

IMPLEMENTATION COMPLETION AND RESULTS REPORT  
(IDA-46470 IDA-H5150 IDA-H5160)

CREDIT OF SDR 6.4 MILLION  
(US\$9.9 MILLION EQUIVALENT)  
TO THE REPUBLIC OF CAMEROON

GRANT OF SDR 4.8 MILLION  
(US\$7.3MILLION EQUIVALENT)  
TO THE CENTRAL AFRICAN REPUBLIC

GRANT OF SDR 5.8 MILLION  
(US\$9 MILLION EQUIVALENT)  
TO THE REPUBLIC OF CHAD

FOR A TOTAL OF SDR 17 MILLION (US\$26.2 MILLION EQUIVALENT)  
FOR THE COMMUNICATIONS INFRASTRUCTURE AND TECHNOLOGY APL  
PROJECT (APL1A)

IN SUPPORT OF THE FIRST PART OF THE FIRST PHASE  
OF A US\$215 MILLION EQUIVALENT

CENTRAL AFRICAN BACKBONE PROGRAM

December 15, 2016

Transport and ICT Global Practice  
Africa Regional Integration  
Africa Region

## CURRENCY EQUIVALENTS

(Exchange Rate Effective December 14, 2016)

Currency Unit = SDR

\$1.353920 = SDR 1

CFAF 616.55 = \$1

## FISCAL YEAR

January 1 – December 31

## ABBREVIATIONS AND ACRONYMS

\$	United States dollar, all dollars are US dollars unless otherwise indicated
2G	Second generation wireless mobile telecommunications technology
3G	Third generation wireless mobile telecommunications technology
4G	Fourth generation wireless mobile telecommunications technology
ADB	African Development Bank
ADETIC	Agence de Développement des Technologies de l'Information et de la Communication (Agency for the Development of ICT, Chad)
ANTIC	Agence Nationale des Technologies de l'Information et de la Communication (National Agency for Information and Communications Technologies, Cameroon)
APL	Adaptable Program Loan
APL1A	Communications Infrastructure and Technology APL Project which is the First Part of the First Phase of CAB Program
APL1B	Second Part of the First Phase of CAB Program
ARCEP	Autorité de Régulation des Communications Electroniques et des Postes (Regulatory Authority for Electronic Communications and Posts, Chad)
ART	Agence de Régulation des Télécommunications (Telecommunications Regulatory Agency, Cameroon and Central African Republic)
AU	African Union
BP	Bank Procedures
CAB	Central African Backbone
CAB1A	First Part of the First Phase of the CAB Program
CAB1B	Second Part of the First Phase of the CAB Program
CAB APL1	First Phase of CAB Program. CAB APL1 is composed of APL1A and APL1B.
CAMTEL	Cameroon Telecommunications
CAR	Central African Republic
ccTLD	Country Code Top-Level Domain
CDMA	Code Division Multiple Access
CEMAC	Communauté Economique et Monétaire des Etats de l'Afrique Centrale (Central African Economic and Monetary Community)
CFA	Communauté Financière Africaine (African Financial Community)
CFAF	CFA Franc
CIT	Communications Infrastructure and Technology
DPL	Development Policy Loan
DRC	Democratic Republic of Congo
DSO	Digital Switchover
E1	European Basic Multiplex Rate
EASSy	Eastern Africa Submarine Cable System
ECCAS	Economic Community of Central African States

EMP	Environmental Management Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
EU	European Union
FDI	Foreign Direct Investment
Gbps	Gigabits per second
GEF	Global Environmental Facility
GDP	Gross Domestic Product
GSM	Global System for Mobile Communication or 2G
GSMA	GSM Association
HCC	Haut Conseil de la Communication (High Council of Communication)
HH	Herfindahl-Hirschman
ICT	Information and Communications Technology
IDA	International Development Association
IFC	International Finance Corporation
INT	Integrity Vice Presidency of the World Bank
IP	Implementation Progress / Internet Protocol
ISP	Internet Service Provider
ITU	International Telecommunication Union
IXP	Internet Exchange Point
kbps	Kilobits per second
M&E	Monitoring and Evaluation
Mbit/s	Megabits per second
MINPOSTEL	Ministère des Postes et Télécommunications (Ministry of Posts and Telecommunications, Cameroon)
MMS	Multimedia Messaging Service
MPNTIC	Ministère des Postes et des Nouvelles Technologies de l'Information et de la Communication (Ministry of Posts and New Information and Communication Technologies, Chad)
MPTNT	Ministère des Postes et des Télécommunications Responsable des Nouvelles Technologies (Ministry of Posts and Telecommunications in charge of New Technologies, Central African Republic)
MTN	Mobile Telephone Networks / MTN Group
MCSCS	Nigeria Cameroon Submarine Cable System
MTR	Mid-Term Review
OP	Operational Procedures
OTRT	Office Tchadien de Régulation des Télécommunications (Chadian Office of Telecommunications Regulation)
PAD	Project Appraisal Document
PCU	Project Coordination Unit
PPF	Project Preparation Facility
PPIAF	Public-Private Infrastructure Advisory Facility
PPP	Public-Private Partnership
PROCYS	World Bank Africa Procurement Cycle Tracking System
QAG	Quality Assurance Group
QoS	Quality of Service
RAP	Resettlement Action Plan
RIAS	World Bank Regional Integration Assistance Strategy for Africa
ROC	Regional Operations Committee
RPF	Resettlement Policy Framework
SAFE	South Africa Far East Cable
SAT-3	South Atlantic-3 Cable
SITCOM Tchad	Société d'Infrastructures de Transmission des Communications Electroniques par Fibre

	Optique Tchad (Company for Fiber Optic Infrastructure Transmission of Electronic Communications Chad)
SMS	Short Messaging Service
SOCATEL	Société Centrafricaine de Télécommunications (Central African Telecommunications Company)
SOTEL	Société des Télécommunications du Tchad (Telecommunications Company of Chad)
SPV	Special Purpose Vehicle
SSA	Sub-Saharan Africa
WACS	West African Cable System
WARCIP	West Africa Regional Communications Infrastructure Program
WASC	West Africa Submarine Cable
WBG	World Bank Group
WiMAX	Worldwide Interoperability for Microwave Access

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**AFRICA**  
**Central African Backbone Program**

**CONTENTS**

**Data Sheet**

- A. Basic Information
- B. Key Dates
- C. Ratings Summary
- D. Sector and Theme Codes
- E. Bank Staff
- F. Results Framework Analysis
- G. Ratings of Project Performance in ISRs
- H. Restructuring
- I. Disbursement Graph

1. Project Context, Development Objectives and Design.....	1
2. Key Factors Affecting Implementation and Outcomes .....	6
3. Assessment of Outcomes .....	17
4. Assessment of Risk to Development Outcome.....	35
5. Assessment of Bank and Borrower Performance .....	35
6. Lessons Learned .....	39
7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners .....	41
Annex 1. Project Costs and Financing.....	42
Annex 2. Outputs by Component .....	43
Annex 3. Economic and Financial Analysis .....	49
Annex 4. Bank Lending and Implementation Support/Supervision Processes .....	53
Annex 5. Beneficiary Survey Results .....	55
Annex 6. Stakeholder Workshop Report and Results.....	56
Annex 7. Consultations with Project Counterparts on Borrower ICRs and CABIA Project.....	57
Annex 8. Summary of Borrower's ICR and/or Comments on Draft ICR.....	64
Annex 9. Comments of Cofinanciers and Other Partners/Stakeholders .....	76
Annex 10. List of Supporting Documents .....	77

MAP

<b>A. Basic Information</b>			
Country:	Western Africa	Project Name:	Central African Backbone - APL1A
Project ID:	P108368	L/C/TF Number(s):	IDA-46470,IDA-H5150,IDA-H5160
ICR Date:	12/14/2016	ICR Type:	Core ICR
Lending Instrument:	APL	Borrower:	GOVERNMENT OF CAMEROON, CAR AND CHAD
Original Total Commitment:	XDR 17.00M	Disbursed Amount:	XDR 15.99M
Revised Amount:	XDR 17.00M		
<b>Environmental Category: B</b>			
<b>Implementing Agencies:</b> Ministry of Posts and Telecommunications			
<b>Cofinanciers and Other External Partners:</b>			

<b>B. Key Dates</b>				
Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	12/05/2007	Effectiveness:		02/12/2010
Appraisal:	07/13/2009	Restructuring(s):		04/14/2014
Approval:	09/24/2009	Mid-term Review:	03/07/2013	04/30/2013
		Closing:	03/15/2016	03/15/2016

<b>C. Ratings Summary</b>	
<b>C.1 Performance Rating by ICR</b>	
Outcomes:	Moderately Satisfactory
Risk to Development Outcome:	Moderate
Bank Performance:	Moderately Satisfactory
Borrower Performance:	Moderately Satisfactory

<b>C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)</b>			
Bank	Ratings	Borrower	Ratings
Quality at Entry:	Moderately Unsatisfactory	Government:	Moderately Satisfactory
Quality of Supervision:	Moderately Satisfactory	Implementing Agency/Agencies:	Moderately Satisfactory
<b>Overall Bank Performance:</b>	Moderately Satisfactory	<b>Overall Borrower Performance:</b>	Moderately Satisfactory

<b>C.3 Quality at Entry and Implementation Performance Indicators</b>			
<b>Implementation Performance</b>	<b>Indicators</b>	<b>QAG Assessments (if any)</b>	<b>Rating</b>
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA):	None
Problem Project at any time (Yes/No):	Yes	Quality of Supervision (QSA):	None
DO rating before Closing/Inactive status:	Moderately Satisfactory		

<b>D. Sector and Theme Codes</b>		
	<b>Original</b>	<b>Actual</b>
<b>Sector Code (as % of total Bank financing)</b>		
Public administration - Information and communications	13	13
Telecommunications	61	61
Other social services	13	13
Other Industry, Trade and Services	13	13
<b>Theme Code (as % of total Bank financing)</b>		
Infrastructure services for private sector development	27	27
Other social development	19	19
Regional integration	27	27
Regulation and competition policy	27	27

<b>E. Bank Staff</b>		
<b>Positions</b>	<b>At ICR</b>	<b>At Approval</b>
Vice President:	Makhtar Diop	Obiageli Katryn Ezekwesili
Country Director:	Rachid Benmessaoud	Mary A. Barton-Dock
Practice Manager/Manager:	Boutheina Guerhazi	Philippe Dongier
Project Team Leader:	Jerome Bezzina	Jerome Bezzina
ICR Team Leader:	Jerome Bezzina	
ICR Primary Author:	Ndeye Anna Ba	
	Mather B. Pfeiffenberger	

## **F. Results Framework Analysis**

### **Project Development Objectives (from Project Appraisal Document)**

The development objective of the Central African Backbone Program is to contribute to increase the geographical reach and usage of regional broadband network services and reduce their prices.

**Revised Project Development Objectives (as approved by original approving authority)**  
N/A

**(a) PDO Indicator(s)**

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
<b>Indicator 1 :</b>	Cameroon - International Communications (Internet, telecoms, and data) bandwidth per person (bits))			
Value quantitative or Qualitative)	10.95	80.00	Dropped	30.00
Date achieved	12/31/2008	03/15/2016	04/14/2014	07/01/2012
Comments (incl. % achievement)	Target 28% achieved as of 7/1/2012. Indicator dropped at restructuring and replaced by PDO Indicator 13: Cameroon - Impact on telecom sector of World Bank technical assistance.			
<b>Indicator 2 :</b>	CAR - International Communications (Internet, telecoms, and data) bandwidth per person (bits)			
Value quantitative or Qualitative)	0.37	3.00	Dropped	2.38
Date achieved	12/31/2008	03/15/2016	04/14/2014	07/01/2012
Comments (incl. % achievement)	Target 76% achieved as of 7/1/2012. Indicator dropped at restructuring and replaced by PDO Indicator 14: CAR - Impact on telecom sector of World Bank technical assistance.			
<b>Indicator 3 :</b>	Chad - International Communications (Internet, telecoms, and data) bandwidth per person (bits)			
Value quantitative or Qualitative)	18.58	50.00	Dropped	9.06
Date achieved	12/31/2008	03/15/2016	04/14/2014	07/01/2012
Comments (incl. % achievement)	Target -30% achieved as of 7/1/2012. Indicator dropped at restructuring and replaced by Indicator 15: Chad - Impact on telecom sector of World Bank technical assistance.			

<b>Indicator 4 :</b>	Cameroon - Internet users per 100 inhabitants			
Value quantitative or Qualitative)	Project set baseline of 2. According to ITU, the value was 3.4.	4.5		20.7
Date achieved	12/31/2008	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 460% overachieved. Source: ITU, December 2015. Original indicator at approval.			
<b>Indicator 5 :</b>	CAR - Internet users per 100 inhabitants			
Value quantitative or Qualitative)	Project set baseline of 0.3. According to ITU, the value was 1.	1.6		4.6
Date achieved	12/31/2008	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 288% overachieved. Source: ITU, December 2015. Original indicator at approval.			
<b>Indicator 6 :</b>	Chad - Internet users per 100 inhabitants			
Value quantitative or Qualitative)	Project set baseline of 0.8. According to ITU, the value was 1.2.	1.4		7.1
Date achieved	12/31/2008	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 507% overachieved. Source: OTRT/ARCEP. Original indicator at approval.			
<b>Indicator 7 :</b>	Cameroon - Total teledensity (active fixed and mobile subscribers per 100 inhabitants)			
Value quantitative or Qualitative)	28.1	70	Dropped	91.7
Date achieved	12/31/2008	03/15/2016	04/14/2014	03/15/2016
Comments (incl. % achievement)	Target 131% overachieved at project closing. Indicator was dropped at restructuring and was replaced by PDO Indicator 22: MoUs concluded by Cameroon, CAR and Chad with at least one neighboring country to facilitate cross-border interconnection regime. Source: ITU, December 2015.			

<b>Indicator 8 :</b>	CAR - Total teledensity (active fixed and mobile subscribers per 100 inhabitants)			
Value quantitative or Qualitative)	8	27	Dropped	36
Date achieved	12/31/2008	03/15/2016	04/14/2014	03/15/2016
Comments (incl. % achievement)	Target 133% overachieved at project closing. Indicator was dropped at restructuring and was replaced by PDO Indicator 22: MoUs concluded by Cameroon, CAR and Chad with at least one neighboring country to facilitate cross-border interconnection regime. Source: ITU, December 2015.			
<b>Indicator 9 :</b>	Chad - Total teledensity (active fixed and mobile subscribers per 100 inhabitants)			
Value quantitative or Qualitative)	24	50	Dropped	41
Date achieved	12/31/2008	03/15/2016	04/14/2014	03/15/2016
Comments (incl. % achievement)	Target 82% achieved at project closing. Indicator was dropped at restructuring and was replaced by PDO Indicator 22: MoUs concluded by Cameroon, CAR and Chad with at least one neighboring country to facilitate cross-border interconnection regime. Source: ITU, December 2015.			
<b>Indicator 10 :</b>	Cameroon - Average monthly price of wholesale international capacity link from Yaounde to European Hub (E1) in US\$			
Value quantitative or Qualitative)	6000	1200	Dropped	920
Date achieved	12/31/2008	03/15/2016	04/14/2014	03/15/2016
Comments (incl. % achievement)	Target 106% overachieved at project closing. Source: Progressus. Indicator dropped at restructuring and replaced by PDO Indicator 24: Cameroon - Coverage of mobile network.			
<b>Indicator 11 :</b>	CAR - Average monthly price of wholesale international capacity link from Bangui to European Hub (E1) in US\$			
Value quantitative or Qualitative)	7000	2500	Dropped	3200
Date achieved	12/31/2008	03/15/2016	04/14/2014	03/15/2016
Comments (incl. % achievement)	Target 84% achieved at project closing. Source: ART. Indicator dropped at restructuring and replaced by PDO Indicator 25: CAR - Coverage of mobile network.			
<b>Indicator 12 :</b>	Chad - Average monthly price of wholesale international capacity link			

	from N'Djamena to European Hub (E1) in US\$			
Value quantitative or Qualitative)	7000	2000	Dropped	108.76
Date achieved	12/31/2008	03/15/2016	04/14/2014	03/15/2016
Comments (incl. % achievement)	Target 1378% overachieved at project closing. Source: SOTEL. Indicator dropped at restructuring and replaced by PDO Indicator 26: Chad - Coverage of mobile network.			
<b>Indicator 13 :</b>	Cameroon - Impact on telecom sector of World Bank technical assistance (composite score: 1 - low impact to 5 - high impact)			
Value quantitative or Qualitative)	1	3		4
Date achieved	04/14/2014	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 133% overachieved. Indicator added at restructuring.			
<b>Indicator 14 :</b>	CAR - Impact on telecom sector of World Bank technical assistance (composite score: 1 - low impact to 5 - high impact)			
Value quantitative or Qualitative)	1	3		3
Date achieved	04/14/2014	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target achieved. Indicator added at restructuring.			
<b>Indicator 15 :</b>	Chad - Impact on telecom sector of World Bank technical assistance (composite score: 1 - low impact to 5 - high impact)			
Value quantitative or Qualitative)	1	3		4
Date achieved	04/14/2014	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 133% overachieved. Indicator added at restructuring.			

<b>Indicator 16 :</b>	Cameroon - Number of direct project beneficiaries (of which percentage female)			
Value quantitative or Qualitative)	6,849,646	not set	not set	21,593,366
Date achieved	12/31/2008	04/14/2014	04/14/2014	03/15/2016
Comments (incl. % achievement)	Indicator added at restructuring and defined as "any individual covered by the wireless network of a mobile operator or Internet service provider." Not possible to measure female. Value increased by 315%. Sources: MTN, Orange and World Bank.			
<b>Indicator 17 :</b>	CAR - Number of direct project beneficiaries (of which percentage female)			
Value quantitative or Qualitative)	826,118	not set	not set	2,891,162
Date achieved	12/31/2008	04/14/2014	04/14/2014	03/15/2016
Comments (incl. % achievement)	Indicator added at restructuring and defined as "any individual covered by the wireless network of a mobile operator or Internet service provider." Not possible to measure female. Value increased by 350%. Sources: ART and World Bank.			
<b>Indicator 18 :</b>	Chad - Number of direct project beneficiaries (of which percentage female)			
Value quantitative or Qualitative)	2,673,538	not set	not set	11,651,102
Date achieved	12/31/2008	04/14/2014	04/14/2014	03/15/2016
Comments (incl. % achievement)	Indicator added at restructuring and defined as "any individual covered by the wireless network of a mobile operator or Internet service provider." Not possible to measure female. Value increased by 436%. Sources: Telegeography and World Bank.			
<b>Indicator 19 :</b>	Cameroon - Number of direct project beneficiaries			
Value quantitative or Qualitative)	0	no target value	no target value	68
Date achieved	04/14/2014	04/14/2014	04/14/2014	03/15/2016
Comments (incl. % achievement)	Indicator added at restructuring. Client wanted it to be number of institutions benefitting from project TA. No target value as it was added during implementation. 68 private and public stakeholders benefitted and more than 4,166,000 new people use Internet.			

<b>Indicator 20 :</b>	CAR - Number of direct project beneficiaries			
Value quantitative or Qualitative)	0	no target value	no target value	10
Date achieved	04/14/2014	04/14/2014	04/14/2014	03/15/2016
Comments (incl. % achievement)	Comments same as above for Cameroon. 10 direct beneficiaries have been identified: MPTNT, HCC, ART, 4 mobile operators, SOCATTEL, 3 Internet Service Providers. 182,000 new people use Internet.			
<b>Indicator 21 :</b>	Chad - Number of direct project beneficiaries			
Value quantitative or Qualitative)	0	no target value	no target value	11
Date achieved	04/14/2014	04/14/2014	04/14/2014	03/15/2016
Comments (incl. % achievement)	Comments same as above for Cameroon. 11 direct beneficiaries have been identified: MPNTIC, ARCEP, SOTEL Tchad, 3 mobile private operators, 5 Internet Service Providers. 863,000 new people use Internet.			
<b>Indicator 22 :</b>	MoUs concluded by Cameroon, CAR and Chad with at least one neighboring country to facilitate cross-border interconnection regime			
Value quantitative or Qualitative)	0	3		6
Date achieved	04/14/2014	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 200% overachieved. Indicator added at restructuring. Cameroon signed 3 MoUs with Chad, Equatorial Guinea, and Nigeria. CAR signed an MoU with Chad. Chad signed 4 MoUs with Cameroon, CAR, Nigeria and Sudan.			
<b>Indicator 23 :</b>	Number of qualitative reports issued by the respective regulatory authorities			
Value quantitative or Qualitative)	0	12		20
Date achieved	04/14/2014	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 167% overachieved. Indicator added at restructuring. Telecom market observatories and audit and quality of service reports published.			

<b>Indicator 24 :</b>	Cameroon - Coverage of mobile network (percentage of population)			
Value quantitative or Qualitative)	35	70		92.5
Date achieved	04/14/2014	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 132% overachieved. Sources: MTN, Orange, October 2015. Intermediate Outcome Indicator at approval, changed to PDO Indicator at restructuring.			
<b>Indicator 25 :</b>	CAR - Coverage of mobile network (percentage of population)			
Value quantitative or Qualitative)	19.3	47.5		59
Date achieved	04/14/2014	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 124% overachieved. Source: ART. Intermediate Outcome Indicator at approval, changed to PDO Indicator at restructuring.			
<b>Indicator 26 :</b>	Chad - Coverage of mobile network (percentage of population)			
Value quantitative or Qualitative)	24	50		83
Date achieved	12/31/2008	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 166% overachieved. Source: Telegeography, February 2016. Intermediate Outcome Indicator at approval, changed to PDO Indicator at restructuring.			
<b>Indicator 27 :</b>	Cameroon - Retail prices of Internet services (per Mbit/s per month, in US\$)			
Value quantitative or Qualitative)	660	200		200
Date achieved	12/31/2008	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target achieved. Source: Ringo. Indicator added at restructuring. Per OPCS guidance note, values calculated by multiplying 256 kpbs price (Intermediate Outcome Indicator 4) by 4.			
<b>Indicator 28 :</b>	CAR - Retail prices of Internet services (per Mbit/s per month, in US\$)			
Value quantitative or Qualitative)	1700	400		1000
Date achieved	12/31/2008	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 54% achieved. Source: ART. Per OPCS guidance note, values calculated by multiplying 256 kpbs price (Intermediate Outcome Indicator 5) by 4.			

<b>Indicator 29 :</b>	Chad - Retail prices of Internet services (per Mbit/s per month, in US\$)			
Value quantitative or Qualitative)	2120	320		1080
Date achieved	12/31/2008	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 58% achieved. Source: SOTEL. Per OPCS guidance note, values calculated by multiplying 256 kpbs price (Intermediate Outcome Indicator 6) by 4.			

**(b) Intermediate Outcome Indicator(s)**

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
<b>Indicator 1 :</b>	Cameroon - Average cost of mobile call (1 minute local peak, in US\$)			
Value (quantitative or Qualitative)	0.306	0.102	Dropped	0.04
Date achieved	12/31/2008	03/15/2016	04/14/2014	03/15/2016
Comments (incl. % achievement)	Target 130% overachieved at project closing. Source: ITU, December 2015. Indicator dropped at restructuring and replaced by Intermediate Outcome Indicator 9: Internet exchange points (IXPs) and number of countries with spectrum equipment.			
<b>Indicator 2 :</b>	CAR - Average cost of mobile call (3 minutes local peak. in US\$)			
Value (quantitative or Qualitative)	0.57	0.49	Dropped	0.4
Date achieved	12/31/2008	03/15/2016	04/14/2014	03/15/2016
Comments (incl. % achievement)	Target 122% overachieved at project closing. Source: ART. Indicator dropped at restructuring and replaced by Intermediate Outcome Indicator 9: Internet exchange points (IXPs) and number of countries with spectrum equipment.			
<b>Indicator 3 :</b>	Chad - Average cost of mobile call (3 minutes local peak, in US\$)			
Value (quantitative or Qualitative)	1.05	0.85	Dropped	0.23
Date achieved	12/31/2008	03/15/2016	04/14/2014	03/15/2016
Comments (incl. % achievement)	Target 410% overachieved at project closing. Source: ARCEP. Indicator dropped at restructuring and replaced by Intermediate Outcome Indicator 9: Internet exchange points (IXPs) and number of countries with spectrum equipment.			

<b>Indicator 4 :</b>	Cameroon - Average monthly price of Internet access (256 kbps in US\$)			
Value (quantitative or Qualitative)	165	50	Dropped	50
Date achieved	12/31/2008	03/15/2016	04/14/2014	03/15/2016
Comments (incl. % achievement)	Target achieved at project closing. Source: Ringo. Indicator dropped at restructuring and replaced by Intermediate Outcome Indicator 12: Adoption by government of regulatory tools (a cost model for interconnection prices).			
<b>Indicator 5 :</b>	CAR - Average monthly price of Internet access (256 kbps in US\$)			
Value (quantitative or Qualitative)	425	100	Dropped	250
Date achieved	12/31/2008	03/15/2016	04/14/2014	03/15/2016
Comments (incl. % achievement)	Target 54% achieved at project closing. Source: ART. Indicator dropped at restructuring and replaced by Intermediate Outcome Indicator 12: Adoption by government of regulatory tools (a cost model for interconnection prices).			
<b>Indicator 6 :</b>	Chad - Average monthly price of Internet access (256 kbps in US\$)			
Value (quantitative or Qualitative)	530	80	Dropped	270
Date achieved	12/31/2008	03/15/2016	04/14/2014	03/15/2016
Comments (incl. % achievement)	Target 58% achieved at 58% at project closing. Source: SOTEL. Indicator dropped at restructuring and replaced by Intermediate Outcome Indicator 12: Adoption by government of regulatory tools (a cost model for interconnection prices).			
<b>Indicator 7 :</b>	Cameroon - Number of Internet servers registered under the Country Top-Level Domain (ccTLD)			
Value (quantitative or Qualitative)	1100	200,000	Dropped	14,000
Date achieved	12/31/2013	03/15/2016	04/14/2014	07/01/2012
Comments (incl. % achievement)	Target 6.5% achieved as of 7/1/2012. Indicator was not tracked after that date and was dropped at restructuring.			

<b>Indicator 8 :</b>	Cameroon - Number of Departments with deployed eGovernment applications			
Value (quantitative or Qualitative)	1	50	Dropped	1
Date achieved	12/31/2008	03/15/2016	04/14/2014	12/31/2009
Comments (incl. % achievement)	Target 0% achieved as of 12/31/2009. Indicator was not tracked after that date and was dropped at restructuring.			
<b>Indicator 9 :</b>	Number of Internet exchange points (IXPs) and number of countries with equipment for spectrum management			
Value (quantitative or Qualitative)	0	6		5
Date achieved	04/14/2014	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 83% achieved. Indicator added at restructuring. Spectrum management equipment is installed in Cameroon, CAR and Chad (total 3). Equipment to measure Quality of Service installed in Chad (total 1). IXP in Chad (total 1).			
<b>Indicator 10 :</b>	Number of IXPs installed and functioning			
Value (quantitative or Qualitative)	0	3		1
Date achieved	04/14/2014	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 33% achieved. Indicator added at restructuring. IXP equipped and installed in Chad. 2 IXPs equipped and installed in Cameroon but not functional at project closing.			
<b>Indicator 11 :</b>	Number of countries that submitted new Laws for regulation and modernization of legal and regulatory framework			
Value (quantitative or Qualitative)	0	3		2
Date achieved	04/14/2014	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 66% achieved. Indicator added at restructuring. Cameroon and Chad adopted a new legal and regulatory framework and secondary legislation. CAR finalized a new legal and regulatory regime that was not yet approved by the Government at project closing.			

<b>Indicator 12 :</b>	Adoption by government of regulatory tools (a cost model for interconnection prices)			
Value (quantitative or Qualitative)	No	Yes		Yes
Date achieved	04/14/2014	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target achieved. Indicator added at restructuring.			
<b>Indicator 13 :</b>	Improved procedures for monitoring the frequency spectrum and the quality of service as measured through the number of qualitative reports issued by the respective regulatory authorities			
Value (quantitative or Qualitative)	0	12		20
Date achieved	04/14/2014	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 166% overachieved. Indicator added at restructuring. Cameroon: 2 telecom market observatories. CAR: 3 observatories. Chad: 3 observatories and 12 audit and quality of service reports (total 15).			
<b>Indicator 14 :</b>	Number of staff trained in spectrum management and monitoring			
Value (quantitative or Qualitative)	0	6		54
Date achieved	04/14/2014	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target 900% overachieved. Indicator added at restructuring.			
<b>Indicator 15 :</b>	Improved conditions for e-Waste recycling, as measured in the short term by the presence of a regional e-Waste recycling center			
Value (quantitative or Qualitative)	No	Yes		Yes
Date achieved	04/14/2014	03/15/2016		03/15/2016
Comments (incl. % achievement)	Target achieved. Indicator added at restructuring. In Cameroon two technical assistances were funded by the project to support the operationalization and the scaling up of a regional e-Waste center.			

## G. Ratings of Project Performance in ISRs

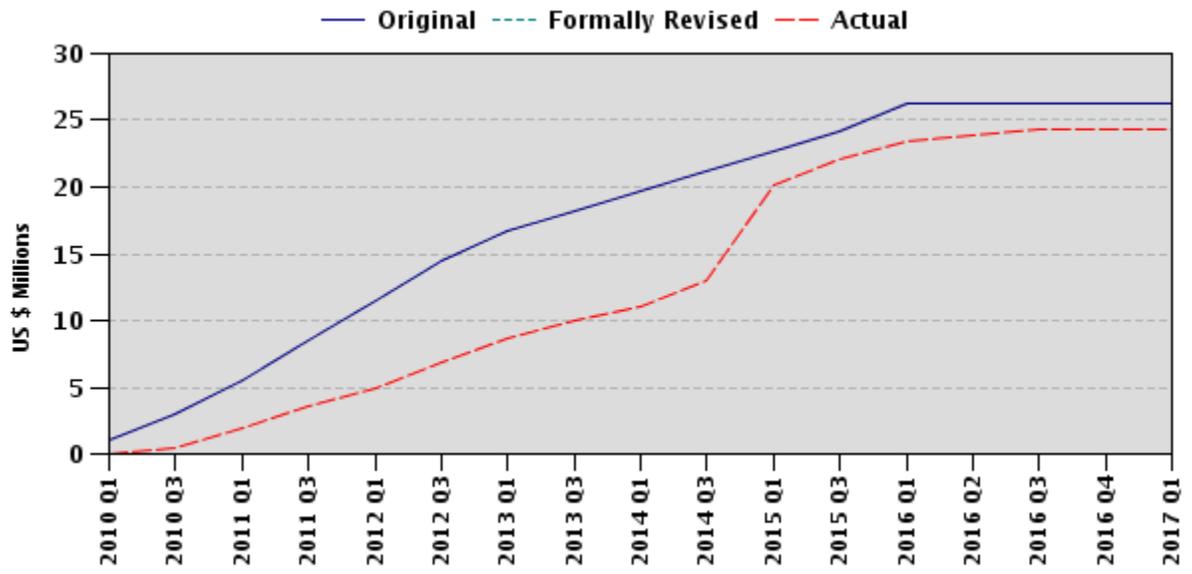
No.	Date ISR Archived	DO	IP	Actual Disbursements (USD millions)
1	04/29/2010	Moderately Satisfactory	Moderately Satisfactory	0.56

2	04/30/2011	Moderately Satisfactory	Moderately Unsatisfactory	3.80
3	09/21/2011	Moderately Satisfactory	Moderately Satisfactory	4.82
4	05/06/2012	Moderately Satisfactory	Moderately Satisfactory	7.31
5	12/16/2012	Moderately Satisfactory	Moderately Satisfactory	9.13
6	01/31/2013	Moderately Satisfactory	Moderately Satisfactory	9.18
7	03/23/2013	Moderately Unsatisfactory	Moderately Unsatisfactory	10.01
8	11/02/2013	Moderately Unsatisfactory	Moderately Unsatisfactory	11.07
9	06/18/2014	Moderately Satisfactory	Moderately Satisfactory	17.49
10	12/17/2014	Moderately Satisfactory	Satisfactory	21.21
11	06/26/2015	Moderately Satisfactory	Satisfactory	23.06
12	04/25/2016	Moderately Satisfactory	Moderately Satisfactory	24.32

#### H. Restructuring (if any)

Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		DO	IP		
04/14/2014	N	MU	MU	13.27	One key activity was added to each country-specific project and the Results Framework was updated with new key results indicators added and others deleted in order to better measure results of the project based on the nature of the project (Technical Assistance)

## I. Disbursement Profile



# **1. Project Context, Development Objectives and Design**

## **1.1 Context at Appraisal**

### **Background on the Central African Backbone (CAB) Program**

1. In 2009, despite reforms implemented in the telecommunications sector,<sup>1</sup> Central African countries were still suffering from limited access and high costs of information and communications technology (ICT) services. There were several hindrances affecting the sector including the isolation of the countries, incomplete market liberalization, and the absence of backbone infrastructure at the national level. These constraints impinged on the countries' abilities to trade with others, create new jobs, and expand their production of goods and services. Most telecommunications operators in the region did not have broadband terrestrial networks and relied on expensive and poor quality satellite connectivity to link cities at the national level. But the countries wanted the growth, job creation, increased productivity, boost in key sectors (e.g., agriculture, health, education), and poverty reduction that affordable broadband could bring.

2. Central African countries realized that without cross-border initiatives, the individual countries would not be in a position to achieve low-cost broadband access and therefore to advance their growth agenda and overall global competitiveness. Landlocked countries in Central Africa can be especially disadvantaged as they need to interconnect with incumbents or national long distance operators in intermediary countries to carry traffic to a submarine cable landing point and often would pay high prices in the process.

3. The Central African Backbone (CAB) Program was designed to be a regional and fully integrated end-to-end backbone infrastructure network linking several Central African countries and providing digital broadband access to the global fiber network. The CAB structure called for the establishment of new regional telecom operator(s) for reselling international, regional, and national capacity to existing national operators and service providers at discounted rates and for a regional Public-Private Partnership (PPP) entity to invest in and manage the CAB infrastructure. This regionally-oriented structure was the first of its kind for the ICT sector in Sub-Saharan Africa and would increase competition for the provision of international and national capacity. Governments and the private sector would actively participate in the CAB Program through investments and incentives. Based on the findings of a 2007 PPIAF-funded feasibility study undertaken by an international consultancy firm that met with all sector stakeholders from Cameroon,

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<sup>1</sup> In Cameroon, a Telecommunications Law in 1998, followed by secondary legislation and the launch of two operators in both the fixed and mobile segments by 2000; in Central African Republic (CAR), a new Telecommunications Law in 2007, followed by secondary legislation and the launch of four mobile operators by 2007 with a monopoly in the fixed segment; and in Chad, a Telecommunications Law in 1998, followed in 2008 by legislation establishing a sector regulator and the launch of three mobile operators by 2009 with a monopoly in the fixed segment (Telegeography).

Central African Republic (CAR), and Chad, in May 2007 the heads of state of the *Communauté Economique et Monétaire des Etats de l'Afrique Centrale* (Economic and Monetary Community of Central Africa or CEMAC) adopted a Declaration calling for the establishment of the CAB under open access and PPP principles and asked for financial assistance from donors.

4. The study's recommended first step was the implementation of a first Central African Backbone Communications Infrastructure and Technology Adaptable Program Loan Project (CAB APL1) involving Cameroon, CAR, and Chad. These countries were selected for the first phase in order to leverage the existing fiber optic network laid along the Chad-Cameroon oil pipeline and extend it further into the landlocked countries of CAR and Chad.

### **Cameroon, CAR and Chad Country and Sector Backgrounds**

5. The ICT sectors of all three CAB APL1 countries are dominated by a state-owned incumbent operator. For Cameroon, this was Cameroon Telecommunications (CAMTEL), which the Government had failed twice to privatize prior to appraisal. In CAR, the incumbent is the *Société Centrafricaine de Télécommunications* (Central African Telecommunications Company or SOCATEL and in Chad it is the *Société des Télécommunications du Tchad* (Telecommunications Company of Chad – SOTEL TCHAD or SOTEL), which are both “distressed operators” with chronic operating losses given their low market share in a competitive sector. As this ICR is focused on the results of the CAB APL1 Project, for further information on the general and ICT sector backgrounds of each country at appraisal, please see the PAD.<sup>2</sup>

### **Rationale for Bank intervention**

6. The Declaration of the CEMAC heads of state adopted in May 2007 called explicitly for World Bank financial support for the implementation of the CAB Program.<sup>3</sup> The Bank had an active ICT policy dialogue in all of the countries involved and was seen as an honest broker, as it had helped to maintain a constructive dialogue among all stakeholders (governments, regulators, public and private operators). The CAB Program was also closely aligned with the Bank's 2004 Regional Integration Assistance Strategy for Africa (RIAS), which identified ICT as an emerging positive trend in the 21st century for Africa, and highlighted CAB's role for the regional connectivity objective.

### **Background on the CAB1A Project and CAB1B Cancellation**

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<sup>2</sup> <https://hubs.worldbank.org/docs/imagebank/pages/docprofile.aspx?nodeid=11204172>

<sup>3</sup> The overall program was formulated with other key stakeholders and development partners (the African Development Bank joined the initiative in 2007 and provides parallel financing for the CAB Program; the African Union (AU) also played an important role in facilitating intergovernmental cooperation and policy harmonization, in conjunction with CEMAC).

7. The first phase of the IDA-financed CAB Program, the CAB APL1 or CAB1 Project, was to cover Cameroon, CAR, and Chad. The regional project aimed to: (i) support the enabling environment through strengthening of the legal, regulatory, and institutional framework; (ii) establish a regional public-private partnership (PPP) entity to manage the future CAB infrastructure as well as build backbone links toward neighboring countries; and (iii) improve government efficiency by supporting the development and rollout of selected eGovernment applications.

8. The World Bank Regional Operations Committee (ROC) met on April 23, 2009 to review the project before appraisal and decided at that time to split CAB1 into two phases: CAB1A to support the strengthening of the enabling environment through technical assistance (TA) activities and CAB1B focused on investment in broadband infrastructure through a regional PPP. The decision to split the project into two phases was based on the lack of readiness of the countries involved to implement a regional PPP structure. It was also done so that CAB1A's Board approval date could be moved up in order to help meet the FY09 target for IDA-15 commitments. CAB1A was then scheduled for Board approval in September 2009, and CAB1B was postponed to allow more time for preparation and appraisal of the PPP.

9. The CAB1B Project directly targeted one of the major constraints on the economic development of both Chad and CAR: their geographical position. By connecting the countries to global broadband networks and taking advantage of economies of scale through creation of a regional PPP, the project aimed to reduce the cost of doing business, particularly at the international level. Because of the reluctance of their incumbents to relinquish sole control over their international gateways, both Cameroon and Chad took actions that would eventually lead to the cancellation of CAB1B. Cameroon withdrew from CAB1B in November 2010 and proceeded to have its national backbone built under a separate contract. It characterized the regional PPP structure as an imposition on its national sovereignty. Chad created a separate company in early 2012 to manage its fiber optic network, in direct contradiction with the regional PPP foreseen in CAB1B. CAB1B was ultimately cancelled on December 15, 2012 because it did not meet its effectiveness deadline after two extensions. More details are provided in the Note on Canceled Operation Report.<sup>4</sup>

10. ***This Implementation Completion and Results (ICR) Report focuses solely on the CAB1A Project.*** The CAB1A Project was approved by the Board on September 24, 2009, became effective on February 12, 2010, and closed on March 15, 2016. It comprises three IDA credits: SDR 8.5 million to Chad, SDR 4.8 million to CAR, and SDR 6.4 million to Cameroon.

## **1.2 Original Project Development Objectives (PDO) and Key Indicators (as approved)**

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<sup>4</sup> <https://hubs.worldbank.org/docs/imagebank/pages/docprofile.aspx?nodeid=18246115>

11. The Project Development Objective at project approval was to contribute to increase the geographical reach and usage of regional broadband network services and reduce their prices.

12. Key indicators as approved were consistent with the overall CAB Program and the ICT Core Sector Indicators. For the PDO and Intermediate Outcome Indicators at appraisal, please see the Results Framework Analysis in the Data Sheet.

### **1.3 Revised PDO (as approved by original approving authority) and Key Indicators, and reasons/justification**

13. The PDO remained the same until project closing. The original indicators were meant to reflect improvements in telecommunications infrastructure and the restructuring of incumbent operators and were set when the CAB1 Project was originally designed. However, once the split of activities into two projects was approved by the ROC, focusing the CAB1A Project on TA, the indicators were not updated accordingly. Therefore, after the mid-term review (MTR) of May 2013 and Level 2 project restructuring (approved on April 14, 2014) to make CAB1A into an independent TA operation, the key indicators were changed to ensure alignment with the nature of the project activities (both old and new) and to better capture the expected outcomes. For Intermediate Outcome Indicators after restructuring, please see the Results Framework Analysis in the Data Sheet.

### **1.4 Main Beneficiaries**

14. The project was designed to target the populations of the three countries by increasing availability and affordability of broadband services. Direct project beneficiaries included citizens, businesses, and governments who would be connected to the Internet. The Restructuring Paper further defined a direct project beneficiary as “any individual covered by the wireless network of a mobile operator or Internet service provider.” Indirect beneficiaries would include populations not directly using the Internet but who would benefit in some way from opportunities created due to the availability and lower costs of Internet access. In addition, the project’s contribution to the promotion of regional market integration in the Central Africa would benefit much larger groups.

### **1.5 Original Components<sup>5</sup>**

15. The project components followed the overall CAB Program design and the table below indicates the designation and cost for each component:

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<sup>5</sup> The description of the component activities was taken from the Technical Annexes for Cameroon, CAR, and Chad under CAB1A.

**Table 1: CAB1A Project Components and Amounts**

Components	Enabling Environment	eGovernment and flagship ICT applications	Project Management
Cameroon	US\$6.9 million	US\$1.2 million	US\$1.8 million
Chad	US\$7.4 million	-	US\$1.6 million
CAR	US\$5.7 million	-	US\$1.6 million

(a) **Enabling Environment Component:** This component provided support mainly in the form of TA, training, and equipment in order to: (i) modernize the policy, legal, and regulatory environment; (ii) strengthen key public institutions; and (iii) promote a pro-competitive environment and restructuring of incumbent operators. With regard to (i), in 2008 as part of implementing the CAB Program, CEMAC and the Economic Community of Central African States (ECCAS) adopted regional Directives on electronic communications meant to provide a harmonized regulatory framework for electronic communications networks and services within CEMAC member states. Thus a key part of (i) was assisting the countries to adopt new legal frameworks to transfer these regional Directives into national legislation that would also be harmonized at the regional level and thus promote regional integration. This is covered in greater detail in Section 3.2.

(b) **eGovernment and Flagship ICT Applications Component (Cameroon only):** The objective of this component was to promote public access to administrative services and ease the use of ICT through the establishment of essential online administrative services and the digitization of cultural and touristic heritage on one hand, and to enhance the image of Cameroon on the Internet by popularizing the use of its country code top-level domain (ccTLD) ".cm".

(c) **Project Management Component:** This component consisted of financing project management-related issues. It supported the following activities: (i) consultants to staff the Project Coordination Unit (i.e., a procurement specialist, a financial manager, an internal auditor, an accountant, and a backbone expert); (ii) equipment (i.e., financial management system); (iii) various TA; (iv) small works; (v) training; and (vi) operating expenses.

## 1.6 Revised Components

16. The project components as designed during appraisal did not change but some activities were modified after the MTR, as explained in the following paragraphs.

## 1.7 Other significant changes

17. The CAB1A supervision team faced several issues during its project implementation: (i) challenges in the restructuring of incumbent operators in all three countries, (ii) addressing Chad's decision in January 2013 to restore exclusivity on the

management of international gateways to the incumbent, and (iii) the coup in CAR in March 2013 and the de facto government at that time. The mid-term review addressed these issues by restructuring the project.

18. Besides making the above-mentioned changes in indicators, the supervision team revised project activities during restructuring to better respond to the needs and objectives of the countries at that time while maintaining the project's regional focus. Activities linked to the CAB1B Project, i.e., those related to preparation for the regional PPP structure, were dropped. The additional funds resulting from the cancellation of those activities, combined with uncommitted funds, were utilized to fund regional activities in each country that contributed directly to the PDO of CAB1A and were desired by the governments themselves.

19. In Cameroon, in response to the new priority of the Government to focus on Digital Switchover (DSO), the Bank agreed to finance the establishment of a regional e-Waste Center in Yaoundé to receive obsolete analogue equipment. In CAR, the new activity focused on building the capacity of various institutions (Ministry of Posts and Telecommunications, regulator, and relevant stakeholders) in dealing with interconnection regimes. The purpose of the new activity was to make CAR a champion of interconnection regimes among the CAB countries and to translate this newly-acquired expertise into regional directives to be implemented by CEMAC. CEMAC is headquartered in CAR's capital Bangui, strengthening the rationale for CAR to focus on interconnection within the region. In Chad, in line with the priority of the Government to improve the quality of service (QoS) offered by mobile phone operators and Internet service providers (ISPs), the project agreed to purchase quality control equipment that would allow the regulator to ensure a high QoS. This also had regional implications as Chad had connected to the SAT-3 submarine cable through Cameroon on its own in 2012 and later connected to East African submarine cables through Sudan in 2014-2015. Therefore, all international traffic coming into or going out of Chad would benefit from the improved QoS as well.

## **2. Key Factors Affecting Implementation and Outcomes**

### **2.1 Project Preparation, Design and Quality at Entry**

20. **Preparation.** The CAB1 Project took almost two years to prepare but it benefitted from preliminary work including the previously-mentioned PPIAF-funded feasibility study undertaken when the overall CAB Program was designed. In addition, the length of preparation attests not only to the complexity of the project but also to the caution exercised by the project team. The decision to split the project into two phases with the first phase (CAB1A) focusing on the enabling environment and TA needed to ensure that the countries had the right policies and expertise in place was a logical choice and was based on a lesson learned from many previous telecommunications reform projects, namely that the proper enabling environment is needed in order for a country to

realize the potential of its ICT market.<sup>6</sup> An additional lesson that the project used came from the Regional Communications Infrastructure Program (RCIP) focused on Eastern and Southern Africa. RCIP had shown that a strong relationship between the government and the private sector through an instrument such as a PPP facility was the most effective way to promote the rollout of regional telecom/ICT infrastructure, and thus in stressing each government's role in providing the proper enabling environment, the project also sought to help the countries differentiate and focus the role of the government and the private sector in this process.

21. The project also took on another important lesson from RCIP. In response to findings by the Quality Assurance Group (QAG) during the eighth Quality at Entry exercise that “weak implementation and capacity across participating countries” was identified in RCIP as a key constraint to accelerating implementation, the project team mobilized resources to strengthen project implementation capacity prior to approval. The resources came in part from ongoing projects and grants. In addition, on October 27, 2008, the project team was able to secure funds through the Project Preparation Facility (PPF) in the amount of US\$1.1 million for Cameroon, US\$820,000 for CAR, and US\$530,000 for Chad to carry out preliminary studies and activities in preparation for the project as well as to hire staff for the Project Coordination Units (PCUs) and to acquire goods such as office equipment and software. These Project Preparation Advances (PPAs) generally helped the countries and the project team to be more ready to move on to implementation after project effectiveness.

22. The project team made explicit efforts as well to secure political support and a strong regional approach upfront in order to sustain the project. The endorsement of the CAB Program by the CEMAC heads of state in May 2007 (para. 3) was seen at the time as providing political backing from the highest level for the project at both the regional and national levels from the countries that were ready to join or would eventually join the CAB PPP network. This endorsement was important in strengthening the justification for the project as a regional one. It also helped greatly to establish institutions to coordinate and oversee the program at the national and regional levels, with overall coordination for the program being given to the CEMAC Commission. A regional expert commission involving three representatives from each participating CAB APL1 country, and one representative from the World Bank, the African Development Bank, CEMAC, ECCAS, and the International Telecommunications Union (ITU) was also established. These institutions were efficient and accepted the need to act cooperatively prior to project approval in moving forward key consultancies to structure the regional project. The project team also consulted extensively with these institutions, which was an important means to ensure that the interests and priorities of stakeholders and beneficiaries in each country were taken into account as the project components were prepared. The project also benefitted from the political endorsement and support of the African Union (AU)

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<sup>6</sup> See for example Gelvanovska, Rogy and Rossotto: *Broadband Networks in the Middle East and North Africa: Accelerating High-Speed Internet Access*, World Bank, 2014, pp. 11-13: <https://openknowledge.worldbank.org/handle/10986/16680>

and the African Development Bank (AfDB), and the CAB Program was strongly anchored in the regional and political agenda of CEMAC, ECCAS, and the AU. All these factors strengthened the overall commitment of the participating countries to implement the project.

23. The CAB1 Project was a high-risk, potential high-reward operation, particularly because of its aim to create a common regional PPP structure among the three countries for the establishment of the CAB network, the first such regional PPP for the ICT sector in Sub-Saharan Africa. During preparation, due diligence was carried out to identify this risk and others associated with the project and each individual country and how they could be mitigated. The risk assessment and mitigation actions the team prepared at appraisal were adequate at entry and were anchored in strong regional support from CEMAC and extensive consultation with regional and national stakeholders. Despite the fact that the project had only a few components that were mainly TA activities, the overall project risk was rated as Substantial due to the need for complex coordination within the project and toward CAB1B and the involvement of three governments and numerous agencies and multilaterals.

24. **Design.** The project was ambitious in the sense that it covered three countries, each with its own sector issues and capacities, implementing agencies, and priorities, and prior to restructuring it required the creation of the regional PPP mentioned above. For these reasons, the decision was made early on to select the most appropriate instrument, namely a Regional IDA horizontal and vertical Adaptable Program Loan (APL), which was seen as most well-suited to take into consideration the time it could take to reach the overall Program objective of establishing a regional network for Central Africa. An APL is designed to provide phased support for long-term development programs. It was therefore flexible enough to accommodate the different levels of readiness of the participating countries (horizontal APL) and to phase TA as needed prior to the mobilization of the required infrastructure financing (vertical APL). This helped to strengthen project design.

25. The Bank team also did a good job of integrating the regional aspect into project design by recognizing the advantage of using the fiber optic infrastructure along the Chad-Cameroon oil pipeline as the core of a CAB regional network that could feasibly include CAR, whose capital city of Bangui is also the headquarters of CEMAC, thus further strengthening the project's regional focus. The project's regional expert commission was mentioned earlier and it continued to play an advisory role during implementation, also strengthening project design. Finally, the project implementation arrangements in each country were also well designed and involved three organizational levels: (i) a Project Steering Committee (*Comité de Pilotage*) responsible for providing advice regarding cross-sectoral issues; (ii) a Project Coordination Unit (PCU) responsible for project implementation, coordination of activities, and fiduciary management; and (iii) a CAB Technical Committee to provide technical input for the development of the regional backbone. The CAB Technical Committee and the respective Government implementing agency would in turn liaise as necessary with the regional institutions mentioned above. Although CAB1A did not include the development of the backbone, it

was helpful to include a technical committee at this stage for continuity and appropriateness of decisions in all countries. The involvement of these regional and national institutions helped to strengthen client ownership, which World Bank experience had shown was important for efficient project implementation.

26. The set of activities that the project team and the governments agreed to finance were designed to promote a pro-competitive environment for services and markets in general by taking on the major sector issues impeding market development in each country. This approach combined international best practice with meeting specific country needs.

27. In **Cameroon**, the major sector issues the project aimed to take on were: (i) the ongoing difficulties at that time of implementing the Special Telecommunications Fund, a fund that would charge operators a percentage of their turnover to aid in promoting universal access; (ii) the need to harmonize the ICT institutional framework in Cameroon in order to provide coherence in the operations of the regulators *Agence de Régulation des Télécommunications* (Telecommunications Regulatory Agency or ART) and *Agence Nationale des Technologies de l'Information et de la Communication* (National Agency for Information and Communications Technologies or ANTIC), the Ministry of Posts and Telecommunications (MINPOSTEL), and other sector stakeholders; and (iii) the need to modernize the Telecommunications Act (98/014) of 1998; and (iv) to convert the 2008 CEMAC Electronic Communications Directives into appropriate sector legislation. Cameroon also included a component on eGovernment and flagship ICT applications, reflecting the more advanced state of its ICT sector at the time.

28. In **CAR**, the focus was on basic needs including: (i) TA to modernize and harmonize the legal, regulatory, and institutional framework for electronic communications services; (ii) TA to define restructuring options for the incumbent operator (SOCATEL); (iii) TA to help increase ICT access in remote areas; and (iv) strengthening the capacity of key public stakeholders (*Ministère des Postes et des Télécommunications Responsable des Nouvelles Technologies* - Ministry of Posts and Telecommunications in charge of New Technologies or MPTNT) and the regulators *Agence de Régulation des Télécommunications* (Telecommunications Regulatory Agency or ART) and *Haut Conseil de la Communication* (High Council of Communication or HCC).

29. In **Chad**, the major sector issues the project intended to address were: (i) accelerating growth in the mobile sector through reduction of call rates and adoption of a universal access policy; (ii) reducing the high cost of international bandwidth that the PPP structure would bring in order to help accelerate the growth of the Internet industry; and (iii) establishing an IXP to reduce the cost of international traffic.

30. **Quality at Entry.** The activities undertaken prior to project approval to bolster implementation capacity of the PCUs helped to strengthen quality at entry. The project was approved on September 24, 2009 and became effective on April 20, 2010 in Cameroon, on February 12, 2010 in CAR, and on July 27, 2010 in Chad.

31. Although it took 7 months and 4.7 months from project approval to effectiveness in **Cameroon** and **CAR** respectively, the first disbursements in the countries took place within eight weeks and two weeks after their respective effectiveness, showing that supportive steps toward effective implementation were taken during preparation. The delays in project effectiveness in those countries were mostly due to bureaucratic obstacles. Actions were also taken in **Chad** to strengthen PCU capacity prior to approval. Because of general capacity constraints, the country had 10 months between approval and effectiveness due to challenges in recruiting PCU staff, and the first disbursement took place 11 weeks after effectiveness.

32. Because the project was on a fast track for approval, the formal results framework was not thoroughly assessed following the split into CAB1A and CAB1B and thus was not appropriate for measuring the results and impact of the different TA activities, but rather was more focused on activities related to the investment in and rollout of infrastructure that would be implemented under CAB1B. This was the result of the team focusing on both CAB1A and CAB1B at the same time instead of focusing on the first set of tasks at hand to ensure their effective implementation prior to infrastructure rollout. This had an adverse impact on quality at entry.

## **2.2 Implementation**

33. In **Cameroon**, implementation from effectiveness until the mid-term review of May 2013 was slowed mainly due to: (i) lack of ownership by the different implementing agencies; (ii) the complexity of key studies (requiring detailed terms of reference and a long procurement process); and (iii) high staff turnover in the different agencies. However, the Government managed to resolve those issues by strengthening the capacity of the implementing agencies, organizing regular meetings with relevant stakeholders, and following up more closely on the implementation of tasks.

34. In **CAR**, the implementation of CAB1A was satisfactory from effectiveness to mid-term review despite difficulties related to the restructuring of the incumbent operator due to political resistance. Minor issues in procurement and financial management were observed during the period but various measures to improve the efficiency of fiduciary functions were adopted and were successful. Because of the outbreak of conflict in CAR in 2012-2014, the Bank invoked OP 7.30 (Dealings with De Facto Governments) and suspended all project disbursements from March 2013 to April 2014. This affected some contracts and consultancies under CAB1A, but the PCU remained intact and resumed activity quickly once OP 7.30 was lifted.

35. During the same period, implementation in **Chad** was slow mainly due to the difficulties faced by the project in following Bank rules, as well as the complexity of some assignments' terms of reference. The Government's mandatory administrative procedures included too many steps with many different agencies, and the technical capacity of the implementing agencies was in many cases not sufficient to develop acceptable terms of reference. Very few consultancies and studies went beyond the

technical evaluation stage. It should also be noted that the national procurement procedures did not facilitate smooth implementation of the project (e.g., contracts above US\$100,000 needed to be cleared by the President). The project also encountered difficulties in financial management, and consequently overall fiduciary aspects were not satisfactory. As a mitigation measure, the project approved the hiring of an international individual consultant as a new Project Coordinator to support the PCU and the Government. Further financial management issues were uncovered in August 2013 and these are described in more detail in Section 2.4.

36. Immediately prior to the mid-term review in May 2013, the disbursement rate was 31% for Cameroon, 55% for CAR and 26% for Chad. Based on these numbers and the difficulties mentioned above, the project was restructured in April 2014. The restructuring (realignment of indicators and a few activities with the PDO)<sup>7</sup> helped to ensure a swift disbursement and the completion of all planned activities.

37. Noteworthy progress was made in **Cameroon** in the regulatory and policy agenda and in development of the mobile market segment after project restructuring. These are discussed further in Section 3.2. Project activities proceeded and were completed by the project closing date. As of March 14, 2016, the disbursement ratio was 96.07% and the project closed as planned on March 15, 2016.

38. In **CAR**, most of the activities were completed by project closing despite a very challenging environment due to the 2012-2014 conflict. The major achievements included: (i) finalization of a report on implementation of a universal service fund including mechanisms for granting licenses to increase rural access; (ii) finalization of a study on the implementation of digital community centers; and (iii) formulation of a strategy for the restructuring of SOCATEL. As of March 14, 2016, the disbursement ratio was 95.21% and the CAR portion of the project also closed on March 15, 2016.

39. In **Chad**, although the project faced difficulties in financial management (see Section 2.4 for more details), significant progress in implementation was noted from restructuring to closing, and as of March 14, 2016 disbursement had reached 89.95%. During that period, a new fiduciary team was appointed within the PCU and the Government-funded fiber optic network project to connect N'Djamena to the Sudan border was procured and finalized. From the policy perspective, a PPP agreement was reached between SOTEL (the incumbent operator) and private operators to manage this network. Following the peace agreement that was signed between Chad and Sudan in 2010 after a period of tension, Chad's interest had shifted from the regional integration of the CAB1 countries to consolidating its relation with Sudan. The President's brother was also appointed Minister of Posts and ICT in October 2013 and such political considerations became more important. Other significant project achievements are

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<sup>7</sup> See Restructuring Paper at <http://wbdocs.worldbank.org/wbdocs/viewer/docViewer/index1.jsp?objectId=090224b0823d5be8&standalone=true&respositoryId=WBDocs> and ICR Sections 1.3 and 1.7.

discussed in Section 3.2. The Chad portion of the project closed as planned on March 15, 2016.

40. The overall disbursement rate at project closing was 93.74% and based on the final results framework (see Data Sheet) with most indicators achieved or/and surpassed and the completion of all planned activities, it was possible to upgrade overall implementation progress from Moderately Unsatisfactory to Satisfactory and progress towards the Development Objective from Moderately Unsatisfactory to Moderately Satisfactory between the mid-term review and project closing.

### **2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization**

41. **Design.** As mentioned above, the indicators chosen at appraisal were geared toward infrastructure rollout foreseen under CABIB and thus were not well designed to measure the TA activities of CABIA, even though the majority of the indicators were standard quantitative ones that covered geographic reach, usage, and price and were thus related to the PDO. At restructuring, the indicators were more closely aligned with the TA activities. This meant that there were fewer standard quantitative indicators and that many of the revised indicators were designed to keep track of the outcome of the specific TA within the countries or implementing agencies, making them easier to monitor (e.g., number of staff trained in spectrum management and monitoring). Some standard ICT and IDA quantitative indicators were still used. Most of these standard indicators and would have been available from sources such as ITU and the GSM Association (GSMA), though with some time lag. They could have also been obtained through surveys or contacting the operators. All were either directly or indirectly linked to the PDO's main features. Collecting the most up-to-date data would require ensuring the appropriate capacity.

42. **Implementation.** Consistent with the project's regional aspect, it was agreed during preparation that the CEMAC ICT Unit would handle data analysis for monitoring and evaluation (M&E) activities across the three countries, although data collection was to be performed by the country implementing agencies (all regulators) under the coordination of the individual PCUs. During project preparation, the project team was able to mobilize a US\$470,000 Institutional Development Fund (IDF) grant for strengthening CEMAC's capacity in the telecom and IT sector. Two of its activities were: (i) the establishment of a regional telecom and IT monitoring system; and (ii) installation of M&E systems/organization of a regional workshop. Under the first activity, the telecom and IT M&E datasets for all CEMAC countries, including Cameroon, CAR, and Chad, were assessed and a new regional M&E system with harmonized datasets for each country was discussed, circulated, defined, and finalized through regional workshops. Under the second activity, the new datasets and M&E system to be implemented at the regional and member-state levels were presented and adopted at a regional workshop in October 2010. The new M&E system was then installed and became operational in all six CEMAC member-states and at the CEMAC Commission.

43. All this helped to increase knowledge transfer between member-states and strengthened their M&E capacity to some extent as well as strengthening CEMAC's coordination and policy role for the region. However, although Cameroon, CAR, and Chad received the new M&E systems, ongoing capacity constraints (no dedicated M&E specialists were appointed in either the ministries or regulatory agencies) and lack of follow-up training made it difficult to implement ongoing M&E for the telecom/ICT sector in the individual countries, including for the CAB1A Project. Ultimately, it was the CEMAC ICT Unit that performed most of the M&E and data collection around once per year from project approval until late 2012. At that time, unrest began in CAR, which broke out into conflict during 2013 and 2014, leading to the destruction of computers at the CEMAC ICT Unit and the CAB1A CAR PCU and making it impossible for them to continue M&E related activities.

44. In April 2014 after the unrest had subsided, both institutions were able to recover to some extent, but M&E capacity remained inconsistent at both the regional and country levels for the remainder of the project. Throughout the project, any CAB1A M&E was done only at the request of the project TTL and not routinely. It also proved difficult for the regulatory agencies to analyze the data that they were able to collect from operators in order to convert it to the format needed by the project. After restructuring, the more project-specific TA-focused indicators were tracked, but the standard ICT and IDA ones (Number of direct project beneficiaries (of which percentage female); Coverage of mobile network (percentage of population); Retail price of Internet services (per Mbit/s per month, in US\$); and Internet users per 100 inhabitants) were not. In addition, there was a difference of opinion about the definition of "direct project beneficiaries" between the Bank team and the implementing agencies. Nor were these matters followed up or commented on by the Bank project team or Bank management. Because the requisite capacity was ultimately not built or provided, M&E design and implementation can both be assessed as moderately unsatisfactory.

45. **Utilization and availability of data for assessing PDO.** With regard to M&E utilization, the regulatory agencies in each country carried out various telecom market monitoring overviews (*observatoires*) under the project. These collected many standard telecom/ICT quantitative indicators (though generally not the CAB1A quantitative indicators), a sign of some growing capacity in this area. Cameroon published three in 2011-2012 and CAR and Chad each published three in 2012-2014. These overviews have also been published on some of the regulator websites (Cameroon and CAR), but the most recent data are from 2014. It is difficult to assess whether the data collected either generally or under the project has been used to inform decision-making and resource allocation, though Cameroon is planning to monitor some project and project-related indicators on geographic reach, usage, and price of broadband services in its recently-adopted National ICT Strategy (*Plan Stratégique : Cameroun Numérique 2020*). All the same, there appears to have been some mainstreaming of M&E for standard ICT indicators within the regulators in each country. At the same time, a dedicated M&E function within each PCU would probably have done much to alleviate the challenges encountered with carrying out regular M&E for the project. Nonetheless, thanks to the efforts that the CEMAC ICT Unit, the regulatory agencies, the PCUs, and the project

team were able to make, the project-related data collected shows substantial progress toward the PDO, as will be discussed later in Section 3.2.

#### **2.4 Safeguard and Fiduciary Compliance**

46. **Safeguards compliance.** The project had an overall Category B for its safeguards due to possible environmental and social impacts of the infrastructure rollout foreseen under CAB1B. It triggered two safeguard categories: one environmental (OP/BP 4.01) and one social: Involuntary Resettlement (OP/BP 4.12). Because Cameroon withdrew from participation in CAB1B, it never prepared an Environmental and Social Management Framework (ESMF) or Resettlement Policy Framework (RPF). However, CAR and Chad both prepared and disclosed draft versions of both of these documents during the preparation phase of the CAB1B Project in May 2011. CAR went on to finalize its Environmental and Social Management Plan (ESMP) and Resettlement Action Plan (RAP) after the CAB1B Project went to the Board in June 2011. In Chad, the CAB1A Project financed the survey studies and a social and environmental impact assessment for its fiber optic link with Sudan that was funded by Huawei and built in 2014-2015.

47. **Fiduciary compliance.** In **Cameroon**, financial management was judged to be satisfactory overall. Interim Financial Reports as well as internal and external audit reports were submitted on a timely basis and were acceptable, although some of the internal audit recommendations were not implemented. Procurement experienced delays at first because of miscoordination between implementing agencies (CAMTEL, MINPOSTEL, ART, ANTIC, Ministry of Communications (MINCOM)) and weak capacity in some (e.g., ANTIC). However, the project team had the PCU hold meetings every two months with the main stakeholders to discuss issues and boost progress, which was a help. Also, procurement slowed some starting in 2012 with a major institutional change, the creation of the Ministry of Public Procurement. The Bank assessed this new arrangement and recommended that all projects approved prior to the creation of this new Ministry should follow their original procurement arrangements. The agreement took some time to be finalized and this delayed ongoing procurement processes. Once it was, however, procurement proceeded smoothly, with the ongoing help of the PCU, and was judged to be satisfactory overall.

48. In **CAR**, financial management was satisfactory with only minor shortcomings. All Interim Financial Reports and internal and external audit reports were submitted on a timely basis and all of the auditors' recommendations for improving internal controls were implemented. In procurement, there were some initial delays in signing contracts because of political issues, but overall procurement was carried out in a satisfactory and very professional manner by the PCU and with the implementing agency providing effective supervision, including regular use of the Africa Procurement Cycle Tracking System (PROCYS). This is especially notable because of the conflict in CAR, equipment destruction at the PCU, and temporary suspension of disbursements (OP 7.30) in 2012-2014.

49. In **Chad**, there were strong weaknesses in both financial management and procurement. Concerning financial management, at the early stages of the project there were problems with the budgeting systems in the PCU and audits were often submitted late. There were several reviews carried out by financial management specialists but most of their recommendations were not implemented. In early 2013, the project team hired a new Project Coordinator for the PCU to strengthen fiduciary oversight.

50. During a supervision mission by the Country Financial Management Specialist on August 22, 2013, the team came across ineligible expenses arising from perceived fraudulent activities carried out by the Project Accountant (who was also at the time Acting Project Finance Officer) amounting to CFAF8,705,000 (US\$17,794). Pursuant to Staff Rule 8.01, paragraph 2.02, the TTL of the CAB1A Project reported the case of the alleged fraudulent activities to INT in October 2013.

51. An in-depth review of the utilization of project funds was conducted to determine whether there were other ineligible and/or fraudulent expenditures. The final figure for ineligible expenses was determined to be CFAF413,189,107 (around US\$700,000). Ultimately, seven PCU staff were found to have engaged in fraud and misuse of project funds and were dismissed. After the review concluded, a new fiduciary team was put into place and financial management showed improvement with Interim Financial Reports and audits being submitted on a more regular basis. Nonetheless, financial management was rated unsatisfactory overall.

52. In spite of ongoing assistance offered by the PCU, procurement in **Chad** was slow prior to the MTR, with only one TA consultancy having been completed by that time. There was also a near complete turnover of PCU staff and frequent communications delays between the staff and the Bank project team. Few of the recommendations for improvements set forth in the aide-memoires were implemented and most procurement activity was focused on support to the PCU (e.g., purchase of vehicles, training, workshops, refurbishing of offices). National procurement procedures also contributed to the slowness (e.g., contracts above \$100,000 had to be cleared by the President). Once a new fiduciary team was put in place at the PCU following the forensic analysis, procurement improved, although the filing and archiving system was still inadequate. Procurement was judged as moderately satisfactory overall.

## **2.5 Post-completion Operation/Next Phase**

53. The CAB1A Project managed to lay a strong foundation for follow-up work through potential Bank interventions involving investment project financing and development policy operations as well as investment by other parties and interest from IFC.

54. **Cameroon** signed a US\$50.93 million CAB follow-up project in June 2015 with AfDB to finance the national component of the CAB Program, a rollout of 916 km of fiber optic cables comprising approximately five priority links to fill in missing segments and to provide for interconnection to CAR, Nigeria, and Congo. The project also

envisages the implementation of a number of ICT applications and services (e-Post, e-Banking, Markets and Climate Information System, etc.) that would bring access to banking services, agricultural prices, and weather forecasts to the rural population, and institutional support through, among other activities, feasibility studies related to further fiber optic infrastructure and applications/services that would form part of a subsequent CAB project. The preparatory activities under CAB1A that facilitated this investment by AfDB included the study on a regional interconnection regime and one on the establishment of a hybrid mailing service in Cameroon. AfDB is also reviving the open access principle originally in CAB1A by requiring all of the links it finances to adhere to that principle.

55. The World Bank Transport and ICT Global Practice is currently discussing with Cameroon a proposed new joint Bank/IFC lending operation called “ECam2020” that takes up from CAB1A and would support the country’s ambitious recently-adopted National ICT Strategy. The strategy calls for the transformation of Cameroon to a digital economy and aims for a broadband penetration rate in Cameroon of 20% and fiber optic infrastructure rollout to seven Central African countries all by 2020. The strategy was not financed by CAB1A, but it is a clear outgrowth of its PDO and project activities and benefitted from the project team’s comments, which were integrated into the final version. The new project would address most of the legal, regulatory, and technical challenges identified by the authorities and the Bank. The activities to be supported would be: (i) the restructuring of CAMTEL to ensure the incumbent’s adaptation to competition, and the liberalization of the country’s broadband markets at the international (landing station) and national (national backbone) levels; (ii) the strengthening of the sector regulators (ART and ANTIC) and the implementation of adopted regulatory instruments and reforms (e.g., spectrum management, digital switchover); and (iii) the development of eGovernment services to modernize the public administration and to support the creation of local content. The project is currently under preparation.

56. Under CAB1A, **CAR** was able to draft a new law on electronic communications and present it to the Council of Ministers for approval, but was not able to complete the full process including final approval by the National Assembly because of the 2012-2014 conflict and its aftermath. Approval of the law by the Council is a prior action for the follow-up first phase of State Consolidation Development Program (SCDP) Development Policy Operation (DPO) grants for CAR, scheduled for Board approval in November 2016. The prior action falls under Pillar 2 (Support Economic Recovery) of SCDP DPO 1. The law was approved by the Council of Ministers in September 2016 and is expected to be ratified by the National Assembly in early 2017. CAB1A also funded TA for the implementation of a universal service fund and one of the triggers for SCDP DPO 2 scheduled for Board approval in June 2017 is adoption of a universal access strategy by the Council of Ministers.

57. CAR has also requested support from the World Bank for a modified CAB1B Project (ICT Sector Development Project) that would support the construction of ICT community centers nationwide and TA to: (i) prepare documentation for the recruitment of a private partner to join in a PPP to manage the Central African Backbone; (ii) finalize

routes, conduct technical surveys, assess deployment costs, and prepare technical specifications for the project; and (iii) carry out updated environmental and social impact studies and develop an updated resettlement plan for the Central African Backbone, as needed. It is also seeking cofinancing from the African Development Bank to finance two fiber optic connections that would connect the country with submarine cables on the west coast of Africa, one through Cameroon and one through Congo. In the current tense environment in CAR, the Government sees reliable communication and information sharing as critical for monitoring the situation and promoting peace-building efforts. The World Bank-financed project will begin preparation in FY17 and is scheduled for Board approval in FY19.

58. **Chad** has expressed interest in follow-up Bank assistance to help it in finalizing a national PPP for its backbone, in renegotiating its interconnection tariffs with Cameroon and Sudan, and in financing further fiber optic infrastructure and related capacity building. As of now, these discussions have not advanced because of the ineligible expenses the country incurred under CAB1A. The Government of Chad recently agreed to reimburse these expenses to the World Bank by the end of 2017.

### **3. Assessment of Outcomes**

#### **3.1 Relevance of Objectives, Design and Implementation**

##### **Relevance of Objectives**

Rating: *High*

59. The project underwent a Level 2 restructuring after MTR and the PDO was not changed, notwithstanding the fact that the infrastructure investment envisaged under CAB1B was cancelled. Two of the countries (Cameroon, Chad) had nonetheless begun to extend their backbone networks and the other (CAR) had made plans to do so based on project TA; accordingly, many of the TA activities financed under the project had been and remained linked directly to furthering backbone extension and extending geographic reach and usage of broadband generally and therefore to achievement of the PDO. The PDO remains relevant after project closing for the following reasons. First, given the ever-growing importance of digital infrastructure for successful development through promoting a thriving economy, efficient government, and citizen engagement, and the fact that the ICT sector contributes substantially to the countries' GDP (in Cameroon it is 5%, in CAR 8%, and in Chad 4%), the PDO has maintained its relevance to the countries' priorities as shown by (see also Section 2.5): (i) the ongoing vision for regional integration articulated in part through the CAB Program whose broader aim is to create a regional space for ICT-related services through infrastructure rollout and greater competition and private sector investment in each country's ICT sector; (ii) the countries' requests for follow-up Bank projects that will address physical infrastructure and broad access to regional broadband network services; (iii) **Cameroon's** launch of a follow-up AfDB project, its recent adoption of a national ICT strategy, and the mention by its President of ICT as a priority sector in December 2015; (iv) **CAR's** request for follow-up AfDB funding; (v) and **Chad's** inclusion of ICT sector development as one of eight

priority objectives in its most recent National Development Plan. In addition, the PDO is still aligned with the most recent Bank/UN/EU global and country strategy documents<sup>8</sup> all of which emphasize the importance of ICT for competitiveness, job creation, improved service delivery, private sector investment, and economic growth.

### **Relevance of Design**

Rating prior to April 2014 Restructuring: *Modest*

Rating after 2014 Restructuring: *Substantial*

60. The project's original design, with a focus on leveraging the Chad-Cameroon oil pipeline's fiber optic network to extend broadband into the landlocked countries of CAR and Chad and to form a core CAB regional network, reflected the priorities of the region and was well-conceived to promote both regional integration and to address development priorities of the individual countries. The project's activities, components, and policy areas were relevant for achievement of the PDO. As has been noted above, because the project was on a fast track for approval, the original M&E framework, related to CAB Program objectives, was not revised to measure the outcomes of CAB1A's TA activities. Thus, it did not properly reflect the countries' sector performance within the context of the project and could not adequately capture progress toward the PDO.

61. After restructuring, the project reflected a better alignment of activities with the country governments' wishes and of results indicators to project outcomes. The links between the project activities, indicators, and the PDO within the context of a TA project were clearer and the revised indicators gave a better picture of actual sector performance in the countries. The project managed to keep its regional emphasis, shifting from the initial focus on of establishing a regional PPP to new country activities with a regional focus after restructuring (Section 1.7). In addition, the added PDO indicator target of having each project country conclude at least one interconnection MoU with a neighboring country helped to maintain the larger regional focus of the CAB Program as supported by CEMAC and the World Bank. The Bank's support to the Program has evolved to encompass a series of projects supporting the interconnection of national networks in the region in order to create a wider space for regional goods and services, including ICT-enabled services.

### **Relevance of Implementation**

Rating: *High*

62. Implementation assistance was responsive to project needs and adapted to changing priorities (e.g., the new activities added at restructuring and the increased focus on building regulatory capacity after restructuring) as well as security and governance

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<sup>8</sup> World Bank World Development Report 2016: Digital Dividends; Cameroon Systematic Country Diagnostic, June 20, 2016; 2016 Recovery and Peacebuilding Assessment for CAR (joint preparation by WB/UN/EU); IDA Turnaround Eligibility Note for the Central African Republic, September 27, 2016; Chad Country Partnership Framework, FY16-20).

hurdles. The project provided adequate and necessary TA to the countries allowing their telecom/ICT sectors to prepare for much-needed infrastructure.

### **3.2 Achievement of Project Development Objectives**

Rating prior to April 2014 Restructuring: *Modest*

Rating after April 2014 Restructuring: *High*

63. The project development objective was to contribute to increase the geographical reach and usage of regional broadband network services and reduce their prices. Prior to restructuring, achievement of the PDO was being assessed against implementation of the proper enabling environment and equally against preparation for investment in broadband infrastructure and restructuring of the incumbent operators. By project restructuring, the second factor had become invalid with the cancellation of the CAB1B Project and the third factor was experiencing significant delays and setbacks (reluctance to face social and political implications of restructuring incumbents, lack of open access for submarine cable landing stations in Cameroon, aftermath of conflict in CAR, monopolization of international gateways in Chad). Thus, overall achievement of the PDO prior to restructuring was Modest. Following restructuring, achievement was measured mainly with regard to strengthening of regulator capacity to oversee telecom/ICT markets, along with implementation of other aspects of the enabling environment that all contributed to increasing the geographic reach and usage and reducing the price of broadband. The achievement picked up notably after restructuring, as will be described below, and was High. By its substantial contributions to laying the policy, legal, and institutional foundations for positive results during the project and potential further positive sector developments, the project was largely successful at achieving the PDO.

64. With regard to attribution, it could be argued that achievement of PDO outcomes was influenced to some extent by exogenous factors such as the rapid growth of ICTs globally, whose adoption tends to be faster and more prominent especially in urban contexts, and the rapid evolution of the sector in general, including the introduction of third generation (3G)/fourth generation (4G) mobile broadband technologies, which help continue to make broadband more accessible at lower costs. At the same time, because the Bank through CAB1A was the only development partner active in the ICT sector of the three countries during project implementation and was pushing for reforms and other TA that were aimed at developing the sector, it can also be argued that most of the positive PDO outcomes that were achieved in the three countries from project approval to closing can be largely attributed to its contributions. For example, Annex 3 makes this argument for the increase in Internet user penetration in the three countries during the project.

65. The achievement of the PDO can be examined from several different perspectives. Some of the main achievements related to establishment of an enabling environment (new laws, spectrum management training) can be measured against the full PDO because they touch on all of its aspects. The PDO can also be broken down into three sub-PDOs:

- (i) Sub-PDO 1 - To contribute to increase the geographical reach of regional broadband network services;
- (ii) Sub-PDO 2 - To contribute to reduce the prices of regional broadband network services;
- (iii) Sub-PDO 3 - To contribute to increase the usage of regional broadband network services.<sup>9</sup>

Other main project achievements and outcomes can be measured against those sub-PDOs. The assessment will first cover the full PDO and then move to the three sub-PDOs.

*Achievement of full PDO: To contribute to increase the geographical reach and usage of regional broadband network services and reduce their prices*

66. The PDO encompasses a basic description of an efficiently functioning telecom/ICT sector. The following activities contributed to achieving all aspects covered in the PDO.

67. **New legal frameworks for the digital age and related capacity building.** In 2008 as part of implementing the CAB Program, CEMAC and ECCAS adopted regional Directives on electronic communications (i.e., electronic transmission of digitally encoded information by computer or mobile device). The Directives are meant to provide a harmonized regional regulatory framework for electronic communications networks and services within CEMAC countries in order to facilitate the introduction and increased usage of broadband and the modern Internet.<sup>10</sup> The project funded TA that helped to transpose these directives into a new legal and regulatory framework appropriate for the digital age at the national level in all three CABIA countries. The TA consultants and the governments consulted with appropriate CEMAC experts throughout the process of drafting the legislation in order to ensure that the Directives were accurately transferred and that the new laws would be harmonized with other electronic communications legal frameworks of CEMAC member states. The new legislation lays the basic framework for achieving all three parts of the PDO. It sets out the rights and responsibilities of all players in the ICT sector (service providers and network operators in the private sector, regulators and ministries in the public sector, consumers) and the steps of the licensing process itself, which enables the private sector to operate and offer services to consumers. Much of the private sector's operation consists of building out broadband networks

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<sup>9</sup> The order of sub-PDOs 2 and 3 have been reversed from their order in the full PDO because price reduction (i.e., affordability) generally drives increased usage of broadband services.

<sup>10</sup> The Directives cover tariffs, interconnection and access, user rights, universal service, and harmonization of legal regimes, regulations, and regulatory policies. See also International Telecommunication Union Support for Harmonization of ICT Policies in Sub-Sahara Africa (HIPSSA) Project, ICT Regulatory Harmonization: A Comparative Study of Regional Initiatives, pp. 74-75 at: <http://www.itu.int/en/ITU-D/Projects/ITU-EC-ACP/HIPSSA/Documents/FINAL%20DOCUMENTS/FINAL%20DOCS%20ENGLISH/ICT%20Regulatory%20Harmonization.pdf>

(increase the geographic reach of broadband services). The legislation also allows for multiple broadband service and network license holders, which ensures competition and thus leads to reduced prices. Reduced prices in turn lead to increased uptake and usage of broadband services. Intermediate Outcome (IO) Indicator 11 targeted having all countries adopt new laws by project closing. Cameroon and Chad succeeded in doing so and the target was 66% achieved. Further details are given below.

68. In **Cameroon**, the new framework was introduced in 2010, began to be implemented in 2012, and was updated in 2015. The new legislation outlined the rights of telecom subscribers, set out updated rules for interconnection<sup>11</sup> between operators, outlined more specifically the responsibilities of the sector regulators ART and ANTIC, established the Special Telecommunications Fund to promote universal service, and outlined the regimes for multiservice licenses necessary in the current environment of converged services (Internet, voice, data, video), including the establishment and operations of electronic communications systems such as submarine cable landing stations for access to international connectivity. One aspect of the strong capacity building subcomponent that the project financed was training for principal staff in the Ministry of Post and Telecommunications on the new legal framework and how it was to be applied, key to ensuring a smooth implementation. Staff from CAMTEL, the incumbent operator, also received project-financed technical training on aspects of the new legislation.

69. In **CAR**, the project provided TA for the updating of the main telecommunications legislation to cover electronic communications. At project closing, it had been submitted to the Council of Ministers for approval. This was as far as the Government and the project team were able to bring it, given the 2012-2014 security difficulties and their aftermath. The consultations held with all stakeholders on the new legislation served to sensitize them to their new roles once the legislation is enacted and helped to keep sector reform efforts moving in a positive direction. As noted earlier, the Council of Ministers approved the new law in September 2016 and the National Assembly is expected to ratify it in early 2017. Among other activities, the project also financed updated equipment and capacity building for MPTNT and HCC.

70. In **Chad**, the project funded TA to harmonize the legal and regulatory framework for electronic communications services that resulted in the adoption of a new framework in 2014. It was comprised of nine new laws, the most important one establishing a new regulator for the sector, *L'Autorité de Régulation des Communications Electroniques et des Postes* (Regulatory Authority for Electronic Communications and Posts or ARCEP), specifically covering electronic communications. ARCEP's powers are specified in the

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<sup>11</sup> When referring to a national market, interconnection is the linking of telecom networks so that customers of one network can communicate with customers of another network. In practice, it usually means allowing mobile operators to connect with the fixed and wireless networks of incumbent/legacy operators, which is more efficient and less costly than requiring each of the mobile operators to build their own network. This process of interconnection is key in order for competition to emerge in a national telecom/ICT market.

new regulation and include standard responsibilities such as enforcement of regulations and compliance with obligations including issuing penalties and sanctions when called for, ensuring a level playing field and preventing dominant market power, managing the licensing process, arbitrating between service providers, network operators and consumers, and managing the radio spectrum. The new legislation covers licensing, interconnection and access to networks, use of frequencies, universal service, consumer protection, and infrastructure sharing. The new legislation also established *L'Agence de Développement des Technologies de l'Information et de la Communication* (Agency for the Development of ICT or ADETIC), responsible, among other areas, for developing a national ICT strategy, managing the universal service fund for electronic communications and ensuring its implementation, and allocating IP addresses in Chad. The project also financed capacity building for key staff of *Ministère des Postes et des Nouvelles Technologies de l'Information et de la Communication* (Ministry of Posts and New Information and Communication Technologies or MPNTIC) and the incumbent operator SOTEL on topics such as fiber optic infrastructure networks and interconnection.

**71. Modern spectrum management equipment and training for an efficient, broadband-enabled ICT sector.** A particularly important set of project-financed activities that was carried out with the regulators in all three countries were studies on the design of spectrum management regulatory tools, purchase and set up of spectrum monitoring equipment, and training of regulatory agency staff in spectrum management and monitoring, the last of which took place in 2014 (IO Indicator 9). These activities encompass a foundational capacity that must be developed in order for ICT regulators to regulate modern markets effectively, as the entire range of digital services in a country depends on reliable access to the radio spectrum. This access, in turn, is the responsibility of the regulator to manage in a way that is seen as fair, transparent, and technically appropriate so that mobile broadband operators and other service providers can feel safe to make long-term investments. This approach to managing spectrum maximizes the availability to this scarce resource to the largest possible number of private sector service providers and operators in order to increase the geographic reach of broadband services including to more remote areas<sup>12</sup>, thus maintaining healthy competition in the sector, reducing broadband prices in turn, and consequently maximizing the number and affordability of broadband services and benefits offered to consumers, thereby driving increased uptake and usage. Each country now has the most up-to-date equipment and skills in this area appropriate for a broadband environment, which is helping them not only to manage their national spectrum more efficiently but also to avoid cross-border

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<sup>12</sup> Efficient spectrum management is a necessary but not sufficient tool for ensuring extension of broadband services to remote and rural areas. Other regulatory tools to incentivize the private sector to cover these less-profitable areas are needed such as reducing the spectrum auction price for a license serving rural areas, allowing small companies to use unlicensed spectrum in remote areas, and issuing subsidies from the universal service fund (percentage of annual revenues collected from each private operator by the regulator to promote universal access to ICT/broadband services) to private operators to ensure coverage of remote and rural areas. See <http://www.ictregulationtoolkit.org/4>: “Universal Access and Service”.

spectrum interference both with each other and with other countries.<sup>13</sup> The new hard and soft capacities also include the important capability of managing Digital Switchover (DSO). They have already been helpful in beginning this process in Cameroon (see next para.) and can also do so in CAR and Chad when those countries are ready to begin their DSO. With Chad, this has already begun to some extent; the new capacities were important in managing cross-border interference with Nigeria when it began its DSO in April 2016. IO Indicator 14, related to the number of staff trained in spectrum management, particularly stands out for its achievement: the target was to have 6 staff across the three countries trained in spectrum management by project end and the actual value was 54, a 900% achievement of the target.

**72. DSO in Cameroon contributing to efficient spectrum management.** A practical guide for DSO in Cameroon was finalized in March 2013 under CAB1A and the country began its DSO in July 2015. DSO is an important part of a spectrum management policy as it can free up around 80% of no longer utilized analogue spectrum that can be used for mobile broadband operators. This is the so-called “digital dividend”. As the World Bank-ITU ICT Regulation Toolkit notes, “This [freed-up] spectrum band offers an excellent balance between transmission capacity and distance coverage. Because of its good signal propagation characteristics, less infrastructure is required to provide wider mobile coverage, meaning that communications services can be provided in rural areas at lower cost.”<sup>14</sup> DSO is already contributing to strengthened spectrum management with its associated benefits in Cameroon and will continue to do so.

**73. Additional regulatory capacity building and enhanced regulatory performance.** Each regulatory agency also received capacity building on basic tools such as interconnection/tariffs, network monitoring, and open access. And as a result of their increased capacity achieved through the project, the regulators have increased their performance considerably through the issuance of more and better qualitative reports on sector status, performance, and trends. From a baseline at restructuring of no reports issued, the three regulators had issued 20 reports by project closing against a target value of 12, a 167% achievement of the target (IO Indicator 13). These achievements also contribute to all aspects of the PDO.

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

**74.** CAB1A did not finance infrastructure under a regional PPP, a lost opportunity for the wider CAB region, but it did directly contribute to infrastructure either being built or prepared for in all three countries, which would not have happened without its

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<sup>13</sup> CAR’s spectrum management has become so precise that there is discussion between the Government and the Bank in the context of preparing the new DPO (Section 2.5) about instituting a frequency tax on operators as one means for the Government to raise revenues.

<sup>14</sup> See <http://www.ictregulationtoolkit.org/en/toolkit/notes/PracticeNote/3279>.

interventions. And the open access principle of the original project design began to return in follow-up activities.

75. **Cameroon.** The CAB1A Project financed TA under the enabling environment component that played a direct role in the buildout of fiber optic infrastructure funded by other financiers in Cameroon during the project, both for the national backbone and for interconnection to other countries. The TA provided the technical knowledgebase necessary for the buildout and included: (i) policy notes on regulatory bottlenecks for broadband and on obligations for the set-up and operation of electronic communications infrastructure; (ii) a feasibility study and technical specifications for the use of solar energy for network transmission; (iii) a study on a regional interconnection regime; and (iv) a white paper on operational procedures for submarine cables in Cameroon. Without this TA, the infrastructure buildout, totaling around 10,000 km, likely would not have happened. The various fiber installations encompassed the launch of the national backbone, the creation of the Nigeria Cameroon Submarine Cable System (NCSCS), and extensions of the national backbone financed by the Chinese company Huawei and of interconnection links financed by AfDB. AfDB in particular would not have stepped in with its follow-up infrastructure investment (see Section 2.5) if the findings and recommendations of these studies had not been in place.<sup>15</sup>

76. The project financed TA on the offer of a third mobile license and in December 2012 Cameroon awarded the license to Vietnam's Viettel, a move that broke its restrictive duopolistic mobile market structure as it heralded the arrival of 3G mobile technology, with its higher data speeds and mobile Web access, to a wider population. Viettel began offering services in September 2014, the same month that the Government awarded a fourth mobile license to CAMTEL, for which the project again provided TA. All four mobile operators now offer 3G services, which cover all major cities and towns, and 4G services were launched in December 2015. The CAB1A Project clearly contributed to this achievement through the improvement of Cameroon's legal and regulatory framework as well as the project's support to the governance of the sector. Cameroon's Digital Switchover should help to sustain this achievement; since digital

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<sup>15</sup> In 2013, Cameroon signed an interconnection MoU with Equatorial Guinea and later that year signed interconnection agreements with Equatorial Guinea and Nigeria as a first step in the establishment of the NCSCS to meet growing demand for more advanced ICT services in the country. The installation of the cable began in June 2015 through a tripartite partnership between MainOne (telecom and network services provider in West Africa), MINPOSTEL (which provided all the funding), and the Chinese company Huawei. The link is 1,100km and connects Kribi, Cameroon and Lagos with a branch to Malabo, Equatorial Guinea. It went live in December 2015. In addition, CAMTEL announced plans in 2014 to extend its fiber-optic network. The project was jointly financed by CAMTEL and a CFA42.8 billion (US\$81.4 million) loan from China's EXIM Bank. CAMTEL's national fiber-optic backbone (launched in May 2013) was 3,200km in 2014. The new cable brought the total length of Cameroon's fiber infrastructure to 6,000km. This had risen to 8,000km by mid-2015, and with the launch of NCSCS later that year, the Government came very close to meeting its objective of 10,000km of fiber optic infrastructure for Cameroon. The AfDB follow-up CAB project was approved in June 2015 and is funding 916 km of fiber for Cameroon's national backbone as described in Section 2.5.

transmission offers a greater number of channels than analogue, it can help in extending broadband to underserved areas through sharing of its transmission sites with other service providers.

77. CAB1A contributed to the achievement of Sub-PDO 1 in Cameroon as shown by the indicators in the Data Sheet. In particular, the coverage of mobile networks exceeded the target by 32% to arrive at 92.5% of the population (PDO Indicator 24) and the number of direct project beneficiaries increased by 315% (PDO Indicator 16).

78. In **CAR**, the project mainly contributed through its overall support to governance of the ICT sector and through the Bank's role as the only active development partner driving sector reform. As mentioned, the project's TA on drafting a new legal and regulatory framework sensitized all sector stakeholders on their role in an efficient ICT sector. In September 2007 (prior to CAB1A approval but following the 2007 adoption of the CAB Program by CEMAC), the regulator ART authorized all four mobile operators to introduce 3G technology. Thus far, Orange has been the only one to do so, launching 3G services in February 2013, mainly in Bangui.

79. CAR conducted environmental and social studies under CAB1A that are also playing a direct role in preparing for infrastructure to be provided through a PPP in a follow-up World Bank project (see Section 2.5). In addition, under the regional activity added at restructuring, CAR would develop technical and institutional capacity for the design of a regional interconnection regime to facilitate regional integration. Ministry and regulatory agency staff received training in interconnection, but the activity was slowed by the 2012-2014 civil unrest. Nonetheless, the PCU was effective in pushing for the signing of 5 MoUs among CEMAC members, which are highlighted later on in Section 3.5(c). The most relevant one here is that signed between CAR and Chad in May 2012. Interconnection to Chad is expected to follow in the near term through financing provided by the Chinese company Huawei. This would give CAR access to submarine cables and international connectivity on both African coasts through Chad's network (see below on achievement of Sub-PDO 1 in Chad).

80. The project also funded TA for the implementation of a universal service fund in CAR and a pilot area has been selected by the Government for initiating use of the fund and how it would be used in conjunction with awarding licenses to offer services to remote areas. This promises to move ahead once the new law on electronic communications is ratified in early 2017. CAB1A contributed to the achievement of Sub-PDO 1 in CAR as shown by the indicators in the Data Sheet. In particular, the indicator related to the coverage of mobile networks exceeded the target by 24% to arrive at 59% of the population (PDO Indicator 25) and the number of direct project beneficiaries increased by 350% (PDO Indicator 17).

81. In **Chad** as in Cameroon, the CAB1A Project financed TA that played a direct role in the buildout of two fiber optic infrastructure links in the country during the project that extended the national backbone for interconnection with Cameroon and Sudan. The TA provided the technical knowledgebase necessary for the buildout and included: (i)

training for ministry and SOTEL staff on fiber optic backbone and interconnection; (ii) design and implementation of regulatory tools including on interconnection (IO Indicator 12); (iii) the study on a regional interconnection regime; (iii) technical and safeguard studies for the Chad-Sudan fiber link; and (iv) a survey study on technical specifications for the CAB network used for the Chad-Sudan fiber link. The infrastructure totaled 3,000 km and would not have been built without the CAB1A TA. The two links broke Chad's landlocked status and constitute the first cross-Africa fiber optic infrastructure, thus also representing an important regional achievement for both Central and Eastern Africa.<sup>16</sup>

82. Shortly after the new regulator in Chad, ARCEP, was established in 2014 through legislation resulting from CAB1A Project-financed TA, it awarded 3G and 4G licenses to the two main mobile operators, Airtel and Tigo, helping to introduce more advanced mobile broadband to the country and to maintain competition in the rollout of those services, starting in N'Djamena.

83. CAB1A contributed to the achievement of Sub-PDO 1 in Chad as shown by the indicators in the Data Sheet. Notably, the coverage of mobile networks exceeded the target by 66% to arrive at 83% of the population (PDO Indicator 26) and the number of direct project beneficiaries increased by 436% (PDO Indicator 18).

*Achievement of Sub-PDO 2: To contribute to reduce prices of regional network broadband services*

84. The award of third and fourth mobile licenses in **Cameroon** made possible through CAB1A was the biggest driver of competition and price reduction. In addition, the regulatory agency received project-financed training on regulation of wholesale and retail markets, which contributed to price reduction in those segments. The wholesale regulation training is continuing to have an impact in keeping prices down: AfDB in its follow-up project has supported continued wholesale regulation by enforcing the open access principle on each fiber link it is financing and having the regulator ART prepare an economic model to fix the cost of access to national and international connectivity with a view to lifting barriers to entry into the fiber optic segment. CAB1A also financed the finalization of terms of reference for two Internet Exchange Points (IXPs),<sup>17</sup> one

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<sup>16</sup> In 2012, Chad signed an interconnection agreement with Cameroon and built 1,500 km of fiber optic infrastructure linking N'Djamena to the Cameroon coast and giving the country access for the first time to international connectivity through the SAT-3 submarine cable. Its second link between N'Djamena and the Sudanese town to El-Geneina (from there connecting Chad with the Eastern African Submarine Cable System (EASSy) landing station in Port Sudan), a distance of 1,500 km, was eventually implemented in 2014 and 2015 by the Chinese multinational company Huawei. Both links were financed through counterpart funding.

<sup>17</sup> An IXP is a physical infrastructure allowing different ISPs to exchange traffic between their networks based on mutual agreements. It is an important part of modern digital infrastructure because it helps to make Internet traffic transit more efficient, thereby tending to reduce the cost of Internet services to consumers.

national and one regional. These became operational in October 2016. The IXPs should continue contributing to reduction of prices for Internet services.

85. CAB1A contributed to the achievement of Sub-PDO 2 in Cameroon as shown by the indicators in the Data Sheet (PDO Indicators 10, 27; IO Indicators 1, 4). In addition, the strong reduction in the Herfindahl-Hirschman (HH)<sup>18</sup> index from 5309 in December 2008 to 3784 (GSMA) at project closing in March 2016 shows just how much of an impact CAB1A had in “de-concentrating” the sector, i.e., in increasing sector competition. This is reflected in the price reductions as well. The wholesale regulation training and the construction of the Nigeria Cameroon Submarine Cable System (NCSCS) helped in reducing international capacity prices, which dropped by more than a factor of 6 (PDO Indicator 10).

86. In **CAR**, all the previously-mentioned achievements (consultation on the new law; training of ministry and regulatory agency staff, especially in spectrum management; policy dialogue and general support to sector governance enabled by the project) contributed to market development and increased competitiveness (e.g., rollout of 3G services by Orange in 2013). In addition, the project’s support to the regulator ART contributed to it carrying out good practices to keep the market well-regulated and ultimately more competitive. Two of these include ART’s fining of one mobile operator (Telecel-RCA) in 2014 for unauthorized use of 3G spectrum and a brief suspension in 2015 of all traffic over another operator (Moov) because of its arrears in paying required spectrum use royalties. The project also financed the finalization of terms of reference for a national and regional IXP in CAR. These promise to contribute to further price reduction for Internet services in CAR once they become operational.

87. CAB1A contributed to the achievement of Sub-PDO 2 in CAR as shown by the indicators in the Data Sheet (PDO Indicators 11, 28; IO Indicators 2, 5) in addition to the reduction of the Herfindahl-Hirschman (HH) index from 3996 in 2008 to 3130 in 2016 according to GSMA. In addition, once CAR obtains fiber optic infrastructure in the framework of its follow-up Bank project and access to international capacity through implementing its interconnections with Cameroon, CAR, and Chad, prices should come down even more markedly.

88. Along with all the previous achievements mentioned, one of the project’s biggest contributions to sector competition and price reduction in **Chad** was its TA financing for the country’s new legal framework, which set up two new, modernized regulatory agencies, ARCEP and ADETIC. As noted above, ARCEP offered 3G and 4G licenses shortly after it was established, contributing importantly to sector competition. In addition, the project financed TA for the finalization of terms of reference for an IXP, which became operational in 2015 and is managed by ADETIC (IO Indicators 9, 10).

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<sup>18</sup> The Herfindahl-Hirschman (HH) index is a commonly accepted measure of market concentration. Data from GSMA.

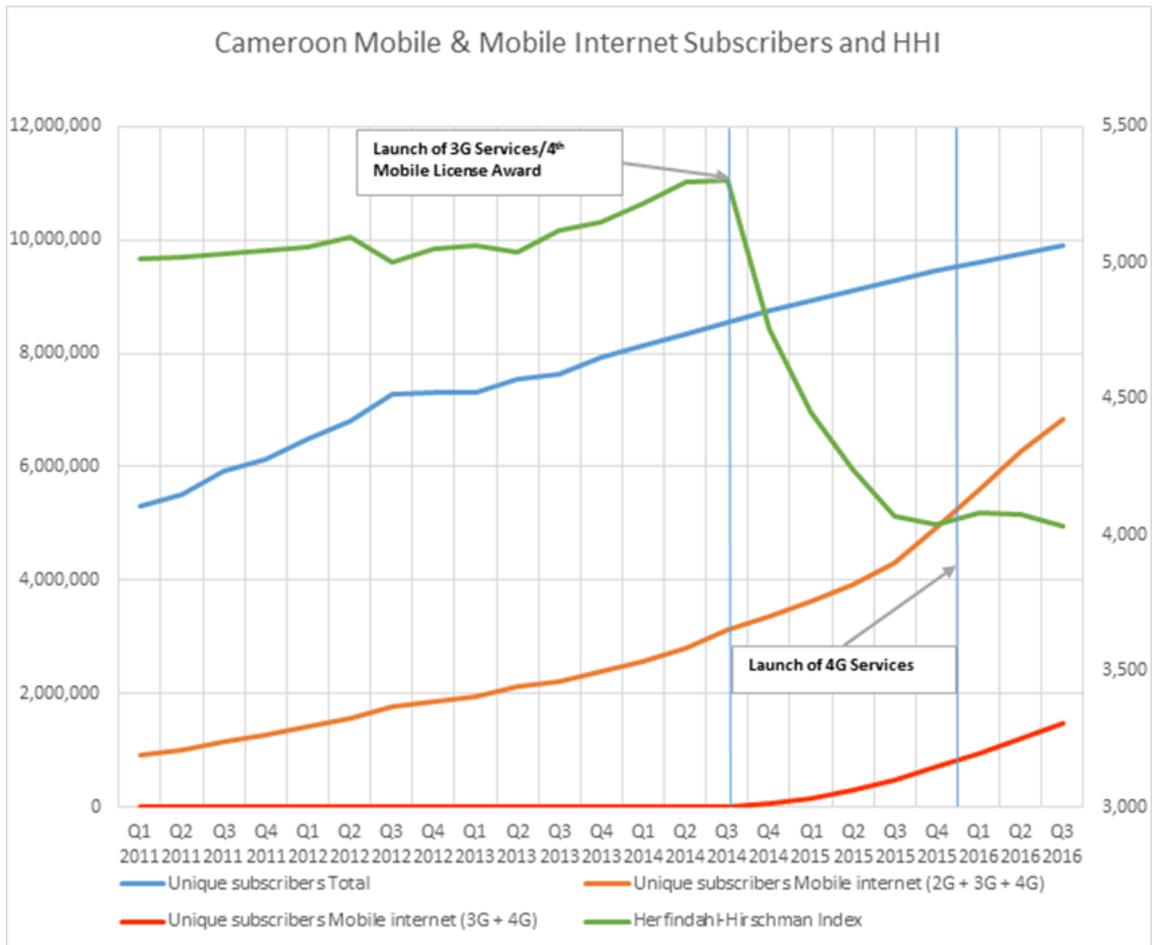
89. In order to ensure that its three mobile operators improved their performance in meeting their quality of service (QoS) obligations, Chad requested and received project-financed TA in 2014 for QoS training for ARCEP staff along with the purchase and set-up of QoS monitoring equipment (IO Indicator 9). 15 staff received this training and they are included in the number of 54 mentioned above receiving overall spectrum management training (IO Indicator 14). The regulator has carried out QoS audits biannually since 2010, and these are now of noticeably higher quality since the training and equipment purchase. A reliable QoS helps to ensure that broadband network resources are used more efficiently and thus ultimately strengthens the market's competitiveness.

90. Chad also benefitted greatly from its two interconnections with Cameroon and Sudan that were enabled by the project, giving it international connectivity for the first time. This led to a dramatic price reduction in that segment (PDO Indicator 12), which has been aided by AfDB's support to wholesale regulation in Cameroon, lowering Chad's interconnection tariff with that country. And using the recommendations of one of the CAB1A-financed studies on a PPP for its Sudan link, the country is in the process of creating a PPP adhering to open access and following the structure discussed during preparation for CAB1B that will be jointly managed by SOTEL and the private operators. This should serve to keep prices down as well.

91. CAB1A contributed to the achievement of Sub-PDO 2 in Chad as shown by the indicators in the Data Sheet (PDO Indicators 12, 29; IO Indicators 3, 6) in addition to the reduction of the Herfindahl-Hirschman (HH) index from 5389 in December 2008 to 4704 in March 2016 according to GSMA. The noticeable drop in the HH index reflects two developments enabled by CAB1A: (i) the increase in competition for international capacity made possible through Chad's fiber optic links with Cameroon and Sudan, with a corresponding dramatic drop in price by nearly a factor of 70 (PDO Indicator 12); and (ii) the introduction of competition for 3G and 4G services authorized by ARCEP.

*Achievement of Sub-PDO 3: To contribute to increase the usage of regional network broadband services*

92. CAB1A contributed to the achievement of Sub-PDO 3 in **Cameroon**, as shown by the figures in the Data Sheet. Quarterly 3G subscriber growth in the country averaged 22% from December 2013 to project closing in March 2016 and the number of subscribers grew by 640% from 298,000 to 1.9 million. From December 2015 to project closing, 4G subscribers grew by 680% from 10,000 to 78,000 (Telegeography). Total teledensity increased by 326% (PDO Indicator 7) and the number of Internet users increased by 609% (PDO Indicator 4). The graph below shows in a striking way one of the major achievements of the PDO in Cameroon: a dramatic drop in the HH index in Q3 2014 when the third mobile operator launched 3G services and the fourth mobile award was announced, followed by an increase of subscribers (especially noticeable on the line showing 3G and 4G services) starting in 2015 and accelerating after 4G services were launched in December 2015.



Source: GSMA.

Note: GSMA defines mobile Internet services as any activity that consumes mobile data (i.e., excluding SMS, MMS and cellular voice calls).

93. CAB1A contributed to the achievement of Sub-PDO 3 in **CAR**, as shown by the figures in the Data Sheet. Quarterly 3G subscriber growth in the country averaged 40% from December 2013 to project closing in March 2016 and the number of 3G subscribers grew by 933% from 15,000 to 140,000 (Telegeography). Total teledensity increased by 450% (PDO Indicator 8) and the number of Internet users increased by 460% (PDO Indicator 5).

94. CAB1A contributed to the achievement of Sub-PDO 3 in **Chad**, as shown by the figures in the Data Sheet. Quarterly 3G subscriber growth in the country averaged 62% from September 2014 to project closing in March 2016 and the number of 3G subscribers grew by 1333% from 3,000 to 40,000. From December 2014 to March 2016 quarterly 4G subscriber growth averaged 25% and the number of 4G subscribers grew 300% from 500 to 1,500 (Telegeography). In addition, its improvement in QoS, aided greatly by project-financed equipment and training (IO Indicator 9), would tend to attract consumers and strengthen their demand for services. Total teledensity increased by 171% (PDO Indicator 9) and the number of Internet users increased by 225% (PDO Indicator 6).



95. A final table illustrates the increase in broadband data usage by the CABIA countries during the project.

**Table 2: Increase in data usage in CAB1 countries during the CABIA Project (used international bandwidth, Gbps)**

	2013	2014	2015	2016	Average growth rate
Cameroon	8.091	17.030	24.371	49.554	86%
CAR	0.087	0.151	0.272	0.322	57%
Chad	0.305	0.521	0.860	2.592	112%
Average CAB1 growth rate					86%

Source: Telegeography.

The relatively large bandwidth values for Cameroon reflect its size, its access to international connectivity through its SAT-3 submarine cable landing station and the Nigeria Cameroon Submarine Cable System (NCSCS), and the competition in 3G and 4G mobile services introduced. CAR's relatively low bandwidth values reflect its landlocked status. At the same time, its average growth rate is substantial and reflects the uptake of 3G and Internet services. Chad has the largest average data usage growth rate, reflecting a notable drop in price for international capacity and increased uptake of 3G and 4G mobile services.

96. Finally, the countries themselves were satisfied overall with the impact of the Bank's TA on the ICT sector (and by extension achievement of the PDO) as shown by the scores decided jointly by them and the Bank and given to PDO Indicators 13, 14, and 15 in the Data Sheet.<sup>19</sup> These scores were based mainly on the training, capacity building, equipment purchases, and studies financed that have been noted above, which were felt to have benefitted sector development and helped to achieve the PDO. The main reason that the scores for Cameroon and Chad are 4/5 while CAR's is 3/5 is because of the new laws being passed in the first two countries, whereas a draft law was finalized but not approved in CAR by project closing.

### 3.3 Efficiency

Rating: *Substantial*

97. The efficiency of the project is rated Substantial. The project delivered all of its planned activities by project closing and without additional financing. The change in

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<sup>19</sup> The core sector indicator Impact on Telecom sector of World Bank Technical Assistance is a composite score (1 – low impact to 5 – high impact) measured according to the following five aspects: (i) making the legal and regulatory framework more effective at delivering sector performance; (ii) improving the capacity of the regulatory institution(s) to deliver on their mandate(s); (iii) increasing the level of competition in the ICT sector; (iv) improving the ICT policy environment in the country; and (v) reforming state-owned assets in the ICT sector.

activities at restructuring was handled well, with savings of US\$1.5 million per country found to finance the new activities. Based on the internet uptake increase (increase in usage) and the population of the three countries, the CAB1A Project has contributed to an increase of an estimated 4,166,000 new users in Cameroon, 182,000 new users in CAR, and 863,000 new users in Chad. At project closing, the US\$26.2 CAB1A investment contributed to an increase of around 5.2 million new Internet users in the three countries over four years, or US\$5 per new user. In terms of studies and reforms, the project financed regulatory tools and draft legal frameworks for a total amount of about US\$1,550,000 (US\$800,000 in Cameroon, US\$400,000 in CAR, and US\$350,000 in Chad), which is on par with examples found in Bank projects for countries in its West Africa Regional Communications Infrastructure Program (WARCIP) that benefitted from similar TA activities.

98. The PCU teams managed to accomplish far more than anticipated with many hands-on trainings and capacity building activities in procurement and project management. Given the specialized nature of the training topics, and taking into account travel costs from N'Djamena, Bangui, and Yaoundé (among the most expensive on the continent), the project was efficient at delivering highly technical training. Although overhead costs for the individual Project Coordination Units were high (between 20% and 25%) compared to other similar projects such as CAB Congo and WARCIP projects (between 8% and 12%), it is fair to say that challenges encountered by the project, especially for Chad (additional staff had to be hired to address the governance and fiduciary issues mentioned above) and CAR (where the PCU team had to stop working for almost a year for security reasons), justify these high costs.

### 3.4 Justification of Overall Outcome Rating

Rating: *Moderately Satisfactory*

99. The Overall Outcome Rating is *Moderately Satisfactory*, based on the above-mentioned ratings as summarized in Table 3.

**Table 3: Assessment of the Overall Outcome**

		Against PDO with Original Indicators	Against PDO with Revised Indicators (2014)	Overall
1.	Relevance of: a) PDOs b) Design c) implementation	High Modest High	High Substantial High	-
2.	Achievement of the PDOs	Modest	High	-
3.	Efficiency	Substantial	Substantial	-
4.	Overall rating	Moderately Unsatisfactory	Highly Satisfactory	-
5.	Rating value	3	5	-
6.	Weight (% disbursed before/after change in indicators at 2014 restructuring)	55%	45%	100%
7.	Weighted value (5x6)	1.65	2.25	3.9
8.	<b>Final Rating</b>	-	-	<b>Moderately Satisfactory</b>

### 3.5 Overarching Themes, Other Outcomes and Impacts

#### (a) Poverty Impacts, Gender Aspects, and Social Development

100. The CAB1A Project can help the three countries address larger development challenges. Through the expansion of the reach of broadband that it has helped to bring, it has contributed towards a continued transformation of the economy in the countries as well as that of the everyday life of its citizens. The countries can begin to consider using the project's outputs as a basis to improve economic growth, boost employment, increase accountability and efficiency of public services, and support social inclusion. These in turn impact poverty and sustainable development.

101. In Cameroon, for example, the Market and Climate Information System being financed by the AfDB project, in turn enabled by the broadband that CAB1A made possible, promises to play a significant role in boosting the productivity and incomes of Cameroon's large population of small scale farmer by easing access to market and

weather information. More generally, ICT-based service industries, also enabled by affordable broadband, are a fuel for job creation, including for women and youth. In India, around 70 percent of ICT-based service jobs are filled by young people (aged 26-35) and in the Philippines women represent 60 percent of the ICT-based service workforce. In Africa, Ghana, Kenya, Morocco, and Senegal are also making similar impressive progress. Developing countries, including the CAB1A countries, have the opportunity to make ICT-based services, which pay 50-100 percent more than comparable service sector jobs, a key driver for growth and job creation, notably for youth and women.

102. One of the PDO indicators after restructuring was percentage of direct project beneficiaries who were female, which was not tracked. There are two proxies for this indicator that can be considered. The first is the Intermediate Outcome Indicator, Coverage of mobile networks (% of population), which reached 92.5, 59, and 83 respectively for Cameroon, CAR, and Chad. As the percentage of the population that is female is 50.0, 50.7, and 49.9 respectively for Cameroon, CAR, and Chad based on World Bank data from 2015, there is potential for the project to benefit women. They can alleviate their time and mobility constraints through increased availability and access to the Internet and cell phones. These tools can raise their ability to coordinate their family and work lives, reduce the cost of money transfers, cut down on the physical labor or travel required to discover information, and thus enable them to enter and expand into markets inside and outside their country more easily and at a lower cost. The second proxy is the gender equality index, one of the components of the mobile connectivity index recently launched by the GSM Association, a new online tool that measures the ability of more than 130 countries worldwide to connect offline citizens to the mobile Internet. The index is based on 2014 data and is scored from 0 to 100 with a higher score representing a stronger performance. Cameroon's gender equality index is 70.9 and Chad's stands at 36.3, with no index values provided for CAR. Given the accomplishments of the project outlined in Section 3.2 and the World Bank gender data cited earlier in this paragraph, it is likely that the project made some contribution to the attainment of those index values. It would be worthwhile to track the gender equality index in future Bank projects and interventions in the telecom/ICT sector of the three countries.

103. An added benefit of the project's activities is Cameroon's plan to generalize the use of solar energy for CAMTEL's fiber optic network transmission devices. This resulted from a study financed by the project and will help to mitigate climate change impacts in the country. Further, the establishment of a regional e-Waste center in Cameroon will help to minimize the environmental impacts of Digital Switchover and is already having regional influence (see following Section 3.5 (b)). Finally, the CAR PCU carried out a very successful consultation with local communities along the route of the planned fiber optic network about the aim of the overall CAB1 Project. This helped secure their buy-in, which was especially important for CAR as it had no prior experience with such infrastructure, and allowed consultants to carry out the follow-up technical surveys.

**(b) Institutional Change/Strengthening**

104. The project provided substantial institutional strengthening according to data gathered by the governments and the PCUs. In Cameroon, the project is estimated to have benefitted 68 private and public stakeholders (ministries, regulatory agency, public operators, private operators, service providers). In CAR, 10 institutions benefitting from the project were identified: MPTNT, HCC, ART, four mobile operators, SOCATEL, and three ISPs. In Chad, there were 11 institutions that benefitted: MPNTIC, ARCEP, SOTEL, three mobile private operators, and five ISPs.

105. A large part of that institutional strengthening was the extensive training the project provided under Component 1 including to telecom/ICT ministry staff in all three countries and to staff in the incumbent operators CAMTEL (Cameroon) and SOTEL (Chad). It should also be noted that from an institutional standpoint, an important long-term impact of the project is the capacity built in the regulatory agencies of all three countries in spectrum management and monitoring. The importance of this has been described above, as well as the unexpectedly high number of staff who were trained.

106. The pilot regional e-Waste center in Cameroon is already beginning to have an institutional strengthening impact in the sub-region, as a mission of government officials from the Democratic Republic of Congo (DRC) visited Cameroon in September 2016 to consult with their government on the center, with the intention of establishing a similar one in DRC.

107. The PCU staff in each country benefitted from training in Bank procurement procedures and this is already having benefits beyond the project in CAR. There the CAB1A PCU is training PCUs for other Bank projects and acted for a time as PCU on another Bank project. The Cameroon PCU set up for CAB1A is continuing to play the same role for the follow-up AfDB project (Section 2.5). It is hoped that there will be similar impacts in Chad.

108. Finally, it is worthwhile mentioning that as a result of the various CAB projects that have been or are being conducted in the sub-region (CAB1A: Cameroon, CAR, and Chad; CAB 2: Sao Tome and Principe; CAB 3: Republic of Congo; CAB 4: Gabon; and CAB 5: Democratic Republic of Congo), communities of practice for the project coordinators and for the regulatory agencies in each country have been launched. The members of those communities are in frequent touch with each other and share knowledge and best practices, a very promising development for institutional sustainability in each country.

**(c) Other Unintended Outcomes and Impacts (positive or negative)**

109. There were a number of regional interconnection regimes designed and implemented with the assistance of CAB1A that extended beyond the three project

countries. In August 2012 the state-owned company SITCOM Chad and CAMTEL signed a fiber optic interconnection agreement, and in May 2012 Chad and CAR signed an interconnection MoU. In 2013, Cameroon signed an interconnection MoU with Equatorial Guinea. Later on that year, Cameroon signed interconnection agreements with Equatorial Guinea and Nigeria as a first step to establishing the Nigeria Cameroon Submarine Cable System that went live in December 2015 (see Section 3.2). In February 2014 a Regional Statement on Interconnection was agreed by CEMAC in Brazzaville. Subsequently, the following interconnection agreements or MoUs were signed between CEMAC member countries: in February 2014 interconnection MoUs were signed between Gabon and Congo, Chad and Nigeria, and Chad and Sudan. In November 2015 Chad and Sudan signed an agreement on fiber optic communications based on their 2014 MoU. This activity played a key role in maintaining the project's regional focus through promoting regional integration. The regimes have facilitated the buildout of cross-border fiber optic infrastructure, which should result in further price reductions over time, and promise to continue to do so.

### **3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops**

Not applicable.

## **4. Assessment of Risk to Development Outcome**

Rating: *Low*

110. The successful accomplishments of the project in laying a strong enabling environment and building regulatory capacity in the three countries has been noted above. These achievements and the increase in geographical reach and usage and reduction in prices of broadband networks they made possible are likely to endure and to enable further sector development (unless the security situation in the countries were to deteriorate seriously). The Risk to Development Outcome is therefore assessed as Low. In the longer term, further increase in usage and reduction in prices could be slowed or even halted because of delays in each country in restructuring their incumbent operator. This risk is mitigated in Cameroon and CAR for now by the fact that this issue is planned to be addressed in their follow-up operations described in Section 2.5.

## **5. Assessment of Bank and Borrower Performance**

### **5.1 Bank Performance**

#### **(a) Bank Performance in Ensuring Quality at Entry**

Rating: *Moderately Unsatisfactory*

111. Bank performance in ensuring quality at entry is rated *Moderately Unsatisfactory* for the following reasons:

112. The project was originally designed to focus on TA to strengthen the enabling environment and the physical regional connectivity infrastructure but was later split into two phases with the first one concentrating only on the TA (see Section 1.1). At that point,

the nature of the project changed but preparation continued to focus on the previous scope (TA and connectivity); thus the Results Framework was not updated accordingly as it should have been. This oversight weakened project design and implementation prior to restructuring because implementation progress and progress toward the PDO were being measured against the wrong indicators. The project may have been weakened as well because of the original decision to split it into two phases, in part so that the first phase could be included in the FY09 allocation of IDA-15 commitments, rather than allowing for more time to prepare the whole CAB1 Project. This rush, along with the insistence on keeping the challenge of the regional PPP structure in CAB1B for Board approval shortly after CAB1A, contributed to uncertainty at the ROC meeting of April 2009 where it was not even known at first whether Chad would participate. In short, the project team and the countries were not fully ready for CAB1A to move forward. The decision to split CAB1 into two phases also weakened perception of the Bank's seriousness about the project in the eyes of the participating countries because of the subsequent delay in infrastructure investment. This delay in turn weakened the incentive that the project team could hold out to the participating countries in order to carry out the more difficult reforms (establishment of regional PPP, restructuring of incumbent operators).

113. The project was restructured partly because of reasons external to the project scope (political crisis in CAR, political economy issues in Chad and Cameroon)<sup>20</sup> but also because of the after-effects of the above-mentioned general rush and the specific oversight on the Results Framework, which ended up lasting nearly five years. If the Framework had been corrected during preparation or possibly through an earlier project restructuring, the TA focus would have been clearer to all parties and would have reflected better the phased nature of the APL approach. With this sharpened focus aided by more appropriate M&E, there might have been the chance to make up for some of the other problems caused by the project split through more capacity building, more stakeholder consultation, and improved overall project management that could have strengthened readiness for the foreseen CAB1B Project.

**(b) Quality of Supervision**

Rating: *Highly Satisfactory*

114. Despite the issues raised during project design and preparation, the majority of activities were completed on time, including the three activities added after restructuring. This was in spite of the above-mentioned political economy difficulties and others such as the near arrest by Chadian authorities of the Bank staff conducting the forensic review of ineligible expenses (Section 2.4), which necessitated holding some meetings outside of Chad. One of the project risks identified and rated Substantial by the Bank team at appraisal was the possibility of implementation delays caused by insufficient consensus

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<sup>20</sup> See Restructuring Paper at <http://wbdocs.worldbank.org/wbdocs/viewer/docViewer/index1.jsp?objectId=090224b0823d5be8&standalone=true&repositoryId=WBDocs>

about the ownership structure and business model of the planned regional PPP. Another was the resistance to restructuring by CAMTEL and SOTEL. Appropriate mitigation measures were taken at appraisal; nonetheless, these risks still came to fruition. At that point, the Bank team showed extreme patience, flexibility, creativity, and proactive support to the countries in undertaking a project restructuring that included dropping activities that were no longer feasible and utilizing the funds saved to set up activities that were needed and identified as priorities by the Governments, would also have regional focus and benefit, and would still show a satisfactory outcome and impact under CAB1A even in the absence of CAB1B investments (see Sections 1.7 and 3.2). The fact that all three countries are requesting follow-up ICT operations from the Bank is evidence that CAB1A was delivered with some success.

115. The Bank team was constantly active in the countries throughout project implementation and worked closely with the PCUs and implementing agencies. It also used its convening power to bring all stakeholders together whenever necessary. Project implementation progress was dutifully and adequately reported and issues swiftly brought to management attention. The Bank quickly found solutions to issues faced by the project (governance issue in Chad, security threats in CAR) and worked extensively with the national project teams to ensure that activities were completed on time. Having the TTL on the ground in the region to respond quickly helped considerably as well.

**(c) Justification of Rating for Overall Bank Performance**

Rating: *Moderately Satisfactory*

116. Bank overall performance is rated *Moderately Satisfactory* consistent with the evaluation of each section above.

**5.2 Borrower Performance**

**(a) Government Performance**

Rating: *Moderately Satisfactory*

117. The governments of all three countries were supportive of the CAB1A Project along with the other CEMAC heads of state from the time of their Declaration in May 2007. Further details about each country government are given below.

118. The Government of **Cameroon** continued its support for the project by approving the new Electronic Communications Law and secondary legislation, based on TA provided by the project, in December 2010. It also signed interconnection agreements with Chad and Equatorial Guinea. At the same time, its support and leadership of other parts of the overall project wavered somewhat in its early stages as shown by the slowness in remedying the lack of ownership of the various government agencies involved in implementing parts of the project. The creation of the Ministry of Public Procurement in 2012 also resulted in all of the project's procurement transactions being put on hold for several months and thus strongly delayed implementation. The Government eventually collaborated with the Bank and the PCU to alleviate these

problems and implementation proceeded more smoothly in the second half of the project. Its performance is rated *Moderately Satisfactory*.

119. The Government of the **Central African Republic** drafted a new Electronic Communications Law and secondary legislation, based on TA from the project, and brought it as far as it could before project closing, given the 2012-2014 security difficulties and aftermath. The law was approved by the Council of Ministers in September 2016 and is expected to be ratified by the National Assembly in early 2017. The Government also signed an interconnection agreement with Chad. It remained largely supportive throughout the project, and the Government's performance is rated *Moderately Satisfactory*.

120. The Government of **Chad** provided inconsistent commitment to the project from in the early stages, but after MTR the National Assembly passed nine new laws related to electronic communications, based on TA provided by the project. The Government also signed four interconnection Memoranda of Understanding (MoUs) with Cameroon, CAR, Nigeria, and Sudan. The Government's performance is rated *Moderately Satisfactory*.

121. Government performance is rated *Moderately Satisfactory* consistent with the evaluation of each section above.

#### **(b) Implementing Agency or Agencies Performance**

Rating: *Moderately Satisfactory*

122. **Cameroon:** As mentioned above, the implementing agencies were slow at first to take ownership of the various parts of the project they were responsible for implementing. This was compounded by inconsistent support from the Minister of Post and Telecommunications regarding some of the reforms to be carried out under the project, particularly the restructuring of CAMTEL. The PCU was proactive in becoming involved early on to help alleviate procurement delays by holding meetings every two months with the main government stakeholders and reaching out daily to each implementing agency. Later, it helped to facilitate agreement between the Government and Bank on procedures to be followed with the Ministry of Public Procurement. Its management of procurement contracts was very good, aided by its regular use of the Africa Procurement Cycle Tracking System (PROCYS), and it submitted all Interim Financial Reports and external and internal audits on a timely basis. The performance of implementing agencies in Cameroon is rated *Moderately Satisfactory*.

123. **CAR:** There were some challenges to the performance of the main government implementing agency MPTNT because of a large turnover of ministers. There were also some implementation delays by other implementing agencies. Nonetheless, their overall support to the project never wavered. In addition, the PCU carried out all its functions in a highly professional matter throughout the project, particularly notable given the conflict in the country in 2012-2014. It worked very closely with the Government to ensure efficient procurement and implementation, also making regular use of PROCYS, and at MTR it had the highest percentage of all three countries of contracted activities finalized.

It submitted all Interim Financial Reports and internal and external audit reports on a timely basis and all of the auditors' recommendations for improving internal controls were implemented. Finally, as noted earlier the PCU's competence in project management is benefitting CAR beyond CAB1A; it is training other Bank PCUs in the country and was acting for a time as the PCU for another Bank project. The performance of implementing agencies in CAR is rated *Highly Satisfactory*.

124. **Chad:** Overall leadership by the main government implementing agency MPNTIC was weak. It and the other implementing agencies had difficulties following the Bank's rules and drafting terms of reference for more complex assignments. The Government's cumbersome national administrative and procurement procedures also did not aid swift implementation. The PCU had strong weaknesses in financial management and procurement during the first half of the project with frequent staff turnover and communications delays between the staff and the project team. The problem with ineligible expenses charged to the project has been noted earlier. The installation of a new fiduciary team following the forensic analysis of financial management helped greatly in accelerating procurement and remedying financial management. The overall performance of implementing agencies in Chad is rated *Moderately Unsatisfactory*.

125. Implementing Agencies' overall performance is rated *Moderately Satisfactory* consistent with the evaluation of each section above.

#### **(c) Justification of Rating for Overall Borrower Performance**

Rating: *Moderately Satisfactory*

126. Consistent with the ratings for Government performance and Implementing Agencies' performance above, overall Borrower performance is rated *Moderately Satisfactory*.

## **6. Lessons Learned**

a) **Projects should not move forward to Board approval if the project team and client countries are not truly ready. In avoiding rush, consider which approach to use.** A deadline for IDA commitments should not be used as justification for moving to project approval with undue haste. More flexibility around use of IDA resources could be helpful, e.g., a grace period for commitment of IDA resources after a given deadline. For an intervention whose ultimate aim is the creation of a regional PPP, a phased approach may mitigate against this problem in some cases, especially for landlocked, small-island, or otherwise isolated countries with weak capacity. The Bank should focus first on putting the proper enabling environment in place and work with each country separately at its own pace rather than trying to coordinate the timetables of countries with different priorities and capacities. Only then should coordinated steps toward a regional PPP be taken. If it is decided instead to pursue a project similar to the original CAB1 Project (non-phased), then sufficient time should be allotted for preparation so that all countries are ready and willing to undertake the required reforms. Alternatively, adopting a speedier and less complex PPP model that uses approaches such as advance capacity

purchases and demand stimulation may help in simplifying project preparation and implementation.

b) **A thorough political economy assessment and high-level national commitment, alongside regional, are key for complex, ambitious regional projects. Consider strengthening regional institutions as part of this process.** While support from the heads of state of a regional body such as CEMAC can provide important political backing for a project of this type, general political economy challenges, such as the interest of incumbent operators, cannot be discounted. A thorough analysis of the political economy in all countries would appear to be a critical tool to use during preparation of such a project in order to help the project team develop the right set of instruments (TA, IPF, DPO) to achieve the intended objective. During the assessment, identifying high-level national champions (at the level of President or Prime Minister) who can overcome political economy challenges is also essential. Their commitment to the necessary reforms should be confirmed by signing an MoU with the World Bank. In addition, in order to help promote regional integration as part of overall political economy, a future similar regional project should consider use of an instrument such as a recipient-executed grant to strengthen the capacity and role of a corresponding regional institution such as CEMAC.

c) **Use of DPOs vs. IPF projects.** For some of the more difficult reforms in the ICT sector, e.g., awarding a new license, privatization of an incumbent operator, passing a PPP law to enable infrastructure investment, the medium-term reward of infrastructure investment and rollout may not be enough. A DPO or series of DPOs at the national or regional level undertaken in partnership and agreement with the country or countries that include these reforms as conditions or triggers may be a more appropriate instrument to use, possibly in combination with APLs.

d) **Importance of consultation and a communication campaign.** Even after a political economy assessment has been carried out, needed political commitment has been secured, and the choice of instruments and PPP model has been made, extensive and repeated consultation will be needed for establishment of the PPP. A communication campaign during project preparation and implementation on PPPs, the rationale for a regional PPP, principles of open access and competition, and exactly what all of that means for incumbent operators is key. Even when it is believed that agreement from all parties has been secured, this will need to be checked and double-checked before proceeding with each step. Indeed, for complex projects such as this one, a communications strategy and dedicated team within the PCUs and implementing agencies is necessary to ensure that all stakeholders understand the objectives and desired results of the project and the roles of each party.

e) **Importance of sound, workable, embedded M&E for TA projects with appropriate capacity building and indicator targets.** Because of the challenges of measuring impact from TA projects, M&E should be carefully considered and crafted during project implementation. Measurement/assessment mechanisms to accurately capture the impact of the activities should then be included upfront as part of project

design. The collection and monitoring of M&E indicators should be matched with the capacity of the PCU and implementing agencies. When needed, an ICT project should include TA for statistics and data collection aimed at strengthening these functions along with data analysis relevant to sector supervision. Definitions of indicators should be understood and agreed by all parties. The M&E framework should be kept up to date with no longer valid Indicators being amended or completely removed as soon as possible. All approved indicators should be measured throughout the project and, regardless of when they are added, should include a baseline and target. In addition, Bank project teams consistently underestimate the power of ICT markets in overachieving indicator targets and should consider setting more ambitious targets for ICT projects.

f) **Incorporate country-based M&E in regional projects.** CAB1A provided a good example of how a regional project's performance can be monitored at the country level since all results indicators were country-focused. This can be helpful in identifying the best performing and less performing countries within a regional project in order to better target project issues. This can also contribute to the effort to streamline regional projects into country programs.

g) **Strengthening technical expertise for ICT projects in PCU and implementing agencies.** For highly technical projects such as this one, the technical expertise within the PCU and implementing agencies, especially in the drafting of technical terms of reference, should be strengthened as early as possible in order to facilitate project procurement and implementation. For ICT projects, one of the best ways to help with this would be to ensure that IT experts are hired at an early stage based on the various activities to be implemented.

## **7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners**

### **(a) Borrower/implementing agencies**

No comments given.

### **(b) Cofinanciers**

Not available.

### **(c) Other partners and stakeholders**

Not available.

## Annex 1. Project Costs and Financing

### (a) Project Cost by Component (in USD Million equivalent)

Components	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
<b>Cameroon</b>			
Component 1: Enabling Environment	6.9	6.50	94%
Component 2 – eGovernment and flagship ICT applications	1.2	1.16	97%
Component 3: Project management	1.8	1.78	99%
<b>CAR</b>			
Component 1: Enabling Environment	5.68	5.19	91%
Component 2: Project management	1.62	1.58	98%
<b>CHAD</b>			
Component 1: Enabling Environment	7.4	6.88	93%
Component 2: Project management	1.6	1.13	70%
<b>Total Baseline Cost</b>	26.2	24.22	92%
Physical Contingencies	0.00	0.00	0.00
Price Contingencies	0.00	0.00	0.00
<b>Total Project Costs</b>	0.00	0.00	
Front-end fee PPF	0.00	0.00	.00
Front-end fee IBRD	0.00	0.00	.00
<b>Total Financing Required</b>	26.2	24.22	92%

### (b) Financing

Source of Funds	Type of Cofinancing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower		0.53	0.55	104%
International Development Association (IDA)		9.90	9.44	95%
IDA Grant		16.30	14.78	91%

## Annex 2. Outputs by Component

## Cameroon

ACTIVITIES	OUTPUTS
<b>Component 1: Enabling environment</b>	
Technical assistance to liberalize the telecom sector	<ul style="list-style-type: none"> <li>• Decision on the award of a third/fourth mobile license to a private operator through competitive bidding process. Licenses were awarded.</li> </ul>
Technical assistance for the provision of a legal and regulatory framework for Electronic Communications	<ul style="list-style-type: none"> <li>• Policy notes (i) on regulatory bottlenecks impeding the development of the broadband market in the country; and (ii) on general and specific obligations for the set-up and operation of transport infrastructure for electronic communications.</li> <li>• New legal and regulatory framework and secondary legislation published</li> </ul>
Technical assistance to define and implement the restructuring options and establish PPP for the incumbent operator	<ul style="list-style-type: none"> <li>• Report on the strategic repositioning of the incumbent operator CAMTEL finalized</li> </ul>
Capacity building for stakeholders in the telecommunications sector on the implementation of the new laws on electronic communications, cybersecurity and cybercrime, electronic transactions, and consumer protection	<ul style="list-style-type: none"> <li>• Workshops and training sessions organized.</li> <li>• Reports on these activities prepared</li> </ul>
Technical assistance to develop regulatory tools (i.e., interconnection/tariffs, network monitoring, open access)	<ul style="list-style-type: none"> <li>• Telecommunications sector tax and tariff study finalized (provides analytical background for regulation of wholesale markets)</li> <li>• Design and implementation of regulatory instruments for wholesale and retail markets and promotional offers</li> </ul>

Technical assistance on the establishment of a national and regional Internet exchange point	<ul style="list-style-type: none"> <li>• Feasibility study on the establishment of a national and regional Internet exchange point (IXP) finalized.</li> <li>• TORs for the establishment of the IXP finalized</li> </ul>
Technical assistance to design frequency spectrum management regulatory tools	<ul style="list-style-type: none"> <li>• Study to review spectrum management framework in Cameroon</li> <li>• Purchase of equipment (spectrum management and monitoring system, information systems).</li> <li>• Training to design and set up of regulatory tools, for spectrum management tool</li> </ul>
Technical assistance to increase ICT access in remote areas and reform the Special Telecommunications Fund	<ul style="list-style-type: none"> <li>• Feasibility study and technical specifications prepared for the use of solar energy for the network transmission</li> <li>• Capacity building and training provided for CAMTEL staff involved in the project</li> </ul>
Technical assistance on Digital Switchover	<ul style="list-style-type: none"> <li>• Feasibility study prepared and TORs drafted for the operationalization and the scaling up of a regional e-Waste center</li> <li>• Practical guide for the Digital Switchover (DSO) process</li> </ul>
Preparation of a white paper on operational procedures for submarine cables in Cameroon: the case of the West African Cable System (WACS)	<ul style="list-style-type: none"> <li>• White paper finalized</li> </ul>
Preparation of a study on the implementation of a technology innovation center in Cameroon	<ul style="list-style-type: none"> <li>• Feasibility study for the establishment of a technology innovation center in Cameroon finalized</li> </ul>
Technical assistance for a study on fiber optic cross-border interconnection with neighboring countries	<ul style="list-style-type: none"> <li>• Study on implementation of a regional interconnection regime finalized</li> </ul>

<b>Component 2: eGovernment and flagship ICT applications</b>	
Technical assistance to conduct a diagnostic summary of the current status of the use of ".cm"	<ul style="list-style-type: none"> <li>• Study to define, implement and manage the domain name ".cm" finalized</li> <li>• Purchase of automated software for the ".cm" and training of users</li> </ul>
Technical assistance to develop a strategy for the digitization of cultural content, to describe the digitization process, and to identify the documents, subjects, and content to be digitized	<ul style="list-style-type: none"> <li>• Strategy and preliminary study to define procedures for digitization of documents and content in Cameroon finalized</li> </ul>
TA to prepare a diagnostic summary of the online public administration in Cameroon and identify public services to be put online;	<ul style="list-style-type: none"> <li>• Study summarizing all public services available on the government website</li> </ul>
TA to develop a specification for designing a governmental web portal.	<ul style="list-style-type: none"> <li>• Specifications prepared and website designed</li> </ul>
Technical assistance for a study on technical management and electronic filing of CAMPOST documents	<ul style="list-style-type: none"> <li>• Study and TORs for an electronic document and filing system finalized</li> </ul>
Technical assistance for a study on the establishment of a hybrid mailing service in Cameroon	<ul style="list-style-type: none"> <li>• Study on the establishment of a hybrid mailing service in Cameroon</li> <li>• TORs for consultant to implement hybrid mailing service prepared</li> </ul>
<b>Component 3: Project Management</b>	
Capacity building of project management team	Procurement and management training for project team
Project coordination team	Coordination team hired
Financial Audits	Annual audit reports prepared
Project reports and documents	Final project completion report prepared
Day to day management of the project	Communication strategy for the CAB project prepared Translation of documents Equipment purchased and maintenance performed

## CAR

ACTIVITIES	OUTPUTS
<b>Component 1: Enabling environment</b>	
Technical assistance to modernize and harmonize the legal and regulatory framework for Electronic Communications Services	<ul style="list-style-type: none"> <li>• Draft law on electronic communications adopted</li> </ul>
Technical assistance to develop regulatory tools (i.e., interconnection/tariffs, networks monitoring, open access)	<ul style="list-style-type: none"> <li>• Fiscal Study on Open Access finalized and final report adopted by the Government</li> </ul>
Technical assistance to increase ICT access in remote areas	<ul style="list-style-type: none"> <li>• Study on management and financing mechanisms of setting up the universal service fund realized</li> <li>• Report including recommendations for granting licenses finalized.</li> <li>• Technical study for the implementation of digital community centers finalized</li> </ul>
Technical assistance to review spectrum management framework in CAR and prepare bidding documents for the acquisition of a spectrum management and monitoring system	<ul style="list-style-type: none"> <li>• Study on the design of frequency spectrum management regulatory tools finalized</li> <li>• Equipment for spectrum management and monitoring purchased and set up and in use</li> <li>• Training on spectrum management and monitoring for regulatory agency (ART) provided</li> </ul>
Launch structuring and start-up consultancies required for the establishment of CAB networks	<ul style="list-style-type: none"> <li>• CAB-related environmental and social consultancies (i.e. Environmental Management Plans (EMP), Resettlement Action Plans (RAPs)) for the Bangui-Berbérati-Nola route finalized</li> </ul>
Technical assistance to promote and establish PPP to deploy the CAB	<ul style="list-style-type: none"> <li>• MoU with Cameroon to promote regional integration</li> <li>• Survey report, TORs and PPP design document for the CAB infrastructure finalized</li> </ul>
Technical assistance to define and implement the restructuring options, and privatize incumbent operator.	<ul style="list-style-type: none"> <li>• Study for the auditing of SOCATEL and the incumbent operator</li> <li>• Final audit report and</li> </ul>

	<ul style="list-style-type: none"> <li>recommendations approved</li> <li>• Strategy for the restructuring of SOCATEL prepared</li> </ul>
Capacity building to strengthen key public stakeholders	<ul style="list-style-type: none"> <li>• IT equipment and Internet connection established for the Ministry of Telecommunications.</li> <li>• Training and workshops for high level staff in the Ministry provided</li> <li>• Capacity building (training and workshops) for ART staff</li> <li>• Software X.Art installed and interfacing with the Accounting system at ART</li> <li>• Training for ART staff on software X.Art provided</li> <li>• Training and workshops for members of the High Council of Communication (HCC)</li> <li>• IT and radio equipment procured for HCC</li> </ul>
Technical assistance to design the establishment of a National and Regional IXP and equipment for the National and Regional IXPs.	<ul style="list-style-type: none"> <li>• Study for the establishment of a national and regional IXP in CAR finalized</li> </ul>
<b>Component 2: Project Management</b>	
Capacity building of project management team	Procurement and management training for project team
Project coordination team	Coordination team hired
Financial Audits	Annual audit reports prepared
Project reports and documents	Final project completion report prepared
Day to day management of the project	Equipment purchased and maintenance performed

ACTIVITIES	OUTPUTS
<b>Component 1: Enabling environment</b>	
Technical assistance to harmonize the legal and regulatory framework for Electronic Communications Services	<ul style="list-style-type: none"> <li>• New legal and regulatory framework and secondary legislation adopted (9 new laws adopted)</li> </ul>
Strengthening of key public institutions	<ul style="list-style-type: none"> <li>• Training for mobile quality of service</li> <li>• Training and Workshops</li> </ul>
Technical assistance to develop regulatory tools (i.e., interconnection/tariffs, networks monitoring, open access)	<ul style="list-style-type: none"> <li>• Study on regulatory tools finalized</li> <li>• Design and implementation of regulatory tools</li> </ul>
Technical assistance to review spectrum management framework in Chad and prepare bidding documents for the acquisition of a spectrum management and monitoring system	<ul style="list-style-type: none"> <li>• Study on the design of frequency spectrum management regulatory tools finalized</li> <li>• Equipment for spectrum management and monitoring purchased</li> </ul>
Technical assistance to promote and establish PPP to deploy the CAB	<ul style="list-style-type: none"> <li>• Study on regional interconnection finalized</li> <li>• 3 MoUS signed: <ul style="list-style-type: none"> <li>✓ MoU Chad – Cameroon</li> <li>✓ MoU Chad – CAR</li> <li>✓ MoU Chad – Sudan</li> </ul> </li> <li>• Survey studies, social and environmental impact assessment in fiber optic network from N’Djamena to Sudan border finalized</li> <li>• Decision on CAB International SPV financing (SPV created)</li> </ul>
Technical assistance to design the establishment of an IXP in Chad	<ul style="list-style-type: none"> <li>• Feasibility study on the establishment of a national Internet exchange point (IXP) finalized</li> </ul>
<b>Component 2: Project Management</b>	
Capacity building of project management team	Procurement and management training for project team
Project coordination team	Coordination team hired
Financial Audits	Annual audit reports prepared
Project reports and documents	Final project completion report prepared
Day to day management of the project	IT equipment purchased and maintenance performed

### Annex 3. Economic and Financial Analysis

1. An economic and financial analysis for each country under CAB1A was carried out in the respective Technical Annexes for Cameroon, CAR, and Chad issued with the Project Appraisal Document (PAD) on August 19, 2009. These analyses were based on the assumption that investment in fiber-optic infrastructure would be supported through a Public-Private Partnership under a second phase operation (CAB1B) and therefore that the analyses for CAB1A should focus on the economic impact of this infrastructure investment under CAB1B:

- The analyses began by calculating the opportunity cost in each country based on the cost of providing high-speed bandwidth through satellite connection compared to providing it through broadband of the foreseen Central African Backbone (CAB).
- They then estimated the economic impact of the CAB investment based on a 10-year model of the broadband market for Cameroon, CAR, and Chad. The economic impact was based on a micro-economic analysis calculating the social welfare as the sum of the consumer surplus and producer surplus. The global regional calculated economic surplus was estimated at US\$94 million, out of which US\$76 million was consumer surplus and US\$18 million was producer surplus.

2. CAB1B was approved on June 30, 2011. However, because of difficulties encountered in the client countries in implementing a PPP structure, the second phase project was cancelled on December 15, 2012 and CAB1A was restructured on April 14, 2014 as an independent TA operation, in contrast to the original project concept of TA that was to lead relatively quickly to infrastructure investment. One regional activity was added for each country that the Bank team and each government agreed would help to drive progress toward the PDO (in Cameroon, establishment of an e-Waste Center to help deal with the disposal of analogue equipment following Digital Switchover; in CAR, capacity building in interconnection for various stakeholders; and in Chad, the purchase of quality control equipment that would enable the regulator to ensure a high quality of service). In addition, the Results Framework and indicators of the project were changed accordingly to better capture project outcomes and the impact of the TA activities, as opposed to continuing to measure for impacts of infrastructure investment that had been cancelled.

3. Given these changes, at the ICR stage it is no longer possible to follow standard Bank guidelines by conducting an economic and financial analysis of CAB1A based on the direct factor input and results that investment in broadband infrastructure might have provided under CAB1B in order to compare the actual economic impacts of CAB1A with those measured under Annex 8 (Economic and Financial Analysis) in each respective Country Technical Annex of the PAD. Measuring the economic and financial impact of a TA project is generally more difficult than doing so for an investment project and there is always the chance of attribution bias. At the same time, during the period of CAB1A, the project activities carried out were the only intervention by any donor or development partner in the ICT sector in each country and were designed to drive reform and development of the sector. Further, as described in Section 3.2 of this ICR, the project

was largely successful at achieving the PDO and thus it can be said with reasonable confidence that the CABIA Project made substantial contributions to the positive changes in the countries' ICT sectors.

4. To capture the economic contributions of the CABIA Project activities on a high-level basis, this economic and financial analysis will focus on the relevant macro PDO indicator, Internet user penetration (% of national population using Internet) measured by the International Telecommunications Union (ITU). The World Bank has published a study<sup>21</sup> using a cross sectional analysis to examine the impact of ICT usage on GDP growth during the period 1980-2006 for 120 developing and developed countries, and the result suggests a robust and noticeable growth dividend from Internet usage in developing countries: all else equal, a 10 percentage point increase in Internet usage penetration would increase GDP per capita growth by 1.21% in developing countries.<sup>22</sup>

5. A high-level estimation of the impact of an increase of the Internet usage penetration is built by comparing (i) a Base Case scenario with the actual Internet usage penetration in each country over the last years with (ii) a Counterfactual scenario where the project would not have taken place and the Internet usage penetration would have been lower. The Internet usage penetration in the Counterfactual scenario is built by extending the 2008-2010 trend for the years 2011 and onwards, i.e. when the CABIA Project activities started to deliver results. The GDP per capita growth and final GDP<sup>23</sup> is then calculated for the Counterfactual scenario by applying the findings of the 2009 World Bank study (a 10 percentage point increase in Internet usage penetration would increase GDP per capita growth by 1.21%).

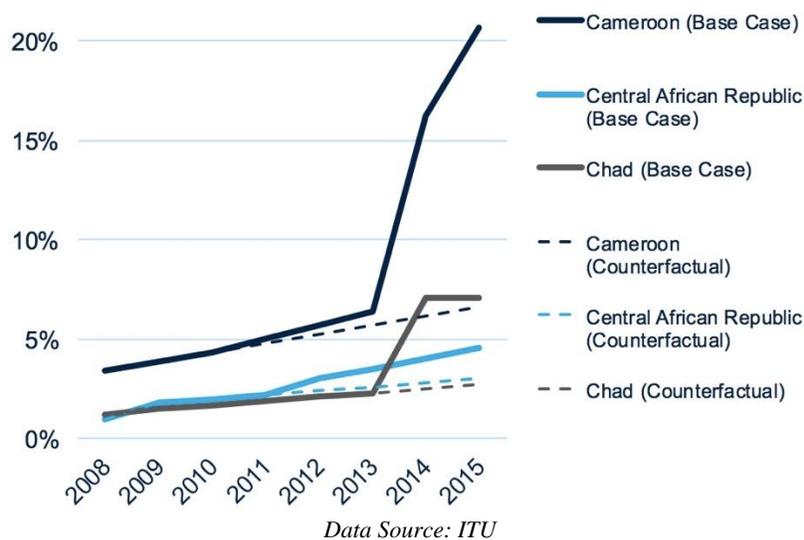
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<sup>21</sup> Qiang, Carlo Rossotto, and Kaoru Kimura, "Economic Impacts of Broadband", in *Information and Communications for Development*, World Bank, 2009:  
[http://siteresources.worldbank.org/EXTIC4D/Resources/IC4D\\_Broadband\\_35\\_50.pdf](http://siteresources.worldbank.org/EXTIC4D/Resources/IC4D_Broadband_35_50.pdf)

<sup>22</sup> This model has been updated using recent data for 86 countries for 1980–2011; the results were essentially the same as before (Colin Scott, *Does Broadband Internet Access Actually Spur Economic Growth?*, 2012:  
<https://people.eecs.berkeley.edu/~rsc/classes/ictd.pdf>).

<sup>23</sup> The calculation is based on the GDP in constant local currency.

Figure 1: Internet users in Cameroon and CAR (% of population, 2008-2015, Base Case and Counterfactual scenarios)



6. Based on the 2009 World Bank study, the increase in Internet penetration yielded a cumulative increase in GDP of US\$744.5 million over the period 2011-2015. The details for each country are provided in the table below.

Table 1: Summary of results (cumulated increase in GDP over the period 2011-2015)

Country	GDP increase (mUS\$)	GDP increase (% of total GDP)
Cameroon	\$630.2m	0.61%
CAR	\$4.5m	0.10%
Chad	\$109.7	0.22%
<b>TOTAL</b>	<b>\$744.5m</b>	<b>N/A</b>

7. The details of the calculations for each year and each country are provided below.

**Figure 2: Calculation details for Cameroon, CAR and Chad (Base Case and Counterfactual Internet user penetration and GDP per capita)**

Base Case - Internet usage penetration (% pop.)	2010	2011	2012	2013	2014	2015
Cameroon (Base Case)	4.3%	5.0%	5.7%	6.4%	16.2%	20.7%
Central African Republic (Base Case)	2.0%	2.2%	3.0%	3.5%	4.0%	4.6%
Chad (Base Case)	1.7%	1.9%	2.1%	2.3%	7.1%	7.1%
Counterfactual - Internet usage penetration (% pop.)	2010	2011	2012	2013	2014	2015
Cameroon (Counterfactual)	4.3%	4.8%	5.2%	5.7%	6.1%	6.6%
Central African Republic (Counterfactual)	2.0%	2.2%	2.4%	2.6%	2.8%	3.0%
Chad (Counterfactual)	1.7%	1.9%	2.1%	2.3%	2.5%	2.7%
Increase in internet usage (in % point)	2010	2011	2012	2013	2014	2015
Cameroon	0.0%	0.2%	0.5%	0.7%	10.1%	14.1%
Central African Republic	0.0%	0.0%	0.6%	0.9%	1.2%	1.6%
Chad	0.0%	0.0%	0.0%	0.0%	4.6%	4.4%
Increase in GDP per capita growth (in % points)	2010	2011	2012	2013	2014	2015
Cameroon	0.0%	0.0%	0.1%	0.1%	1.2%	1.7%
Central African Republic	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%
Chad	0.0%	0.0%	0.0%	0.0%	0.6%	0.5%
Base Case - GDP per capita growth (constant local currency)	2010	2011	2012	2013	2014	2015
Cameroon	0.7%	1.5%	2.0%	2.9%	3.3%	3.6%
Central African Republic	1.1%	1.3%	0.9%	-38.2%	-3.2%	3.4%
Chad	9.9%	-3.2%	5.3%	2.2%	3.4%	-1.5%
Counterfactual - GDP per capita growth (constant local currency)	2010	2011	2012	2013	2014	2015
Cameroon	0.7%	1.5%	1.9%	2.9%	2.1%	1.9%
Central African Republic	1.1%	1.3%	0.9%	-38.3%	-3.3%	3.2%
Chad	9.9%	-3.2%	5.3%	2.2%	2.9%	-2.0%
Base Case - GDP per capita (constant local currency)	2010	2011	2012	2013	2014	2015
Cameroon	444700	451526	460462	473999	489705	507530
Central African Republic	125147	126825	127999	79063	76548	79166
Chad	373560	361645	380856	389387	402736	396830
Counterfactual - GDP per capita (constant local currency)	2010	2011	2012	2013	2014	2015
Cameroon	444700	451397	460201	473598	483930	499187
Central African Republic	125147	126825	127907	78924	76430	79022
Chad	373560	361645	380856	389387	400583	394701

Source: ITU (2005-2015) & World Bank Indicators (2012-2013)  
Source: ITU (2005-2015)  
Source: ITU (2005-2013) & OTRT (2014 & 2015)

0.121	% point increase in GDP/capita
0.121	growth for each % point
0.121	increase in internet usage

Source: World Bank Indicators  
Source: World Bank Indicators  
Source: World Bank Indicators

Source: World Bank Indicators  
Source: World Bank Indicators  
Source: World Bank Indicators

**Figure 3: Calculation details for Cameroon, CAR and Chad (Base Case and Counterfactual increase in GDP)**

Population (m)	2010	2011	2012	2013	2014	2015	
Cameroon	20.59	21.12	21.66	22.21	22.77	23.34	
Central African Republic	4.44	4.53	4.62	4.71	4.80	4.90	
Chad	11.90	12.30	12.72	13.15	13.59	14.04	
Base Case - GDP (constant local currency)	2010	2011	2012	2013	2014	2015	
Cameroon	9.E+12	1.E+13	1.E+13	1.E+13	1.E+13	1.E+13	
Central African Republic	6.E+11	6.E+11	6.E+11	4.E+11	4.E+11	4.E+11	
Chad	4.E+12	4.E+12	5.E+12	5.E+12	5.E+12	6.E+12	
Counterfactual - GDP (constant local currency)	2010	2011	2012	2013	2014	2015	
Cameroon	9.E+12	1.E+13	1.E+13	1.E+13	1.E+13	1.E+13	
Central African Republic	6.E+11	6.E+11	6.E+11	4.E+11	4.E+11	4.E+11	
Chad	4.E+12	4.E+12	5.E+12	5.E+12	5.E+12	6.E+12	
Exchange rate (local currency per US\$)	2010	2011	2012	2013	2014	2015	
Cameroon	495	472	511	494	494	591	
Central African Republic	495	472	511	494	494	591	
Chad	495	472	511	494	494	591	
GDP increase (constant local currency converted in m US\$)	2010	2011	2012	2013	2014	2015	TOTAL
Cameroon	\$ -	\$ 5.8	\$ 11.1	\$ 18.0	\$ 266.0	\$ 329.3	\$ 630.2
Central African Republic	\$ -	\$ 0.0	\$ 0.8	\$ 1.3	\$ 1.1	\$ 1.2	\$ 4.5
Chad	\$ -	\$ -	\$ 0.0	\$ -	\$ 59.2	\$ 50.5	\$ 109.7
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ 5.8</b>	<b>\$ 11.9</b>	<b>\$ 19.4</b>	<b>\$ 326.3</b>	<b>\$ 381.0</b>	<b>\$ 744.5</b>

Source: World Bank Indicators  
Source: World Bank Indicators  
Source: World Bank Indicators

Source: World Bank Indicators  
Source: World Bank Indicators  
Source: World Bank Indicators

## Annex 4. Bank Lending and Implementation Support/Supervision Processes

### (a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
<b>Lending</b>			
Mavis A. Ampah	Lead ICT Policy Specialist	GTI11	
Geoffrey H. Bergen	Country Manager	LCCCO	
Laurent Besancon	Manager	LLILS	
Yann Burtin	Senior Underwriter	MIGEA	Task Team Leader
Kashmira Daruwalla	Senior Procurement Specialist	GGO03	
Mamadou Lamarane Deme	Program Manager	LCRRF	
Fabrice Houdart	Country Officer	MNCA1	
Kaoru Kimura	ICT Policy Specialist	GTI11	
Lucienne M. M'Baipor	Senior Social Development Spec	GSU01	
Samia Melhem	Lead ICT Policy Specialist	GTI09	
Kouami Hounsinou Messan	Senior Procurement Specialist	GGO07	
Juan Navas-Sabater	Lead ICT Policy Specialist	GTI09	
Deo Ndikumana	Senior Operations Officer	AFCC2	
Koyalta Ndordji	IT Analyst, Client Services	ITSCR	
Jelena Pantelic	Senior Operations Officer	AFTN2 - HIS	
Ivan Rossignol	Chief Technical Specialist	GTCD2	
David Satola	Lead Counsel	ICOIO	
Abdoulaye Seck	Country Manager	EACMM	
<b>Supervision/ICR</b>			
Jerome Bezzina	Senior Regulatory Economist	GTI11	Task Team Leader
Patrick Bongotha	Consultant	GGODR	
Isabelle Huynh	Senior Operations Officer	GTI11	
Sekou Keita	E T Consultant	AFTME - HIS	
Evelyne Huguette Madozein	Team Assistant	AFMCF	
Kouami Hounsinou Messan	Senior Procurement Specialist	GGO07	
Sylvie Munchep Ndze	Procurement Assistant	AFCC1	
Maria Isabel A. S. Neto	Senior Operations Officer	GEE01	
Michele Ralisoa Noro	Operations Analyst	GTI11	
Haoussia Tchaoussala	Senior Procurement Specialist	GGO07	
David Tchuinou	Senior Economist	GMF01	
Paulette C.E. Aida Thioun Zoua	Program Assistant	AFMTD	
Xavier Decoster	Consultant	GTI11	
Monica Sawyer	Operations Officer	GTISO	
Mather Pfeifferberger	Operations analyst	GTI09	Co-author of ICR

Ndeye Anna Ba	Senior Program Assistant	GTI01	Co-author of ICR
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**(b) Staff Time and Cost**

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	USD Thousands (including travel and consultant costs)
<b>Lending</b>		
<b>FY 08</b>	23.68	146.0
<b>FY 09</b>	48.70	307.5
<b>FY10</b>	19.87	105.1
<b>Total:</b>	<b>92.25</b>	<b>558.6</b>
<b>Supervision/ICR</b>		
<b>FY 10</b>	3.99	72.2
<b>FY 11</b>	20.25	109.3
<b>FY 12</b>	22.32	140.3
<b>FY 13</b>	20.19	148.4
<b>FY 14</b>	14.01	115.0
<b>FY 15</b>	17.71	119.7
<b>FY 16</b>	7.95	68.9
<b>FY 17</b>	19.13	80.2
<b>Total:</b>	<b>125.55</b>	<b>854.0</b>

**Annex 5. Beneficiary Survey Results**

*(if any)*

Not applicable.

**Annex 6. Stakeholder Workshop Report and Results**  
*(if any)*

Not applicable.

## **Annex 7. Consultations with Project Counterparts on Borrower ICRs and CABIA Project**

1. The World Bank CABIA Project team met by videoconference with the Cameroon and CAR project stakeholders in Cameroon (Yaoundé, May 30, June 3, 2016) and CAR (Bangui, July 12 – 14, 2016) to ask them further about their Borrower ICRs and the project. The Chad project counterparts were not available. In Cameroon, the meeting was led by Ndeye Anna Ba and Jerome Bezzina and was comprised of Pierre Sonfack (Project Coordinator), Elisabeth Mongo, Rolande Dzebaze (Ministry of Planning), Guy Ronel Guemaleu (Ministry of Planning), Pauline Tsafak (MINPOSTEL), Denis Ngae (MINPOSTEL), Joseph Richard Mbath Tsoungui (Procurement Specialist, CAB Project), Victor Kuate (Financial Specialist, CAB Project), Yerima Kamdoum, Marie Mathilde Eyong, Eric Didyme Yazingui (CAB Project). In CAR, the Bank team was supported by Mather Pfeiffenberger, co-author of the ICR and met with Mr. Francois Xavier Dekoupou, Acting Project Coordinator.

2. The discussions followed the format of the questionnaire below, which had been sent to the participants prior to the videoconferences.

### **Questionnaire Banque Mondiale a/s Projet CAB**

#### ***I. Rappel***

Objectif du projet : Le principal objectif de développement du projet est de contribuer à accroître la portée géographique et l'utilisation des services du réseau régional à haut débit à fibre optique et de réduire leurs prix.

Composante 1: Amélioration de l'environnement sectoriel

- La modernisation et l'harmonisation des cadres juridiques et institutionnels nationaux ;
- Le renforcement de capacités des principaux acteurs du secteur public ;
- La promotion d'un environnement concurrentiel.

Composante 2 : e-gouvernement et Applications (Cameroun)

Composante 3: Gestion de Projet

#### ***II. Préparation du projet***

- ☞ Comment jugez-vous la préparation du projet ? simple/complexé/réaliste/trop ambitieux ?
- ☞ Pensez-vous que les objectifs du projet soient appropriés et répondent aux besoins du pays et du secteur
- ☞ Les indicateurs et cibles choisis sont adéquats pour ce projet?

### **III. Mise en œuvre**

- ☞ Quels seraient selon vous les facteurs clés qui auraient d'une manière ou d'une autre affecté la mise en œuvre du projet ainsi que l'obtention des résultats ?

### **IV. Suivi et évaluation**

- ☞ Pensez-vous que les données recueillies le long du projet ont été pertinentes pour bien mesurer les résultats du projet ? Pourquoi ?
- ☞ Aviez-vous rencontré des problèmes pour la collecte de ces données ? Pourriez-vous partager des exemples et comment vous avez résolu ces problèmes ?
- ☞ Pensez-vous que d'autres indicateurs auraient été plus appropriés ?
- ☞ Est-ce que ces données ont été évaluées et prises en compte pour informer les différentes décisions prises le long du projet ? Quels genres d'informations pensez-vous avoir été utiles pour ces prises de décisions ?
- ☞ Comment s'est déroulé le suivi et évaluation et la mesure des indicateurs ? Est-ce que les objectifs ont été atteints pour chaque indicateur ?
- ☞ Pourriez-vous partager et décrire les activités qui selon vous ont été les plus difficiles ? Comment avez-vous réussi à surmonter ces difficultés ?
- ☞ Que pensez-vous que l'équipe de la banque mondiale aurait pu faire pour mieux supporter la mise en œuvre du projet ?

### **V. Passation des marchés**

- ☞ A votre avis comment s'est déroulée la passation des marchés ? Etait-elle en conforme à l'accord de financement et aux Directives de Passation des Marchés de la Banque.
- ☞ Selon vous, quels seraient les majeurs points d'insatisfaction à ce sujet ?

### **VI. Arrangements pour la mise en œuvre du projet**

- ☞ Pourriez-vous rapidement nous présenter les modalités mise en place pour la mise en œuvre du projet ?
- ☞ A votre avis, est ce que les provisions techniques, financières et institutionnelles ont été adéquates pour le bon déroulement du projet ? Quels changements aurez-vous préconisé ?
- ☞ Pensez-vous que l'équipe de gestion du projet a bénéficié de ressources humaines (formation comprise) et budgétaires satisfaites durant le projet ? Pourquoi ?

### **VII. Commentaires et Notations**

#### **Suivi et évaluation (S&E)**

- ☞ Que pensez-vous des indicateurs choisis pour le suivi du projet ? Pensez-vous que ces indicateurs répondent aux critères de qualité d'un bon indicateur ? Pourriez-vous donner des exemples ?

Items	Notation
✓ Conception du S&E modèle au commencement	
✓ Mise en œuvre du plan de S&E	
✓ Qualité globale du S&E	

## Exécution

- ☞ Quelles sont selon vous les difficultés rencontrées lors de l'exécution des activités ? Seraient-elles liées au (i) contexte politique et institutionnel; (ii) à l'insuffisance de motivation des partenaires ou alors seraient-elles de nature internes. Auriez-vous des exemples à partager avec nous ?

Items	Notation
✓ Qualité de l'exécution BM	
✓ Qualité de l'exécution par la coordination (capacité opérationnelle de l'équipe du projet)	
✓ Qualité du S&E par les instances étatiques	
✓ Qualité globale de la mise en œuvre /exécution	
✓ Mobilisation des ressources	
✓ Réalisation des activités	
✓ Mise à disposition des produits	

## Évaluation des résultats

### *Pertinence*

- ☞ Comment évaluerait-vous la pertinence du projet par rapport aux priorités nationales ? Est-ce que les objectifs du projet étaient cohérents par rapport aux composantes du projet ainsi que les activités exécutées et les documents préparés tout au long du projet ?

### *Efficacité*

- ☞ Pensez-vous que le projet ait été efficace par rapport aux résultats et objectifs escomptés ? et par rapport aux ressources financières? Pourquoi ?

### *Efficiace*

- ☞ Diriez-vous que les activités prévues ont été exécutées dans des délais raisonnables eu regard aux plannings prévus ? Exemples ?

Items	Notation
✓ Pertinence	
✓ Efficacité	
✓ Efficience	
✓ Utilisation par les bénéficiaires (Effets)	
✓ Notation globale du résultat du projet	

### **Durabilité**

Items	Notation
✓ Disponibilité de ressources financières	
✓ Environnement sociopolitique	
✓ Cadre institutionnel et gouvernance	
✓ Probabilité globale de durabilité	

Echelles de notation:

- ❖ Peu satisfaisant - Satisfaisant - Très satisfaisant
- ❖ Invraisemblable - Modérément vraisemblable - Vraisemblable
- ❖ Risque faible - Risque moyen - Risque élevé

### **VIII. Evaluation globale du projet**

- ☞ Y aurait-il selon vous des contraintes qui limiteraient le succès et les impacts du projet dans le futur?
- ☞ Après cette expérience, quelles recommandations, actions correctives vous sembleraient pertinentes pour les projets à venir ?
  - Conception du projet:
  - Execution :
  - Suivi et évaluation :
  - Passation de marchés:
  - Financement:
  - Autres recommandations:

3. The summary minutes from the videoconferences follow.

#### **I. Project Preparation**

4. The project teams confirmed that the project was innovative and timely to respond to the challenges faced by the ICT sector in Cameroon and CAR. The ICT sector is significant for the economy of both countries but their respective sector strategies were dated and did not respond to the new digital era. This project was therefore timely and in line with the priorities of both countries, although it was deemed complex mainly because

of its regional nature involving three countries and the fact that it was originally one project that was ultimately split into two phases. The attendees also questioned the regional aspect of the project as it seemed that all activities were nationally focused.

5. The objectives of the CAB1A project were deemed appropriate although it could have been more ambitious. The counterparts believed that the original design (including technical assistance and infrastructure) would have better responded to the needs of the sector and thus would have been more beneficial.

6. The meeting discussed the initial Results Framework and indicators selected during the preparation phase. The indicators were deemed inadequate as they were still measuring the impact of the new infrastructure while the CAB1A project was not dealing with that aspect. This inadequacy was one of the main reasons for the project restructuring which took place in 2013. A number of indicators were too vague and could not appropriately measure the impact and efficacy of the project. This was also due to the fact that the impact could only be measured in the long term, long after the project is closed.

7. The preparation phase went well overall. The World Bank played an important convening role bringing different partners around the table (AfDB, CEMAC, AU) and supporting the Government during the preparation phase. Adequate provision was taken during that phase to ensure that team members were hired, equipment purchased, and studies started. The availability of funds through the Project Preparation Facility and trust funds such as PPIAF and IDF was critical for the successful preparation phase. In Cameroon, the meeting noted a lack of communication around the project which generated different understanding of the project goals.

## **II. Project Implementation**

8. Implementation of CAB1A started well although each country had to deal with different issues, but overall the teams were satisfied with the Bank's performance during implementation.

9. The nearby presence of the Task Team Leader (TTL), who was based in Yaoundé and could easily travel to CAR, was appreciated and valuable. It was easy for the teams to communicate with the TTL and quickly receive non-objections as needed. In Cameroon, the delay in receiving the counterpart funding influenced a bit the implementation especially for activities that were financed by those funds.

10. In CAR, the project encountered many challenges outside of the control of the project (security issues, numerous changes in Government, unrest). Despite all of those challenges, most activities were completed by project closing (99% completion rate) and the agencies involved judged the project to be very successful and beneficial. They commended the Bank team's continuous presence and support throughout the life of the project and particularly cited the knowledge-sharing opportunities that resulted from the project.

11. After the mid-term review in May 2013, the CAB1A Project went through a restructuring to update the results framework but also to add/drop activities. Disbursement rates were not encouraging before the midterm review but positive actions were taken after restructuring which ultimately allowed the project to disburse and progress in a satisfactory manner.

### **III. Monitoring and Evaluation**

12. As mentioned earlier, the teams stressed the inappropriateness of the indicators selected during preparation. At mid-term, the project was restructured in order to update the Results Framework and selection of more relevant indicators based on the TA activities of the project.

13. The teams' main feedback on M&E was the lack of a dedicated expert within the Project Coordination Unit (PCU) which made the collection and processing of data more challenging. Data collection required participation of many agencies and there was a lack of coordination which could have been avoided if a dedicated M&E expert was part of the PCU. Data analysis was performed by the CEMAC ICT Unit but that arrangement was not suitable mainly because of the unit's capacity constraints.

### **IV. Procurement**

14. The teams confirmed the valuable and consistent support in procurement from the Bank team throughout project implementation.

15. In Cameroon, procurement tasks were affected by the involvement of the new Ministry of Public Procurement, which was nonexistent during preparation but was to be involved in all new contracts going forward. This created delays in reviewing and processing contracts but eventually the project team was able to adapt and the large majority of procurement activities were completed as planned.

16. In CAR, the procurement aspect of the project was a major positive outcome. The CAR project procurement specialist valued the extensive training he received but most importantly he was able to train procurement specialists from other Bank projects thus building a workforce with skills sets previously nonexistent in the country.

17. The teams encountered issues with stakeholders' and implementing agencies' understanding and acceptance of the procurement rules and delays receiving needed approvals as well as technical issues with the Bank procurement systems (Client Connection). Ultimately, these issues were resolved and procurement activities concluded on time.

## **V. Project Management**

18. The institutional arrangements and resources available for implementation support were deemed adequate by all concerned parties. All national projects had a steering committee, technical committee, and a project coordination unit.

19. The PCUs were overall adequately staffed and financially sustainable and were in place early enough to ensure effective project implementation. The implementation manuals were also prepared in advance. Throughout the years though it became apparent that the PCUs could benefit from a dedicated M&E expert and a communications specialist, and for Cameroon a technical expert would have been useful.

20. There was a lack of communication with regard to the project's beneficiaries and stakeholders and their specific roles.

## **Annex 8. Summary of Borrower's ICR and/or Comments on Draft ICR**

The full CABIA Project Borrower's ICRs for Cameroon, CAR, and Chad can be found in WBDocs here:

<http://wbdocs.worldbank.org/wbdocs/viewer/docViewer/index1.jsp?objectId=090224b0846c466e&standalone=true&respositoryId=WBDocs>.

A summary of the main points from each Borrower's ICR follows.

### **CAMEROON**

A final external evaluation of the CAB Project was conducted by an independent consultant from 15 February to 05 March 2016. Overall the implementation of this project is satisfactory.

#### *Relevance - Satisfactory*

This score is obtained because of the alignment of the CAB Project with national priorities.

The CAB Project design took into account the international commitments made by Cameroon with a view to achieving the Millennium Development Goals/Sustainable Development Goals as well as the needs expressed by the beneficiaries, notably those contained within the CEMAC declaration for the financing of a Central African broadband network.

The support granted by the World Bank for this project is in line with Cameroon's strategic orientations, particularly as regards its regional integration strategy.

That said, the restructuring introduced at the mid-term review brought a slight difference to the quality of the preparatory studies regarding the influence of the industry environment on the project.

Administratively, the restructuring of the project was not reflected in the Technical Annex, which should have been amended accordingly. This omission may be the source of various interpretations on the evolution of the project and lead to non-relevant conclusions and recommendations.

#### *Effectiveness: Highly satisfactory*

Halfway through the implementation of the Project, and regardless of whatever figure or number was considered, the prospects of achieving expected results appeared uncertain, which led to the recommendation to restructure the project.

The impact of all measures taken for the turnaround of the project resulted at its closure in a dramatic improvement in the disbursement rate, which rose from 35% in 2013 to 92.97% at four months before project closing.

A strong mobilization of counterpart funds accelerated the implementation of activities, exceeding the expected results of the Project.

*Efficiency: Moderately Satisfactory*

The majority of dysfunctions identified with regard to this criterion can be explained by causes some of which are outside the control of the project team. The causes of these dysfunctions had as consequences delays in the implementation of activities by the Executing Agencies and longer than usual delays both in the evaluation of proposals and in lengthy procurements.

*Sustainability: Satisfactory*

Studies conducted during the Phase CIT1 CAB 1A have allowed Cameroon to reach the triggers required for ADB financing of CAB infrastructure.

With regard to this result, which is in line with the continuity of the first phase of the CAB Project, this evaluation finds that the prospects for follow-up and consolidation of the achievements of this project are good.

*Performance of the World Bank*

Through IDA, the World Bank has fully played its role as donor. Supervision missions that were conducted in the field on a regular basis helped ensure constant monitoring of activities.

*Performance of the Government of Cameroon*

Two positive aspects concerning the Government's activity need to be remembered, namely: (i) its compliance with the deadline for meeting project effectiveness conditions, on the one hand; (ii) its meeting of its commitment to allocate CFAF 244 million in counterpart funds, on the other.

*Summary of key lessons and recommendations*

Lessons learned from project implementation: (1) the top-down approach characterized by the conditionality of the PPP option for financing the Connectivity Component was rejected by all beneficiary countries. The World Bank has failed to draw lessons from this rejection and maintaining this conditionality appeared to the countries as an infringement of their sovereignty (2) the recommendation to restructure the project ruled out the assumption that the implementation team had underperformed. For this reason, the World Bank implicitly recognized that the conceptual logic of the project was inadequate from the start, (3) the CAB Project is perceived in a rather lukewarm manner by the stakeholders consulted during the course of this evaluation because of its low level of visibility on the ground as well as an ineffective communications strategy; (4) the delay by the Government in its decision on the restructuring of the incumbent operator CAMTEL is not likely to make the telecommunications and ICT sector more attractive to public and private investors.

*Key recommendations*

To the World Bank: Develop a partnership approach characterized by a process of supporting the countries in considering themselves as partners in initiatives supported by the World Bank and in better integrating the project's intended

objectives and results in order to be capable of explaining them better to their respective publics.

To the Government of Cameroon - (i) Accelerate the process of decision making on the options chosen for the restructuring of the incumbent operator CAMTEL, (ii) Revitalize the dialogue between the Government and the World Bank for the preservation of the benefits of Phase 1 of the project and the continuation of an intervention alongside ADB and GEF in Phase 2 and (iii) Activate a communications campaign on the CAB Project in order to make its objectives better understood and to report the positive results achieved at the conclusion of the current phase.

## CAR

The overall project performance is evaluated by assessing the following aspects below:

### *Consistency*

In spite of some shortcomings, there is good coherence between the objectives and results of the project. Nonetheless, some indicators do not meet the quality criteria of a good indicator.

### *Relevance*

The project objectives are consistent with the major documents that set the framework for implementation: the Project Appraisal Document, the Technical Annex for the Central African Republic, the Financing Agreement, and the Restructuring Paper.

The project was relevant as well in its targeting of beneficiaries: Ministry of Posts and Telecommunications in charge of New Technologies, High Council of Communication (*Haut Conseil de la Communication*), Telecommunications Regulatory Authority (*Agence de Régulation des Télécommunications*).

### *Effectiveness*

The project shows sufficient effectiveness in achieving results and the project objective, mobilization of financial resources for funding, targeting of beneficiaries of the purchased equipment, trained personnel, and consultation between stakeholders.

However, one must note a lack of effectiveness on the following points: the inclusion of gender; visibility (communication); the monitoring and evaluation strategy (despite having been mitigated by the commitment of human resources mobilized in the project).

It can be concluded that overall, the project has been sufficiently effective.

### *Efficiency*

The events in the country have led to looting of goods and services made available to the beneficiaries under the project. In addition, the project team was not active during this period, resulting in salary costs that do not correspond to actual activity (although the staff made great effort to be present and to safeguard work equipment and tools, at their own risk).

Most of the planned activities were carried out within a reasonable time with regard the schedules that had been drawn up.

There are many reasons for satisfaction in particular on the quality of achievements (training, studies, material and equipment), which is good.

### *Impact*

The products delivered by the project are used by the beneficiaries to improve their working methods.

The following factors may impede somewhat the impact of the project: (i) the time it took the national party to take ownership of the project in view of the period of institutional instability, (ii) non-adoption by the legislative authority of important documents elaborated or finalized during the project (laws not yet

passed) (iii) not providing periodic reports on the results of the use of assets and equipment provided (particularly the case with ART-CAR).

The project's impact is real for the institutions and structures that have benefitted from the work tools and training provided.

#### *Sustainability*

Some results of the project will continue after the end of the project, including equipment acquired for the benefit of ART-CAR, the improved capacities of Government technical staff and the project team through training and study tours, and the legal texts prepared (if they are approved).

#### *Procurement*

The procurement was conducted as provided in the Financing Agreement and in accordance with the Bank's Procurement Guidelines.

All scheduled activities in the APL1A phase have been executed and completed. They were the subject of an assessment by the Government. The implementation rate is around 99% at March 10, 2016 except for the Project closing activities (external audit closing and closing report).

#### *Overall, project performance are satisfactory given the above*

We can conclude that the project has a great relevance in the subregional context and in that of the global and sectoral policies and strategies of the CAR, as well as that of the various donor interventions.

The project has played a pioneering role in setting up favorable conditions for CAR in the development of the telecommunications sector. The project has overcome technical and institutional challenges and has helped to increase the country's organizational capacities for national implementation of a project.

#### *Recommendations for corrective actions for the design, implementation, monitoring and evaluation of the project*

Support future project teams to implement simple and effective means of monitoring and evaluation by developing a manual specifically on monitoring and evaluation and by establishing a database in order to contribute to better management of national statistics and to capitalize better on actions and results of future projects.

#### *Recommendations for actions to support or strengthen initial benefits*

Initiate the second phase planned for the project.

#### *Recommendations for future directions*

Due to the period of unrest during the project, conduct an inventory of investments made by the project so that this can be taken into account when determining the property to be acquired for the next phase.

#### *Recommendations for actions to deal with relevance, performance and success*

Initiate a large scale communications plan for the purpose of mobilizing more easily the direct and indirect beneficiaries of access to ICTs.

## CHAD

*The main project achievements are as follows:*

The ICT institutional and legal frameworks has been modernized and harmonized with those of the sub-region by MPNTIC with support from the CAB-APL1A Project.

Successful reform of the former regulator, *Office Tchadien de Régulation des Télécommunications* (Chadian Telecommunications Regulation Office – OTRT): The regulatory structure has undergone a transformation from OTRT to ARCEP with means of strengthening its capabilities to better fulfill its mission.

Property and equipment acquired: (i) fixed and mobile equipment for management and control of the frequency spectrum, (ii) mobile equipment for management and control of Quality of Service, (iii) installation of an Internet exchange point (IXP).

Feasibility study for the fiber optic infrastructure between N'Djamena and Adré (bordering Sudan): the exact route, environmental and social impact studies, the ESMF and RPF were entirely financed by the project. Funding for the infrastructure was provided 100% by the Government of Chad and the work is being completed according to information provided by ARCEP.

Strengthening the capacity of MPNTIC.

*Results and performance indicators*

The information and statistical data shown in the annual observatory of the electronic communications and postal markets regularly published by ARCEP / Chad since 2011 show the advances and progress in the ICT sector. The project has contributed significantly to the evolution and visibility in the ICT sector. The impact of the World Bank's technical assistance is estimated to be more than 4 on a scale of 5.

In view of the target indicators and those registered or about to be realized at project closing, the restructured CAB-Chad Project APL1A reached the targets and the results and performance indicators have largely been exceeded.

However, despite the importance of the achievements made in terms of reforms in the ICT sector, the importance of the technological equipment and material acquired for ARCEP, and the direct and indirect impacts of these achievements, the CAB Project -APL1A was inconspicuous and little known to the larger public of Internet users and project beneficiaries because of the absence of a communications strategy and plan. The CAB-APL1A Project results should be broadcast to the population in order to make them more aware of the Government's vision for ICT.

*Performance of restructured CAB-APL1A Project*

(i) The disbursement rate is estimated at around 89.95%. This rate is considered "Moderately Satisfactory", (ii) the administrative, financial and accounting management is deemed "Moderately Satisfactory", (iii) the filing and archiving of accounting documents and in particular of procurement records and reports on the overall Project achievements are failing and rated "Unsatisfactory".

#### *Impacts of the Project*

The Project impacts are classified into two categories: direct impacts and indirect impacts.

The direct impacts of the Project: (i) The modernized ICT institutional framework harmonized with that of the sub-region is promising. This framework is helping to attract foreign investment in the sector and new operators want to establish themselves in Chad. (ii) Performance of ARCEP: The rise of ARCEP's authority and its improved regulatory performance, (iii) The creation of ADETIC and the provision of equipment (IXP), (iv) The continuation of the process of creating a PPP structure already underway with the operators active in the sector.

The indirect impacts noted and the effects of training are important: (i) inclusion of ICT in the National Development Plan 2013 - 2015, (ii) the organization of the *Salon International des Technologies de l'Information et de la Communication dédié à l'Afrique* (International Exhibition for ICTs dedicated to Africa – SITIC) in N'Djamena in September 2014 on the theme: "Make Chad the Hub of ICT in Africa "(iii) rehabilitation and deployment of fiber optic networks.

#### *World Bank/IDA action and performance*

The World Bank/IDA has fulfilled its mission and commitments for the most part in implementing the CAB-APL1A Project. Nevertheless, the cancellation of the CAB-APL1B Project is very regrettable.

#### *Government Action*

Government action was decisive in the conduct of the Project. The turnover rate of the two ministerial posts in charge of CAB-APL1A is regrettable: Five (5) Ministers were changed at the *Ministère de l'Economie, du Plan et de la Coopération Internationale* (Ministry of Economy, Planning and International Cooperation - MEPCI) and four (4) were changed at the *Ministère des Postes et des Technologies de l'Information et de la Communication* (Ministry of Posts and ICT – MPTIC) during the period from 2009 (preparatory phase of the project) to 2016 (closing phase), the six (6) years of the CAB-APL1A Project.

#### *Effectiveness of the PCU*

Notwithstanding all the difficulties with financial management and procurement, the PCU team established in 2013 has led the CAB-APL1A Project up until closing with demonstrated results judged satisfactory and with performance indicators met and exceeded.

### *Performance of the PIU*

An analysis of jobs financed by the project shows that the PCU's management costs represent on average 29% of total expenditures in the Special Account. For comparison, the costs of delegated project management represent a ratio of 4 to 5% of disbursements for works and between 10 to 15% for studies.

### *The main lessons learned from the implementation of the CAB-APL1A Project*

(i) Set from the first phase of the Project the factors or indicators that will trigger the preparation of the second phase and incorporate them in the Financing Agreement of the first phase of the Project, (ii) At the beginning of the Project, define a strategy and communications plan to support the Project and make it visible and understandable for the beneficiaries and the population in general, (iii) Define at the outset the management of procurement risks at the national level and negotiate conditions for the elimination or attenuation of those risks during project appraisal and negotiation, (iv) From the beginning of the project ensure regular supervision missions on the project's technical, fiduciary, procurement, and work program aspects with precise action plans assessed during each supervision mission and set a new schedule of upcoming deadlines, (v) Recruit for the PCU a specialist for both monitoring and evaluation and classification and archiving of Project files.

### *Recommendation*

Strengthen political and sectoral dialogue and restore confidence among stakeholders: Government of Chad and World Bank/IDA and maintain the assistance of the World Bank in the sector to complete the initiatives launched under CAB-APL1A, notably: (i) support for the implementation of the PPP structure and strengthening its capabilities at startup and establishment of an institutional framework for creation and organization of PPP structures, (ii) operationalization of the IXP (sustainability) and capacity building at the start of ADETIC activities, (iii) support to the Government in the interconnection negotiations with the Sudanese operators, (iv) support to the Government on reforming SOTEL, and (v) support to the Government on its policy of building out fiber optic infrastructure, both for its national network and for interconnection with CAR.

## **Annex 9. Comments of Cofinanciers and Other Partners/Stakeholders**

Not available.

## **Annex 10. List of Supporting Documents**

### Project file

Quality Enhancement Review Meeting Minutes, April 2, 2009  
Regional Operations Committee Meeting Decision Note, May 12, 2009  
Program Appraisal Document, August 19, 2009  
Republic of Cameroon Technical Annex, August 19, 2009  
Central African Republic Technical Annex, August 19, 2009  
Republic of Chad Technical Annex, August 19, 2009  
Financing Agreement for Grant H515-CF, December 11, 2009  
Financing Agreement for Grant H516-CD, January 22, 2010  
Financing Agreement for Credit 4647-CM, January 29, 2010  
Aide Memoires, Implementation Status Reports, various correspondences; September 2009 – November 2016  
Government of Cameroon, Mid-term Review  
Project Restructuring Paper, April 14, 2014

### Other

Qiang, Christine, Carlo Rossotto, and Kaoru Kimura, “Economic Impacts of Broadband”, in *Information and Communications for Development*, World Bank, 2009  
International Telecommunication Union Support for Harmonization of ICT Policies in Sub-Sahara Africa (HIPSSA) Project, *ICT Regulatory Harmonization: A Comparative Study of Regional Initiatives*, December 2009  
Cameroon Country Assistance Strategy, FY10-FY13, February 23, 2010  
*Africa’s Future and the World Bank’s Support to It*, March 2011  
Scott, Colin: *Does Broadband Internet Access Actually Spur Economic Growth?*, 2012  
World Bank Broadband Strategies Toolkit, 2012 ([www.broadbandtoolkit.org](http://www.broadbandtoolkit.org))  
Note on Cancelled Operation Report for CAB1B Project (P116542), June 6, 2013  
Gelvanovska, Natalia, Michel Rogy and Carlo Rossotto: *Broadband Networks in the Middle East and North Africa: Accelerating High-Speed Internet Access*, World Bank, 2014  
Chad Country Partnership Framework, FY16-20, November 4, 2015  
Republic of Cameroon: Priorities for Ending Poverty and Boosting Shared Prosperity – Systematic Country Diagnostic, June 20, 2016  
Telegeography GlobalComms Database, Cameroon Report, June 2016  
Telegeography GlobalComms Database, Central African Republic Report, June 2016  
Telegeography GlobalComms Database, Chad Report, June 2016  
Program Information Document (Appraisal Stage) for Central African Republic State Consolidation Development Program, September 15, 2016  
IDA Turnaround Eligibility Note for the Central African Republic, September 27, 2016  
European Union/United Nations/World Bank, *Central African Republic: National Recovery and Peacebuilding Plan, 2017-21*, October 2016

# MAP

