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IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IDA-H7120 IDA-H7130 IDA-H7140 IDA-62220)

ON

GRANTS

IN THE AMOUNT OF SDR 14.2 MILLION
(US$23 MILLION EQUIVALENT)
TO BURKINA FASO

IN THE AMOUNT OF SDR 21.6 MILLION
(US$35 MILLION EQUIVALENT)
TO THE REPUBLIC OF THE GAMBIA

IN THE AMOUNT OF SDR 21 MILLION
(US$34 MILLION EQUIVALENT)
TO THE REPUBLIC OF GUINEA

AND A

CREDIT

IN THE AMOUNT OF EURO 16.4 MILLION
(US$20 MILLION EQUIVALENT)
TO BURKINA FASO

FOR

THE 2ND PROJECT UNDER FIRST PHASE OF THE US$300 MILLION WEST AFRICA REGIONAL COMMUNICATIONS INFRASTRUCTURE PROGRAM
(WARCIP APL 1B)

February 25, 2022

Digital Development Global Practice
Africa West Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective December 31, 2016)

Currency Unit =	Guinea Franc
GNF 1.00 =	SDR 0.00007892
SDR 1.00 =	US$ 1.34433000

(Exchange Rate Effective December 31, 2016)

Currency Unit =	Gambia Dalasi
GMD 1.00 =	SDR 0.01714765
SDR 1.00 =	US$ 1.34433000

(Exchange Rate Effective September 30, 2018)

Currency Unit =	West African CFA
XOF 1.00 =	SDR 0.00126532
SDR 1.00 =	Euro 1.20482708
Euro 1.00 =	US$ 1.5805000

(Exchange Rate Effective July 30, 2021)

Currency Unit =	West African CFA
XOF 1.00 =	SDR 0.00126994
SDR 1.00 =	Euro 1.20044530
Euro 1.00 =	US$ 1.19020000

ABBREVIATIONS AND ACRONYMS

ACE	Africa Coast to Europe
ADM	Add-Drop Multiplexer
AF	Additional Financing
APL	Adaptable Program Loan
ARCEP	Postal and Electronic Communications Regulatory Authority (*Autorité de Régulation des Communications Électroniques et Postes) (Burkina Faso)*
ARPT	Postal and Electronic Communications Regulatory Authority (*Autorité de Régulation des Postes et Télécommunications) (Guinea)*
BCR	Borrower Completion Report
BFIX	Burkina Faso Internet Exchange Point
C&MA	Construction and Maintenance Agreement

CAPEX	Capital Expenditures
CAS	Country Assistance Strategy
CPF	Country Partnership Framework
DE4A	Digital Economy for Africa
DGCMEF	Directorate General of Control of Public Procurement and Financial Commitments (*Direction Générale du Control des Marchés Publics et des Engagement Financiers) (Burkina Faso)*
ECOWAN	ECOWAS Wide Area Network Project
ECOWAS	Economic Community of West African States
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FA	Financing Agreement
FCV	Fragility, Conflict and Violence
FM	Financial Management
GAMCEL	Gambia Telecommunication Cellular Company
GAMTEL	Gambia Telecommunication Company
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GoBF	Government of Burkina Faso
GoG	Government of Guinea
GoTG	Government of The Gambia
GRM	Grievance Redress Mechanism
GSC	The Gambia Submarine Cable
GSMA	Global System for Mobile Communications Association
GUILAB	Broadband Company for Guinea (*La Guinéenne de Large Bande)*
ICR	Implementation Completion and Results Report
ICT	Information and Communication Technology
IDA	International Development Association
IFMIS	Integrated Financial Management Information System
IFR	Interim Financial Report
IMF	International Monetary Fund
IP	Internet Protocol
IRR	Internal Rate of Return
IsDB	Islamic Development Bank
ISP	Internet Service Provider
ISR	Implementation Status and Results
ITU	International Telecommunication Union
IXP	Internet Exchange Point
JPS	Joint Partnership Strategy
M&E	Monitoring and Evaluation
MDENP	Ministry of Development of Digital Economy and Posts (*Ministère du Développent de l'Économie Numérique et des Postes*, Burkina Faso)
MOFEA	Ministry of Finance and Economic Affairs (The Gambia)
MOICI	Ministry of Information and Communications Infrastructure (The Gambia)
MPTEN	Ministry of Post, Telecommunication, and Digital Economy (*Ministère des Postes, des Télécommunications et de l'Economie Numérique*, Guinea)

MTR	Midterm Review
NPV	Net Present Value
OPEX	Operational Expenditures
PAD	Project Appraisal Document
PAGE	Program for Accelerated Growth and Employment (The Gambia)
PDO	Project Development Objective
PIU	Project Implementation Unit
PNDES	National Economic and Social Development Plan (*Plan National de Développement Économique et Social*)
PPA	Project Preparation Advance
PPP	Public-Private Partnership
PRSP	Poverty Reduction Strategy Paper
PURA	Public Utilities Regulatory Authority (The Gambia)
RAP	Resettlement Action Plan
RIAS	Regional Integration Assistance Strategy
RICAS	Regional Integration and Cooperation Assistance Strategy
SCD	Systematic Country Diagnostic
SCOOPS	Simplified Cooperative Society (*Société Coopérative Simplifiée*)
SOGEB	National Backbone Managing Company (*Société de Gestion et d'Exploitation du Backbone National*) (Guinea)
SOP	Series of Projects
SOTELGUI	Guinea Telecommunication Company (*Société Guinéenne des Télécommunications*)
SPV	Special Purpose Vehicle
TA	Technical Assistance
TOC	Theory of Change
VLP	Virtual Landing Point
WARCIP	West Africa Regional Communications Infrastructure Program

Regional Vice President:	Ousmane Diagana
Regional Integration Director:	Boutheina Guemazi
Acting Global Director:	Nicole Klingen
Country Director for Burkina Faso:	Clara Ana Coutinho de Sousa
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TABLE OF CONTENTS

DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P122402	West Africa Regional Communications Infrastructure Project - APL-1B
Country	**Financing Instrument**
Western Africa	Investment Project Financing
Original EA Category	**Revised EA Category**
Partial Assessment (B)	Partial Assessment (B)

Organizations

Borrower	Implementing Agency
Ministry of Economy and Finance, Ministry of Information and Communications Infrastructure, Ministère de l'Economie, des Finances, et du Developpement du Burkina Faso, Burkina Faso, Republic of Guinea, Republic of the Gambia	Ministry of Digital Economy and Post, Ministry of Information and Comminications Infrastructure, Ministere du Developpement de l'Economie Numerique et des Postes, Secretariat Permanent du Programme Sectoriel des Transports

Project Development Objective (PDO)

Original PDO

The development objective of WARCIP is to increase the geographical reach of broadband networks and reduce costs of communications services in West Africa. For APL1B, the Project's development objectives are to contribute to increasing the geographical reach of broadband networks and to reducing the costs of communications services in each of the territories of The Gambia, Guinea and Burkina Faso.

PDO as stated in the legal agreement

The objectives of the Project are to increase the geographical reach of broadband networks and to reduce costs of communications services in the Recipient's territory.

FINANCING

	Original Amount (US$)	Revised Amount (US$)	Actual Disbursed (US$)
World Bank Financing			
IDA-H7130	35,000,000	34,761,077	32,563,720
IDA-H7120	23,000,000	22,929,813	19,948,274
IDA-H7140	34,000,000	33,872,057	31,755,664
IDA-62220	20,000,000	17,950,883	16,651,819
Total	**112,000,000**	**109,513,830**	**100,919,477**
Non-World Bank Financing			
Total	**0**	**0**	**0**
Total Project Cost	**112,000,000**	**109,513,831**	**100,919,477**

KEY DATES

Approval	Effectiveness	MTR Review	Original Closing	Actual Closing
21-Jun-2011	31-Oct-2011	02-Jun-2014	31-Dec-2016	30-Jul-2021

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US$M)	Key Revisions
29-Feb-2016	66.48	Change in Loan Closing Date(s) Reallocation between Disbursement Categories
28-Dec-2017	80.68	Change in Loan Closing Date(s)
25-Apr-2018	81.15	Additional Financing
26-Jun-2019	85.39	Change in Components and Cost Reallocation between Disbursement Categories Change in Safeguard Policies Triggered
10-May-2021	93.11	Change in Results Framework Change in Components and Cost Change in Loan Closing Date(s) Cancellation of Financing Reallocation between Disbursement Categories Change in Implementation Schedule

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KEY RATINGS

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

RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US$M)
01	21-Sep-2011	Satisfactory	Satisfactory	4.68
02	07-Apr-2012	Satisfactory	Satisfactory	45.20
03	20-Oct-2012	Satisfactory	Satisfactory	52.33
04	16-May-2013	Satisfactory	Satisfactory	53.38
05	10-Aug-2013	Satisfactory	Satisfactory	54.57
06	12-Mar-2014	Satisfactory	Satisfactory	56.84
07	15-Nov-2014	Moderately Satisfactory	Moderately Satisfactory	61.35
08	24-May-2015	Moderately Satisfactory	Moderately Satisfactory	63.94
09	03-Feb-2016	Moderately Satisfactory	Moderately Satisfactory	66.43
10	18-Sep-2016	Moderately Satisfactory	Moderately Satisfactory	69.67
11	24-Mar-2017	Satisfactory	Satisfactory	77.25
12	18-Nov-2017	Satisfactory	Satisfactory	80.68
13	08-Jun-2018	Satisfactory	Satisfactory	81.15
14	20-Dec-2018	Satisfactory	Satisfactory	84.27
15	14-Oct-2019	Satisfactory	Satisfactory	86.49
16	04-May-2020	Satisfactory	Satisfactory	86.57
17	30-Nov-2020	Satisfactory	Satisfactory	92.75
18	27-Jul-2021	Satisfactory	Satisfactory	93.47

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SECTORS AND THEMES

Sectors

Major Sector/Sector	(%)
Information and Communications Technologies	**100**
Public Administration - Information and Communications Technologies	22
ICT Infrastructure	78

Themes

Major Theme/ Theme (Level 2)/ Theme (Level 3)	(%)
Private Sector Development	**87**
Business Enabling Environment	26
Investment and Business Climate	14
Regulation and Competition Policy	12
Jobs	11
Job Creation	11
Public Private Partnerships	10
Regional Integration	40
Urban and Rural Development	**22**
Urban Development	11
Urban Infrastructure and Service Delivery	11
Rural Development	11
Rural Infrastructure and service delivery	11

ADM STAFF

Role	At Approval	At ICR
Regional Vice President:	Obiageli Katryn Ezekwesili	Ousmane Diagana
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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. CONTEXT AT APPRAISAL

Background of WARCIP

1. **The West Africa Regional Communications Infrastructure Program (WARCIP) seeks to provide a comprehensive solution to address connectivity gaps in the region[1].** Approved on January 20, 2011, the US$300 million WARCIP supports West Africa to increase the geographical reach of broadband networks and reduce costs of communications services. WARCIP focuses on international and regional connectivity to enable the creation of a fully integrated network which will eventually link all countries' networks in the region and provide affordable high-speed connectivity within countries. WARCIP is implemented as a series of Adaptable Program Loans (APLs) and Series of Projects (SOP),[2] including the following phases and projects: Phase 1 - regional APL 1A (Sierra Leone and Liberia), APL 1B (The Gambia, Guinea, and Burkina Faso), and APL 1C (Benin); Phase 2 - regional APL 2 (Mauritania and Togo); and Phase 3 – regional SOP3 (Guinea-Bissau).

2. **The subject of this Implementation Completion and Results Report (ICR) is the 2nd regional APL under Phase 1 of WARCIP, named the WARCIP APL 1B, which included The Gambia, Guinea, and Burkina Faso and was approved by the Board on June 21, 2011.** An overall Project Appraisal Document (PAD) was produced for the WARCIP APL 1B, completed by Technical Annexes for The Gambia and Burkina Faso and an Emergency Project Paper[3] for Guinea.

Context at Appraisal and Sector Context

3. **The Economic Community of West African States (ECOWAS) region was undergoing economic growth since 2000.** The regional growth of gross domestic product (GDP) was 4.7 percent in 2008 and slowed down to 4.4 percent in 2010 as a result of the global economic downturn.[4] ECOWAS member states were collaborating to deepen integration and improve growth in the region, as emphasized in the 2007 joint Regional Poverty Reduction Strategy for West Africa, proposing four strategic directions for regional intervention, including the aim to "develop and interconnect infrastructures."[5]

4. **In line with the region, the three countries under the WARCIP APL 1B (The Gambia, Guinea, and Burkina Faso) experienced positive GDP growth rates in the run-up to 2008 between 3 and 6 percent.** Despite the economic growth, all three countries were categorized as least developed countries, ranking 168 (The Gambia), 178 (Guinea), and 181 (Burkina Faso), out of 187 countries on the United Nations Human Development Index in 2011.[6] A wave of reforms in the region, particularly on policy and regulatory improvements at the national level, increased competition and resulted in improved access to information

[1] Countries included in the region: Benin, Burkina Faso, Cabo Verde, Cote d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo.
[2] SOP (formally APL), World Bank Operations Policy and Country Services, July 18, 2017.
[3] The PAD for the WARCIP APL 1B constituted a general PAD. Detailed information (including a Results Framework) is included in the Technical Annexes for The Gambia and Burkina Faso and the Emergency Project Paper for Guinea. All four documents are dated May 25, 2011.
[4] 2010 Interim Report of the ECOWAS Commission.
[5] The PAD for the second series of the first phase of WARCIP, May 2011.
[6] United Nations Human Development Index: https://hdr.undp.org/sites/default/files/hdr_2011_en_summary.pdf

and communication technology (ICT) services. The Gambia, Guinea, and Burkina Faso embraced policies promoting significant liberalization of the telecommunication sector in 1998, 2001, and 2004 respectively.

5. **These impressive developments, however, masked the challenges that the three countries were facing in providing access to modern ICT for their populations.** Despite the opening up of the telecommunication sector and subsequent impressive mobile penetration growth, internet penetration levels remained marginal. In 2010, barely 1 percent of inhabitants in the three countries were internet users, compared to an average of 8.7 percent in Sub-Saharan Africa (SSA) and nearly 27 percent globally.[7] In the range of 0.07 and 0.09 percent, these countries' broadband penetration was very low, and below the Sub-Saharan average of 0.11 percent. Prices of ICT[8] services in the ECOWAS region generally were also very high, as The Gambia, Guinea, and Burkina Faso ranked 147, 142, and 155, respectively, out of 161 countries, according to the International Telecommunication Union (ITU).[9] Sector liberalization remained largely incomplete, and the markets were constrained by weak competition and monopolies, resulting in low penetration of fixed networks and suboptimal development of the internet services, as high prices suppressed demand for international traffic. At 14.6, 0.9, and 6.5 international minutes per person, respectively, the average outgoing internet traffic in 2009 in The Gambia, Guinea, and Burkina Faso was low, compared to the 49 and 22 minutes per person recorded in Cabo Verde and Senegal, respectively.[10] Furthermore, the three countries experienced low levels of access to international internet bandwidth. In 2010, The Gambia, Guinea, and Burkina Faso international bandwidth was at around 155, 150, and 800 Mbit/s, respectively,[11] due to the relatively small number of internet users, the high cost of capacity, and the limited access to connectivity.

6. **The Gambia and Guinea, as smaller coastal states, were often seen as unattractive investment opportunities and consequently bypassed by private submarine cable consortia establishing regional connectivity networks.** The two countries were among a handful of countries in the ECOWAS region which were still not directly connected to the global network of broadband optical fiber infrastructure. With small domestic markets, the two countries relied on satellite connectivity and fiber connection through neighboring countries, resulting in unreliable services and high prices (in the range of US$4,000–5,000/Mbit/s/month compared to US$500/Mbit/s/month in East African countries connected to submarine cables). In this context, connecting to the new Africa Coast to Europe (ACE) submarine cable represented a unique opportunity to improve international connectivity for The Gambia and Guinea.

7. **Burkina Faso suffered from its landlocked geographical position but had the potential to be an important link in the regional connectivity network.** The country was depending on the cooperation of its neighbors for international access, often at uncompetitive prices (US$4,500 for 1 Mbit/s in 2011). But its central geographical position in West Africa also offers advantages, such as a strategic location for several large telecom groups in the region, and opportunities to complete international connections and regional rings for its six neighboring countries (Mali, Niger, Benin, Ghana, Togo, and Côte d'Ivoire). A terrestrial route to a new or existing fiber cable system was found to be, under the WARCIP APL 1B preparation, the most cost-effective long-term option to improve international connectivity.

[7] International Telecommunication Union (ITU) Database (2020).
[8] The ITU ICT Price Basket score is a composite score that considers the cost of a fixed telephone line (monthly subscription and 30 calls), mobile telephone line (25 outgoing calls and 30 SMS messages), and fixed broadband internet (monthly subscription to an entry level package and 1 Gb a month).
[9] ITU, Measuring the Information Society (2010).
[10] Telegeography International Traffic Database, 2009.
[11] National Regulatory Authorities (Guinea, The Gambia, and Burkina Faso), Mike Jensen Feasibility Study.

Rationale for Bank Support

8. **World Bank (WB) support was justified based on the WARCIP alignment with the Regional Integration Assistance Strategy (RIAS) Update.** Partnering for Africa's Regional Integration (March 21, 2010),[12] which sought to create economies of scale, facilitate intraregional trade and exports and connect landlocked countries to regional and global trade routes by reducing barriers to movement of goods and services between countries, and improve the regional business environment. WARCIP was featured as a flagship program in the RIAS Update. WARCIP was also aligned with the World Bank Africa Strategy: Africa's Future and the World Bank's support to it.[13] By facilitating cheaper access to internet and supporting the development of national and regional communications infrastructure, WARCIP aimed at promoting sustainable employment (Pillar 1: Competitiveness and Employment) and creating a critical building block for ICT applications (Foundation Governance and Public Sector Capacity). WARCIP also leveraged public and private sector partnership (PPP) investments in the ACE submarine cable.

Higher-Level Objectives

9. **The WARCIP APL 1B responded directly to the strategic priorities at the country level.** The Gambia was aligned with the 2008–2011 Joint Assistance Strategy[14] which focused on two pillars: (a) strengthening economic management and public service delivery and (b) enhancing productive capacity and accelerating growth and competitiveness. Guinea was aligned with the Interim Strategy Note discussed in April 2011,[15] which focused on (a) fostering sustainable and equitable growth, (b) improving access and quality of basic social services, and (c) strengthening governance and institutional and human capacity. Burkina Faso was aligned with the 2010–2012 Country Assistance Strategy (CAS), which sought to assist the country to deepen economic transformation and identify new drivers of growth and supported the CAS objectives through better access and use of ICT to improve delivery of public services, lower the cost of doing business, new investments in the ICT sector, and improved access to markets.

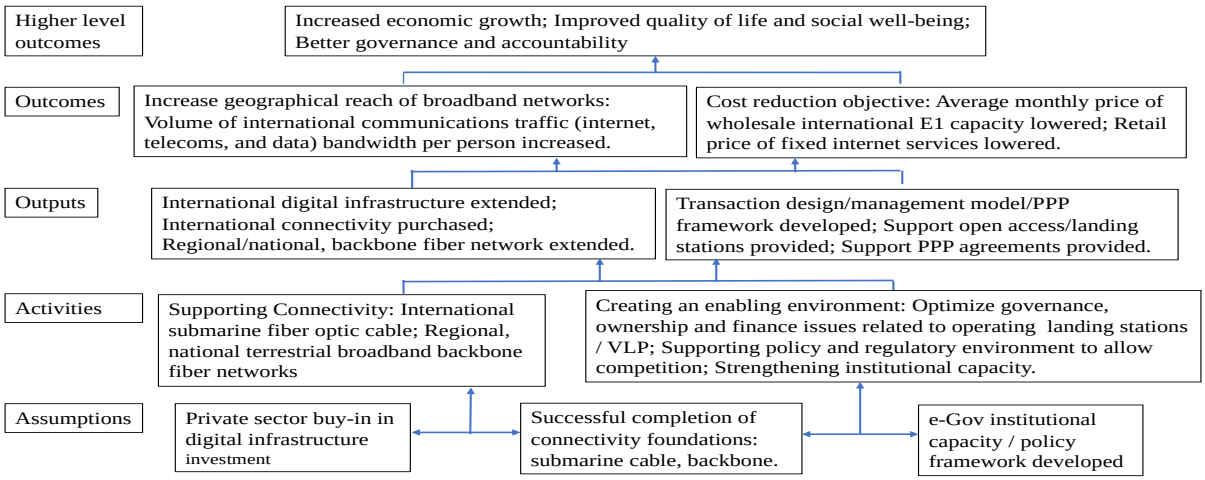
Theory of Change (Results Chain)

10. **The WARCIP APL 1B PAD and specific project documents did not include a Theory of Change (TOC) diagram.** The TOC diagram presented in figure 1 has been produced for this ICR.

11. **The WARCIP APL 1B aimed at increasing geographical reach of broadband networks and reduce cost of communication services.** This would be achieved by increasing international, regional, and national connectivity, coupled with supporting the creation of an enabling environment for connectivity fostering governance, policies, and regulations and institutional capacity. The premise was that increasing the geographical reach of broadband networks and reducing the cost of communications fostered sustainable and equitable growth while strengthening economic management and public services delivery. Figure 1 illustrates a Results Chain appropriate for the WARCIP APL 1B.

[12] https://siteresources.worldbank.org/INTAFRREGINICOO/Resources/1587517-1271810608103/RIAS-Paper-Final-
[13] February 2011, Report No. 59761.
[14] African Development Bank-World Bank Joint Assistance Strategy 2008–2011.
[15] Document date: 2011/03/24. Report No. 59671

Figure 1. Results Chain for the WARCIP APL 1B and The Gambia, Guinea, and Burkina Faso



Note: PPP = Public-private partnership.

Project Development Objective (PDO)

12. The PDO for the WARCIP APL 1B was "To increase the geographical reach of broadband networks and reduce costs of communications services in the Recipient's territory," as stated in the Financing Agreements (FAs)[16] for The Gambia, Guinea, and Burkina Faso.

Key Expected Outcomes and Outcomes Indicators

13. The PDO Indicators listed in the WARCIP APL 1B PAD were the following:

- Volume of international traffic (kbit/s per person)
- Access to telephone services (fixes mainlines plus cellular phones per 100 people)
- Access to internet services (number of subscribers per 100 people)
- Average monthly price of wholesale international E1 capacity link from capital city to Europe (US$/month/2 Mbit/s)
- Direct project beneficiaries, of which female

14. Guinea and Burkina Faso adopted all five PDO Indicators in the WARCIP APL 1B PAD, while The Gambia adopted just four of those PDO Indicators, excluding "Access to telephone services"[17].

15. **Targeted beneficiaries.** The WARCIP APL 1B benefited the entire population of The Gambia, Guinea and Burkina Faso, including telecommunication operators and all end-users (government agencies, universities, schools, hospitals, banks, corporate users, ministries and departments, and individuals).

[16] The FA for The Gambia, dated June 29, 2011; the FA for Guinea, dated June 29, 2011; the FA for Burkina Faso, dated July 4, 2011.
[17] This PDO indicator was not included under The Gambia given the Islamic Development Bank parallel operation/ financing of the fiber backbone.

Components

16. **WARCIP offered a customizable menu of specific activities pertaining to physical investments and technical assistance (TA).** Each Government chose a particular set of country-specific interventions under WARCIP APL 1B. The WARCIP APL 1B components are described in the following paragraphs.

Component 1: Supporting Connectivity

17. **International connectivity.** The component involved support to provide access to those coastal countries without established access to international submarine cable connectivity, and to help landlocked countries with limited/indirect access have alternative access to international connectivity to improve terms of access to capacity and lower cost. Project funds would secure participation for The Gambia and Guinea in the ACE submarine cable and would allow Burkina Faso to issue a competitive tender to purchase high-capacity bandwidth from neighboring coastal countries via a terrestrial connection to a new or existing submarine cable system. The funds would allow for the construction of a domestic landing station in The Gambia and Guinea and of a virtual landing point (VLP)[18] in Burkina Faso.

18. **Regional/national competitiveness.** The component included the rollout of terrestrial broadband backbone fiber networks and cross-border connectivity. Also, it was envisaged to be complemented by proceeds of divestiture of Government shares in the special purpose vehicles (SPVs) to be created specifically in each country for owning and operating the submarine cable landing stations/VLP in line with to the selected PPP approach. In Burkina Faso, additional fiber optic link would be built between Ouagadougou and the closest border point (Paga, Ghana) to provide redundancy, security and wider access to low-cost international capacity.

Component 2: Creating an Enabling Environment for Connectivity

19. **This component aimed to provide support to optimize the governance, ownership, and financing issues related to the operation of the submarine cable landing station/VLP and provision of networks and services emanating from the acquired international connectivity.** It focused on the transaction design and operating model for ownership and management of international, regional, and national infrastructure using PPP frameworks and related open access principles to create an enabling environment for improved connectivity.[19] It included (i) creating a policy and regulatory environment to allow competition, (ii) addressing policy and regulatory bottlenecks to maximize the benefits of the proposed connectivity agenda, and (iii) developing studies to help the Governments of the three countries put in place a regime for open access to the submarine cable landing stations and to the international capacity. It also involved strengthening capacity for sector regulators and relevant ministries to ensure that PPP agreements and related open access principles were implemented effectively.

[18] A VLP is a dry port for submarine fiber optic cable. It manages the capacity of international bandwidth for the benefit of local partners in the telecommunication sector.
[19] Open access is broadly defined as an equal opportunity for operators to have unfettered access to given infrastructure or services under similar terms and conditions.

Component 3: Project Implementation

20. **This component provided support to strengthen the capacity of Governments to implement the project.** It covered operational costs, office equipment, audits, communications, development, and/or monitoring of the implementation of environmental and social studies.

B. SIGNIFICANT CHANGES DURING IMPLEMENTATION

21. **There were no significant changes no significant changes during the implementation of The Gambia and Guinea.** In Burkina Faso, a US$20 million International Development Association (IDA) credit AF to the initial IDA grant was approved in April 2018 to scale up activities.

22. **The Gambia and Guinea.** Level 2 restructuring approved in February 2016: extension of the closing date by nine months, from March to December 2016, and reallocations between disbursement categories, particular for accounting for the exchange rate losses from SDR to US$ of approximately US$2 million in The Gambia and US$4 million in Guinea.

23. **Burkina Faso.** Level 2 restructurings: (i) February 29, 2016 - closing date extension by 12 months, from December 2016 to December 2017, and reallocations between disbursement categories; (ii) December 28, 2017 - closing date extension by six months, from December 2017 to June 2018; and (iii) May 11, 2018 - closing date extension by three months, from June 2018 to September 2018. Changes to the AF portion of the project (and its associated additional IDA financing to Burkina Faso): (i) June 29, 2019 - changes in disbursement categories; (ii) May 10, 2021 - closing date extension by one month from June 2021 to July 2021, changes in the Results Framework, components and cost, cancellation of part of funds (Fada-Pama link due to the high insecurity levels in the area) and of non-allocated funds, and reallocation between disbursement categories to allow the acquisition of additional international connectivity.

24. **Rationale for changes and their implications for the original TOC.** As mentioned above, a TOC was not included in the WARCIP APL 1B PAD, The Gambia and Burkina Faso Technical Annexes, or the Guinea Emergency Paper. A TOC diagram was thus produced for this ICR (see figure 1), and the changes introduced during implementation had no implications for the TOC which was produced for this ICR:

(a) **The Gambia.** The nine months' closing date extension allowed for the completion of the elaboration of the open access policy, the preparation of a feasibility study for regional connectivity, as well as development of strategies supporting repositioning of state-owned Gambia Telecommunication Company (GAMTEL) and Gambia Telecommunication Cellular Company (GAMCEL). The reallocation of funds between components allowed for the use of savings from the ACE consortium fees to fund goods, works, consultant services, and operational costs, causing no implications for the TOC.

(b) **Guinea.** The nine months' closing date extension allowed for the completion of studies on regulation and broadband strategies, without implications for the TOC.

(c) **Burkina Faso.** The changes allowed for the completion and extension of the works and some key studies, as well as to cancel the Fada-Pama link. The changes and the deletion of a PDO indicator[20] by the AF had no implications for the TOC.

[20] The PDO Indicator deleted was: "Volume of international traffic (kbit/s per person)"

II. OUTCOME

A. RELEVANCE OF PDOs

Assessment of Relevance of PDOs and Rating

25. **Relevance of the WARCIP APL 1B PDO is High.** The relevance of the PDO to the WB regional strategy for Africa[21] was High at project appraisal and remains High at the closing as it is consistent with the Africa Regional Integration and Cooperation Assistance Strategy (RICAS) for the period FY21-FY23.[22] RICAS' Pillar 1: Building Regional Connectivity of the strategy states that "Better regional connectivity remains a necessary, though not sufficient, requirement for promoting integration in Africa and is an overriding priority for national and regional stakeholders". ICT was identified as a key sector that can promote the region's economic and social development: increasing competitiveness and employment, improving the public sector efficiency, acknowledging the transformative powers of digital technologies.

26. **The Gambia.** The relevance of the PDO (closed on December 31, 2016) to the second African Development Bank and World Bank Joint Partnership Strategy[23] (JPS-2) (2013–2016) was High, as the PDO remained consistent with The Gambia Country engagement note for the period of FY18-FY21, which states that the WB will continue to coordinate closely with partners on governance, climate change, energy, ICT, and private sector development issues. The note supports The Gambia Program for Accelerated Growth and Employment (PAGE) 2012–2015, which identifies two pillars for sustainable growth: (a) enhancing productive capacity and competitiveness to strengthen resilience to external shocks and (b) strengthening the institutional capacity for economic governance and public service delivery. The project, in improving key elements for more pervasive and affordable internet services, directly contributes to these pillars.

27. **Guinea.** The relevance of the PDO (closed on December 31, 2016) to the 2014–2017 CAS[24] for Guinea was High and remained consistent with the 2018–2023 CAS.[25] Built on the strategic priorities of the Government set out in the Poverty Reduction Strategy Paper (PRSP),[26] the CAS identifies improving ICT connectivity as a strategic area to stimulate growth and economic diversification. The project, in providing the key elements for more pervasive and affordable internet services, directly contributed to the Guinea National Economic and Social Development Plan (PNDES) (2016-2020), in particular with respect to the its pillars: (i) Development of the broadband network; (ii) Strengthening the telecommunication legislation and regulation.

28. **Burkina Faso.** The relevance of the PDO was High, as it remained consistent with the FY18–FY23 Country Partnership Framework (CPF)[27] and Systematic Country Diagnostic (SCD).[28] The PDO contributed to Objective 1.3 of the CPF: "Develop transport, trade and ICT for improved access to markets," requiring the enhancement of communications services. The SCD highlighted that "Burkina Faso needed to improve its communication infrastructure, particularly in terms of connections to international network and in

[21] Partnering for Africa's Regional Integration: Regional Integration Assistance Strategy for Sub-Saharan Africa. Report No. 60387, March 21, 2011.
[22] Africa Regional Integration and Cooperation Assistance Strategy – FY21-FY23.
[23] Gambia Second Joint Partnership Strategy 2013–2016, Report No. 72140.
[24] Guinea CPF (2014–2017) - No. 76230-GN approved September 2013.
[25] Guinea 2018–2023 CAS Report No 125899-GN
[26] PRSP III, 2013–2015. International Monetary Fund (IMF), Guinea Poverty Reduction Strategy Paper, Country Report No. 13/191.
[27] Burkina Faso CAS Report No. 123712.
[28] Report No. 114393, dated March 2017.

isolated regions. The implementation of the appropriate regulations was essential to prevent excessive prices (or limited access), including for Internet access, which remained very expensive." It was also consistent with the Burkina Faso National Plan for Economic and Social Development II (PNDES) (2021-2025), which pillars included: (i) Development of a quality broadband network; (ii) Strengthening the telecommunication market; (iii) Development of a national expertise in telecommunication.

B. ACHIEVEMENT OF PDOs (EFFICACY)

Assessment of Achievement of Each Objective/Outcome

29. **The overarching development objectives for the WARCIP APL 1B were "to increase the geographical reach of broadband networks and reduce cost of communications services in recipient's countries."**[29] This section disaggregates the PDO into two parts and provides the evidence for its achievement using the PDO indicators and intermediate indicators. The aggregate rating for the WARCIP APL 1B is based on the evaluation of each PDO outcome and its application in the respective country.

PDO Outcome 1: To increase the geographical reach of broadband networks in recipient's countries

30. This development outcome was measured by three outcome indicators, used as proxy reflecting the increase in geographical reach of broadband networks: (i) Volume of international traffic: international communications (internet, telecoms, and data) bandwidth per person (measured in kbit/s per person); (ii) Access to internet services (measured in number of subscribers per 100 people); and (iii) Access to telephone services (fixed mainlines plus cellular phones per 100 people).

(i) Volume of international traffic: international communications (internet, telecoms, and data) bandwidth per person (measured in kbit/s per person).

31. **The volume of international traffic increased dramatically**. In The Gambia, the increase was from 10 kbits/s per person in 2010 baseline to 528 kbits/s per person at the closure in 2016, surpassing the end target of 30 kbit/s. In Guinea, the increase was from 5 kbit/s per person to 86 kbit/s by closure in 2016, surpassing the end target of 85 kbit/s. In both countries, the increase was directly related to the increase in international capacity provided through the ACE submarine cable. The steady increase in the volume of international traffic started when ACE submarine cable landing stations became operational in 2013. In Burkina Faso, this PDO Indicator was deleted under the 2018 AF,[30] but evidence show that the country also successfully benefited from increased international traffic. Before it was deleted, the indicator value had increased from 28 kbit/s per person in 2010 to 244.2 kbps per person in 2017, largely surpassing the end target value of 74 kbps per person set for the 2016 original closing date, although its increase is largely due to the telecommunication market's fast development rather than the project itself. Nevertheless, comparing the growth of international traffic in the three countries to that of the entire Africa region shows that these significant increases coincide with the implementation of the project's activities.

(ii) Access to internet services, (measured in number of subscribers per 100 people).

[29] As per the FAs for The Gambia, dated June 29, 2011; Guinea, dated June 29, 2011; and Burkina Faso, dated July 4, 2011, and the Burkina Faso AF, no date.
[30] The justification provided in the AF Project Paper, dated April 9, 2018, page 19, stated: the PDO indicator was deleted as it was found redundant and less adequate than the indicator "Volume of international traffic".

32. **Access to internet services increased exponentially.** In The Gambia, the share of the population with access to internet services surpassed its target by 93 percent, growing from 0.75 percent of the population in the 2010 baseline to 28 percent by closure in 2016, while the end-of-the-project target was 3 percent. Most of the internet users accessed the internet through their mobile phone.[31] In Guinea, the share of the population with access to internet services increased from 0.3 percent in the 2010 baseline to 26.2 percent by closure in 2016, while the end-of-the-project target was 0.70 percent. In Burkina Faso, access to internet reached 67.26 percent by closure in 2021, exceeding the target of 40 percent from a baseline of 0.20 percent, while the access to network coverage for mobile internet (percentage of the population) reached 50.67 percent, falling slightly below target of 60.00 percent. The intermediate indicator "National internet traffic exchanged at the IXP" reached 12,000 Mbps at peak times, greatly exceeding the target of 1,500 Mbit/s peak times, from a baseline of 350 Mbps peak times. In The Gambia, the number of individuals using the internet reached 51 percent of the population in 2019.[32] In Guinea, it reached 23 percent, also in 2019.[33]

(iii) Access to telephone services (fixed mainlines plus cellular phones per 100 people).

33. **The project reached close to universal access to telephone services.** In The Gambia, this PDO indicator was not included, but the remarkable increase in the number of smartphone users during implementation is nonetheless impressive. It grew from 127,000 users in 2011 to 345,000 in 2016. In Guinea, the share of the population with access to telephone services surpassed its target by 206 percent, increasing from 34.7 percent in the 2010 baseline to 97.8 percent by closure in 2016, while the end-of-the-project target was 47.5 percent. In Burkina Faso, access to telephone subscriptions reached 108.46 percent[34] of people, exceeding the target of 92 percent from a baseline of 37.2 percent. Moreover, access to mobile telephony coverage reached 92.41 percent of the population, achieving the end-of-the-project target of 90 percent from a baseline of 80 percent. Access to mobile telephone subscriptions in The Gambia reached 109.5 percent of the population, in 2021, while fixed telephone lines were 24.1 percent in 2020.[35] In Guinea, access to mobile subscriptions service reached 118 percent of the population.[36]

PDO Outcome 2: Reduce costs of communications services in recipient's countries

34. This development outcome was measured by the outcome indicator "Average monthly price of wholesale international E1 capacity link from capital city to Europe," measured in US$ per month for 2 Mbit/s. The price of international E1 capacity was used as a proxy to the cost of communications. Intermediate indicators provided additional means to measure and assess the achievement.

35. **The reduction in costs was significant, particularly after the international connectivity investments funded by WARCIP were operational.** In The Gambia, the price of international E1 capacity decreased by almost 90 percent during implementation, reaching US$500 by closing in 2016, thereby surpassing the end-of-the-project target by 50 percent. The target of Intermediate Outcome Indicator 2: Retail price of internet services (per Mbit/s per month in US$) was also exceeded. During implementation, the price of 1 Mbit/s per month for enterprises decreased by 73 percent, from US$1,500 to around

[31] Government completion report. December 2016.
[32] World Development Indicators.
[33] World Development Indicators.
[34] Some people had access to more than one line.
[35] Telegeography.
[36] Telegeography.

US$400. In Guinea, the price of international E1 capacity reached the end-of-project target of US$1,400, from a baseline of US$8,000. The reduction in cost of wholesale capacity (Intermediate Outcome Indicator 2) was also important. The price of 1 Mbit/s per month for enterprises decreased by 36 percent, from US$1,200 to around US$762. However, this reduction did not achieve the end-of-the-project target of US$500. The factors that might explain includes the cost structure of the prices, and the level of taxation. In Burkina Faso, the average monthly price of wholesale international E1 capacity link from the capital city to Europe decreased to US$319, greatly exceeding the target of US$1,400, from a baseline of US$9,000. Intermediate indicators provide additional relevant evidence. The retail price of mobile internet services reached US$12.30, underachieving the target of US$8.00 from a baseline of US$16.00, and the retail price of fixed internet services reached US$22.24, exceeding the target of US$70.00, from a baseline of US$130.00.

36. **WARCIP APL 1B overall achievements.** In addition to achieving all PDO outcome targets (exceeding most of them), other substantial achievements include the following:

37. **In The Gambia, there was notable impact on all beneficiary entities.** The project supported the establishment of the Gambia Submarine Cable (GSC), an SPV with majority private shareholders to manage the country's participation in the ACE cable consortium and operate the new international bandwidth acquired through ACE. It also provided policy, legal, and regulatory support to the Ministry of Information and Communications Infrastructure (MOICI) on sector liberalization, national ICT and broadband strategy, internet exchange point (IXP) feasibility assessment, and regional connectivity study); to the Public Utilities Regulatory Authority (PURA) on taxation, spectrum, and numbering); and to GAMTEL with repositioning studies covering business strategies and HR audit. Extensive training was conducted for MOICI, PURA, and GAMTEL on technical and regulatory areas of the telecom sector as well as areas for advancing digital government (that is, government cloud and cyber security). However, a key policy principle underlying the PPP arrangement—the full liberalization of The Gambia's international gateway—was not entirely accomplished before the closing date (December 31, 2016) of The Gambia portion of WARCIP APL 1B, given political difficulties the Government faced. The international gateway was fully liberalized only in August 2019, with the issuance of gateway licenses to the private mobile operators.[37]

38. **In Guinea, the project successfully implemented nearly all activities planned in the PAD.** The project supported the establishment of the Broadband Company for Guinea (*La Guinéenne de Large Bande,* GUILAB), an SPV that owns and manages the ACE cable connection and commercialize international bandwidth with regulated wholesale prices. However, the disinvestment plan related to the Government shares in the GUILAB was not entirely accomplished at the closing date (December 31, 2016) of the Guinea portion of WARCIP APL 1B, given political difficulties the Government faced. In April 2019 the Government of Guinea (GoG) disclosed its intention to divest new shares in telecommunication infrastructure provider and international gateway operator GUILAB. The state, which initially owned 100% of GUILAB, today holds 52.52% of the operator's shares, and plans to release a further 27.52% to retain a 25% stake. Owing to savings from an efficient fiduciary management, it was also able to implement additional TA studies to support the Government to make informed decisions on the governance of the ICT sector and the broadband strategy and governance structure of the future backbone.

[37] This was achieved with the support of The Gambia Second Fiscal Management, Energy and Telecom Reform Development Policy Financing (P173150).

39. **In Burkina Faso, the project successfully supported a substantial increase in the number of government agencies with access to internet services, which reached 2,332 buildings of these entities in 42 provinces.** Compared to 2017, it was an increase of 129 percent in the number of entities and 300 percent in the number of provinces connected. The project supported the establishment of the Simplified Cooperative Society (*Société Coopérative Simplifiée*, SCOOPS), an SPV in charge of the VLP, regrouping the Government and 14 private telecommunication operators and internet service providers (ISPs). This SPV owns and manages the VLP equipment and the supply of international capacity (as part of the international access infrastructure). In addition, an entity in charge of the IXP operation and management was created (Burkina Faso Internet Exchange Point, BFIX), regrouping seven public and private members.

40. **Justification of the WARCIP APL 1B overall efficacy rating.** The overall WARCIP APL 1B efficacy is rated Substantial considering the following factors under The Gambia, Guinea, and Burkina Faso:

- All PDO indicators under Objectives 1 and 2 of the PDO were achieved with exceptional outcomes (three exceeded and one met the target).
- Most of the intermediate outcome indicators exceeded or met their end targets.
- At least one entity in each participating country, with PPP arrangements, was established ensuring dramatic improvements in the quality of communications services. However, all key policy principles underlying the PPP arrangements were not fully accomplished in all countries at project closing date due to difficulties the Governments faced and beyond the project control (E.g., the full liberalization of The Gambia's international gateway, the divestment of the Government's shares in GUILAB).
- The sustainability outlook is positive, driven by the continuous progress in the access to broadband networks and in the reduction of costs of communications services in a competitive telecommunication sector.

C. EFFICIENCY

41. **For The Gambia and Guinea, the new ACE submarine cable was recommended due to its advantage in terms of speed, quality of transmission, and long-term cost savings compared to alternatives such as satellite connectivity and other fiber options.** Although up-front costs were higher, the key cost saving was in the purchasing of international connectivity bandwidth. It was estimated at appraisal that the cost of bandwidth on ACE would be ten times cheaper than the cost of bandwidth on existing African submarine cables linking to Europe (for example, MainOne or SAT- 3/WASC), which was US$280–800/Mbit/s/month and averaged US$500/Mbit/s/month. The cost advantages of ACE were even greater compared to satellite bandwidth costs of at least US$4,000/Mbit/s/month.

42. **In The Gambia, the IRR of 38 percent shows that investment in ACE was highly profitable with a net present value (NPV) of US$17 million and reaching a breakeven point in 2013.** Financial analysis developed at appraisal showed that ACE would break even in 2019/2020 with an internal rate of return (IRR) of 28.8 percent assuming an average bandwidth sale price of US$100/Mbit/s/month and an IRR of 19.9 percent assuming US$50/Mbit/s/month. The final breakeven year depended on actual capacity uptake and the cost of bandwidth. Investment data were calculated based on a discount rate of 15 percent. The financial model was revised with the latest data and estimate available from GSC and other sources. The updated model used an estimate of revenues based on the entire mobile sector provided by the Global System for Mobile Communications Association (GSMA) and a subsequent estimation of the ratio of wholesale and data revenues out of the total mobile market revenues.

43. **In Guinea, it appears that GUILAB has been financially sustainable as it has covered its operational expenditures (OPEX) since 2015, the breakeven point, excluding capital expenditures (CAPEX) (cumulated free cash flow excluding the CAPEX has been positive since 2015).** The financial analysis developed during preparation showed that ACE would break even in 2014/2015 with an NPV to 2025 of US$24.8 million, and the IRR was 22.4 percent. The final breakeven year depended on actual capacity uptake and the cost of bandwidth. Investment data were calculated based on a discount rate of 15 percent. The financial model has been revised with the latest data and estimates available from GUILAB and other sources. The updated model used a conservative estimate of revenues growth, estimated at the midterm review (MTR). The IRR for the new model stands at 2 percent, showing that investment in ACE was profitable. The difference with the IRR estimated at appraisal was mainly because prices did not reach the level of US$100 and US$50/Mbit/s/month projected at appraisal.

44. **For Burkina Faso, the less than two years of operation was too short to properly assess the return on the investment generated by an infrastructure (backbone) with a long-life cycle.** At the time of appraisal, the cost of international capacity to London at the Burkina Faso border was estimated at US$2500/Mbit/s/month and roughly US$10–50/Mbit/s/month to bring that capacity to Ouagadougou. Based on this assumption, the financial analysis estimated an IRR over 10 years at 28 percent, with a breakeven expected between 2016 and 2018 with an NPV of US$8.4 million. The 2018 AF documents, assumed there would be an improvement in the internet penetration with an additional 1.47 million internet users in 2020 and a positive impact on the country's GDP, resulting in an annual GDP increase to up to US$22.2 million over the next few years and improving the initial IRR results. The Burkina Faso VLP was created in 2018 and became operational in January 2020, which means that sufficient data was not available to assess the return on investment at the time of the ICR. In addition, no revenue information has been provided by SCOOPS for this ICR. In consequence, the assessment of the actual financial results has not been performed with respect to the NPV evolution and the IRR result for the project investments, but other elements can help assess the project's value.

a) There is a project's positive impact on the country GDP growth, as well as its contribution to the evolution of the telecommunication services penetration in the country, owing to lower end user tariffs induced through lower international connectivity costs.[38] It can therefore be assumed that the NPV of the project over 10 years (2028) is positive.
b) Aspects of design and implementation related to efficiency included, for the additional fiber optic link to be built between Ouagadougou and the closest border point: (i) for the primary link between Ouagadougou and the border with Ghana (funded under the parent portion of WARCIP): delays in procurement as result of the high complexity of technical aspects involved, which in consequence required a significant effort from the team involved, and lack of capacity in managing the construction of large infrastructure works; and (ii) for the redundancy link between Ouagadougou and the border with Benin (funded under the AF): significant deterioration of the security situation that caused the cancelation of the construction. However, efficiency was not significantly affected as the parent portion fully delivered on international connectivity.

WARCIP APL 1B Efficiency Rating

45. **Efficiency for the WARCIP APL 1B is rated as Substantial** based on the positive economic and financial results of The Gambia, Guinea and Burkina Faso.

[38] 2009 Information and Communications for Development, Extending Reach and Increasing Impact, The World Bank.

D. JUSTIFICATION OF OVERALL OUTCOME RATING

46. **WARCIP APL 1B overall outcome is rated Satisfactory** based on the High rating of relevance, Substantial rating for efficacy, and Substantial rating for efficiency:

(a) **High relevance** of the PDO based on its sustained alignment with World Bank strategy for The Gambia, Guinea, and Burkina Faso.

(b) **Substantial rating for efficacy**, balancing a high level of achievement for the PDO indicators and most of the intermediate indicators, tempered by caveats on fully accomplishing key policy principles underlying the PPP arrangements put in place resulting in moderation of this rating.

(c) **Substantial rating for efficiency**, balancing the positive economic and financial results of The Gambia and Guinea, tempered by the lack of an efficiency analysis for the Burkina Faso.

E. OTHER OUTCOMES AND IMPACTS

Gender

47. **Only Burkina Faso documentation provided information on outcomes and impacts on gender.** It highlighted systematic efforts made to ensure that women could be hired by the contractors of the construction works to carry out appropriate manual activities in the localities along the works pathway. Reports from the work supervision informed about the women hired and technical visits witnessed the groups of working women carrying out their activities and using the appropriate security equipment.

Institutional Strengthening

48. **The Gambia.** Institutional strengthening was supported through capacity building to the personnel of MOICI, regulator PURA, GAMTEL, and the Project Implementation Unit (PIU). The capacity building took the form of study tours, local training, and classroom and long-term training, benefiting more than 200 people in the four organizations at the cost of US$1.6 million.

49. **Guinea.** It included: (a) capacity building to the personnel of the Ministry of Post, Telecommunication, Digital Economy (*Ministère des Postes, des Télécommunications et de l'Economie Numérique*, MPTEN) and the PIU in fiber optic, digital economy, project management, environmental safeguards, and (b) greater regional and international exposure to best practices and technological innovation through attending conferences. In addition, technical support to the Postal and Electronic Communications Regulatory Authority (*Autorité de Régulation des Postes et Télécommunications*, ARPT) and MPTEN to review the legislation and update the telecommunication strategy provided hands-on experience through close cooperation between the consultants and the ministry's personnel.

50. **Burkina Faso.** It included: (a) a total of 177 personnel of the Ministry of Development of Digital Economy and Posts (*Ministère du Développent de l'Économie Numérique et des Postes,* MDENP), the Postal and Electronic Communications Regulatory Authority (*Autorité de Régulation des Communications Électroniques et Postes,* ARCEP), and the PIU benefited from approximately 70 training opportunities addressing different subjects and (b) some 500 administrative departments benefited from communications infrastructure improvements allowing them to access internet connections. Institutional

strengthening was one of the project priorities, involving all the executing agencies. It included in-country and international trainings.

Mobilizing Private Sector Financing

51. **The WARCIP APL 1B leveraged private sector investments in broadband connectivity.** The program focused on establishing in all three countries a SPV in accordance with PPP frameworks and open access principles: improved international connectivity has unleashed private sector investments in expanding the coverage of broadband networks (in particular 3G mobile broadband). The private sector also participated in the project implementation through the focal points arrangements and monitoring and evaluation (M&E) activities. This approach based on private sector financing mobilization was a successful main driving force steering the designs and implementation of the three countries under WARCIP APL 1B.

Poverty Reduction and Shared Prosperity

52. **With abundant international capacity supported by WARCIP APL 1B, the countries can focus on leveraging internet communications to boost development challenges including fostering and inclusive economic growth.** Increasing affordability of internet services was extremely significant given the reduction achieved in the costs of international connectivity: in The Gambia, the price of international E1 capacity decreased by almost 90 percent; in Guinea, the price of international E1 capacity reached the end-of-project target of US$1,400, from a baseline of US$8,000; and in Burkina Faso, the average monthly price of wholesale international E1 capacity link from the capital city to Europe decreased to US$319, from a baseline of US$9,000. Recent evidence[39] points to significant impact of mobile broadband coverage on poverty reduction and on shared prosperity: in Nigeria for example, household total consumption increased by 6 percent after one year of 3G/4G mobile coverage and by 8 percent after two years; the proportion of households in extreme poverty decreased by 4 percent after one year and by 7 percent after two years. Financial inclusion has also been greatly facilitated by improved access to mobile services. In The Gambia and Guinea, after the arrival of ACE submarine cable, the Central Bank has been issuing more licenses for money transfer outlets in rural and urban areas.

Other Unintended Outcomes and Impacts

53. **In The Gambia**, the project supported the establishment of ICT centers to provide access to the internet, digital literacy training, and ICT certifications to rural areas with the objective to bring connectivity to not only the ICT center but also to the nearby villages and schools. In addition, the Ministry of Finance and Economic Affairs (MOFEA) deployed software and servers for the Integrated Financial and Management Information System (IFMIS) to ministries, departments, and agencies under the WB-financed Integrated Financial Management Information System Project, allowing the IFMIS to leverage the ACE internet bandwidth capacity for real-time transfer of financial data between agencies.

54. **In Guinea**, the extension of the fiber optic network financed by the project allowed for initiating the connection of public buildings to the internet, including the connection of the departments of six ministries.

[39] The Welfare Effects of Mobile Broadband Internet, Evidence from Nigeria, Policy Research Working Paper 9230, Poverty and Equity Global Practice, May 2020.

55. **In Burkina Faso**, in addition to the support to increasing the number of government buildings connected to the internet (see paragraph 50) the project financed the drilling of five water wells, the associated construction works, and the pumping equipment to each. These investments were agreed with the communities located in the proximity of the deployed optic fiber connections and in response to the communities' request. Another school benefited from a pilot to install smart boards/projectors and provide e-learning content developed under the World Bank-financed project supporting the education sector.[40]

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

A. KEY FACTORS DURING PREPARATION

56. **The WARCIP APL 1B preparation**. At the regional level, background analysis was conducted to assess the options to address connectivity gaps and lessons learned considered. Project Preparation Advances (PPA)[41] were made available. In The Gambia and Guinea[42], the PPAs financed key studies, identified the best low-cost international connectivity options and supported the establishing of the SPVs with strong private sector participation. The PPAs focused on ensuring that the Government complied with WARCIP principles for PPP and open access and established the right setting for the implementation. It was a successful approach, the SPVs were created in the two countries even before the Board approval of the project. In Burkina Faso, the PPA implementation faced significant delays, so that only the activity to prepare safeguards instruments was conducted; the four others planned activities were postponed to implementation.

57. **The WARCIP APL 1B risks and mitigation measures were adequately identified**. The risk was rated as Moderate Impact for preparation and implementation. It considered the private sector not cooperating or participating in the PPP, political risk of government failure to commit to the project design, and risk of poor execution due to limited institutional capacity. The mitigation measures focused on an increased dialogue and participatory decision-making with the private sector. TA was provided to compensate for the weak government capacity and demonstrate value in the proposed reforms.

58. **Countries demonstrated firm commitment to the project.** Both The Gambia and Guinea were fully committed to not miss the opportunity of a first direct access to international submarine cable. The Gambia provided a rapid response by enacting, with an extension of just one month, all the conditions of effectiveness under a weak institutional and legislative environment. Guinea, with an extension of three months, also enacted all the conditions of effectiveness under a similarly weak environment. Burkina Faso was included in the WARCIP APL 1B based on a strong government request to benefit, as a landlocked country, of opportunities arising from more abundant and cheaper international connectivity in coastal countries.

59. **The PPP in The Gambia and Guinea were designed during the preparation stage, whereas in Burkina Faso it was delayed to implementation.** The model adopted on coastal countries Guinea and The

[40] Burkina Faso Higher Education Support Project (P164293)
[41] PPAs: The Gambia, US$2 million; Guinea, US$5 million; Burkina Faso, US$1 million.
[42] Guinea was processed as an emergency operation under OP 8.00 due to the tight timeline for the country to pay the financial obligations to the ACE consortium, including outstanding fees.

Gambia was the creation of a SPV with equity co-funded by the Government and private operators. WARCIP would directly finance the ACE membership fee. The shareholders would access a share of the acquired bandwidth proportionally to their equity share. Finally, private operators would have the option to increase their equity by buying the shares owned by the Government. At the preparation stage, studies supporting the PPP design and financed by the PPA were not developed for landlocked Burkina Faso. Also, the PAD peer-reviewers acknowledged that the support to Burkina Faso was the most complex under the WARCIP APL 1B, and that some technical questions could only be answered during implementation, including definition of the exact SPV/PPP structure. In addition, a longer implementation was anticipated (compared to Guinea and The Gambia), because terrestrial backbones are more complex to structure and deploy. In consequence, disbursements were expected to be slower, particularly given that selecting and implementing a TA needed to take place before any major disbursements.

60. **Implementation arrangements** were thoroughly assessed during preparation and an action plan was put in place to compensate for the countries' lack of experience. In The Gambia and Guinea, the implementation was entrusted to new PIUs, while in Burkina Faso it was assigned to an existing entity[43] with solid experience in World Bank-financed projects. A focal point system including public and private stakeholders was designed to strengthen the implementation arrangements, enabling the PIUs to focus on the operational aspects while bringing the know-how and expertise of market players, and act as a platform for stakeholders to efficiently cooperate.

B. KEY FACTORS DURING IMPLEMENTATION

61. **The disbursement of ACE membership fees for the connectivity component in coastal Guinea and The Gambia happened in the first year of implementation thanks to adequate effectiveness conditions linked to the reforms. However, commitments for further government divestiture in the PPPs remained opened after project closing.** The largest activity under The Gambia and Guinea components was the financing of the ACE (see map in Annex 9) membership fees. Amounting to approximately 75 percent of the total project cost, and was disbursed early in the first implementation year, facilitated by the establishment of the SPV arrangement as an effectiveness condition. Commitments for further government divestiture in the PPPs remained however opened by project closure**.** For The Gambia, the shares of SPV GSC were divided into 49 percent for the Government of the Gambia (GoTG) – 19 percent through the Ministry of Finance and 30 percent for GAMTEL – and 51 percent for five private sector players for a total available capacity of 10 Gbps. It was planned for the government shares in GSC to be made available to other parties under a divestment plan. By the project closure in 2016, this divestment had not materialized and has still not in 2021. In Guinea, implementation was particularly facilitated by the establishment of GUILAB, the SPV, as an effectiveness condition. The shares of GUILAB were divided into 29.7 percent for the Government of Guinea, 11.65 percent for Guinea Telecommunication Company (*Société Guinéenne des Télécommunications,* SOTELGUI) (also currently owned by the Government of Guinea), 24.12 percent for Orange Guinea, and the rest for nine different operators and service providers. The project planned for the government shares in GUILAB to be made available to other parties under a divestment plan. But by project closure, the government had not yet taken actions to this end.

62. **Slow implementation of the IXP in Guinea due to lack of stakeholder's agreement**. The establishment of the IXP was slow to materialize due to disagreements on where the point of presence

[43] The existing PIU also managed two other WB projects during the first two years.

would be hosted. Stakeholders came to an agreement only near the end of the project and the IXP was established under the management of the regulator. The virtual government network was accomplished linking five government departments in the capital city.

63. **In landlocked Burkina Faso, implementation of the connectivity component was impacted by different factors.** The support focused on the VLP and terrestrial cross-border connectivity infrastructure. The resultant transaction processes significantly contributed to a more complex, longer implementation and significantly slower disbursement. During the 10 years of the implementation, much of the Government and the World Bank team's effort focused on addressing the factors associated with the delays and related implications. Still, there were important factors that properly steered the implementation toward the envisaged achievements, as follows:

(a) *The performance of the PIU has been found effective throughout implementation*. The assigned PIU proved to be effective in managing the implementation. Strengths included working well with the technical teams, properly coordinating inputs to highly technical terms of reference and properly taking actions for advancing fiduciary arrangements. Support from the focal point system was key.

(b) *Implementation delays.* Political crisis and security issues due to extremism led to activities changes, cancellation of major works and significant implementation delays. Other factors included: the lengthy national procurement procedures, unmotivated civil servants, the highly technical nature of the connectivity activities, and changes in the executing agencies disrupting the activities. The COVID-19 sanitary crisis also caused major delays in the last years. Additional factors were the absence of counterpart funds financing activities that were not eligible under the financing (such as supporting the participation of a wide range of stakeholders), and frequent change of personnel working in the executing agencies creating institutional vacuum and loss of continuity.

(c) *Key advisory services delays.* For both the VLP/IXP and capacity purchase, the Advisory Services contract was key, providing consolidated TA in designing management arrangement options, procurement, implementation, and operation of connectivity activities. Procurement processes and implementation delays significantly affected the contract implementation. The final product (bidding documents for the acquisition of international broadband) was delivered by the original closing date (December, 2016). Broadband was acquired about two years later (September, 2018).

(d) *Challenges faced by the construction of the connectivity (Ouagadougou and Paga, on the Ghana borders) (see map in Annex 9).* One year before the original closing date, the first procurement process was unsuccessful despite the joint efforts from the Government and the World Bank to find a viable solution to the multiple and complex technical and financial issues in question. As a result, this procurement was relaunched, restricted to the firms that initially expressed interest. One year later, the contract was signed with higher costs requiring overall cost adjustments.

(e) *Creation of the VLP.* The entity in charge was created in 2016, 5 years after the project started in June 2011, and the process for obtaining required legal and regulatory documentation was initiated. Causes for the delay in the creation of the SCOOPS included the complexity and the coordination requirements of the PPP model chosen by the stakeholders (SCOOPS regrouping 14 public and private entities). The completion of the entity creation (services tariff validation and the signature of the convention for the transfer of assets and the maintenance of the fiber optic) was accomplished 3 years later, in 2019.

(f) *Acquisition of the international bandwidth.* The selection process was much longer than projected, and multiple exchanges were required to adapt the contract specifications to the license terms. The purchased international bandwidth was equivalent to US$4 million, a significant downsizing

compared to the initial envelope of US$10 million. The AF supported additional purchase, partially restoring the initial envelope.

(g) *The AF.* Amounting to US$20 million, it included a set of scale-up activities: (i) expansion and strengthening of connectivity infrastructure; (ii) creation of an enabling environment and strengthening of institutions for improved connectivity; and (iii) project implementation. The largest construction activity (the link between Burkina Faso and Benin) was dropped, initially given the implications from crossing a disputed area (OP 7.60 - Projects in Disputed Areas was triggered) and finally due to major security concerns[44]. This freed some funds to finance the strengthening of the VLP/IXP, the creation of an addition VLP/IXP, and the construction of a 25 km regional link.

64. **Implementation of the Enabling environment faced a slow progress both in The Gambia and Guinea.** By the MTR in The Gambia, only 21 percent of the funds allocated to the component were disbursed. Guinea faced similar trends. Implementation ratings were downgraded in both countries. In The Gambia PURA, the regulator, commissioned a study on the legal and regulatory approach to open access for both international and national connectivity which did not find any dominant position in the international data transmission and therefore did not recommend ex ante regulatory obligations. Yet, PURA reported that alternative ISPs were facing difficulties accessing international capacity on fair terms through the private operators. Also, the liberalization of the international voice gateway was a government commitment to the project, which remained outstanding by the project closure, but was finally achieved in 2019. The slow pace resulted in an accumulation of procurement processes, jeopardizing the implementation of some key activities. In Guinea, most of the activities supporting the ARPT, the regulator, were delayed and eventually dropped, due to the entity lack of interest and cooperation. For Burkina Faso, most of the activities to strengthen the regulatory environment and the PPP management have been completed, including a national development policy proposal for the digital economy, a development strategy for the broadband universal access, and a sector policy proposal and an implementation action plan.

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

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

Monitoring and Evaluation Design

65. **The logic underpinning WARCIP APL 1B was conceptually clear and coherent as explained in their respective project documents.** The PDO and intermediate indicators were adequate; however, during the implementation of the M&E system for The Gambia and Guinea it was highlighted that no PDO indicator was directly measuring the PDO objective "to increase the geographical reach of broadband networks". Yet, this ICR considers that PDO indicators in the three countries were appropriate proxy for that PDO objective, which has also been confirmed under the other WARCIP projects.

66. **The target values could have benefited from adjustments during implementation, when increases such as the uptake in internet services could be attributed to a gamut of factors.** Compared to other sectors, the telecommunication markets evolved more rapidly, largely due to the fast pace of

[44] In October 2020, a security assessment on the situation in Eastern Burkina Faso – commissioned by the GoBF, through the project – was conducted and concluded that the Fada-Pama area's insecurity level was high and dangerous, including attacks against civilians and regular checks by terrorist groups, rendering it impossible to start and complete the construction of the Fada-Pama fiber optic link safely and on time.

development of the underlying technologies, making it difficult to accurately predict the evolution of certain market indicators target and values. This aspect was not fully incorporated in the M&E design.

67. **The M&E scope was appropriate, its complexity was manageable, deeply inserted in the ICT market, and conducive to a strong partnership with the private sector.** The approach proposed was successful in obtaining the information through this arrangement as well as in building partnerships. However, the intermediate indicator "retail price of internet services" could have been included as a PDO indicator since it consisted of a direct measure of the second PDO objective "lowering the cost of communications" and was essential to gauge the impact of the project on the internet retail market and the overall project beneficiaries. Also, including an indicator on the quality of the internet services to complement the indicators on access and prices might have been appropriate.

68. **The PIUs were required to have a part-time M&E specialist and establish standard formats and guidelines for data collection and reporting.** The main data used for the M&E of the outcome indicators was collected from the private sector operators and was based on data used by operators and international organizations. The PIUs were also responsible for providing, where necessary, capacity building for the various stakeholders to ensure the adequate collection of project data. Through Component 3, funds were allocated for capacity building for the M&E specialists and for regular reports.

69. Although with some shortcomings, the Results Framework retained clarity and presented clear indicators to monitor the progress of the achievement of the objectives.

M&E Implementation

70. **The evaluation reveals some quality issues of the M&E implementation among the countries.** In particular, in The Gambia, the quarterly reports and annual progress reports were not generated as per the provisions of the Project Implementation Manual and PDO indicators were not regularly and consistently reported on. There was a delay in recruiting an M&E expert which led to weakness in generating progress reports and periodic measurement of performance indicators. This situation somewhat improved in the latter half of the project implementation.

71. **In Guinea, M&E implementation was of a better quality.** A qualified M&E specialist was recruited by the PIU, first on a part-time basis and later as a full-timer to strengthen the overall system. The quarterly M&E reports were timely prepared and recommended corrective actions to the indicators and data collection to improve the process. The PIU also commissioned beneficiary surveys at the midterm and end-of-project milestones. The MTR found that the request for data from operators exceeded the requirements of M&E and was sometimes misleading and incorrect. The review suggested revising the data collection forms and adjusting M&E to the exact needs of the project.

72. **In Burkina Faso, the M&E system worked as expected.** Good-quality reports were submitted as scheduled. The monitoring indicators were updated following the methodology adopted and the agreed schedule, allowing to assess key expected project impacts. An outstanding aspect of the M&E system was that it was designed to involve a large number of public and private entities directly and indirectly involved in the project implementation, allowing for capturing key impact expected from the project within the public and private sectors. The M&E implementation was under the PIU responsibility. The PIU organized

the data collection involving ARCEP, public sector entities involved, and private sector entities which included the providers and other beneficiaries as well as individual users.

73. **This ICR found that the M&E reporting in the World Bank system was insufficiently accurate with respect to the consolidation of the values aimed at reflecting the aggregated results of the WARCIP APL 1B.** No information was found on the protocol followed to calculate the consolidated values. Many of the consolidated values seemed to be the simple average of the countries' values, but this pattern was not consistently followed. Fortunately, the information by country is consistent and provided for this ICR to assess the achievement of each outcome.

M&E Utilization

74. **As mentioned earlier, the intensity and quality of the M&E utilization varied by country as well as along the implementation timeline.** In The Gambia, the delay in recruiting an M&E specialist created difficulties in incorporating the M&E flow of information into the overall project implementation process. In Guinea, the quality of the M&E system was high, and the M&E outputs influenced the project implementation decision. This was particular evident with respect to the second PDO objective "reducing the cost of communications services," which contributed to additional studies to identify factors hindering the levels of cost reduction expected. In Burkina Faso, the M&E was critical to capture key impacts expected from the project and inform the PDO and intermediate indicators.

Justification of Overall Rating of Quality of M&E

75. **Quality of M&E is rated Substantial**, for the following reasons:

- The moderate shortcomings in the availability of timely data are balanced against a strong approach, supported by solid experience in the sector, surveys reaching out to multiple stakeholders particularly the private sector, as well as individual users.
- Insufficient accuracy of the M&E reporting in the World Bank system.

B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE

Environmental and Social Issues and Safeguards Compliance

76. **The WARCIP APL 1B and its activities in The Gambia, Guinea and Burkina Faso were categorized as Category B and triggered four safeguard policies: Environmental Assessment (OP/BP 4.01); Natural Habitats (OP/BP 4.36); Physical Cultural Resources (OP/BP 4.11); and Involuntary Resettlement (OP/BP 4.12).** The project contributed to generate substantial social benefits, including the possibility of better access to quality and lower-cost ICT services for the population. Given the nature of the construction works required, no major social and environmental negative impacts were anticipated and encountered during the project implementation. Overall, only some temporary, low to moderate environmental and social impacts, mostly localized, were anticipated and occurred.

77. **In The Gambia**, an Environmental and Social Impact Assessment (ESIA), Environmental and Social Management Plan (ESMP), and Resettlement Action Plan (RAP)[45] were prepared and disclosed.[46] These

[45] RAP prepared by SAL Consult Limited, PO Box GP20200, Accra, May 2011.
[46] ESIA and RAP disclosed on May 11, 2011.

instruments assessed and provided the needed mitigation measures to address the minor environmental impacts that were anticipated and occurred during implementation. The RAP identified that the construction works affected 27 people and characterized the negative impacts as temporary inconveniences, not affecting any existent structure and not requiring land acquisition.

(a) ***RAP implementation.*** In June 2013,[47] two years after the RAP preparation, the implementation had not been initiated. The total number of people affected was then listed as 15, entitled to an estimated total compensation close to US$1,500.00. One year later, according to the MTR Aide Memoire[48], the payment of the compensations was not yet concluded. A significant effort was mobilized to locate the remaining people to compensate, including constant visits to the areas and announcement on two widely listened to radio stations, including in the local languages. Locating the beneficiaries was the main obstacle since many of them had moved elsewhere and the places were being occupied by completely different businesses. Compensation was provided to the six people who were located.[49] The institutional responsibility for the RAP implementation was identified as the main reason for the delay. As per provision in the RAP, MOICI was responsible for implementing the plan through GAMTEL. However, there was a contention between the two entities regarding who should have made the funds available. The stall in agreement was identified as the main cause of the delay. In addition, the lack of clarity on the RAP about the roles of different entities involved in implementing the overall mitigation measures contributed to the delay.

(b) ***ESIA/ESMP implementation*.** According to records,[50] no evidence of environmental negligence was identified, although there was no documentation supporting evidence that the contractor/consultant actually made reference to the ESIA and applied the management/mitigation plan outlined in the ESIA. Likewise, there was no evidence supporting the adoption of the environmental and social management measures for the operational phase.

78. **In Guinea**, following the procedures under OP/BP 8.00, 120 days after effectiveness, an Environmental and Social Screening Assessment Framework was prepared. A RAP was not prepared since the landing station was built in a shore zone, government owned and free of any type of use[51]. The activities were assessed to have minimal and temporary negative environmental impacts and mitigation measures were incorporated in the technical designs of the construction works and verified by the works supervision. In addition, intense capacity building was provided to GUILAB personnel on appropriate environmental procedures for the operations of the infrastructure built. During the works, the impacts were also minimal and temporary.

79. **In Burkina Faso**, the following activities were associated with potential negative environmental and social impacts: the construction works for deploying the fiber optics between Ouagadougou and Paga, Fada and Pama, and Dindéogo and Zabré. The safeguard instruments prepared were an Environmental Impact Notice (*Notice d'Impact Environmental, NIE*), and a RAP (both instruments disclosed in Burkina

[47] WARCIP - The Gambia, Third Implementation Support Mission, June 17–22, 2013, Aide-Mémoire.
[48] WARCIP - The Gambia, MTR Aide-Mémoire, June 17–21, 2014
[49] The results of the compensation payments are informed in the Monitoring Report on the Resettlement Payment, from MOICI, dated October 7, 2014. The Supervision Mission Aide-Mémoire January 19–23, 2015, acknowledges the payment of compensation to just six of the 15 people affected. Also acknowledge on the Implementation Status and Results Report No. 11.
[50] WARCIP - The Gambia, Third Implementation Support Mission, June 17–22, 2013, Aide-Mémoire.
[51] Étude d'Impact Environnemental et Social du Project WARCIP-Guinée, Rapport Final Décembre 2011 (page 56)

Faso from October 17 to November 17, 2014). In addition, an environmental and social audit was carried out in 2018. The construction works between Fada and Pama were not executed due to security concerns. Safeguard instruments prepared for the Dindéogo-Zabré extension included an ESIA and a RAP.

(a) **The social and environmental impacts from the construction works between Ouagadougou and Paga were limited.** The social impacts were restricted to partial affectation of structures and temporary loss of revenues. A total of 277 households were preliminary identified as affected, and 274 received financial compensation (FCFA 23 million, approximately US$40,000). The RAP completion report informed that all compensation measures were accomplished, including the payment of financial compensations and addressing complaints. The implementation of the environmental mitigation measures addressed the temporary and limited negative impact caused by the construction works. The implementation was properly monitored and a full review was carried out by closure. The review findings confirmed that the implementation of the environmental safeguard instrument was appropriate as well as the results obtained from the measures adopted. Noteworthy were the excellent results achieved from the tailored measures put in place to mitigate potential negative impacts from the construction works that crossed the National Park Kaboré Tambi. In addition, following the ESIA recommendations, approximately 1,600 trees were planted in selected sites located in the districts where the optic fiber was deployed, benefiting schools and religious places.

(b) **The social and environmental impacts from the construction works between Dindéogo and Zabré were also limited.** The technical designs incorporated social and environmental mitigation measures that effectively reduced impacts. The social impacts were limited to partial affectations of structures, economic revenues, trees, and crops—affecting 198 households. Financial compensation was paid to all 198 households (FCFA 19 million, approximately US$33,000.00). The report on the completion of RAP implementation informed that all the compensation measures were fully accomplished before the closure, including addressing complaints received. The report also informed on the methodology adopted and overall compliance with the OP 4.12 - Involuntary Resettlement requirements. The environmental instrument designed to mitigate the temporary and limited impacts caused by the construction works was properly implemented. The incorporation of the required mitigation measures into the designs of the works, as well as in the procedures implemented by the works supervision, were instrumental for ensuring the appropriate results obtained.

(c) **Associated with the construction works, a Grievance Redress Mechanism (GRM) was developed and implemented, which included informing the communities in the direct and indirect affected areas.** In addition to information campaigns carried out in these communities, the social team involved distributed booklets providing clear and complete information regarding the functioning of the GRM, including contact information to submit complaints and receive feed backs. Also, Gender-based Violence (GBV) information campaigns were carried out, which alerted the communities regarding the nature of the harm and the importance of channeling the associated complaints through the GRM. Neither the GRM nor GBV mechanism have been solicited during project implementation.

Fiduciary Compliance

80. **The fiduciary risk rating was Substantial under the WARCIP APL 1B and the fiduciary performance rating ranged from Moderately Satisfactory to Satisfactory, which was significantly influenced by the different designs in The Gambia, Guinea, and Burkina Faso.** The Gambia and Guinea projects financed the payment of the fee to access ACE, which resulted in disbursing close to 70 percent of the funds shortly after effectiveness. In contrast, all the activities in Burkina Faso required standard fiduciary processing. Also, the longer implementation period encompassed significant political uncertainties in the country, which contributed to the fiduciary difficulties. Audit reports were prepared, expressing unqualified/unmodified opinions. Specific information on fiduciary performance in each country is provided in the following paragraphs.

81. **In The Gambia, procurement performance** was rated Moderately Satisfactory throughout. Although the procurement process applied to less than 25 percent of the project funds,[52] it faced significant delays largely due to lengthy coordination required between the various entities involved in the several processing steps, as part of the focal point arrangement the adopted (see paragraph 60).

82. **Financial Management (FM) performance** was rated mostly Satisfactory but downgraded to Moderately Satisfactory for short periods. Mitigation measures put in place included (a) recruitment of an FM officer with satisfactory competence and experience, (b) computerized financial and accounting system installed, and (c) ex post audits undertaken by qualified professional issuing quarterly reports. These measures produced the envisaged results. Specific supervision missions were carried out at least twice a year, finding that the staffing was adequate and bookkeeping updated. Also, satisfactory interim financial reports (IFRs) were submitted on time.

83. **Disbursement** reached approximately 70 percent in the first year of implementation, reflecting the ACE fee payment and in line with the project designs. The remaining funds mainly financed activities under Component 2 and delays mostly related to procurement processing delayed disbursement. The exchange rate losses from SDR to US$ contributed to adjustments in activities.

84. **Audit.** External audit reports were prepared under the terms of reference acceptable to the World Bank. Unaudited IFRs and audit reports were mostly delivered on time. There were delays in the procurement process for hiring the auditors (short list not acceptable) requiring restarting the selection process. All IFRs were considered acceptable, and all audits expressed unqualified/unmodified opinions.

85. **In Guinea, Procurement performance** was rated Moderately Satisfactory throughout, with rating reflecting the performance of the WARCIP APL 1B countries. At preparation, the substantial weaknesses in the capacity to implement procurement procedures stood out. Procurement for activities under the PPA were managed by a team supporting projects in the education sector, which had experience managing and operating World Bank projects and included a qualified procurement specialist. As for the new PIU created, the project provided for a set of mitigating measures including the recruitment of a qualified and experienced procurement specialist, training of all involved actors, the development of a detailed manual of procedures, and a thorough filing system. About 26 percent of the funds were required to follow World Bank procurement procedures, which were managed in an efficient and appropriate manner throughout implementation. Nevertheless, some delays affected the procurement process which were mitigated with additional training.

[52] This refers to the activities under Component 1 and Component 2.

86. **FM performance** was rated mostly Satisfactory but downgraded to Moderately Satisfactory for short periods. Similar to The Gambia, thorough mitigation measures were implemented increasing capacity, which, at preparation, were found not to meet the required standards, and the envisaged results were achieved.

87. **Disbursement** reached approximately 70 percent in the first year of implementation, reflecting the ACE fee payment and in line with the project designs. The remaining funds mainly financed activities under Component 2 and delays mostly related to procurement processing delayed disbursement. Impact of losses of SDR to US$ led to adjustments of the distribution of funds among activities.

88. **In Burkina Faso, procurement performance** was rated Moderately Satisfactory during most of the implementation, and procurement risk was rated Substantial throughout. A particular issue frequently raised during most of the implementation period was the low ratio between the number of procurement processes completed and the number of processes planned. Moreover, the ratio was even lower in terms of value, which reflected over the project disbursement. Nevertheless, it was also highlighted that the procurement processes were not under the sole responsibility of the PIU, since several other government representatives were involved playing an important role in review and approval. The procurement specialists in the PIU had solid experience, particularly in World Bank procurement procedures. Actions agreed and implemented to improve the procurement processing included (a) intense and frequent monitoring of the processes through permanent consultation with the government departments involved (Directorate of Public Procurement [*Direction des Marchés Publics*] and General Directorate of Control of Public Procurement and Financial Commitments [*Direction Générale du Control des Marchés Publics et des Engagement Financiers,* DGCMEF]), aiming to speed up the processing; (b) suppression of the double non-objection procedures (DGCMEF; IDA); and (c) strengthening of the capacity of the procurement committees with respect to the World Bank procurement procedures to improve the review consistency. Low capacity of local entrepreneurs and complexity of national procurement system constituted major constraints for the implementation.

89. **FM** was rated Moderately Satisfactory during most of the implementation. FM risk was rated Substantial. The FM arrangements in place were found to be appropriate throughout implementation. However, to better manage risks the following were pursued: increase the involvement of the internal auditor in the review of the project operations; improve the setting of analytical, budgetary, and accounting of FM software; and start early on the selection processes of the external auditor. The main weaknesses that affected the implementation of FM procedures were weak data control in FM systems, delays in financial reporting, some internal control deficiencies, insufficient compliance with core rules, delays in updating the accounting and monitoring of budget execution, internal audits not using generally accepted standards, and adequate external audit but whose reporting and follow-up faced delays. Gradually, these weaknesses were overcome. By the MTR, the FM arrangements were found to be fully appropriate.

90. **Disbursement** experienced significant delays. Multiple factors discussed earlier explain this situation. The fluctuation of the exchange rate in favor of the US dollars leveraged a budget surplus allowing the financing of complementary investments.

91. **Audit.** External audit reports were prepared under the terms of reference acceptable to the World Bank. Unaudited IFRs and audit reports were mostly delivered on time. All IFRs were considered acceptable, and all audits expressed unqualified/unmodified opinions.

C. BANK PERFORMANCE

Quality at Entry

92. Key elements of the quality at entry for WARCIP APL 1B, are based on:

- The World Bank identified and helped prepare a timely, groundbreaking program and projects of high strategic relevance at the regional and country levels, with important medium- and long-term implications. Lessons of similar projects were considered. The implementation arrangements proposed for the three projects were sound, mainstreaming project management and coordination with various key public and private sector stakeholders.
- The program was a bold and innovative initiative building on the wave of reforms and ICT sector improvements in the ECOWAS region as well as on The Gambia, Guinea, and Burkina Faso's commitments to further reforms.
- In terms of design of the project, (a) the low capacity of the clients in fiduciary procedures, as well as in the technical and managerial aspects related to the envisaged PPP and arrangements for Direct/Virtual landing points, was properly identified; (b) project preparation in The Gambia and Guinea was well coordinated with the ACE submarine cable project unfolding, ensuring efficient synergies; (c) composition of the World Bank team preparing the project was well balanced, including staff with operational experience, strong ICT technical backgrounds, economics skills, public administration knowledge, and country experience. However, in Burkina Faso, the conceivable larger delays inherent to the project design in a landlocked country were not adequately factored in.
- Despite the program's long implementation period (from 2011 to 2021), the staff turnover was not excessive, allowing for proper program continuity as well as its three projects.
- The inherent risks were assessed in the WARCIP APL 1B PAD and technical annexes produced for The Gambia and Burkina Faso, and an Emergency Paper for Guinea. Nevertheless, the strategy adopted has proven somewhat insufficient to avoid the shortcomings related to the further divestment of Government in the SPVs established in The Gambia and Guinea. Also, possible risks were not identified with respect to the severe security and political uncertainties in the border areas of Burkina Faso and Benin, which unfolded early in the AF implementation and during most of the implementation, causing significant delays and the cancelation of key activities (refer to footnote 39).
- The rapid increase of competition intensity in the telecommunication market, which led to higher penetration rates and lower prices than previously expected, was not anticipated.
- In The Gambia and Guinea, an outstanding achievement during preparation was the World Bank team's efficient and timely response to Government requests to fund ACE membership fees – more specifically in supporting the Governments in meeting the effectiveness conditions, establishing the SPV, and securing the required PPA funds, under a tight deadline to meet the submarine cable deployment schedule.
- M&E arrangements, as well as the identification of the potential environmental and social negative impacts and arrangements for the associated safeguard instruments, were adequate.

93. **The World Bank's performance in ensuring quality at entry for the WARCIP APL 1B is rated Satisfactory.**

Quality of Supervision

94. **As the documents and stakeholders consulted attest, the World Bank team provided adequate support and supervision to the projects and worked closely with the implementing agencies and beneficiaries to ensure achievement of project objectives in an efficient way.** The World Bank team provided substantial guidance to the Governments of The Gambia, Guinea, and Burkina Faso as well as to the different public and private entities involved. An appropriate number of supervision missions[53] were carried out, in addition to joint coordination and review meetings involving different beneficiaries. The team reported consistently on issues through Aide Memoires and Implementation Status and Results (ISR) reports. The World Bank team followed up closely with the PIU on any delays that emerged and provided prompt support in finding solutions.

95. **The World Bank team effort in supporting and encouraging the Governments of The Gambia and Guinea to address the pending policy and regulatory measures that were relevant for the overall ICT development in the two countries was noteworthy.** Analytical and advise studies were developed and comprehensive discussions were held addressing issues such as the liberalization of the international gateway, adoption of an open access policy, and business strategies supporting GAMTEL/GAMCEL in The Gambia and GUILAB in Guinea. In Burkina Faso, the World Bank team effort in supporting and encouraging the Government and the PIU in addressing delays in implementation was noteworthy. This effort resulted in mitigation of issues beyond the project's control, such as the double processing required by the national procurement policies and those related to the security issues and political uncertainties.

96. **M&E implementation was adequate, although some modest shortcomings in Guinea due to the difficulties the Government faced in hiring a seasoned specialist.** However, the M&E reporting in the World Bank system was not sufficiently accurate, particularly with respect to the aggregated data reflecting the WARCIP APL 1B consolidated achievements.

97. **The Word Bank's performance in ensuring quality supervision is rated Satisfactory**, balancing the strong overall achievements tempered by moderate shortcomings related to the non-accomplishment of a key policy element underlying the PPP arrangement in The Gambia and Guinea and the M&E reporting in the World Bank system.

Justification of Overall Rating of Bank Performance

98. **Overall World Bank performance is rated Satisfactory.** This takes into account moderate shortcomings at Quality at Entry, balanced against strong and effective Quality of Supervision, moderated (as recommended by the ICR Guidelines) by the project Outcome rating of Satisfactory.

D. RISK TO DEVELOPMENT OUTCOME

[53] The number of supervision missions was approximately 10 for The Gambia, 11 for Guinea, 17 for Burkina Faso.

99. **The Risk to Development Outcome of WARCIP APL 1B is Moderate.** In The Gambia and Guinea, the connection to the submarine cable ACE has unlocked a major constraint to the development of the broadband internet market in both countries, which also dramatically improved in Burkina after the investments in connectivity infrastructure to link with coastal countries.

100. **In both Guinea and The Gambia, the payment of the ACE consortium was a one-time membership fee.** It allowed the countries to become a member with a voice in the management and operation of this international submarine cable and the SPVs (GSC in The Gambia, GUILAB in Guinea) established with the support of the project are ensuring maintenance of the landing station and international connectivity services in the long term. The revised legal and regulatory framework has improved under the project, opening up the sector in both countries to increased private sector investments and expansion of broadband services.

101. However, in The Gambia and Guinea there were remaining risks to the development outcome.

102. **In The Gambia**, the main risks were related to:

- *Open access to ACE***.** Managed by GSC and operators, access to ACE capacity was based on their respective shares in the SPV, thus not regulated on open access terms, creating barriers to entry.
- *Open access to the ECOWAS Wide Area Network Project (ECOWAN) network***.** Operators and ISPs voiced concerns that the fees charged by GAMTEL to use ECOWAN were high, which made expanding their services over this network unprofitable. The other concern was the financial viability of ECOWAN and the recovery of the investment costs funded by the Islamic Development Bank (IsDB) if the network was not sufficiently used by the private operators. The private operators requested the GoTG that part of the ACE layaway payments could be reinvested into GAMTEL for it to pay the IsDB loan and thus reduce the access fee to ECOWAN. Thus, high access fees risked impeding the further reduction of internet service tariffs and the diffusion of services to suburban and rural areas.
- *Lack of divestiture in the ACE SPV.* The GoTG retained 49 percent shares in the GSC through the MOFEA and GAMTEL. Other WARCIP projects included the provision that no one shareholder has the right to hold more than 25 percent of the shares in the SPV to ensure that no one operator or shareholder can control the capacity of ACE and therefore affect competition in the market. This, however, depended on the capacity of the private sector to invest more in the SPV. Given the abundance of capacity and the limited competition from players outside the GSC PPP, the risk of the lack of divestment was limited. However, medium- to long-term plans should account for divestment, including the option to opening the capital of the GSC to players outside the telecommunication market in case capital within it is limited.
- *International voice gateway.* The monopoly of GAMTEL over the international voice gateway was still perceived by private operators as an impediment to the growth of their business since most of the revenues from this market segment were directly controlled by GAMTEL. While the international voice gateway was still a monopoly under the management of GAMTEL at the closing of the project, it has since been liberalized with the issuance of gateway licenses to the private mobile operators in August 2019. This was achieved with the support of The Gambia Second Fiscal Management, Energy and Telecom Reform Development Policy Financing (P173150).

- *Vision for State Owned Enterprises GAMTEL/GAMCEL.* The project funded the business strategy for GAMTEL and the audit to take stock of GAMTEL and GAMCEL's human resources. The two studies and other assessments by GAMTEL provided the Government a strong foundation to start developing a pathway for reforms. Since the closing in 2016, the World Bank was asked by the GoTG to conduct a restructuring options study for GAMTEL, GAMCEL and the wholesale network. Based on this additional analysis, the GoTG has hired a transaction advisor to advise on a transaction strategy. This is being funded through by The Gambia Fiscal Management Development Project (P166695) and is expected to be completed by the end of 2022.

103. **In Guinea**, the main risks were related to:

- *Lack of divestiture in the ACE SPV.* Under PPP structure, no one shareholder had the right to hold more than 25 percent of the shares in GUILAB. This provision was in place to ensure that no one operator or shareholder could control the capacity of ACE and therefore affect competition in the market. At the closure in 2016, the Government still held 29 percent of the shares, in addition to 11 percent allocated to SOTELGUI, which was also owned by the Government.
- *An increase in the prices of wholesale international capacity.* The new shareholder agreement of GUILAB introduced a new model of governance that could result in an adjustment in the price of international connectivity (wholesale market). At the closure in 2016, GUILAB was developing the list of services and tariffs of international connectivity to offer its shareholders as well as any new entrant. However, there was a need for ARPT to ensure that prices were cost oriented and do not impede the development of the market and the entry of new players and services.
- *Prices of national connectivity*. The wholesale rates to access the backbone capacity that distributed international connectivity domestically would directly affect the price of the retail operators. Studies conducted showed that the infrastructure operated by the National Backbone Managing Company (*Société de Gestion et d'Exploitation du Backbone National*, SOGEB) might be structurally in deficit and will be difficult to recover its costs in the medium term. The availability of a national fiber optic backbone was essential for the growth of the market and was a direct complement to the international capacity. Careful assessment of the different business models and options for commercializing this national capacity is needed.

104. **Since The Gambia and Guinea components under WARCIP APL 1B closed in December 2016, short briefings on the current status of the digital economy in The Gambia and Guinea are provided in Annex 7.** These briefings are extracts from the World Bank Digital Economy for Africa (DE4A) country diagnostics, The Gambia (2021) and Guinea (2020).[54]

105. **In Burkina Faso, the increasing insecurity in many areas of the country constituted the most relevant risk.** The intensity of conflicts in these areas might damage the connectivity infrastructure financed by the project and disrupt the service. The GoBF and SCOOPS have been taking preventive actions by maintaining frequent dialogues with providers and overall beneficiaries.

[54] See *https://www.worldbank.org/en/programs/all-africa-digital-transformation/country-diagnostics*

106. **Further increase of insecurity may cause additional risk**. Increased intensity of conflicts and related damages in the telecommunication infrastructure may trigger the rollback of SCOOPS, if some of the entity members would no longer be interested in maintaining their participation.

107. **In spite of this difficult context, the strengths of the investments in Burkina Faso include:**

- The connectivity link between Ouagadougou and the closest border point, Paga in Ghana, including an extension links to the Bagré Growth Pole and Dindéogo-Zabré, effectively supplying the bulk international bandwidth by offering redundancy, primary connection, security, and wider access to low-cost connectivity capacity (332 km of connectivity links) delivered to the VLP/IXP (equipment, installation, configuration, and training) installed in Ouagadougou and in Bobo-Dioulasso.
- SCOOPS, the SPV managing the VLP and the supply of international communication capacity, was created and became fully operational. It included the Government and 14 private telecommunication operators and ISPs. The entity statutes were adopted and signed by all stakeholders (ensuring, among others, that the VLP will be operated under the obligations of open and nondiscriminatory access). The entity in charge of the IXP operation and management has been created (BFIX) regrouping seven public and private members.
- Due diligence of the regulatory environment and policy making and regulatory capacity has been accomplished, and a PPP for the national infrastructure was designed.
- According to the Beneficiary Survey (see Annex 6):
  - 16 out of the 21 ISPs started operating within the last five years, which coincides with the start of the operation of VLP financed by the project.
  - 90.5 percent of the ISPs surveyed stated that they project an upward trend for their business.
  - 60 percent of the ISPs found the VLP access conditions satisfactory.
  - 81 percent of the ISPs surveyed projected a downward trend for the wholesale connection cost; and 90.5 percent project a downward trend for the retail connection cost.

V. LESSONS AND RECOMMENDATIONS

108. **A regional approach to fostering access to broadband internet is aligned with the nature of the required connectivity investments and remains a critical agenda for regional integration** (cf. the "Africa Regional Integration and Cooperation Assistance Strategy (RICAS) for the period FY21-FY23"). Submarine cables are typically connecting several coastal countries and foster multi-country approaches, as shown with the ACE submarine cable. With the increase of submarine cables circumventing West Africa, landlocked countries can benefit from increased competitive prices when connecting through several coastal countries, as shown by the Burkina Faso example. Developing direct and virtual landing points through the region helps to drive an expansion of broadband coverage and a decrease in broadband prices, hence contributing to less heterogeneity in broadband markets across the region.

109. **Successful incentives to government commitment on PPP and open access principles.** WARCIP was successful in supporting the following incentives: promoting a series of policy dialogue informing governments on the positive results (affordability and quality of broadband) of PPP models with open access principles, and using effectiveness or disbursement conditions to help secure tangible actions to establish an appropriate PPP and open access environment for connectivity, as demonstrated by The Gambia and Guinea Governments helping to establish SPVs in their complex political economy contexts.

110. **However, the PPP model by itself does not guarantee open access and the use of this essential infrastructure by all market players to spur competition necessitates a close cooperation with the sector regulator**. To ensure fair and equitable access, further regulatory safeguards should also be in place, including the appropriate monitoring by the sector regulator of the terms and conditions for accessing the international capacity, to ensure that prices are appropriately set, that there is no collusion between the shareholders, and that the terms of access are nondiscriminatory to all players. It is key that future PPP arrangements not only support the development of open access policies but also include in their design the support to the implementation of such policies. The limited cooperation from the regulator in Guinea (ARPT) highlights the critical need to secure the buy-in of all essential stakeholders at the preparation stage, and for maintaining consistent partnership during implementation.

111. **The government's majority stake in the SPV arrangement is another element that can benefit from a better design in similar projects.** Based on lessons from The Gambia, limiting the government share at the onset to less than 25 percent seems to be a better way of curbing government control. This, however, depends on the available financing by other private sector players and provisions to ensure compliance.

112. **Challenges of predicting indicators in the telecommunication market**. Compared to other sectors, the telecommunication markets evolve more rapidly, largely due to the fast pace of development of the underlying technologies. Thus, it is difficult to accurately predict the evolution of certain market indicators targets and values. A critical lesson is that targets and values of indicators in ICT projects must be revised more often and regularly reassessed against current market development trends.

113. **Overall, the focal point system achieved mixed impacts**. It was instrumental in the three countries, but the coordination between the different beneficiaries under the focal point system also contributed to implementation delays. The implementation of such a focal point system should therefore include a more streamlined and formal collaboration process, whereby parties have the proper incentives and are required to abide by the preset coordination procedures and timelines.

114. **Need for more synergies between the projects in different countries.** Increased knowledge sharing between countries benefiting from the WARCIP program would contribute to a faster and more efficient implementation.

115. **Projects in a landlocked country**, focusing on the VLP and terrestrial cross-border connectivity infrastructure, entail transaction processes significantly more complex, longer implementation and slower disbursement, compared to the other coastal countries, which can be connected to existent submarine cables. These should be taken into account in the project designs.

116. **Operations in Fragile, Conflict and Violence (FCV) countries require flexible implementation strategies**. Lessons from Burkina Faso demonstrate the relevance of being ready to adopt flexible implementation strategies based on "on-the-ground" presence of staff, and closely monitoring the security situation, as well as taking appropriate and timely action with respect to construction of connectivity infrastructure in coordination with the security team in the CMU. However, the availability of the infrastructure established under the parent portion of the project allowed to quickly reallocate funds to procure additional international bandwidth to support the country's response to the COVID-19

pandemic.

117. **Low capacity and complexity of national procurement systems are major constraints for donor-funded large infrastructure operations**. Based on lessons from Burkina Faso, reducing the complexity of national procurement systems for the construction of large infrastructure projects would improve implementation efficacy and efficiency.

ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: To increase the geographical reach of broadband networks and reduce costs of communications.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Average monthly price of wholesale international E1 capacity link from capital city to Europe (USD/month/2Mbit/s)	Amount(USD)	7,300.00 31-Dec-2010	2,450.00 31-Mar-2016	1,266.66 11-May-2018	739.66 30-Jul-2021
Gambia: Average monthly price of wholesale international E1 capacity link from capital city to Europe (USD/month/2Mbit/s)	Amount(USD)	5,000.00 31-Dec-2010	1,000.00 11-Mar-2016		500.00 23-Dec-2016
Guinea: Average monthly price of wholesale international E1 capacity link from capital city to Europe	Amount(USD)	8,000.00 30-Sep-2010	1,400.00 31-Mar-2016		1,400.00 07-Jan-2016

(USD/month/2Mbit/s)					
Burkina Faso: Average monthly price of wholesale international E1 capacity link from capital city to Europe (US$ per month per 2Mbps	Amount(USD)	9,000.00 31-Dec-2010	2,500.00 31-Mar-2016	1,400.00 31-Jul-2021	700.00 30-Jul-2021

Comments (achievements against targets):

Overall: Exceeded: 171.2%.

The Gambia: Exceeded at 200%

Guinea: Achieved at 100%

Burkina Faso: Exceeded at 200%

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Access to Telephone Services (fixed mainlines plus cellular phones per 100 people)	Number	35.95 30-Sep-2010	54.75 31-Mar-2016	68.75 11-May-2018	103.13 30-Jul-2021
Guinea: Access to Telephone Services (fixed mainlines plus cellular phones per 100 people)	Number	34.70 30-Sep-2010	47.50 31-Mar-2016		97.80 23-Dec-2016

Burkina Faso: Access to Telephone Services (fixed mainlines plus cellular phones per 100 people)	Number	37.20 31-Dec-2010	62.00 31-Mar-2016	92.00 30-Jun-2021	92.00 30-Jul-2021

Comments (achievements against targets):

Overall: Exceeded: 148%.

Guinea: Exceeded at 206%

Burkina Faso: Achieved at 100%

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Volume of international traffic: International Communications (Internet, Telecoms, and Data) bandwidth per person (kbit/per person)	Number	14.33 31-Dec-2010	63.00 31-Mar-2016		291.37 31-Dec-2016
Gambia: Volume of international traffic: International Communications (Internet, Telecoms, and Data) bandwidth per person (kbit/perperson)	Number	10.00 31-Dec-2010	30.00 31-Mar-2016		497.00 23-Dec-2016

Guinea: Volume of international traffic: International Communications (Internet, Telecoms, and Data) bandwidth per person (kbit/perperson)	Number	5.00 31-Dec-2010	85.00 31-Mar-2016		85.75 23-Dec-2016

Comments (achievements against targets):

Overall: Exceeded at 462%.

The Gambia: Exceeded at 1,656%

Guinea: Achieved at 100.2%

Burkina Faso: This PDO Indicator was deleted by 2018 AF as redundant and less adequate than the indicator “Volume of international traffic”, however this indicator was not included in the revised Results Framework as indicated in the AF PP (page 13).

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Access to Internet Services (number of subscribers per 100 people)	Number	0.41 30-Sep-2010	1.43 31-Mar-2016	14.56 11-May-2018	37.23 30-Jul-2021

Gambia: Access to Internet Services (number of subscribers per 100 people)	Number	0.75 30-Sep-2010	3.00 31-Mar-2016		35.90 23-Dec-2016
Guinea: Access to Internet Services (number of subscribers per 100 people)	Number	0.30 31-Dec-2010	0.70 31-Mar-2016		26.19 23-Dec-2016
Burkina Faso: Access to Internet Services (number of subscribers per 100 people)	Number	0.20 31-Dec-2010	0.60 31-Mar-2016	40.00 30-Jun-2021	40.00 30-Jul-2021

Comments (achievements against targets):

Overall: Exceeded at 255%

The Gambia: Exceeded at 933%

Guinea: Exceeded at 3,741%

Burkina Faso: Achieved at 100%

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Direct project beneficiaries	Number	3,300,000.00 30-Sep-2010	6,242.00 31-Mar-2016		7,840,000.00 29-Aug-2016

Gambia: Direct project beneficiaries	Number	1,600,000.00 30-Sep-2010	1,800,000.00 31-Mar-2016		1,800,000.00 31-Dec-2016
Gambia: female beneficiaries	Percentage	44.00	51.00		47.00
Guinea: Direct project beneficiaries	Number	3,700,000.00 30-Sep-2010	5,600,000.00 31-Mar-2016		10,150,000.00 23-Dec-2016
Guinea: Female beneficiaries	Percentage	25.00	30.00		35.00

Comments (achievements against targets):

Overall: Exceeded at 125% with direct project female beneficiaries achieved at 101%.

The Gambia: Achieved at 88% with direct project female beneficiaries achieved at 92%.

Guinea: Exceeded at 178% with direct project female beneficiaries achieved at 116%

Burkina Faso: The PDO indicator for Burkina Faso was deleted by the 2018 AF as redundant and less adequate than the indicators “Access to telephone services” and “Access to Internet services".

A.2 Intermediate Results Indicators

Component: Burkina Faso: Component 1- Connectivity

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Burkina Faso: Volume of available international capacity: International Communications (Internet, Telecoms, and Data) bandwidth (Gbps)	Number	0.78 31-Dec-2010	7.70 31-Dec-2016	30.00 30-Jul-2021	39.00 30-Jul-2021

Comments (achievements against targets):
Exceeded: 130%.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Burkina Faso: Retail price of mobile Internet services (5Go prepaid package with 3G technologies or above)	Amount(USD)	16.00 31-Dec-2016	8.00 30-Jun-2021		8.00 30-Jul-2021

Comments (achievements against targets):
Achieved: 100%. This Intermediate indicator was included by the 2018 AF.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Burkina Faso: Retail price of fixed Internet services (download speed at 2Mbps or above) per month	Amount(USD)	130.00 31-Dec-2016	70.00 30-Jun-2021		70.00 30-Jul-2021

Comments (achievements against targets):
Achieved: 100%. This Intermediate indicator was included by the 2018 AF.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Burkina Faso: Network coverage for mobile telephony (as % of population)	Percentage	80.00 31-Dec-2016	90.00 30-Jun-2021		90.00 30-Jul-2021

Comments (achievements against targets):
Achieved: 100%. This Intermediate indicator was included by the 2018 AF.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion

Burkina Faso: Network coverage for mobile Internet (3G and above, as % of population)	Percentage	25.00 31-Dec-2016	60.00 30-Jun-2021		60.00 30-Jul-2021

Comments (achievements against targets):
Achieved: 84%. This Intermediate indicator was included by the 2018 AF.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Burkina Faso: Total length of national fiber optic networks (km)	Kilometers	1,860.00 31-Dec-2016	3,320.00 30-Jun-2021		3,320.00 30-Jul-2021

Comments (achievements against targets):
Achieved: 100%. This Intermediate indicator was included by the 2018 AF.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Burkina Faso: National Internet traffic exchanged at the IXP (Mbps peak times)	Number	350.00 31-Dec-2016	1,500.00 30-Jun-2021		1,500.00 30-Jul-2021

Comments (achievements against targets):

Achieved 100%. This Intermediate indicator was included by the 2018 AF.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Burkina Faso: Citizen perception of the affordability and quality of broadband services (Including perception by women)	Percentage	0.00 31-Dec-2017	75.00 30-Jun-2021		75.00 30-Jul-2021

Comments (achievements against targets):
Achieved: 100%. This Intermediate indicator was included by the 2018 AF aiming at mainstream Citizens Engagement in the AF.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Impact on Telecom sector of World Bank Technical Assistance (composite score: 1- low impact to 5-high impact)	Number	0.00 30-Sep-2010	3.00 31-Mar-2016		3.00 30-Jul-2021
Gambia: Impact on Telecom	Number	0.00	3.00		3.00

sector of World Bank Technical Assistance (composite score: 1- low impact to 5-high impact)		31-Dec-2010	31-Mar-2016		31-Dec-2016
Guinea: Impact on Telecom sector of World Bank Technical Assistance (composite score: 1- low impact to 5-high impact)	Number	0.00 31-Dec-2010	3.00 31-Mar-2016		4.00 23-Dec-2016
Burkina Faso: Impact on Telecom sector of World Bank Technical Assistance (composite score: 1- low impact to 5-high impact)	Number	0.00 31-Dec-2010	4.00 31-Mar-2016	4.00 30-Jul-2021	4.00 30-Jul-2021

Comments (achievements against targets):

Overall target achieved: 100%.

The Gambia: Achieved at 100%

Guinea: Exceeded at 131%

Burkina Faso: Achieved at 100%.

Component: Guinea: Component 1- Supporting Connectivity

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised	Actual Achieved at

				Target	Completion
Guinea: Volume of available international capacity: International Communications (Internet, Telecoms, and Data) bandwidth (Gbit/s)	Number	0.15 31-Dec-2010	5.90 31-Mar-2016		9.50 23-Dec-2016

Comments (achievements against targets):
Target surpassed at 161%

Component: Gambia: Component 1- Supporting Connectivity

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Gambia: Volume of available international capacity: International Communications (Internet, Telecoms, and Data) bandwidth (Gbit/s)	Number	0.16 31-Dec-2010	5.90 31-Mar-2016		9.50 23-Dec-2016

Comments (achievements against targets):
Target exceeded at 161%

B. KEY OUTPUTS BY COMPONENT

Objective/Outcome 1: To increase the geographical reach of broadband networks (*in the recipients' territory – The Gambia, Guinea, and Burkina Faso*)	
Outcome Indicators	1. Volume of international traffic: international communications (internet, telecoms, and data) bandwidth per person. Target 63.00 kbit/s per person; Results 291 kbit/s per person. 2. Access to internet services. Target 14.56%; Results 37.23%. 3. Access to telephone services. Target 69.75%; Results 103.13%.
Intermediate Results Indicators	
The Gambia	1. Volume of available international capacity: international communications (internet, telecoms, and data) bandwidth. Target 5.90%; Results 4.97%
Guinea	1. Volume of available international capacity: international communications (internet, telecoms, and data) bandwidth. Target 5.9%; Results 9.50%.
Burkina Faso	2. Volume of international capacity: international communications (internet, telecoms, and data) bandwidth. Target 30.00%; Results 58.26%. 3. Network coverage for mobile telephony. Target 90%; Results 92.42%. 4. Total length of national fiber optic networks. Target 3,500 km; Results 7,494 km. 5. National internet traffic exchanged at the IXP. Target 1,500 Mbps peak times; Results 12,000 Mbps peak times.
Key Outputs by Component (linked to the achievement of Objective/Outcome 1)	
The Gambia	1. The membership fees to the ACE cable consortium were made as scheduled in 2011/2012 and the cable became operational in December 2012. 2. A landing station was built and reached a capacity of 10 Gbit/s. By the project closure, the Government was negotiating with ACE for a capacity upgrade. 3. A PPP arrangement was developed and implemented for the landing station, which has become owned and managed under GSC by 5 private shareholders in addition to the Government and the Government-owned operator GAMTEL. Total GSC capital is approximately US$35 million. 4. The government connectivity infrastructure funded by the project brings new internet capacity to 36 ministries, departments and agencies through a government Local Area Network providing a platform for eGovernment service deployment. An IFMIS was one of the first systems to be deployed to leverage this connectivity. 5. The project also funded the connectivity of six secondary schools to the broadband network. ICT centers in these schools provided internet access for the communities, digital literacy training and ICT certifications to rural areas. 6. Support to the initial establishment of the SPV and subsequently the governance, ownership, and financing issues related to the operation of the landing station and provision of networks and services emanating from the ACE cable, including the SPV setup, GSC business plan, and operational support to the SPV GSC.
Guinea	1. The membership fees to the ACE cable consortium were made as scheduled in 2011/2012 and the cable became operational in January 2013.

	• The landing station is now owned by 10 private shareholders in addition to the Government, under the SPV GUILAB. Private operators reimbursed the cost of their shares to the Government. • The landing station in Guinea now has an available capacity of 42 Gbit/s. • GUILAB reached a total capital of approximately US$36.9 million. 2. Support to the elaboration of the agreement for the ACE membership. 3. Elaboration of a shareholder regulation and utilization authorization for the ACE cable under a PPP arrangement. 4. Development of Guinea's national infrastructure and the effective use of its ICT for critical services, through the establishment of an IXP and a virtual government network. • The IXP has been installed at the new premises of the regulator and business model for its operationalization has been elaborated. • As of project closure, however, the IXP was not yet operational since the connectivity of the point of presence of the IXP to the ACE submarine cable has not been implemented and the IP addresses not acquired. • A virtual government network linking five government establishments in Conakry was implemented along with an IP telephony system. 5. Feasibility study for the IXP. 6. Equipment supplies and installation of an information system in five ministries' offices. 7. IXP equipment supply and installation. 8. Study on the operationalization of the PPP (ACE cable/landing station access) and on the needed legal and regulatory environment under the 'open access' principles. 9. Supervision of equipment supply and installation for Metropolitan Conakry network. 10. Equipment supplies and installation/information network and IP telephone message solution. 11. Additional equipment for the IXP extension to GUILAB and Koloma.
Burkina Faso	1. Bulk international bandwidth supplied to all of the licensed operators, through the purchase (contract of the lease of capacity signed and effective) of high-capacity bandwidth (5 Gbit/s), delivered to the VLP operated through a PPP arrangement (SCOOPS). Additional purchased (9 Gbit/s for an estimated five years), financed through the AF, restored (at least partially) the initial envelopes of US$10 million. 2. VLP and IXP facility built, equipped, and fully operational—financing and recurrent cost provided, also successful compared to other IXPs in the region in terms of traffic exchange. Through the AF, the VLP and IXP were further strengthened (in terms of equipment, technical and management capacity) to improve redundancy by opening a second site in Bobo-Dioulasso. The IXP was scaled up to lower the cost and improve the quality of the national connectivity and to stimulate the production and usage of local content and services. 3. Service tariffs validated by the General Assembly of the SCOOPS, and commercialization of the bandwidth started in December 2018.

	4. Fiber link deployed from Ouagadougou to Paga on the border of Ghana and an extension to the Bagré-pôle, providing redundancy, security, and wider access to low-cost capacity (extending from 212 km to 307 km). 5. Fiber link 25 km extension to Dindéogo-Zabré deployed under the infrastructure sharing component of the AF.
Objective/Outcome 2: Reduce costs of communications services in the recipients' territory (*The Gambia, Guinea, and Burkina Faso)*	
Outcome Indicators	1. Average monthly price of wholesale international E1 capacity link from capital city to Europe. Target US$1,266.66/month/2 Mbit/s; Results US$739.66/month/2 Mbit/s.
Intermediate Results Indicators	
The Gambia	1. Retail price of internet services. Target US$500 per month; Results US$400 per month.
Guinea	—
Burkina Faso	1. Retail price of mobile internet services (5G prepaid package with 3G technologies or above). Target US$8.00 per month; Results US$12.30 per month. 2. Retail price of fixed internet services (download speed at 2 Mbps/s or above per month). Target US$70.00 per month; Results US$22.24.
Key Outputs by Component (linked to the achievement of Objective/Outcome 2)	
The Gambia	1. Initial establishment of the SPV and subsequently the governance, ownership, and financing issues related to the operation of the landing station and provision of networks and services emanating from the ACE cable. This included legal services for the SPV setup, GSC business plan, and operational support to the SPV GSC. 2. Installation of the Add-Drop Multiplexer (ADM) for the ACE landing station to split the fiber to feed terrestrial networks. 3. Legal and regulatory due diligence and safeguards for open access for both national and international connectivity and international voice gateway liberalization. The policy recommendations were discussed with all stakeholders in 2015. 4. Broadband strategy, the demand stimulation strategy, and the action plan were completed; the recommendations are being considered. However, the implementation support component was not completed. 5. GAMTEL supported, providing the Government a strong foundation to start developing a full-fledged restructuring action plan for implementation. Key outputs include a repositioning study, human resources audit, and planning tool for GAMTEL. 6. Most elements for the support of MOICI policy making and capacity building were executed: an ICT adviser to MOICI recruited for one year; a review of the first National Information and Communications Infrastructure with lessons learned; support to the formulation of the second National Information and Communications Infrastructure 2022; cybersecurity strategy developed (recommendations are currently being considered); MOICI data center; a digital switchover study completed (recommendations are currently being considered). 7. Support to PURA: numbering plan study, PURA strategic plan, spectrum monitoring study, fees and taxation study, quality of service monitoring tools, international gateway licenses.

	8. Extensive program of capacity building for all implementing agencies, including PIU, GAMTEL, PURA, and MOICI.
Guinea	1. Established the necessary institutional arrangement for the efficient functioning of the PPP, including a support for drafting the shareholder agreement and the articles of incorporation. 2. Established the commercial and business requirement for open access. Specific outputs: strategy for the repatriation and autonomy of the domain ccTDL .gn management; capacity strengthened on optic fiber provided; TA for the redelegation of the ccTDL .gn; fiscal and tariffs on the ICT sector study; numeric management master plan; IXP evaluation and business plan; TA for the operationalization of the ccTLD .gn; equipment for M&E activities; software development for M&E. 3. Support in the repositioning of SOTELGUI including an audit on the assets and equipment. The government-owned operator ceased operation in August 2012, while continuing the deployment of a GSM and LTE mobile network through Huawei, without the availability of personal to supervise. An extensive independent audit of the existing infrastructure, equipment, and other assets of SOTELGUI was undertaken, including issuing a set of recommendations to ensure the efficient use of this infrastructure as well as the viability of public investment. Specific outputs: SOTELGUI network audit, SOTELGUI social plan implementation, SOTELGUI strategic advice support, TA to GUILAB, and SOTELGUI operational audit. 4. Study supporting government decisions on the operationalization of the national backbone infrastructure, including potential business models to recoup investment and provide operators with the capacity needed to provide broadband services at the national level. Included recommendations and legal support to open up SOGEB capital to private investors. Specific outputs: review of the law and a recommendation on the gaps and weaknesses of the legal and institutional framework set by the law, including a preliminary elaboration of the corresponding decrees and a tailored capacity building program was provided through the project to the personnel of the ministry. These included capacity building in the areas of fiber optic, digital economy, project management, environmental safeguard, and so on; national backbone business model elaboration; legal texts elaboration on telecommunication; the project funded the update of the national ICT strategy for 2016–2020, including a study on the existing infrastructure and an economic and financial analysis of the development of broadband networks and services; another important area for the development of the internet market is the management of the .gn domain name. In that regard, the project supported the Government in appropriating the management of the .gn domain name through facilitating negotiation between the Government of Guinea and the current owner of the .gn domain. This, however, has not been realized yet. 5. Strategy, business model, institutional arrangement, and capacity building for the management of the domain name. 6. Reassessing the level and impact of taxation on the sector, shedding light on whether the fiscal and regulatory levies are onerous or not and whether they are impeding further development in the sector.

	7. Analysis of the level of taxation in the sector, the cost structure of operators, and of end user equipment, as well as the impact of taxation on the affordability of services.
Burkina Faso	1. Transaction/legal advisory services provided, assisting the implementation of the investments under Component 1, included the definition of the framework for the management and distribution of the bulk capacity, integration with the VLP, and establishment of the PPP structure—a cooperative society (SCOOPS) owning and managing the VLP equipment, the supply of international capacity, and part of the international access infrastructure. 2. SCOOPS, a complex PPP model chosen by the stakeholders, regrouping 14 members (public and private) within a cooperative society, has been fully developed, adopted, signed by all stakeholders, and formally created (accomplishing all the legal, financial, and technical requirements fulfilling the withdrawal conditions [tied to the bandwidth purchase] in the FA) and in charge of key roles of the VLP operation. The PPP setup manages the VLP and owns and directly manages two pairs of fiber optic links dedicated to international traffic transmitted over the link to Ghana. 3. Association for the management of the IXP operation created—the association for the BFIX, including public and private stakeholders. 4. Advisory services, tender design, and audit of the fiber cable provided, supporting the Government to structure the tendering process for the fiber optic between Ouagadougou and Paga, Ghana, including the tender documents reflecting the environmental and social policies. 5. Assessment of government connectivity needs to connect key government agencies in the capital city and in the city of Tenkododo. The assessment included identification of remaining gaps and institutional needs, informing investments needs. Also included the development of a business plan for the government network (organizational, infrastructure, equipment, and human resources). 6. Assessment of the IXP requirements and definition of specifications. 7. Strengthening policy-making capacity of MDENP, including advisory services in the area of digital economy, infrastructure, and applications development; broadband and universal access strategy and implementation plan, supporting comprehensive policy to promote broadband use, proposing regulatory actions for broadband development, and priority areas favorable to applications' pick-up; strategy and action plan for digital economy strategy and action plan, in line with the government vision for national development, also building on the benefits and other impacts of a digital economy enabled by the increased access to cheaper broadband; development of general inter-operationality guidelines; review of taxation policies and implications on access, including assessing its impact on the business model of telecommunication operators, on individual and business end-users; market analysis carried out to identify market dominance, price regulations, cost models; assessment supporting the transition from IPv4 to IPv6 prepared. 8. Strengthening regulatory capacity of ARCEP, including technical capacity building provided, supporting the entity in improving competitive market and regulatory environment; supported development of legislation to facilitate number portability, domain name registration, electronic transactions, and licensing for

	Voice over IP; assisted in addressing cyber security aiming at identifying, defending, responding, and managing cyber threats. 9. Strengthening the policy-making capacity of the MDENP, including a study on taxation developed, regulatory framework governing the sharing of infrastructures and construction works between sectors prepared, licensing regime developed, proposal on operationalization of the universal service strategy elaborated. 10. Operationalization of the national infrastructure, including developing the framework of a PPP for the national backbone infrastructure, optimizing significant existing and planned investments and in line with the open, transparent, and equitable access principles.

ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION

A. TASK TEAM MEMBERS

Name	Role
Preparation	
Supervision/ICR	
Jerome Bezzina, Tounwende Alain Sawadogo	Task Team Leader(s)
Mathias Gogohounga	Procurement Specialist(s)
Murielle Laurette Irina Edon Babatounde	Financial Management Specialist
Sandrine Egoue Ngasseu	Financial Management Specialist
Souleymane Hussein Seye	Environmental Specialist
Mamady Kobele Keita	Environmental Specialist
Sekou Abou Kamara	Environmental Specialist
Bienvenue Helene Karambiri	Team Member
Sarah Brierley	Team Member
Djeneba Bambara Sere	Procurement Team
Sylvie Munchep Ndze	Procurement Team
Fatou Mbacke Dieng	Team Member
Thierno Hamidou Diallo	Procurement Team
Ndeye Magatte Fatim Seck	Procurement Team
Jean Okolla Owino	Team Member
Yolande Bougouma-Zagre	Procurement Team
Racky Dia Camara	Procurement Team
Tassere Pitroipa	Procurement Team
Suzane Kabore Rayaisse	Procurement Team
Evelyne Huguette Madozein	Team Member
Antoine V. Lema	Social Specialist
Bouraima Diaite	Procurement Team
Michele Ralisoa Noro	Operations Analyst

B. STAFF TIME AND COST

Stage of Project Cycle	Staff Time and Cost	
	No. of staff weeks	US$ (including travel and consultant costs)
Preparation		
FY11	38.878	284,790.06
FY12	6.910	34,327.30
Total	**45.79**	**319,117.36**
Supervision/ICR		
FY11	0	468.94
FY12	16.692	120,675.93
FY13	18.945	147,033.44
FY14	34.364	232,998.55
FY15	37.649	202,417.50
FY16	36.399	193,308.85
FY17	19.681	198,713.16
FY18	26.952	129,652.33
FY19	10.077	62,759.33
FY20	12.139	103,262.34
Total	**212.90**	**1,391,290.37**

ANNEX 3. PROJECT COST BY COMPONENT

Components	Amount at Approval (US$ Million)	Actual at Project Closing (US$ Million)	Percentage of Approval
Burkina Faso: Component 1. Connectivity	31.30[a]	28.20	90%
Burkina Faso: Component 2. Creation of an Enabling Environment and Strengthening of Institutions for Improved Connectivity	8.68 [a]	5.91	68%
Burkina Faso: Component 3. Project implementation and Contingency	3.02 [a]	2.17	72%
Guinea: Component 1. Supporting Connectivity	25.20	25.26 [b]	100%
Guinea: Component 2. Creating an Enabling Environment for improved connectivity	6.80	2.47 [b]	36%
Guinea: Component 3. Project implementation	2.00	1.91 [b]	95%
Gambia: Component 1. Supporting Connectivity	25.75	24.59 [b]	95%
Gambia: Component 2. Creating an Enabling Environment for Improved Connectivity	7.25	4.84 [b]	67%
Gambia: Component 3. Project Implementation, Communications, and M&E including Contingency	2.00	2.55 [b]	128%
Total	**112.00**	**97.90 [b]**	**96%**

Notes:

a. Includes Additional Credit to Burkina Faso, source: Project Paper on a Proposed Additional Credit in the Amount of EUR16.4 million (US$20 million equivalent) to Burkina Faso for a West Africa Regional Communications Infrastructure Project – Additional Financing, dated April 4, 2018, Table 2.1. Overall Cost Estimate by Component, page 38.

b. The discrepancy between the figures (used in the table for Guinea and Gambia Assessment of Activities at Closing) and the Actual from the Portal/ICR datasheet could be attributed to/derived from the exchange rate fluctuation of the project implementation period, resulting in the total Actuals variance.

(b) Financing

Source of Funds	Type of Cofinancing	Appraisal Estimate (US$, millions)	Actual/Latest Estimate (US$, millions)	Percentage of Appraisal
Borrower	NA	0.00	0.00	0%
IDA-Credit	NA	20.00	16.71	83%
IDA Grant	NA	92.00	84.26	92%

ANNEX 4. EFFICIENCY ANALYSIS

WARCIP APL 1B - The Gambia Project

Financial Analysis

Assumptions

- **Discount rate:** 15 percent; project lifetime: 20 years; years of operationalization: 2013; capital cost for ACE: US$25 million; repayment of private capital share in GSC: according to the GSC members, the repayment of the private operators' shares to the Government amounts to 49 percent of the total CAPEX. Only 41.47 percent of the due layaway payments were made between 2013 and 2016. Deferrals of payment have been agreed with the Government and were on track by the project closure. The cash flow analysis assumes all repayment will be made in 2029.
- **Revenues:** Revenue estimation was based on the total non-recurrent revenues of the entire mobile sector in the Gambia between 2013 and 2020. Beyond 2020, a linear projection model was used to estimate total non-recurring mobile revenues till 2029. From the retail mobile revenues, the estimated wholesale portion was based on the ratio of wholesale to retail price indicators reported by the PDO indicators. After 2016, it was assumed to stand at 63 percent. The final assumption for the expected revenues of GSC was that around 20 percent of the total service revenues were derived from data services, given that the bandwidth of ACE would mostly be utilized for data services.

Results of the Analysis

Table 4.1. Free Cash Flow Analysis

2. Financial analysis

FCF	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Revenues	$m	0.0	0.0	0.0	15.6	6.4	6.7	6.8	6.8	6.8	6.8	6.7	7.1	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8
OPEX	$m	0.0	0.0	0.0	(0.7)	(0.7)	(0.7)	(0.7)	(0.9)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.1)	(1.1)	(1.1)	(1.1)	(1.1)	(1.2)
Taxes	$m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CAPEX	$m	(4.3)	(4.3)	(4.3)	(1.3)	(1.3)	(1.3)	(1.3)	(2.5)	(2.6)	(2.9)	(0.1)	(0.0)	(0.0)	(0.0)	(0.0)	(0.1)	(0.0)	0.0	(0.1)	0.0
Free Cash Flow	$m	(4.3)	(4.3)	(4.2)	13.6	4.4	4.7	4.8	3.4	3.2	2.9	5.6	6.0	6.1	6.2	6.2	6.3	6.4	6.5	6.5	6.7
Cumulative Cash Flow		(4.3)	(8.5)	(12.7)	0.8	5.2	9.9	14.7	18.1	21.3	24.2	29.8	35.8	41.9	48.1	54.3	60.6	67.0	73.5	80.1	86.7

2010-2029 Financial Indicators	
IRR (Total CAPEX Included)	38%
NPV ($m)	16.58

Economic Analysis: Impact on GDP Growth Assumptions

- **Mobile internet penetration with WARCIP (numbers from GSMA 2010 to 2020 with projected numbers from 2016 to 2020).** By 2021, The Gambia's projected mobile internet penetration is estimated at 53 percent. Therefore, the growth rate from 2021 to 2029 is assumed to be that of more mature market—namely, the average growth rate of internet subscribers for developed countries from 2017 to 2020 was estimated at 3.86 percent.

- **Mobile internet penetration without WARCIP.** The growth rate of internet subscribers without WARCIP was based on the average growth rates in 2011, 2012, and 2013 before the submarine cable became fully operational.

WARCIP APL 1B - GUINEA PROJECT

Financial Analysis

Assumption

- **Discount rate:** 15 percent; project lifetime: 20 years; capital cost for ACE: US$33.9 million (including WARCIP grant of US$25 million and Orange Guinee contribution to ACE of US$8.9 million)
- **Revenues:** Estimate by GUILAB in 2014, with GUILAB projections from 2014 to 2020 (see table 4.2). Beyond 2020, the evolution of revenues (in real prices) from 2021 is estimated based on the forecast of the GDP growth by the International Monetary Fund (IMF).[55] For the remaining years, the GDP growth is considered equal to that of 2021.[56]
- **OPEX:** Estimated by GUILAB in 2014, with GUILAB projections from 2014 to 2020 (see table 4.2). For the remaining years, OPEX is assumed the same as that of 2020, a realistic assumption given changes in OPEX were minimal over the years as projected by GUILAB.
- **Income tax:** Same as OPEX and revenues; data provided by GUILAB based on revenues and expenses.

[55] IMF, World Economic Outlook Database, October 2016. https://www.imf.org/external/pubs/ft/weo/2016/02/weodata/index.aspx.
[56] As it may be overly optimistic to assume that GDP growth remains at 2021 projected levels (6 percent) through 2029, a sensitivity analysis was performed on the calculations to determine the impact of this assumption on the overall calculated IRR. The results show that for 5 percent GDP growth, the IRR would be 1.5 percent, and for a 7 percent GDP growth, the IRR would be 2.3 percent, showing only a small impact.

Table 4.2. Financial Statement Provided by GUILAB (Actual 2011–2014, estimated 2015 onward)

Plan de trésorerie (HT)	mars-11	Exercice 2011	Exercice 2012	Exercice 2013	Exercice 2014	Exercice 2015	Exercice 2016	Exercice 2017	Exercice 2018	Exercice 2019	Exercice 2020
		1er exercice	2eme exercice	3ème exercice	4ème exercice	5ème exercice	6 ème exercice	7ème exercice	8ème exercice	9ème exercice	10ème exercice
Opérations liées à l'exploitation de la GUILAB											
Charges d'exploitation											
Achats de marchandises			5 832,00	5 783,40	5 793,12	5 734,80	5 710,50	5 695,92	5 686,20	5 661,90	5 686,20
Achats de matières premières			-	-	-	-	-	-	-	-	-
sous-traitance : maintenance station d'atterrissement		-	1 220 400,00	1 210 230,00	1 212 264,00	1 200 060,00	1 194 975,00	1 191 924,00	1 189 890,00	1 184 805,00	1 189 890,00
entretien câble segment T7			36 000,00	35 700,00	35 760,00	35 400,00	35 250,00	35 160,00	35 100,00	34 950,00	35 100,00
Sous-total charges d'exploitation			**1 473 720,00**	**1 461 439,00**	**1 463 895,20**	**1 449 158,00**	**1 443 017,50**	**1 439 333,20**	**1 436 877,00**	**1 430 736,50**	**1 436 877,00**
Charges indirectes ACE			300 000,00	297 500,00	298 000,00	295 000,00	293 750,00	293 000,00	292 500,00	291 250,00	292 500,00
Sous-Total		-	**1 773 720,00**	**1 758 939,00**	**1 761 895,20**	**1 744 158,00**	**1 736 767,50**	**1 732 333,20**	**1 729 377,00**	**1 721 986,50**	**1 729 377,00**
Impôts et taxes		-	294 744,00	292 287,80	292 779,04	289 831,60	288 603,50	287 866,64	287 375,40	286 147,30	287 375,40
Charges de personnel											
Sous -total charges de personnel			**64 800,00**	**64 260,00**	**64 368,00**	**63 720,00**	**63 450,00**	**63 288,00**	**63 180,00**	**62 910,00**	**63 180,00**
Charges financières						-	-	-	-	-	-
Sous-total charges financières											
Autres charges						-	-	-	-	-	-
Impôts sur les bénéfices			833 996,52	837 232,20	838 850,04	844 512,48	845 321,40	853 410,60	857 455,20	857 455,20	857 455,20
TOTAL charges	-	-	**2 967 260,52**	**2 952 719,00**	**2 957 892,28**	**2 942 222,08**	**2 934 142,40**	**2 936 898,44**	**2 937 387,60**	**2 928 499,00**	**2 937 387,60**
Produits d'exploitation											
Total Ventes	-	-	2 773 440,00	3 030 226,25	3 059 371,68	3 067 716,30	3 078 372,13	3 194 053,65	3 141 285,38	3 149 630,00	3 200 987,25
évolution CA	-	-	0%	8%	1%	0%	0%	4%	-2%	0%	2%
Solde 1	-	-	**- 193 820,52**	**276 513,50**	**320 386,27**	**364 301,72**	**402 937,85**	**615 366,46**	**502 407,15**	**539 541,00**	**621 810,90**
					-	-	-	-	-	-	-
Solde 1 cumulé	-	-	**- 387 641,04**	**165 385,96**	**806 158,50**	**1 534 761,94**	**2 340 637,64**	**3 571 370,56**	**4 576 184,86**	**5 655 266,86**	**6 898 888,66**
Opérations liées aux postes de bilan		-			-	-	-	-	-	-	-
		-			-	-	-	-	-	-	-
Sorties d'argent		-									
Investissements	15 594 000,00	27 120 000,00	6 780 000,00								
Remboursements d'emprunts		-	-					50 000,00	50 000,00	50 000,00	50 000,00
Rentrées d'argent						-	-	-	-	-	-
Capital	7 462,69	33 892 537,32				-	-	-	-		
Autres : dons Banque Mondiale		-	25 000 000,00		-	-	-	-	-	-	-
Droits de servitude		-	-		-	-	-	-	-	-	-
Subventions	7 462,69	3 007 462,69	6 014 925,37								
Emprunts		-	-		-	-	-	800 000,00	-		-
Autres dons ou subventions		-			-	-	-	-	-	-	-
Solde 2	**- 15 579 074,63**	**9 780 000,00**	**24 234 925,37**	**-**	**-**	**-**	**-**	**750 000,00**	**50 000,00**	**50 000,00**	**50 000,00**
Solde 2 cumulé	**- 15 579 074,63**	**9 780 000,00**	**28 000 000,00**	**28 000 000,00**	**28 000 000,00**	**28 000 000,00**	**28 000 000,00**	**28 750 000,00**	**28 800 000,00**	**28 750 000,00**	**28 700 000,00**
		-			-	-	-	-	-	-	-
Solde 1 + 2	- 15 579 074,63	9 780 000,00	18 026 179,48	276 513,50	320 386,27	364 301,72	402 937,85	1 365 366,46	452 407,15	489 541,00	571 810,90
Solde 1 + 2 cumulé	- 15 579 074,63	9 780 000,00	27 612 358,96	28 165 385,96	28 806 158,50	29 534 761,94	30 340 637,64	32 321 370,56	33 376 184,86	34 405 266,86	35 598 888,66

Results of the Financial Analysis

Table 4.3. Financial Cash Flow and Rate of Return

Financial IRR (before tax)

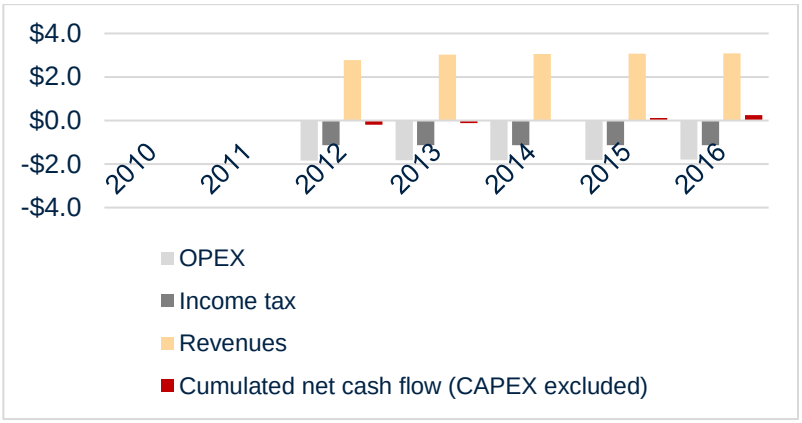
FRR Total Project	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Summary																				
CAPEX	-4.3	-19.7	-9.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OPEX	-	-	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
Revenues	-	-	2.8	3.0	3.1	3.1	3.1	3.2	3.1	3.1	3.2	3.4	3.6	3.8	4.1	4.3	4.6	4.9	5.1	5.4
Residual Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.3
Financial Cash Flow	**-4.3**	**-19.7**	**-8.9**	**1.2**	**1.2**	**1.3**	**1.3**	**1.4**	**1.3**	**1.4**	**1.4**	**1.6**	**1.8**	**2.0**	**2.3**	**2.5**	**2.8**	**3.1**	**3.3**	**12.0**
IRR (2020-2029)	**2%**																			

Table 4.4. Financial Sustainability

Financial Sustainability (CAPEX excluded, after tax)

Sustainability	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Summary																				
OPEX	-	-	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
Revenues	-	-	2.8	3.0	3.1	3.1	3.1	3.2	3.1	3.1	3.2	3.4	3.6	3.8	4.1	4.3	4.6	4.9	5.1	5.4
Residual Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.3
Income tax	-	-	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1
TOTAL net cash flow	**-**	**-**	**-0.2**	**0.1**	**0.1**	**0.1**	**0.1**	**0.3**	**0.2**	**0.2**	**0.3**	**0.5**	**0.7**	**0.9**	**1.1**	**1.4**	**1.6**	**1.9**	**2.2**	**10.9**
Cumulated net cash flow (CAPI	-	-	**-0.2**	**-0.1**	**-0.0**	**0.1**	**0.3**	**0.5**	**0.7**	**0.9**	**1.2**	**1.7**	**2.4**	**3.3**	**4.4**	**5.8**	**7.4**	**9.3**	**11.5**	**22.4**

Figure 4.1. Gross Revenues, OPEX, and FCF for GUILAB (US$ million 2010–2016)



Economic Analysis: Impact on GDP Growth

Assumptions

- **Internet subscribers with WARCIP (number as provided by the M&E of the PIU from 2010 to 2016).** From 2016 to 2020, projected mobile broadband growth is taken from GSMA intelligence. The total number of unique subscribers is multiplied by the average number of SIM per unique subscriber to get the approximate number of subscribers for this period. By 2021, Guinea's projected internet penetration exceeds 50 percent. Therefore, the growth rate from 2021 to 2029 is assumed to be that of more mature market, namely the average growth rate of internet subscribers for developed countries from 2017 to 2020. The result is a growth rate of internet subscribers of 3.86 percent between 2021 and 2029.

- **Internet subscribers without WARCIP.** The growth rate of internet subscribers without WARCIP was based on a linear increase in line with growth rates in 2010, 2011, and 2012 before the submarine cable became operational.
- **Impact of broadband on GDP.** According to World Bank research, each 10 percentage point increase in broadband penetration increases overall GDP growth in developing countries by 1.38 percentage points.[57]
- **GDP estimates:** The forecast of the GDP growth is by the IMF.[58] For the remaining years, the GDP growth is considered equal to that of 2021.

Results of the Economic Analysis

Table 4.5. Impact of ACE on GDP growth

ACE capacity impact on GDP	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Internet Penetration (number of internet subscribers per 100 people)																				
With WARCIP	0%	0%	0%	1%	20%	20%	26%	38%	45%	50%	55%	57%	59%	61%	64%	66%	69%	71%	74%	77%
without WARCIP project	0%	0%	0%	1%	1%	1%	2%	2%	3%	4%	5%	7%	8%	11%	14%	17%	21%	27%	33%	41%
Internet penetration differential, impact of the project	0%	0%	0%	0%	19%	19%	24%	35%	42%	46%	50%	50%	51%	51%	50%	49%	47%	45%	41%	36%
GDP growth due to project	0%	0%	0%	0%	3%	3%	3%	5%	6%	6%	7%	7%	7%	7%	7%	7%	7%	6%	6%	5%
GDP, constant prices (US$ billions, 2011)	4.7	4.5	5.6	6.1	6.7	6.7	6.5	6.9	7.4	7.9	8.5	9.0	9.6	10.2	10.8	11.4	12.1	12.8	13.6	14.4
GDP associated with impact of project US$ billions)	-	-	-	-	0.2	0.2	0.2	0.3	0.4	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.7
Projected																				

Figure 4.6. Impact of ACE on GDP growth

ACE capacity impact on G	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Internet Penetration (number of internet subscribers per 100																				
With WARCIP	8%	10%	15%	21%	27%	31%	37%	42%	46%	50%	53%	55%	57%	59%	62%	64%	67%	69%	72%	75%
without WARCIP project	8%	10%	15%	21%	21%	21%	21%	22%	22%	22%	22%	22%	22%	23%	23%	23%	23%	23%	24%	24%
Internet penetration differential, impact of the project	0%	0%	0%	0%	6%	10%	15%	20%	25%	28%	31%	33%	35%	37%	39%	41%	43%	46%	48%	51%
GDP growth due to project	0%	0%	0%	0%	1%	1%	2%	3%	3%	4%	4%	5%	5%	5%	5%	6%	6%	6%	7%	7%
GDP, current prices (US$ billions)	1.0	0.9	0.9	0.9	0.8	0.9	0.9	0.8	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
GDP associated with impact of project US$ billions)	-	-	-	-	0.01	0.01	0.02	0.02	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.08
Projected																				

Source: Projected GDP based on IMF World Economic Output Database. Broadband Penetrations rates basec

[57] Qiang, Christine Zhen-Wei, Carlo M. Rossoto, and Kaoru Kimura. 2009. "Economic Impacts of Broadband." In *Information and Communications for Development 2009: Extending Reach and Increasing Impact*, Chapter 3. World Bank.
[58] IMF, World Economic Outlook Database, October 2016. https://www.imf.org/external/pubs/ft/weo/2016/02/weodata/index.aspx

WARCIP APL 1B - BURKINA FASO PROJECT

Financial Analysis

Assumptions

- At the project appraisal, the cost of international capacity to London at the Burkina Faso border was estimated at US$2,500/Mbit/s/month and roughly US$10–50/Mbit/s/month to bring that capacity to Ouagadougou. Based on this assumption, the financial analysis estimated an IRR over 10 years at 28 percent, with a breakeven expected between 2016 and 2018 with an NPV of US$8.4 million. At the AF PAD in 2018, it was assumed there would be an improvement in the internet penetration with an additional 1.47 million internet users in 2020 and a positive impact on the country's GDP, resulting in an annual GDP increase to up to US$22.2 million over the next few years an improving the initial IRR results.

Table 4.7. Projections

YEAR	EXPECTED INTERNET PENETRATION IN MILLION	EXPECTED INTERNET PENETRATION IN %	% ADDITION	EXPECTED GDP IMPACT
2020	6.83	8.3	40%	21MUS$

Results of the Financial Analysis

- The VLP was created in 2018 and became operational in January 2020. The less than two years of operation was too short for properly assessing the return on the investment generated by an infrastructure (backbone) with a long-life cycle. In addition, no revenue information has been provided by SCOOPS (the cooperative managing the VLP) for this ICR. In consequence, the assessment of the actual financial results has not been performed with respect to the NPV evolution and the IRR result for the project investments. Nevertheless, the project's positive impact on the country GDP growth, as well as its contribution to the evolution of the telecom services penetration in the country, owing to lower end user tariffs, is unquestionable (see the following section). It can be assumed that the NPV of the project over 10 years (2028) is positive.

Economic Analysis

Telecom Services Penetration - Impact on the GDP

- The following elements have been analyzed: evolution of the volume of international traffic, evolution of the wholesale international (E1) price, and evolution of the telecom services penetration. The achievement of these components provides information on the impact of the project on the population and GDP per capita.
    - **Evolution of the volume of international traffic.** Data provided by ARCEP show that the available international bandwidth reached 77.66 Gbit/s by 2020. The VLP Burkina Faso thus made it possible to significantly improve the availability of international bandwidth at the end of 2020 for all networks.

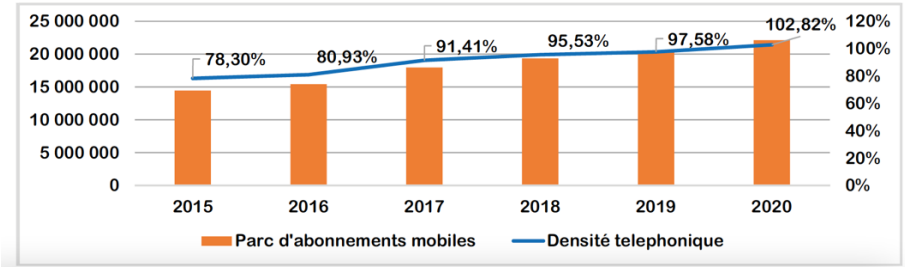
Table 4.8. Evolution of Bandwidth Capacity Availability

Capacité en Gigabits/seconde disponible de la BPI	2 015	2 016	2 017	2 018	2 019	2020
ONATEL SA	5,60	5,60	13,10	22,00	25,10	35,00
ORANGE BURKINA FASO SA	0,93	2,28	4,19	16,00	16,16	20,16
PAV BURKINA				5,00	7,50	22,50
Capacité totale disponible de la BPI	**6,53**	**7,88**	**17,29**	**43,00**	**48,76**	**77,66**

- **Evolution of the wholesale international (E1) price.** Regarding the project data noted in the Borrower Completion Report (BCR), the wholesale international price for an E1 (US$/month/2Mb/s) reached US$319 by the end of 2020. The baseline in 2012 was US$9,000 and the price fell to US$1,513 in 2018, according to the AF PAD.

- **Evolution of the telecom services penetration.** According to the PAD, the target was a 62 percent increase in access to telephony services by the project completion. The ARCEP figures indicate an achievement of roughly 103 percent that was 66 percent higher, confirming the project benefit on this key performance indicator.

Figure 4.2. Increase in Mobile Subscriptions[59]



Internet Penetration Impact on the Country GDP

- The GSMA report shows that the global telecom ecosystem provides roughly 8.6 percent of the country's economy (direct and indirect employment, direct and indirect taxes). In addition, a recent World Bank study of 120 countries estimates that every 10-percentage point increase in mobile phone penetration is accompanied by 0.8 percentage point economic growth in developing countries. Based on this estimate and the increase of customers of telecom services in Burkina Faso (from 19.9 million in 2018 to 22.2 million in 2020, implying an evolution of 11.5 percent while the population grew only 4.5 percent in the same period), the impact can be estimated at roughly 1 percent in the GDP.
- The ITU performed an analysis of the internet penetration impact. In 2018, this leading regional study, which covers most of the countries in the Africa region, confirmed that a 10-percentage increase in the mobile broadband penetration rate in Africa would lead to a 2.5 percent increase in GDP. In 2020, ITU analysis revised the impact at +2 percent. In addition, a frequently cited World Bank study (Qiang and Rossotto 2009)[60] found that low-income and middle-income countries

[59] ARCEP Report 31 December 2020.
[60] Qiang, Christine Zhen-Wei, Carlo M. Rossoto, and Kaoru Kimura. 2009. "Economic Impacts of Broadband." In *Information and Communications for Development 2009: Extending Reach and Increasing Impact*, Chapter 3. World Bank.

experienced about a 1.38 percent increase in GDP for each 10-percentage point increase in broadband penetration. The AF PAD AF estimated an impact between 0.23 percent and 0.9 percent.

Table 4.9. Projections[61]

	2016	2017	2018	2019	2020	
evolution of the population (in Million)	18.6	19	20	20.3	20.9	
internet penetration without Warcip	19%	23%	26%	29%	33%	
internet penetration **(source ARCEP)**	19%	28%	29%	31%	51%	
penetration increase due to the project		5%	3%	2%	18%	
GDP (billion US$)	13.10	14.13	15.40	16.10	17.40	
% GDP Impact (Bertshek survey)						total
HYP 1) 10pts ==> 0.23%		0.1%	0.1%	0.0%	0.4%	
HYP 2) 10pts ==> 0.9%		0.45%	0.27%	0.18%	1.62%	
impact GDP increase in billion US$						
hyp 1		0.02	0.01	0.01	0.07	0.11
hyp 2		0.06	0.04	0.03	0.28	0.42

- Even based on these estimated lower impacts, the country GDP increased between US$110 million and US$420 million over 2016–2020. The penetration expected at 40 percent in the AF PAD has been exceeded by 54 percent. This boom in the telecom services was made possible since the prices of the internet connection packages are within the reach of the average citizen with 3G and 4G cost from FCFAF 100 for 10 MB. Fixed internet remains marginal with a cumulative number of subscriptions of 14,381 as of March 31, 2021, according to the regulator. It is mainly constituted by broadband subscriptions (≥512 kbit/s) which represent 94.11 percent, showing that the prices and the bandwidth availability have made high speed connections affordable.
- The e-government has also grown significantly. An agency has been entrusted with the implementation of ICT projects and major programs such as ‘E-burkina’, ‘RESINA’, and so on. This availability of the internet network has favored the digital economy in the country, promoting financial inclusion (around 33 percent of the Burkina Faso population has a mobile payment account). The Ministry of Agriculture has also made internet development a key policy theme with strong incentives to develop digital solutions for agriculture.

[61] Based on ARCEP Report 31 December 2020.

ANNEX 5. BORROWER, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

The Governments of The Gambia, Guinea and Burkina Faso did not send comments on the draft ICR. However, the executive summaries of the completion reports prepared by the Governments of The Gambia, Guinea and Burkina Faso are presented below.

The Gambia

The West Africa Regional Communication Infrastructure Program (WARCIP) in The Gambia is a World Bank project with a total funding of US$ 35 million. The project was declared effective in 2011 and scheduled to close in 2016. The Project Development Objectives are (i) to increase the geographical reach of broadband networks by connecting Gambia to international broadband, and (ii) reduce costs of communications services in the country. This project was a key driving force in complementing The Gambia Government's initiatives in achieving the Program for Accelerated Growth and Employment (PAGE) national development objectives.

Under the Component 1 – Supporting Connectivity (US$ 25.75m) of the project, The Government of The Gambia through GAMTEL participated in the ACE (African Coast to Europe) Submarine Cable Consortium to provide a submarine cable infrastructure and landing station in The Gambia by signing the ACE Construction and Maintenance Agreement (C&MA) in 2010. The project has financed The Gambia's contribution of US$ 25 million in the ACE consortium and the construction of a Domestic Landing Station. A Special Purpose Vehicle (SPV) has been created with the participation of the private sector operators and incorporated in 2012 as the Gambia Submarine Cable (GSC) Company. The subscription to the ACE submarine cable has significantly reduced the country's reliance on costly satellite services and terrestrial connection via Senegal. The project has empowered the country to own its primary international gateway permitting ownership rights and shareholding of all mobile operators and some Internet Service Providers (ISP). The Government of The Gambia has also facilitated financing through the Islamic Development Bank for the development of its national fiber optic (817 km) Backbone (ECOWAN – The Gambia) with segments which constitute part of the ECOWAS Regional Backbone. The ECOWAN project would ensure nationwide terrestrial fiber optic connectivity extension to border cities to ensure that The Gambia is ready to connect with its neighbor countries, as part of the ECOWAS Regional Backbone. The ECOWAN project would also complementarily link directly with the ACE landing station to leverage international bandwidth capacity to the interior of the country.

Under the Component 2 - Creating an Enabling Environment for improved connectivity (US$ 7.25m), technical assistances have been provided by the project to optimize the governance, ownership and financing issues related to the operation of the domestic landing station, and services emanating from the ACE Cable. Numerous studies have been completed to support the Government in its efforts to (i) increase internet access; and (ii) set up a legal and regulatory due diligence, and safeguards for an open access to the international bandwidth and national backbone.

Under the Component 3 – Project Implementation (US$ 2m), the Project Implementing Unit (PIU) has improved its reporting obligations as recommended in the mid-term report. This was a major weakness observed during the project's mid-term review. The procurement, accounting, and administrative & financial procedures documented in the Project Implementation Manual, Financing Agreement and Project Appraisal Document have been implemented by the PIU. Regarding the delays in various stages of

procurement processes, more measures are needed to manage awarded contracts to ensure timely and efficient delivery.

An analysis of WARCIP's Results Framework confirmed significant achievements in each of the indicators, signifying satisfactory progress in meeting the Project Development Objectives (PDO) targets. On volume of international traffic, the project appraisal target of 30 Kbit/s per person stood at 528Kbit/s at project closure. The fact that this indicator had a baseline of 10 Kbit/s at project effectiveness is ample evidence to manifest achievements registered. The indicator on access to internet services (number of subscribers per 100 people) with a baseline of 0.75% registered 28% at project closure; surpassing the 3% target. The average monthly price of wholesale international E1 capacity link from the capital is US$ 500.00 at project closure and has reached the target of less than US$ 1,000 per E1.

The Project was completed nine months behind schedule in comparison to what was planned at appraisal. Nonetheless, the project was able to achieve the targeted outputs. The services and facilities provided under the Project are operating properly. The implementation of the WARCIP-Gambia has contributed to the improvement of telecommunication services in the country and both the public and private sector are benefiting from the project's outcomes.

The Government of The Gambia (GoTG) recommended the World Bank to continue supporting the development of ICT sector and to provide additional assistance for (i) the acquisition of spectrum monitoring equipment to prevent the clean spectrum from illegal use; and (ii) the provision of an Optical Add-Drop Multiplexer (ADM) to extend the capacity of the fiber optic network. The lessons learnt by the GoTG in the implementation of WARCIP project will be considered in the design and implementation of future projects.

Guinea

The Government of the Republic of Guinea has requested and obtained from IDA a grant of US$ 34 million equivalent to SDR 21 million for the implementation of the West Africa Regional Communication Infrastructure Program in Guinea (WARCIP-Guinea). The Grant Agreement (No. H7140-GN) was signed on June 29, 2016. The project was declared effective in December 2011 and was expected to close in March 2016. However, at the request of the Government this date was extended to December 31, 2016 to allow the project activities to be completed.

The project development objectives are (i) to increase the geographical reach of broadband networks by connecting Guinea to international broadband network; and (ii) reduce costs of communications services in the country. The project has three components: (i) Supporting Connectivity; (ii) Creating an Enabling Environment for Connectivity; and (ii) Project Implementation. At the closure of the project, the overall disbursement rate stood at 99%.

Under the Component 1 - Supporting Connectivity (US$ 24.85m), the project has financed the ACE (African Coast to Europe) consortium membership and participation fees. Using PPP frameworks and open access principles, a Special Purpose Vehicle (GUILAB SA company) has been created. This company owns and manages the landing station. As for regional connectivity, the IXP has been implemented as well as the roll-out of computer networks in six (6) ministerial departments.

Under Component 2 - Creating an Enabling Environment for Connectivity (US$ 3.85m), the project focused on establishing the optimal conditions for the successful development of the telecommunication and ICT sector, through the design and modeling of Public Private Partnership frameworks for the ownership and management of international, regional, and national infrastructure. In this regard, the sectoral policy letter, the national ICT strategy as well as the implementation rules of the 2015 Telecommunication Law have been produced. Legal and regulatory safeguards for open access and support for regulatory reforms and capacity building of the ARPT have been provided. The tax and tariff study has been completed along with the study on the relocation of the internet Top-Level Domain (.gn). The historical operator SOTELGUI has been audited and a digital development framework defining the strategy of the broadband connectivity of Guinea has been elaborated to prepare its privatization.

Under component 3 - Project implementation, monitoring-evaluation, and communication (US$ 1.3m), the project's monitoring, financial, and annual audit reports, were regularly submitted to the World Bank. The operating expenses, acquisition of furniture, vehicles, various equipment and audits for the PIU have been executed at 90% of the budgeted amount.

Regarding the WARCIP-Guinea performance, all the indicators have been reached and exceeded at mid-term. The broadband access rate has increased from 1% in 2012 to 26.19% in 2016. The mobile penetration rate rose from 74% in 2012 to 98.8% over the same period. The monthly wholesale price between Conakry and Europe has also fallen sharply from $8,000 to $1,400, leading to a decline in the retail price of Internet services. The series of studies financed by the project have provided the sector with a legal and regulatory framework. The survey of project beneficiaries showed that Internet use has increased exponentially since the landing of the ACE cable. Access is fast, cheaper, and more attractive. Users are in all segments of the population with 70% of young people including 30% of women.

IDA's financial support allowed the project to be efficiently executed by an effective team. The WARCIP-Guinea project has fostered the introduction of mobile transfer services in Guinea and the previously unbanked population is now largely integrated into mobile money services.

The project's achievements deserve to be preserved through continued support to improve international connectivity through terrestrial loopbacks. To pursue its ICT ambitions, the Government of Guinea has expressed the need to be supported by the World Bank in: (i) securing the international connectivity through a redundant international optical link from Senegal and which will transit by an important mining region of Guinea; (ii) setting-up optical link monitoring tools for a more effective regulation; and (iii) connecting the rest of the country's public administrations that have not been targeted by the project. The Government of Guinea has learned lessons from this project and notes the need for a better coordination before deploying any new digital infrastructure, to prevent duplication and incompatibility.

Burkina Faso

The country component for Burkina Faso of the West Africa Regional Communications Infrastructure Program (WARCIP-BF) is a World Bank support project to Burkina Faso and which objective is to increase the geographic reach of broadband networks, lower costs and improve the quality of regional and international connectivity. The WARCIP-BF has a total budget of US$ 42.24 million in two financing phases. The Initial Financing, through an IDA grant of US$ 22.24 million, covers the period from December 2011 to December 31, 2016 (extended to September 30, 2018). At the Government' s request, the World

Bank has provided an Additional Financing of US$ 20 million in the form of an IDA credit for the period from September 5, 2018 to July 30, 2021.

This project is structured into three components: (i) Supporting Connectivity; (ii) Creating an Enabling Environment for Connectivity; (ii) Project Implementation. During the two financing phases, there were no changes in the objectives of these components. As of July 31, 2018, of the Initial Financing (IF) highlights a physical execution rate of 100% and a financial execution rate of 100% - with a" Satisfactory" rating. At the end of the project, the Additional Financing recorded a physical execution rate of 85.5% and a financial execution rate of 55.44% with a "Moderately Satisfactory" rating.

Under the Component 1 – Supporting Connectivity, the construction of the fiber optic network between Ouagadougou, Bagré and the Ghana border has been completed. The facilities that will host the Virtual Cable Landing Station (V-CLS) and the Internet Exchange Point (IXP) are now operational, and the active equipment has been installed. The IXP, established as an association of content providers and Internet Service Providers (ISPs) through a public-private partnership (BFIX), is fully operational. In addition, all other project-related activities have been completed. These include: (i) the acquisition and installation of a self-supporting tower, antenna support and a mini shelter for the V-CLS and the IXP; (ii) the acquisition and installation of equipment and training for the Ouagadougou Internet Exchange Point (IXP) and for the V-CLS. Within the scope of the Additional Financing, the main activities carried out are as follows: (i) technical studies for the deployment of the Fada-Pama-Benin border fiber optic link; (ii) preparatory studies for the realization of the Dindéogo-Zabré fiber optic works; iii) equipment acquisition and installation, and related training for the V-CLS and the Bobo-Dioulasso Internet Exchange Point (IXP); and (iii) technical and architectural studies for the backbone network operations center.

Under the Component 2 – Creating an Enabling Environment for Connectivity, the Special Purpose Vehicle for the V-CLS management has been created, but with delays due to the complexity and coordination requirements of the PPP model chosen by the stakeholders. The Government and nine (9) private telecom operators and Internet Service Providers (ISPs) partnered through a Cooperative Company (BFIX) owning and managing the V-CLS equipment, the international capacity offer, and a share of the international access infrastructure. BFIX is formally authorized to operate and ensures that the V-CLS is operated under open and non-discriminatory access obligations. As part of the additional financing, the development of regulations and technical guides for the mutualization of infrastructure construction and the guidelines for the sharing of electronic communications infrastructure, as well as the acquisition of equipment and systems for FasoREN's Network Operations Center (NOC), have been completed. The FasoREN business model has been developed and the public administration has been provided with international bandwidth.

Under Component 3 – Project Management, the project monitoring, financial reports, as well as the annual audit reports, were regularly submitted to the World Bank within the deadlines. The audits were carried out in accordance with the planned schedule and the Monitoring and Evaluation (M&E) mechanism performed well. The project's performance measurement framework was periodically updated to reflect the project's impact. All the executed activities were deemed to be in line with the Bank's safeguard policies and with the national safeguard framework.

All the indicators and objectives were achieved. The indicators showed an increasing penetration (from 0.2% in 2011 to 40% in 2017) and a decrease in the price of ICT services. In terms of lessons learned, it

was noted that the project provided the opportunity for successful and unsuccessful experiences. The Government of Burkina Faso (GoBF) notes with satisfaction the positive experiences of this project such as the coordination unit that was located within the Permanent Secretariat of the Transport Sector Program, which was responsible for managing several projects, and which has proved to be both efficient and cost-effective. The establishment of a Technical Committee, consisting of representatives of the stakeholders, has helped to resolve the various problems encountered. Some of the project's outcomes, such as the V-CLS, IXPs, fiber optic networks deployment and the production of several studies for the development of policies in the ICT sector - have provided an extensive knowledgeable experience to the Government of Burkina Faso.

The GoBF has noted that various external and internal factors, such the security situation, the COVID-19 pandemic, and the political instability, have impacted the implementation of the project and the achievement of its objectives. Considering the shortcomings identified and to facilitate the implementation of similar projects in the future, the project completion report recommends (i) to provide an implementation report at the end of each project phase to allow stakeholders to assess the previous phase and draw lessons for the next one; and (ii) a better coordination between government entities for documents reviewing and procurement procedures, to prevent delays. Finally, the report recommends the set-up of a national counterpart fund that would be used to meet expenses and disbursements related to project activities that are not eligible for donor resources.

ANNEX 6. BURKINA FASO BENEFICIARY ASSESSMENT

WARCIP APL 1B - Burkina Faso Project

1. A Beneficiary Assessment was carried out by the project closure (July 2021). The full Beneficiary Assessment Report is available in the project records. Among the main beneficiaries were internet users and internet providers (82 public sector and 312 private sector) as well as the PIU, the Permanent Secretariat of the Transport Program, the General Direction of Communications Infrastructure, and the regulator. The methodology adopted included the review of existent documents and data, questionnaires addressing qualitative and quantitative information, and focus groups. A total of 53 questionnaires provided qualitative information, and 394 questionnaires provided quantitative data. The main difficulties faced included nonavailability of beneficiaries at the time of the field surveys; some internet providers decline to provide details on their portfolio of clients and access to those; and absence of a baseline data allowing to compare with the quantitative data obtained (as a result, just few data were retained). The surveys covered the country's four region: Center - 63.2 percent; High-Basins - 23.9 percent; Center/South - 6.6 percent; and Center/East - 6.3 percent. The distribution among the sectors surveyed was the following: services - 60 percent; commerce - 34.3 percent; industries - 3 percent; and artisanal - 1.3 percent.

Key Aspects

- Most (85 percent) providers operate at least for nine years. The larger majority (71.4 percent) started operating in the same year as the VLP financed by the project operation started (since 2018).
- Most (62 percent) ISPs were affiliated to the SCOOPS.
- Genre of internet users surveyed: Men, 65.2 percent; women - 34.8 percent.
- Socio-profession categories surveyed: Students, 50 percent; formal sector employees - 17.8 percent; informal sector workers - 16 percent.
- Having heard about the project: No, 82 percent; yes - 18 percent.
- Increase in number of users:
    - 19 of the 21 ISPs surveyed stated that their number of costumers steadily increased since 2018.
    - From 2018 to 2021, the annual increase in the number of users was 26 percent (from 10,086 to 16,723. In the first six months of 2021, the increase was exceptional—from 16,723 to 89,999 (438 percent increase).
    - The reasons explaining these increases were good connection quality, affordability given the lower price, necessity, popularization of the mobiles run by android systems, and the increased awareness regarding the opportunities that the internet offer. Many new users (25.7 percent of the total users) explained that they did not know how to use the internet, but as they learned they wanted to have access to the internet.
- VLP access conditions: 15 (71 percent) of providers said they were aware.

  - 60 percent stated that the access conditions were adequate and at a lower price than other alternatives.
  - 40 percent would prefer flexible, gradual conditions, according to the market, which would allow purchase of capacity in line with the demand.

- User's access: Out of the 394 users surveyed, 91.4 percent accessed the internet through mobile connections, while only 4.8 percent had mobile and fixed connections.
- Number of years of the user's access: 46.7 percent had access for more than five years.
- The connection improvements supported by the project allowed for connecting governmental entities to the network in 42 provinces, covering 2,332 buildings.
- Connection type: The public sector uses only Wi-Fi (40.24 percent) or cable/Wi-Fi (40.24 percent), while the private sector preference is for Wi-Fi (64.10 percent).
- Connectivity longevity: 61.7 percent of the public and private sector have connected less than five years ago.
  - The main reason that led most in the private sector (44.1 percent) to connect was the lower cost.
- Reasons for taking longer in connecting: High costs - 44.1 percent; no need - 13.2 percent; lack of financial means - 24.3 percent; novelty of the technology - 16.4 percent; lack of knowledge on the technology - 2.0 percent.
- Quality of the internet (ISPs): 71.4 percent of the internet providers stated that the quality of internet connection is stable, allowing the users to enjoy fluidity and stability when connecting. Only 14.3 percent stated that the quality is below satisfactory.
- Delays in accessing a webpage (ISPs): 66.7 percent of the providers estimated that the delay to access a web page is reasonable, while 23.8 percent stated that it takes long or too long.
- Satisfaction compared to previous quality (users): 51.5 percent of users stated that quality is satisfactory compared to precedent years. However, 47.5 percent stated that the quality is still unsatisfactory and that they wish the transition to 5G or 6G.
- Delays in accessing a web page (users): 59.9 percent of users stated that the delay in accessing a web page is reasonable, while 35.8 percent stated that it was actually too quick. A minority (4.3 percent) stated that it takes too long.
- Access continuity: 65.2 percent of users stated that there were short interruptions in the connection.
- Access quality accordingly with public entities/enterprises: 51.5 percent (203 entities/enterprises surveyed out of 394) stated that the quality was satisfactory, while 47.5 percent found it unsatisfactory.
- Satisfaction with the delays in accessing a web page per region: Center - 57.02 percent; Center/East - 57.69 percent; Center/South - 57.69 percent; High-Basins - 80.85 percent.
- Delays in sending and downloading files: 63.3 percent of public entities/enterprises found that it is satisfactory, while 26.1 percent found that it takes too long.

- Access continuity: 71.1 percent of public entities/enterprises informed that there are brief interruptions.
- Connection cost reduction: Providers stated that the cost has decreased, particularly over the last five years where the decrease reached 50 percent. About 61.9 percent attributed the lower cost to the VLP financed by the project, while 38 percent attributed to other feeding sources.
    - Those who opted for 'wholesale provider' explained: 43 percent due to the cost affordability and other 43 percent due to the access conditions.
    - The majority of providers stated that both the semi-wholesale and retail prices have decreased, although they did not inform the details of their prices.
- View from public entities/enterprises on the connection costs: Affordable, 43.6 percent; expensive - 26.9 percent; does not know - 19.5 percent; too expensive - 10.9 percent.
- View from the users on the connection costs: Affordable, 83 percent; expensive - 15 percent; too expensive - 2 percent.
- Users' expectation regarding the connection costs trends: Decrease, 46.2 percent; increase - 34.3 percent; does not know - 19.5 percent.
- Connection resilience/autonomy level accordingly with providers: 52 percent found it satisfactory; while 48 percent found it unsatisfactory.
    - Improvements in resilience are clearly associated with the VLP financed by the project, and installing 'relais en énergie' has been suggested to protect the VLP from the frequent power outages in the country.
- Capacity building: The main beneficiaries were those from multiple government agencies involved with the project implementation. They acknowledged the great benefit from the capacity-building events, which unfortunately were undercut by the restrictions from the COVID-19 pandemic.
- Suggestions to increase the number of users: Promote the increase the number of providers - 78.4 percent; reduce taxation - 18.3 percent.
- Impact of better connection in enterprises: Reducing delays in processing requests - 97.2 percent; increasing the business visibility - 92.6 percent; improving the quality of services - 97 percent.
- Project strengths, according to actors involved: Meaningful participation during preparation; the project coordination ensured proper procedures; the project was extremely relevant given the deficiencies Burkina Faso was facing in terms of communications development.
- Project weaknesses, according to actors involved: The AF lacked taking into account the security issues; several activities were dropped given different reasons; maintenance problems facing some of the infrastructure financed by the project, notably the IXP; the bandwidth management and supply mechanism result in losses (offer larger than the demand); the port high prices at BFIX; the VLP lack of energy supply autonomy; the project insufficient dissemination; the insufficient number of personnel for structures such as the BFIX.
- Recommendations from the actors involved in the project:

- Connection access: Increase access through optic fiber to all the localities in the country; decrease the sector's taxes and fees to facilitate universal access at a lower cost; promote competition among a larger number of providers promoting better services.
- Concerning the investments financed by the project: Lower the VLP cooperative (SCOOPS) subscription fees; reduce the minimum capacity for the VLP subscription; extend the VLP and IXP to other localities.
- Capacity building: Continued strengthening for the specialists involved; sensibilization of consumer entities as well as the general population toward the preservation of the project results; capacity building made available through SCOOPS to the clients.
- Connection resilience and autonomy: Interconnection with an additional neighboring country; energy supply autonomy for the VLP.
- Bandwidth management and infrastructure functioning: VLP adopting a policy conducting to the use of the totality of the bandwidth; calibration of the VLP funds to adjust the bandwidth offer to the demand; VLP functioning rationalization so the two reference points (Ouagadougou and Bobo-Dioulasso) are totally redundant; VLP and IXP management innovation leading to having just one management entity for both; strong government involvement in the infrastructures financed by the project to ensure their long-term functioning.
- Connection quality and cost: Further cost reduction to facilitate access to a larger number of people; increase in the number of IXP cash; cost reduction at the BFIX port; improvement in quality for better fluidity.
- On the sector regulation: Government adopting regulation policies; measures increasing the number of providers adopted; policies for sharing the fiber optics and towers adopted to promote adequate competition, as well as the environment preservation.
- Suggestions in case of a follow-up project: Prior assessment of priorities from different entities involved to take into account in the project; a more thorough risk assessment (in particular concerning safety issues); designing and implementing an efficient communication plan to disseminate the project activities and results.

ANNEX 7. Additional Technical Information

The two boxes below present briefings of the digital economy in The Gambia and Guinea. The briefings are excerpts from the Digital Economy Diagnostic Report (DE4A), World Bank Group.

Digital Economy for Africa (DE4A): Gambia Diagnostic Report 2021, The World Bank Group

The Gambia has sufficient international capacity

- One submarine cable: With support from the Word Bank-financed WARCIP APL 1B, the country acquired direct connection to the international broadband network through the ACE submarine fiber optic cable in 2012.
- Managed through a PPP: GSC, 51 percent owned by private sector, owns and operates the landing station and provides ACE capacity and landing station access to its members (corresponding to their shares in GSC.
- Offering ample capacity: According to PURA and GSC, only around 18 percent of the ACE capacity (129.5 Mbps per 10,000 people) is currently utilized.
- International gateway fully liberalized: international data licenses were issued to all GSC members in 2013; voice gateway market was liberalized in 2019 with support from the Gambia First Fiscal Management, Energy and Telecom Reform Development Policy Financing (P164545), financed by the World Bank and closed in May 2021.
- However, open access policy needs to be reapplied / reemphasized, as new ISPs have entered the market since the GSC was established, requiring open, fair and affordable priced access to ACE.

Key challenge

- ACE is entering the second half of its economic life and is widely deemed to be unreliable in view of regular disruptions that intensified in 2020-2021.

Potential remedy

- Acquire access to the second submarine cable with a separate landing station, while concomitantly supporting an alternative terrestrial fiber link (managed by private sector) to Senegal.

The national backbone is relatively well developed…

- 817 km of the ECOWAS Wide Area Network (ECOWAN); 130 km of GAMTEL's legacy fiber (incorporated into ECOWAN); 420 km of the National Broadband Network (NBN).

Although it is still deemed expensive and unreliable

- While ECOWAN's dark fiber is generally found to be acceptably reliable, the management and quality of the lit fiber – linked to GAMTEL's technical and financial capacity to adequately manage it – is considered persistently weak.
- The rural routes are considered particularly unreliable and underutilized due to fiber cuts.
- The situation is rendered more difficult by an existent moratorium on laying fiber, adopted by MOICI in December 2018 as a temporary measure to protect significant public investments in ECOWAN and NBC infrastructure and stimulate their use.

The Gambian telecom market is relatively competitive, but with persistent access, usage and gender gaps

- There is one fixed line operator (state-owned GAMTEL), four Mobile Network Operators with GSM licenses, five licensed ISPs.
- Mobile penetration is high, with the country ranking 7th on the continent in terms of mobile tele density.
- Number of active sim cards per 100 inhabitants has reached 136 (ITU, Dec 2020) – only 66.5 percent of active sim cards use data (PURA, 2020)
- Broadband 3G+ covers 88 percent of the population, but 63.5 percent of those covered do not appear to be using broadband services.
- The 4G uptake remains especially low at 4.5 percent.
- There is a distinct gender dimension in the usage gap, as 44 percent of women vs 52 percent of men report to regularly use internet (2016/2018 Afrobarometer surveys).

- **Among the underlying factors are high prices and low quality of mobile broadband, acting as barriers to internet uptake for productive use.**

- There is scope to further enhance telecom regulatory, policy and institutional environment, reinforce significant market power regulation, stimulate infrastructure sharing and introduce service neutral licenses, as well as review ICT sector specific taxes and facilitate prompt adoption of cybersecurity data protection legislations

Digital Economy for Africa (DE4A): Guinea Diagnostic Report 2020, The World Bank Group

Key strengths

- High mobile penetration rate at 105 percent and up to 85 percent of mobile coverage countrywide.
- Strong legislative framework.
- Affordable international bandwidth.
- Satisfactory regulator's performance.

Key weaknesses and roadblocks

- Low broadband internet penetration at 39 percent in 2019 (source ARPT).
- Market mechanism not fully in place as the regulator functions in "command and control" mode.
- Many legal and regulatory provisions yet to be executed.
- High level of taxes on telecom services and products.
- Significant gap in adequately implementing universal service funded by the Universal Service Fund (USF), thus leaving many dark spots.
- Absence of cyber-security strategy (despite having cybercrime legislation).

Key opportunities

- Other Licensed Operators (OLOs) are prepared to invest but they require predictable policy and regulatory environment.
- Putting in place the Universal service provision as described by law will go a long way in eliminating dark spots and improving access.
- Adoption of a long-run costing model on essential facilities will enable significant improvement on affordability of broadband services.
- Clarifying the vision and the plans for future datacenters and operationalizing data protection legislation.

 # Quick wins (short-term):

- Set up an operational computer security incident response team (CSIRT) to translate legal provision of the cyber security law into concrete actions and address the absence of emergency cyber security plans.
- Establish the Data Protection Authority and appoint the Data Commissioner to operationalize data protection legislation.

 # High-priority (short-to-medium-term)

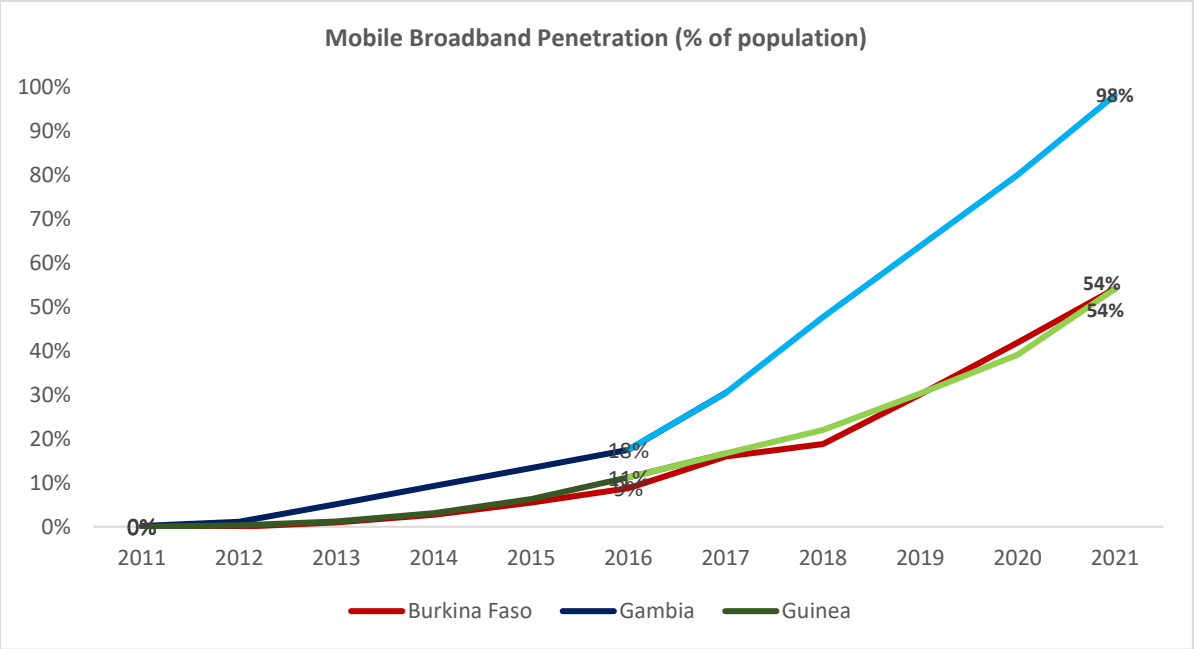
- Clarify the governance structure of SOGEB and provide the associate timeline regarding its restructuring.
- Establish a USF management and governance framework in consultation with operators and other relevant stakeholders.

 # Long-term

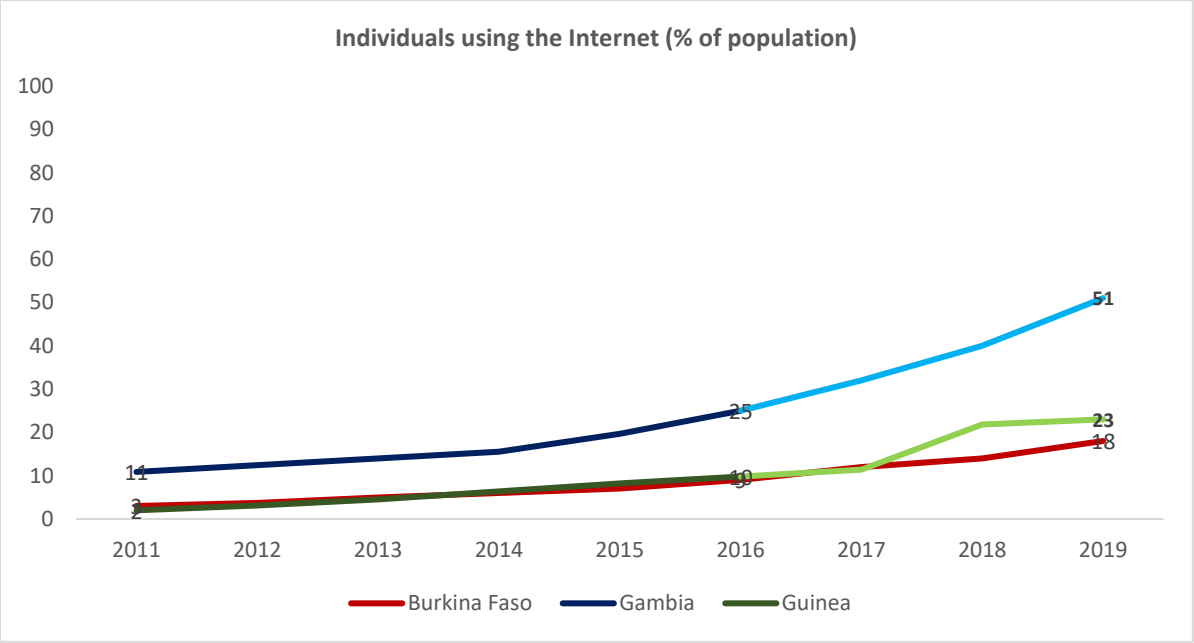
- Extend the Long-Run-Incremental-Cost model to the National Backbone operated by SOGEB to make the wholesale bandwidth price more affordable and comparable to other jurisdictions.
- Strengthen the ex-ante regulation related to Significant Market Power (SMP) and extend the regulatory analysis to international and national wholesale bandwidth markets.
- Clarify the vision and the plans for future datacenters.
- Ensure granular extension and application of the data protection and privacy regime.

The table below summarizes key information on the SPVs created in The Gambia, Guinea, and Burkina Faso.

	The Gambia	Guinea	Burkina Faso
SPV Name	GSC (Gambia Submarine Cable)	GUILAB (Guinéenne de Large Bande)	SCOOPS (Société de Coopérative Simplifiée)
Purpose of SPV	ACE consortium member	ACE consortium member	VLP establishment and operation
Share of equity	19% GoTG; 30% GAMTEL; 51% 5 private operators + ISPs (as of 2011 with no changes to date)	29.7% GoG; 11.65% SOTELGUI 24.12% Orange Guinea 34.53% 9 private operators + ISPs. As of today: 52.55% GoG; 26.25% Orange Guinea The rest is divided between 9 private operators + ISPs. (As of 2011).	All cooperators (including GoBF) have the same rights and obligations whatever the amount of their capital contributions is. In 2016 when it was created, SCOOPS was composed of GoBF + 22 private Operators/ ISPs. Each contributor's part is 2,000 (equivalent to US$ 4,000). No changes since 2016.
SPV Legal Status/ Setup	A common law trust with a company limited by guaranty as trustee.	GUILAB was set up as a private company, where shareholders had initially access to bandwidth proportionally to their equity share. Later on, GUILAB became the dominant operator in the wholesale bandwidth market.	Cooperative society governed by the uniform act related to the applicable law of cooperative societies in Burkina Faso.
Other key features	Open access principle, however with limited application to date	Open access principle	Open access principle
WARCIP Financing	ACE membership fee	ACE membership fee	VLP membership fee



Perimeter: *number of mobile broadband capable subscribers divided by the total population (UN data)*
Source: GSMA, UN



Source: ITU

ANNEX 8. SUPPORTING DOCUMENTS

- Project Appraisal Document, Report No. 62001-AFR, dated May 25, 2011
- Republic of The Gambia Technical Annex, Report No. T7744-GM, dated May 25, 2011
- Emergency Paper to the Republic of Guinea, Report No. 62002-GN, dated May 25, 2011
- Burkina Faso Technical Annex, Report No. T7745-BF, dated May 25, 2011
- Project Paper on a Proposed Additional Credit to Burkina Faso, Report No. PAD2293, dated April 4, 2018
- Financing Agreement between Republic of The Gambia and International Development Association, Grant Number H713-GM, dated June 29, 2011
- Financing Agreement between Republic of Guinea and International Development Association, Grant Number H714-GN, dated June 29, 2011
- Financing Agreement between Burkina Faso and International Development Association, Grant Number H712-BF, dated July 4, 2011
- Financial Agreement (Additional Financing) between Burkina Faso and International Development Association, Credit Number 6222-BF, signed May 11, 2018
- Implementation Status and Results Reports (ISRs) 2011–2021
- Supervision Aide Memoires (The Gambia, Guinea, Burkina Faso)
- Project Procurement Reviews
- Financial Management Supervision Reports
- Restructuring Papers
- Social and Environmental Safeguards Instruments and Reports
- Assessment of Activities at Closing on a Grant to the Republic of The Gambia for the First Phase of the West Africa Regional Communications Infrastructure Program (WARCIP APL 1B), June 27, 2017
- Assessment of Activities at Closing on a Grant to the Republic of Guinea for the First Phase of the West Africa Regional Communications Infrastructure Program (WARCIP), June 9, 2017
- Digital Economy for Africa Country
    - Diagnostic of The Gambia, July 2021
    - Diagnostic of Guinea, July 2021
- Borrower Completion Reports:
    - West Africa Regional Communication Infrastructure Program (WARCIP) – Guinée. Rapport Final d'Évaluation et d'Achèvement du Project WARCIP Guinée, Décembre 2016
    - West Africa Regional Communications Infrastructure Program (WARCIP) – The Gambia. Project Completion Report, December 2016

  - Programme Régional des Infrastructures de Communication en Afrique de l'Ouest du Burkina Faso (PRICAO-BF), Rapport d'Achèvement, Version Finale, Juillet 2021

- *Enquête de Satisfactions des Bénéficiaires du Project Régional d'Infrastructures de Communication de l'Afrique de l'Ouest du Burkina Faso* (PRICAO/BF), Rapport Final, Juillet 2021.

ANNEX 9. WARCIP 1B BROADBAND INFRASTRUCTURE MAP