation of the IDA grant and the resetting of its target value down from 3,400 km. A 620 km link between Kinshasa and Muanda had been completed by SOCOF in 2020 but was not yet operational due to the pending PPP contract to operationalize the link and the fact that the link was not connected to the landing station at Muanda. The link has a potential to substantially increase the working fiber capacity between Muanda (WACS) and Kinshasa, which could enhance the customer value proposition for mobile operators by offering faster and more reliable broadband, with attendant benefits for extending the geographic reach of broadband network services across the Western Economic Cluster. A PPP contract to operate and maintain the link was signed with an Angolan/Congolese consortium

b) **Geographical reach of mobile services (percentage of population covered)**

i. The PDO indicator was achieved with 64% of the population covered against a target of 50% at appraisal. Although the fiber link between Muanda and Kinshasa that was installed by SOCOF is expected to become operational, this has not yet happened and therefore progress cannot be attributed to this link.¹⁹ In the meantime, private operators Vodacom and Airtel have built an additional fiber link between Muanda and Kinshasa in 2021 that is connected to SCPT’s landing station at Muanda, thereby decreasing the chances of these operators using the SOCOF link in the immediate term. However, the concessionaire intends to extend the SOCOF link to Angola and Congo Brazzaville, and that will offer increased geographic reach once it becomes operational.

ii. The project was unsuccessful in increasing the geographic reach of broadband in the Eastern and Southern Economic Clusters, and particularly in establishing links to East Africa to access the submarine cables off

¹⁸ A Modest rating indicates that the operation partly achieved (or is expected to partly achieve) its objectives (intended outcomes).

¹⁹ The PPP contract was signed on March 14, 2022. It is understood that this new consortium will seek to commercialize the link via connection with Angola if it is unable to access SCPT’s landing station at Muanda.



the east coast, as this part of the project was cancelled (refer to section 2). The project also had trouble in establishing Memoranda of Understanding (MOUs) with neighboring countries to the east.

PDO 2 - To contribute to reduce the price of services

40. Achievement of PDO 2 is rated as Modest.

a) Retail price of mobile Internet services

- i. The project was expected to contribute to reduction in price of mobile internet services through increased competition, economies of scale, improved quality of service and the availability of value-added ICT services (e.g., mobile banking). The indicator exceeded its target. By project closing, the retail internet prices (for mobile subscribers) had come down to around US\$123/Mbps/month from a high of around US\$ 2,000 at the beginning of the project. The direct impact of the project's optic fiber infrastructure in the market is zero because the infrastructure was not yet operational. However, it would seem that other CAB5 activities that contributed to increased affordability, such as modelling of mobile network interconnection prices financed under Component C, have enabled operators to reduce, over several years, the mobile termination rate and voice-over-the-counter tariffs to the great benefit of users. The interconnection tariffs decreased significantly because of the implementation of the new tariff model: US\$0.034/minute in 2016; US\$.0.027/minute in 2017; US\$0.023/minute in 2019; US\$0.02/minute in 2020.

b) Impact on telecom sector of technical assistance

- i. The TA, policy dialogue and capacity building for MINPTNTIC and ARPTC was provided to strengthen the legal and regulatory framework in DRC including spectrum management, network integrity and cybersecurity. Additionally, a wholesale observatory was put in place and continues to monitor the telecom industry and produce quarterly market reports. More specifically, the modelling of mobile network interconnection prices financed under Component C and implemented by ARPTC, has enabled operators to reduce, over several years, the mobile termination rate and voice-over-the-counter tariffs to the great benefit of users.
- ii. Capacity building and TA were carried out to promote Open Access and a wholesale pricing regime, and to develop regulatory tools for the broadband market. This contributed to improvement of the efficiency of regulation of the telecoms and ICT sector in DRC and increased availability of value-added services (such as mobile banking). However, at the time of ICR preparation, the Open Access policy for new and existing framework was pending approval.
- iii. The rollout of 4G and the widespread adoption of smartphones dramatically increased the speed of broadband available to mobile customers and resulted in a corresponding large reduction in the price per Mbps per month. The mobile operators faced resistance from the regulator ARPTC when they tried to increase the pricing for the better services. This was a positive sign that regulatory effectiveness was improving following TA assistance provided to ARPTC in the project.

PDO 3 To contribute to increase the usage of regional broadband network services

41. Achievement of PDO 3 is rated as Modest.



a) **Number of Internet subscribers per 100 people**

Usage of internet services (mobile subscribers) increased significantly during the project. The indicator was achieved at 115 percent. During this period, several other investments in broadband infrastructure were ongoing (as discussed in section 1), giving the market various connectivity options. Meanwhile the SOCOF link was not yet operational by the end of the project. Therefore, attribution of this achievement to the infrastructure installed by the CAB5 project is not possible.

b) **Number of direct project beneficiaries**

The "direct project beneficiary" indicator remained at zero as the infrastructure was not yet operational by project closure. However, there is potential to make a significant contribution towards this target in the future once the link is commercialized.

c) **Impact on telecom sector of technical assistance**

TA was provided to ARPTC on spectrum management, frequency management and monitoring and cybersecurity. This had a positive effect on the development of 3G in DRC which had a penetration rate of 25.8 percent on July 1, 2021, and on trust among users.

C. EFFICIENCY

42. **The ICR assesses the Efficiency as Modest.**

43. **The substantial (US\$4 million) Project Preparation Grant (PPG), an advance for preparatory work for the CAB5 project, was unable to complete its funded activities** in key areas in the very short time (7 months) before the project was approved,²⁰ which may have contributed to subsequent inefficiencies and cancellation of funds.

44. **The subsequent delays in execution of the disbursement conditions did detract from overall project efficiency.** These delays also had substantial effects on completion of the components and resulted in major reduction of scope of Component B and cancellation of much of the IDA grant funding. These were compounded by long delays in awarding the PPP contract. However, some of the PDO indicators were achieved (albeit with questionable attribution to the project) and represent significant long-term value. Costs related to procurement, security and project management were substantial but reasonable given the context.

45. **Four restructurings were needed, resulting in a total extension of 21 months to the original closing date.** This would have been well justified if the funds could have been used. However, only around US\$38.18 million of the US\$92.1 million²¹ of IDA grant money was used (41.5 percent of the initially approved amount) and US\$8.78 million was undisbursed by the end of the project.²² The remaining grant money was not wasted, as it was reallocated to a WB-supported program directed at COVID recovery in DRC.

²⁰ Further detail is provided in Section III A: "Key Factors During Preparation"

²¹ This was the US\$ value of the SDR 59.8 million IDA grant at the final closing date (September 30, 2021). The disbursement breakdown by component was US\$3.68 million for Component A, US\$28.0 million for Component B, and US\$6.5 million for Component C.

²² The US\$8.78 million figure for the undisbursed amount is per the Client Connection. A higher amount of \$17.53 million is derived from the Datasheet in the Operations Portal, however the latter needs to be adjusted for US\$/SDR currency fluctuations.



46. **At the time of ICR preparation, no project-supported infrastructure investment was operational**, therefore an updated economic and financial analysis was not prepared (given there would be zero direct return). It is possible that the project will contribute to substantial economic benefits for DRC because the Muanda-Kinshasa route is the main route connecting the international submarine cable and the capital city. The link has been constructed to a high quality and will likely deliver improved quality and reliability to the capital. However, the link is not yet operational, so it is too early to judge.²³

47. **The cost of construction of the 620 km of fiber in the Western cluster was about US\$27,000 per kilometer**, including civil works. This is in line with international estimates for an underground link covering broadly similar terrain and is substantially lower than the price paid by SCPT for the previous link on the same route.

D. JUSTIFICATION OF OVERALL OUTCOME RATING

48. **Given the High relevance, Modest efficacy and Modest efficiency, the overall outcome rating is Moderately Unsatisfactory (MU).**

49. **Notable sector improvements took place during the project period in line with the PDO** (improved geographic coverage, lower prices and more usage of broadband and ICT services). While it is difficult to attribute these improvements to the project, significant contributions were made by its TA activities, particularly in support of the regulator ARPTC. Since commercialization of the SOCOF fiber infrastructure will only happen after the ICR, it will only be possible to measure the effects of that part of the project in the future.

E. OTHER OUTCOMES AND IMPACTS (IF ANY)

Gender

50. **The main project activities aimed to benefit men and women alike.** For instance, the benefits of increased broadband penetration, lower prices for customers, improved Telecom legislation and regulation etc., do not discriminate by gender or age. However, although the project did not target specifically gender, generally women using broadband may have the most gain from access and affordability in a context where women have lower incomes.²⁴ In addition, the project sought to disaggregate the project beneficiaries into male and female beneficiaries to determine impact on each of the two segments.

Institutional Strengthening

51. **The project contributed to the institutional strengthening of MINPTNTIC and ARPTC** through technical assistance, strategic support, and policy and regulatory capacity building on crucial topics such as the implementation of PPP and Open Access, regulatory tools, cost models, spectrum management and cross border coordination, cybersecurity and monitoring and evaluation. This institutional strengthening is expected to result in the improvement of the efficiency of regulation of the telecoms and ICT sector in DRC.

²³ Economic and financial analyses were provided in the PAD (Annexes 6a and 6b). However these analyses were predicated on the addition of operational fiber links by the project, which did not happen.

²⁴ <https://www.peacewomen.org/content/gender-inequality-and-social-institutions-dr-congo>



Mobilizing Private Sector Financing

52. **To leverage international expertise and ensure operational and investment decisions are made on a sound commercial basis**, the project adopted an approach to have private participation in the management, maintenance, and commercialization of the CAB5 infrastructure under an open-access PPP model between the public-shareholding company owning the network (SPN) and the private operator managing the network (concessionaire). The project financed the passive infrastructure including burying of ducts and fiber, and building shelters, while the concessionaire consortium will provide active equipment and finance the missing last mile in Muanda to connect the fiber to the WACS landing station (or make alternative connection arrangements in the near term, via Angola). The concessionaire consortium is expected to make substantial financial investments to supplement the IDA grant resources; around \$6 million as stated in the PPP contract.

Poverty Reduction and Shared Prosperity

53. **The development of DRC's telecommunications sector contributes to the WB's twin goals** of eliminating extreme poverty and boosting shared prosperity. During project implementation, there has been an improvement in affordability of internet with retail prices coming down to around US\$123 per Mbps per month from a high of around US\$ 2000 per Mbps per month at the beginning of the project. However, attribution of this success to the project is uncertain. Geographical reach of internet services has increased to 65 percent over the project period, which can be partly attributed to successful implementation of capacity-building activities for ARPTC under Component C. More broadly, the sector dialogue supported by the project through MPTNTIC and the ARPTC directly contributed to the promulgation of the new Telecom Law, providing more certainty to operators and eventually translated in the general growth of the sector. This increased access to broadband services provides leap-frogging opportunities, by enabling new ways of communicating, sharing and storing information, delivering services and conducting business. Increased access to information benefits various segments of society; for example, it empowers entrepreneurs and traders to expand their business within the DRC and to facilitate trade regionally and globally.

II. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

A. KEY FACTORS DURING PREPARATION

54. **The WB assessed the level of Government preparedness to implement the CAB5 project.** Prior to its appraisal of the CAB5 project, the WB conducted an internally funded TA operation for ICT regulatory services in DRC (P132812). This TA, conducted between late 2012 and early 2014, aimed at (i) assessing the readiness of the Government to successfully implement the CAB5 project, focusing on open access and nondiscriminatory principles for the management of the future backbone; (ii) advising government on revision of the legal and regulatory framework; and (iii) developing the proposed PPP framework and structure. Results from the TA indicated that there was need to assess, and measure increased risks associated with the setting up of the PPP and allow more time to establish CAB5's readiness. It also noted evolution of a competitive landscape in the development of the sector and highlighted the importance of closely managing risks and the need for the WB to collaborate with MIGA and IFC to better determine the extent to which the private sector would financially contribute to the project. These recommendations were considered during the preparation of the project.



55. **CAB5 preparation time was insufficient to finalize the preparatory activities.** A US\$4 million Project Preparation Grant (PPG) was approved by IDA and the DRC government in December 2013 as an advance under the CAB-SOP5 project.²⁵ The PPG supported (i) the establishment of arrangements to allow an investment bank to be recruited to finalize the PPP arrangements;²⁶ (ii) identification of network investments to be funded by the proposed project; (iii) engaging MINPORTFOLIO as the Implementing Agency, through its project management unit (COPIREP); (iv) preparation of appropriate safeguards instruments; and (v) a study to develop the Government's roadmap for the restructuring of SCPT. However, the 7 months allocated to finalization of these activities was insufficient, leading to challenges during project implementation.

56. **The PPP Structure.** The CAB5 Project Information Document (Appraisal Stage)²⁷ elaborated on the reasons why the project would rely on PPPs to build and operate the fiber optic network in the DRC as follows: (i) Neither the Government of DRC nor private operators were perceived to have the financial capacity or the technical expertise on their own to support the high upfront investment required to build a nationwide network. The context was seen to be like that of Europe and the U.S. where the large geographic size presented significant challenges and disincentives for telecommunications operators to invest and expand outside an economic cluster; (ii) The PPP could be designed to aggregate market players which would reduce transaction costs for both the Government and the private operators. This setup would increase coordination capabilities for maintaining the network and determining wholesale prices in a transparent manner; (iii) A number of private operators in the DRC were already discussing establishing a consortium in order to leverage coordination and investment opportunities for network expansion.

57. **Establishment of the PPP was proposed as a two-step approach.** As a prerequisite, (i) an SPN, which would be a public shareholding company, would be established to own the passive infrastructure (i.e. fiber cables and ducts) and partial active infrastructure (buildings, transmission technology-neutral equipment that could be shared among operators); (ii) the rest of the active infrastructure and network intelligence would be operator-specific.²⁸ As a first step the SPN would select a construction company to build the infrastructure and conduct civil work and lay down dark fiber on the ground. Once built, the infrastructure would be incorporated as equity into the capital of the SPN. As a second step the SPN would contract an aggregation of operators or several operators separately (the "concessionaire") to "light" the dark fiber (i.e., to invest in access network and active equipment) and a concession contract would be prepared and concluded between the SPN and these operators for the maintenance, management and commercialization of the infrastructure. The basic reasoning behind the establishment of a PPP was sound, but in the fact, it took a long time to structure (partly due to the delay in setting up the SPN), and probably overestimated the client capacity to manage a complex arrangement with limited PPP experience. The political economy issues also delayed the implementation of the PPP.

58. **Implementation arrangements and focal points:** The WB advocated for efficient implementation arrangements that included a project steering committee²⁹, Project Fiduciary Unit (first in COPIREP and then in SOCOF once it was

²⁵ Other projects in the CAB series also used a substantial PPG. However, this PPG was signed only seven months before the Board approval of the CAB5 project, which meant that items (a) and (e) could not be completed before the approval of the main project. Covenants were then inserted into the Financing Agreement to make project disbursements conditional on progress on these items.

²⁶ It was further clarified that this involved establishing a *Societe de Patrimoine Nationale* (SPN), a limited company wholly owned by the Congolese state, which would engage an investment bank to structure the PPP.

²⁷ This document was published in February 2014.

²⁸ *Inter Alia*: terminal equipment, optic fibre electronics, routers, switches...

²⁹ *Comité de Pilotage*



established) and Project Focal Points (MINPTNTIC, MINPORFOLIO, ARPTC). As a State-owned Enterprise (SOE), SOCOF fell under the Ministry of Portfolio. Establishing SOCOF was considered to have been justified because SCPT, which could have managed and operated the new fiber infrastructure, had governance issues and poor track record with regards to management and its ability to ensure high quality infrastructure standards and the Government wanted to keep the ownership of the fiber public. Unfortunately, and while SOCOF was able to ensure that the fiber delivered through CAB5 is of very high quality, the project also experienced significant delays, notably in managing the selection of the private partner as already mentioned above. The selection for the PPP contract took a total of 20 months, from the time the pre-qualification was launched in July 2020 to when the contract was finally signed in March 2022³⁰.

59. **The Project risks were adequately identified but the mitigation measures were insufficient.** Key risks identified by the WB at appraisal stage included delays in the implementation of the new legal framework, the difficult political economy of restructuring the state-owned SCPT, and the “undefined PPP scheme” all of which materialized and resulted in delays in the project implementation. The project overall risk was rated substantial throughout the life of the project, mainly due to low disbursements and long delays in implementation of the project components.

B. KEY FACTORS DURING IMPLEMENTATION

60. **Project disbursement conditions could not be met during implementation.** The project included disbursement conditions including signing a new Telecom law to address the main perceived gaps and weaknesses of the earlier 2002 Telecom Law.³¹ Delays in approval of a new Telecom law by parliament caused delays in implementation of component B, and finally resulted in the reduction of this component’s scope and the cancellation of SDR 26.346 million (equivalent to US\$36.4 million) of uncommitted funds under the IDA grant. As mentioned earlier in this document, the conditions were considered important for creation of the appropriate enabling environment for project implementation. However, implementation of the CAB5 project would have still been possible without the conditions. In hindsight, it could have been preferable to support the achievement of these reforms (once agreed with the Government) under a separate instrument (such as a DPO) so as not to delay or cancel critical developments in the sector unnecessarily.

61. **Government buy-in to the project:** Feedback from the Recipient was that the project did not have enough visibility at high levels of Government and with the public, and often struggled to influence decision making by Government institutions, the Presidency, and the Parliament, such as the adoption of the new legal framework and finalization of the PPP arrangement. Some politicians and some local private companies perceived the project as a threat to their interests.

³⁰ The prequalification process for the selection for the PPP operator was launched on July 7, 2020. The prequalification bids were received on August 31, 2020, and the Government of DRC selected 4 bidders shortly after. The tender was then launched on February 8, 2021. Final bids were received on April 9, 2021. The Government awarded the contract to FAST on September 28, 2021. The contract was finally signed on March 14, 2022, 5.5 months later.

³¹ As stated in the PAD, under the 2002 Law, the state-owned telecom operator SCPT holds temporary exclusive rights to “*Backbone Nationale*” (BBN) for national security reasons, raising concern among the WB’s CAB5 project appraisal team that this could compromise competition and Open Access principles. However, art. 12 of the telecommunications law (No. 013 of 2002) allows the State via the telecommunications regulator to authorize (exceptionally) another operator (not SCPT) to install and exploit part of the BBN.



62. **The project was attempting to help SCPT to remedy defects in its existing Muanda-Kinshasa link** (under component A)³² and at the same time to constitute an SPN to organize a PPP scheme to construct new links, including a new link between Muanda and Kinshasa. The former would require cooperation with SCPT, the latter would essentially be in competition with SCPT. This did not provide a coherent strategy that would be attractive for SCPT. The need for SCPT buy-in remained, regardless of attempts by MINPORTFOLIO and the project to restructure the company. Even a restructured SCPT would still be in the broadband backbone business and would remain responsible for at least 4,000 km of fiber backbone that it had already installed and/or was installing in DRC (and had already leased capacity to multiple MNOs).

63. **The socio-political environment was not favorable.** Elections held in 2018 slowed down the project. Institutional changes that took place during the elections may have resulted in a gap in funding for SOCOF's operations. This contributed to Restructuring #1 in 2019, which took place following the project's mid-term review. Meanwhile progress had been made on the approval of the new telecom law, though at a slow pace. The political environment improved with formation of the new Government in 2019, which laid more focus on the development of the digital economy.

64. **Project implementation was affected by the Government's stringent measures to combat the COVID-19 pandemic** since reporting its first case in March 2020 – including border closures, restrictions on public gatherings, and travel bans between Kinshasa and other provinces. These measures impacted project implementation and supervision activities since both WB staff and government officials were restricted from travel

65. **Disbursement Conditions:** In order to help ensure effective Government commitment to the SCPT restructuring and the PPP scheme (specifically the operationalization of the SPN), the WB deemed it necessary to include covenants in the FA that needed to be met before specific project disbursements could take place.³³ Two of these covenants compromised the implementation of the project, as discussed immediately below.

III. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

A. QUALITY OF MONITORING AND EVALUATION (M&E)

M&E Design

66. **The outcome indicators for this project were essentially the same as those used for the regional CAB program**, related to the geographical reach, usage, and prices of regional broadband network services with clear targets against which progress toward objectives was assessed. However, in this case, the scale of the project's proposed activities was modest in comparison to the ICT and broadband investment needs of the country, and a large amount of private investment in ICT was also taking place at the same time. For example, one of the MNOs, Airtel, has already invested more than US\$1 billion in DRC. Therefore, the attribution of the results to the project is uncertain and probably quite low. This is explicitly recognized in the PDO, which specified that the project would contribute to

³² This envisaged support to SCPT was twofold: restructure SCPT to make it a competitive wholesale operator and rehabilitate its Kinshasa-Muanda link to have fully performing assets and revenues. The envisaged "deal" with the government was to help SCPT prepare for the new legal framework and a fully competitive environment.

³³ Covenants were introduced in CAB4 (Gabon) for requiring the setting up of the SPN to implement the PPP.



reaching the objectives. The TA component of the project, particularly the support to the regulator ARPTC, did contribute to reaching the PDO. The contribution of the new fiber infrastructure will be seen in the future when it becomes operational. The results framework was clear, and intermediate indicators adequately captured the contribution of the project's activities and outputs toward achieving PDO-level outcomes. The sector's regulator ARPTC was the entity designated to perform data collection, before compiling the results and transmitting them to the project team.

67. **M&E design could have been improved by providing more precise definitions for the indicators** – for example, there was a requirement to modify two indicators during implementation to clarify that they applied to mobile services only. The original indicators for capacity building did not focus on the contribution of the project, and the revised indicator did not refer to capacity building. A modified capacity building indicator was used for this ICR. There was inconsistency in the name of the PDO2 (price of services) indicator. The indicator was named Wholesale National Capacity Transmission Price (US\$/Mbps/month) but the project referred to the indicator as Retail Price of Internet Services (per Mbit/s per Month, in US\$). The indicator measured retail price of internet available to consumers rather than the wholesale price. The name of this indicator should have been changed from Wholesale to Retail in line with the data that was being monitored by the project.

M&E Implementation and Use

68. **M&E data (baseline and actual values) were collected and analyzed in a methodologically sound manner.** ARPTC collected the relevant data in the context of its market oversight duties by getting reliable information directly from the operators and ISPs. ARPTC then provided to the [Project Implementation Unit \(PIU\)](#), on a biannual basis, the monitoring and evaluation indicator values it collected.

69. **The project achieved 6 out of 9 outcome and intermediate indicators;** however, attribution challenges have already been noted. M&E data was used to monitor performance throughout the implementation phase and to adjust indicators and results framework during restructuring in 2019 and 2020. M&E findings were disseminated by the PIU to all stakeholders, and ARPTC has continued to collect data beyond the project's closing date.

Justification of Overall Rating of Quality of M&E

70. The quality of M&E is rated to be **Substantial**, given the quality of implementation, regular dissemination, and utilization in project implementation.

B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE

71. **Environmental and social safeguards.** The environmental assessment category was rated B at appraisal. The project had a significant infrastructure development component and social cost. The project triggered environmental safeguard policy OP/BP 4.01, an Environmental and Social Management Framework (ESMF). Three Environmental and Social Impact Assessment (ESIA) reports and one Environmental and Social Management Plan (ESMP) were produced and disclosed. The project also triggered OP 4.10 and OP 4.12, and a Resettlement Action Plan (RAP) was prepared and implemented for the Western cluster. A Resettlement Policy Framework, and an Indigenous Peoples Policy Framework were also prepared. A functional Grievance Redress Mechanism (GRM) was created, with 56 complaints registered since



the start of the project, and all were dealt with and considered closed. An environmental specialist was hired to support the project in the monitoring of environmental safeguards. The environment risk rating is Substantial.

72. **Most of the planned actions in the ESIA reports were implemented to a satisfactory standard** (although with important delays for some) and the environmental impact of works was systematically mitigated as per the standards and guidelines included in all contracts under the project. However, the project's performance on safeguards was rated as Moderately Unsatisfactory at closing because the project closed with one outstanding OHS issue.

73. **Occupational Health and Safety (OHS) incidents.** The project has reported one OHS incident. This incident involving a serious traffic accident which caused two fatalities was classified as severe and was confirmed and accounted through the Environmental and Social Incident Response Toolkit (ESIRT), and not closed because the compensation to be paid to the families of the deceased and the two injured persons is still pending. The WB will continue following up with the Recipient on this pending case to ensure its resolution and closing as soon as possible.

74. **The Financial Management (FM) risk was initially rated as Substantial and subsequently raised to High.** The FM arrangements including the mitigation measures for the project were considered adequate to meet the WB's minimum fiduciary requirements under OP/BP10.00. The PIU had experienced FM staff so it was not required to recruit additional FM staff. However, at the close of the project, FM was rated Moderately Unsatisfactory while the fiduciary risk rating was High. The key issues in the project were low budget execution rate, frequent delayed submission of the Interim Financial Report (IFR), delayed submission of the 2019 and 2020 audit report and qualified audit opinion, ineligible expenditures identified, significant internal control weaknesses, and cases of mismanagement of project assets pointed out by the auditor. At the beginning of the project implementation, the PIU was temporarily set up in COPIREP, which had limited experience of managing WB projects. In late 2016 the PIU was transferred to SOCOF, a newly formed entity, and was subject to the direction of the new SOCOF Director-General. An in-depth financial management audit carried out in March 2021 identified questionable expenditures for a total amount of US\$1,714,691. SOCOF management rejected the report and denied most of the facts. During another review of supporting documentation randomly selected by the Financial Management Specialist (FMS), the team identified ineligible expenditure of US\$135,843.29, transactions with insufficient supporting documents, and significant weaknesses in the internal control systems. The WB will send formal communication to the government on the ineligible expenses. Finalization of the audit findings is pending at this stage³⁴. These internal control weaknesses led to delays in the payments of suppliers and execution of project activities and affected project implementation especially over the last 2 years of the project life.

75. **The procurement risk at the time of CAB5 project closure was rated Substantial.** The selection of the PPP operator was still in progress. COPIREP, which had procurement experience from previous projects, was the Fiduciary Agency that initially conducted the procurement for this project until the PIU was fully operational. A procurement plan for the first 18 months was prepared at appraisal and was updated at least once yearly to respond to the project's implementation needs. The annual work plan and budget were prepared in accordance with the FM Manual and successfully revised by PIU, in collaboration with the WB team. During project implementation, procurement was rated Satisfactory until January 2020 when it was downgraded to Moderately Unsatisfactory while the risk of the procurement was rated Substantial. For the built fiber infrastructure between Muanda and Kinshasa, which remained as the main activity of the CAB5 project, it was noted that the procedure for recruiting the PPP operator was still in process even at the project closing date (although the contract was signed in March 2022). In line with the WB Guidelines, to avoid in

³⁴ Once the final audit report is received a final withdrawal application to document the audit fees and related bank charges.



time any confusion about the procurement procedure, the financing agreement could have been clearer and indicated that the selection of the PPP partner would not be subject to WB procurement procedures, as the contract was not financed by the Bank³⁵. The Project Implementation Manual, which would have provided further clarity on the issue, was not included in the project framework. This caused unnecessary delays because the client lost time referring to the WB for no-objection notices before exercising the option to use its own procedures.

C. BANK PERFORMANCE

Quality at Entry

76. The ICR assesses the quality at entry as **Moderately Unsatisfactory**.

77. The **project drew on the experiences of WB-financed telecommunications and ICT projects and programs** in the region and built on the WB's policy dialogue in the ICT sector in the DRC. However, key lessons and emerging lessons from earlier CAB projects, particularly CAB1 and CAB3, could have been considered, where misinterpretations of the political economy in markedly similar contexts to DRC and CAB5 might have been learned from. A note on CAB1 and CAB3 is included in Annex 5.

78. **Risks were identified early in the project. However, the mitigation measures were insufficient or too optimistic.** Most of the risks identified during project appraisal materialized, including delays in the implementation of the new Telecom Law and the difficult political economy of restructuring the state-owned SCPT. To mitigate these risks and expedite implementation, a PPG was provided in December 2013 to support the development of a PPP arrangement, studies on networks to be funded, establishment of the PIU, preparation of appropriate safeguards instruments, and a study to develop a roadmap for SCPT restructuring. However, insufficient time was made available to complete key activities under the PPG before the main project was approved in mid-2014, and this may have seriously compromised the implementation and results of the CAB5 project.

79. **Stakeholder engagement was difficult.** While the importance of the telecommunications sector was well recognized in DRC, government experience in developing or executing projects related to the sector was very limited. The situation was also characterized by a lack of trust between stakeholders. As a result, involving diverse stakeholders in the design phase was challenging. The project design was therefore informed mostly by experiences from different local and international experts.

80. **Two of the disbursement conditions seriously delayed implementation of the project and led to partial cancellation.** The disbursement conditions were considered necessary to ensure the right institutional environment was in place to achieve the PDO, namely the enactment of a new telecoms law, and the adoption of a schedule for the SCPT restructuring. The failure of the Recipient to meet these conditions contributed to long delays in project implementation and the eventual cancellation of much of the IDA grant funding.

³⁵ Although the selection process for the PPP partner was not subject to the Bank procurement procedures, the Financing Agreement stipulated that the terms and conditions of this contract should be acceptable to the Bank.



Quality of Supervision

81. The ICR assesses the quality of supervision as Moderately **Satisfactory**
82. **The Bank team was diligent in supervising the project** and prepared very detailed and comprehensive Aide Memoires following the regular supervision missions. 14 supervision missions were conducted during the lifetime of the project³⁶ complemented by close remote support. The Bank's team offered technical assistance and relevant policy advice, responded to the Government's request for four restructurings in a timely manner, and took advantage of the first restructuring to partially relax a key legal covenant which allowed the construction of a new fiber link between Muanda and Kinshasa to proceed. The team also provided valuable technical assistance to help the Government in the implementation of the PPP arrangement. It would have been judicious for the Bank's team to recruit additional, full-time technical staff and digital policy experts in-country early on. Such recruitment, coupled with additional field visits, could have considerably expedited implementation.
83. **The supervision of fiduciary and safeguards aspects was considered to be Moderately Satisfactory.** The project adhered to the Bank's internal policies and procedures, but the Bank team could have followed up better on the various fiduciary issues and taken the necessary corrective measures when the ratings regressed. Although the Bank team members provided exhaustive written and verbal recommendations to the PIU when red flags manifested in FM and Procurement, they could have done a closer, in-person follow-up and escalated these issues more quickly.

Justification of Overall Rating of Bank's Performance

84. Based on the considerations above, the ICR assesses the Bank's overall performance as **Moderately Unsatisfactory**

D. RISK TO DEVELOPMENT OUTCOME

85. The Risk to Development Outcome of CAB5 is assessed as **Low**
86. **The future commercialization of the new SOCOF fiber link between Muanda and Kinshasa and the improved capacity and efficiency of the regulator ARPTC are the expected development outcomes of this operation.** The PPP arrangement has been designed to ensure that once operational, the new link will be properly maintained and will set a benchmark for good quality of service. The future operating revenues of SOCOF should be covered by the revenues of the PPP arrangement. The precise arrangements for interconnecting the SOCOF link into the broader network will in the first instance be the responsibility of the new PPP concessionaire. If access to the existing landing station at Muanda is blocked, interconnection may be achieved via Angola and potentially through interconnection to one of the new undersea cables that are expected to land in DRC. This anticipated improvement, along with the progress made by ARPTC, is expected to be robust and at low risk of reversal.

³⁶ 12 in person, and the two virtually due to COVID-19 restrictions.



87. **It is anticipated that the DRC Government and the World Bank will continue to support the sustainability of the achieved outcomes** by investing in the ongoing DRC Transport and Connectivity Support (PACT) program under preparation to improve digital connectivity and strengthen the governance of the Digital Infrastructure sector in DRC.

IV. LESSONS AND RECOMMENDATIONS

88. **Well-designed and effective disbursement conditions can help to secure tangible reforms. However, the potential burden of such conditions and the political economy context need to be taken into consideration.** It is important to take account of political and other realities in the country before complex and potentially unimplementable reforms are included as conditions in an investment project. The imposition of sub-optimal conditions can reduce flexibility and limit implementation options in challenging projects. This may be particularly relevant in fragile environments and in a fast-evolving sector with high private sector participation like ICT.

89. **An Investment Project Financing (IPF) may not be the right vehicle to secure the adoption major reforms.** The promulgation and enactment of a new telecoms law is subject to many uncertainties beyond the direct influence of the project itself. The Bank has other instruments such as DPOs and IPFs with disbursement-linked indicators (DLIs) that might be more appropriate for this purpose. In 2019, the World Bank envisaged a new DPO series in DRC. The promulgation of the new Telecom law was among the PDO's Prior Actions, and the related policy dialogue helped to push the Government to promulgate the Law in November 2020.

90. **The design of a PPP for the ownership and management of the CAB5 fiber infrastructure was not as successful as expected.** The creation of an SPV (SOCOF) to hold the infrastructure ownership on behalf of the Government and manage the PPP contracts worked well in other countries such as Guinea or Benin. This model experienced headwinds in DRC due in significant part to political opposition supported by the SCPT, which perceives SOCOF as unfair competition. Proper account of the local political economy should be taken before setting up a new institutional arrangement.

91. **A Project Preparation Advance, if used, should be given enough time to achieve its objectives, or at least to resolve the key issues it is trying to address.** There were only seven months to implement the substantial US\$4 million PPG, and by the time the project was approved there were still key issues left unaddressed, to the apparent detriment of project implementation. Much of the PPG was still unused by the time of project approval.

92. **Bank financing should focus on investments in areas where commercial incentives are insufficient to attract large-scale private investment.** Particularly in this case, by the time the link was built, precious grant funding was used for the construction of a long a route that was already commercially viable, when enormous gaps in broadband coverage that were not commercially viable to address could have been prioritized for the grant money.

93. **Different instruments can be used to minimize public sector contribution.** More recent projects, for instance in Malawi and Ghana, have used the modality of internet pre-purchase as a form of incentivizing private sector to invest in infrastructure by providing them with an anchor tenant. In some cases, the Bank can also support private investment through providing de-risking products including partial risk guarantees.

94. **The movement of the PIU from one implementing agency to another in the middle of the project implementation period should be avoided.** This is especially the case if the second entity is new and has no operational experience.



ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: Project Development Objective Indicators

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Impact on Telecom sector of World Bank Technical Assistance (composite score: 1- low impact to 5-high impact)	Number	0.00 24-Feb-2014	4.00 16-Jul-2014		3.00 27-Sep-2021
Comments (achievements against targets):					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Access to Internet Services (number of subscribers per 100 people)	Number	2.00 24-Feb-2014	20.00 16-Jul-2014		23.00 27-Sep-2021



Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Wholesale national Capacity Transmission Price (per Mbit/s per Month, in US\$)	Amount(USD)	2,000.00 24-Feb-2014	200.00 16-Jul-2014		123.00 27-Sep-2021

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Geographical reach of mobile services (percentage of population covered)	Percentage	25.00 24-Feb-2014	50.00 16-Jul-2014		64.00 27-Sep-2021

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Direct project beneficiaries	Number	0.00 24-Feb-2014	5,000,000.00 16-Jul-2014		0.00 27-Sep-2021



Female beneficiaries	Percentage	0.00	2,500,000.00		0.00
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Comments (achievements against targets):

A.2 Intermediate Results Indicators

Component: Component A - Emergence of an Inclusive Digital Economy

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of Manpower Trained under the Project (number of people)	Number	0.00	100.00		141.00
		24-Feb-2014	16-Jul-2014		27-Sep-2021

Comments (achievements against targets):

Component: Component B - Construction, Management and Commercialization of the CAB5 Infrastructure through a PPP Scheme

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Length of Fiber Optic Network Built (km)	Kilometers	0.00	3,400.00	620.00	620.00
		24-Feb-2014	16-Jul-2014	23-Jul-2020	27-Sep-2021



Comments (achievements against targets):

Restructuring #2 (July 23, 2020) cancelled uncommitted IDA grant proceeds which resulted in changes on the components and results framework, mainly due to delays in adopting the new ICT law, which had been included as a pre-disbursement covenant in the FA. As a result, the length of fiber optic link was reduced from 3,400 km to 620 km, reflecting the length of installed fiber between Kinshasa and the landing station in Muanda (Western region), in line with the cancellation of uncommitted funds.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Impact on IT/ITES Sector of World Bank Technical Assistance (composite score: 1 # low impact to 5 # high impact)	Number	0.00	4.00		4.00
		24-Feb-2014	16-Jul-2014		27-Sep-2021

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Private Capital Mobilized	Amount(USD)	0.00	20,000,000.00	10,000,000.00	0.00
		24-Feb-2014	16-Jul-2014	23-Jul-2020	27-Sep-2021

Comments (achievements against targets):



The private capital mobilized indicator was at zero as the infrastructure was not operational yet by project closure. The project was not able to mobilize private capital due to delay in establishing the PPP contract before project closing which also affected operationalization of the new fiber connectivity. The project was not able to mobilize private capital due to delay in establishing the PPP contract before project closing which also affected operationalization of the new fiber connectivity.



ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION

A. TASK TEAM MEMBERS

Name	Role
Preparation	
Jerome Bezzina	Task Team Leader(s)
Lanssina Traore	Procurement Specialist(s)
Angelo Donou	Financial Management Specialist
Marc Jean Yves Lixi	Team Member
Paula F. Lytle	Social Specialist
Abdoulaye Gadiere	Social Specialist
Supervision/ICR	
Marc Jean Yves Lixi	Task Team Leader(s)
Guy Kiaku Kindoki, Cheick Traore, Clement Tukeba Lessa Kimpuni	Procurement Specialist(s)
Lydie Madjou	Financial Management Specialist
Francis Tasha Venayen	Financial Management Specialist
Tasneem Rais	Procurement Team
Grace Muhimpundu	Social Specialist
Koho Francine Takoy	Procurement Team
Alice Museri	Procurement Team
Julie Luvisa Bazolana	Procurement Team
Joelle Nkombela Mukungu	Environmental Specialist
Raymond Sinsi Lumbuenamo	Team Member



B. STAFF TIME AND COST

Stage of Project Cycle	Staff Time and Cost	
	No. of staff weeks	US\$ (including travel and consultant costs)
Preparation		
FY13	9.000	52,179.23
FY14	41.378	193,243.15
FY15	0	2,802.38
Total	50.38	248,224.76
Supervision/ICR		
FY15	6.863	54,553.11
FY16	18.650	120,587.87
FY17	13.138	132,029.42
FY18	8.657	126,553.64
FY19	18.506	158,925.15
FY20	13.806	62,125.50
Total	79.62	654,774.69



ANNEX 3. PROJECT COST BY COMPONENT

Components	Amount at Approval (US\$M)	Actual at Project Closing (US\$M)	Percentage of Approval %
Component A - Emergence of an Inclusive Digital Economy	13.20	3.86	29.24
Component B - Construction, Management and Commercialization of the CAB5 Infrastructure through a PPP Scheme	71.60	28.00	39.11
Component C - Enabling Environment and Regulatory Effectiveness	7.30	6.50	89.04
Total	92.10	38.3	41.59



ANNEX 4. BORROWER, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

By the time of ICR finalization no comments had been received by the Borrower.

The Bank however received comments from SOCOF (the PIU at the time of project closing) some of which were incorporated in the final version of the ICR. The main points are summarized below:

1. The delay in finalization of the PPP process was not caused by lack of interest by the mobile operators to participate in the PPP process but rather the difficult conditions caused by the COVID-19 pandemic, difficult disbursement conditions and the political instability.
2. SOCOF challenged the perception that there could be leadership or governance issues with the company.
3. Under SOCOF's leadership, the project installed high quality fiber optic link in strict compliance to international standards that will in the future be used as a reference in the subregion. The PIU mentioned that other private operators have also acknowledged this.
4. SOCOF disputed the findings of the in-depth financial management audit report that was carried out in March 2021 which identified questionable expenses and noted that the results were not final yet. Further to this, it also challenged the complementary FM review which identified ineligible expenses.



ANNEX 5. THE CENTRAL AFRICAN BACKBONE (CAB) PROGRAM AND PROJECT SUMMARY

As set out at its inception in 2007, the development objective of the Central Africa Backbone (CAB) Program (and the individual CAB Projects) was to support population, businesses, and governments across the Central Africa region to have access to quality and affordable ICT services on open, transparent, and non-discriminatory terms. The benefits accrued in the targeted countries would spill over the Central Africa region by:

- (i) Lowering the cost of international broadband capacity and extending the reach and usage of backbone networks across the region.
- (ii) improving government efficiency and transparency through eGovernment applications; and
- (iii) increasing country and regional competitiveness.

For the purpose of using the Regional IDA envelope, regional connectivity under CAB financing was deemed regional in nature and thus qualified for the Regional IDA envelope. This was a valuable attribute that substantially increased the overall IDA envelope for the CAB program. (All the countries were IDA-eligible except Gabon, where the project was IBRD-financed).

To maximize flexibility and client-responsiveness and to take account of the specific sector context of each country, the CAB Program planned to include a set of customizable components and sub-components drawn from the following areas:

1. Strengthening the enabling environment

- Modernize and harmonize legal and regulatory framework of the ICT sector
- Strengthen capacity of public key stakeholders (i.e., Ministry and independent regulatory agency)
- Promote a pro-competitive environment (i.e., develop regulatory tools, liberalize the telecom sector, restructure, and privatize public incumbent operators, PPP promotion) to maximize benefit from the regional backbone
- Strengthen M&E capacity

2. Improving connectivity and services

- Finance the national infrastructure for the CAB including fiber-optic cables, terminal equipment, switches, to guarantee the establishment of open access networks (to all operators) on the basis of PPPs, leveraging private sector investment
- Finance the purchase of capacity on the CAB to assist rural and underserved areas, as well as targeted users (schools, universities, hospitals, eGovernment use) with discounted capacity prices
- Finance the establishment of government Virtual Private Networks (VPNs) to collect all the government communication needs (voice and data) to be routed via the CAB and the establishment of national and regional Internet Exchange Points (IXP)

The PDOs of the individual CAB projects were to contribute to improving the geographic reach and usage of regional broadband network services and a reduction in the price of services. The CAB “guiding principles”



including securing open access, developing wholesale markets, and catalyzing private sector investment through PPPs were not explicitly included in the PDOs.

The CAB's PPP Approach

The CAB's PPP approach was developed on the foot of initial advice from a specialist consulting firm in 2007, that was funded by PPIAF, a Bank-hosted trust fund. The consultants advised that a regional PPP entity should be piloted to manage the future CAB infrastructure, particularly new backbone links to neighboring countries. This approach was trialed in the first project (CAB1 - Chad, Central African Republic and Cameroon) and it failed. A regional PPP entity was not established. A modified PPP approach was promoted by the Bank for subsequent CAB projects that focused on a single country. In these subsequent cases, the proposed PPP approach was for the government to create a holding company that would own the fiber optic network in its territory and would select, through a tender, a concession holder to finance, build and manage the network. This approach had mixed results, as seen in the individual projects described below.

Individual CAB Projects

CAB1: Chad, Central African Republic, and Cameroon - P108368

- Board Approval date: September 24, 2009
- Closing date: March 15, 2016
- Approved Bank Financing: IDA credit \$9.9m, IDA grant \$16.3m
- Outcome ratings: ICR - MS; ICRR - MS; PPAR - U.

The concept was to leverage the existing fiber optic network laid along the Chad-Cameroon oil pipeline and extend it further into the landlocked countries of Central Africa and Chad. The project was originally designed to cover legal and regulatory reforms, the establishment of a regional telecom operator for reselling international, regional and national capacity to existing national operators and service providers at lower than current prices in the targeted countries, and the construction of backbone links to neighboring countries.

Before its approval, the Bank's Regional Operations Committee (ROC) decided to postpone the connectivity investment component to a subsequent phase and to include only the enabling environment TA activities in this project. The investment part of the project was later canceled before project effectiveness because countries had not fulfilled the effectiveness conditions.

The establishment of a regional PPP was not achieved. It was blocked by Cameroon and not funded by either of the other two countries. No infrastructure investment resulted directly from the project.

The project's goal of restructuring incumbent operators was not achieved in any of the three countries. In 2019, the Cameroonian incumbent operator CamTel was restructured and was subsequently awarded three licenses covering fixed, GSM and transport services (including cable landing stations), however this development was not attributable to the CAB1 project.

CAB2: Sao Tome and Principe (STP) - P117652



- Board Approval date: January 20, 2011
- Closing date: December 12, 2014
- Approved Bank Financing: IDA grant \$14.9m
- Outcome ratings: ICR - HS; ICRR - HS; PPAR - S.

STP, a group of islands in the Gulf of Guinea with about 200,000 inhabitants, was not connected to the global network of broadband fiber. The Africa Coast to Europe (ACE) fiber submarine cable was the most cost-effective option to greatly enhance the country's international connectivity. The CAB2 operation part funded STP's \$25 million contribution to the ACE consortium. The project also supported the tendering of a second mobile operator license and provided technical assistance for the enabling environment including setting up the PPP scheme.

The operation was ideally timed to benefit STP, as the ACE cable was being rolled out to connect 16 countries including STP. The project disbursed very quickly, including PPA advances of \$5 million in mid-2010 to co-fund the ACE membership fee installments. A local holding company was set up as an open special purpose vehicle (SPV) to hold STP's participation in ACE, secure funding from the sole existing operator (already 51% privately owned by Portugal Telecom) and allow future operators to access the new ACE cable capacity with similar "open access" conditions. The creation of the SPV was an effectiveness condition of the IDA grant. A cable landing station was established in STP in mid-2012 and the cable was commercially launched in early 2013. The government then sold its 24.5% shareholding in the SPV to the newly licensed second operator, keeping only a "golden share" which gives it power to veto any changes to the statutes, particularly the principle of open access to the cable capacity.

CAB3: Republic of Congo (P122398)

- Board Approval date: May 25, 2011
- Closing date: February 28, 2019
- Approved Bank Financing: IDA Credits \$20m
- Outcome ratings: ICR - MU; ICRR - MU

The planned operation involved enhancing the enabling environment including the restructuring of Congo Telecom, investing in three inter-regional links to neighboring countries, establishing national and regional IXPs, and building ICT skills in local industry and business startups. The Borrower contributed an additional \$15m as planned.

Only one of the three planned cross-border links was constructed (to Gabon), and its commercial operation was leased to a private operator under a 3-year contract that was not successful (mainly due to the lack of interconnection policies and protocols at national level between the two countries).

No SPV (SPN) was established due to sustained government opposition. The creation of the SPN was identified as one of the prior actions in the first discussions of the Bank's DPO series for RoC (P165815). The removal of this prior action by the GoC during the preparation phase confirmed the political sensitivity of the matter. Attempts to restructure Congo Telecom were unsuccessful and this component was dropped at the first restructuring.



CAB4: Gabon (P122776)

- Board Approval date: March 28, 2012
- Closing date: October 31, 2020
- Approved Bank Financing: \$81m IBRD loan (includes additional financing)
- Outcome ratings: ICR - S; ICRR - S

The operation financed TA for deepening reforms in the digital sector, a share of the Government's \$15m consortium fee for participation in the ACE cable (the second cable landing), terrestrial fiber links including connecting with the RoC, and setting up an IXP and a Carrier Hotel.

An independent sector regulator ARCEP was put in place in February 2012, just before project approval. An SPN was set up as agreed with the Bank, it took two years to put in place. The first phase (1,140 km) of project-supported fiber optic cable was successfully made operational under a PPP arrangement with Axione, a subsidiary of Bouygues. The operationalization of the second phase (640 km) was delayed due to the need for a two-year negotiation with Axione to amend the existing concession, and it was not yet commercialized at project close.



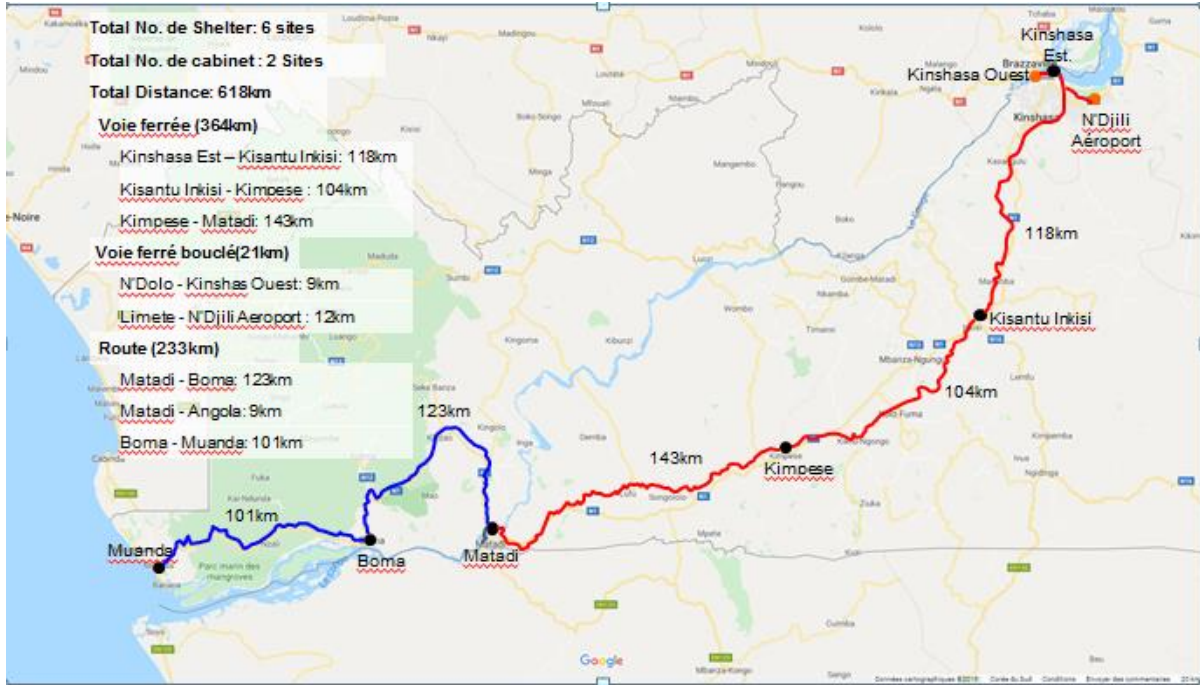
ANNEX 6. SUPPORTING DOCUMENTS

1. Project Appraisal Document, Report No Report No: 87051-ZR
2. Borrower Completion Report : 'Republique Democratique Du Congo Cab 5 Financement Banque Mondiale'
3. Financing Agreement Grant H981-ZR dated July 25, 2014
4. Amendment to Financing Agreement dated March 26, 2019
5. Implementation Status and Results Reports (ISRs)
6. Supervision Aide Memoires
7. Project Procurement Reviews
8. Financial Management Supervision Reports
9. Restructuring Papers
10. Social and Environmental Safeguards Instruments and Reports





ANNEX 7. CAB5 BROADBAND INFRASTRUCTURE MAP

The map below shows the infrastructure that was financed and implemented under the CAB5 project (Muanda-Kinshasa link).



Legend

-  CAB5 optical fiber laid along the road
-  CAB5 optical fiber laid along the railway line.