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IDA/R2019-0195/1

June 6, 2019

<p>Closing Date: Tuesday, June 25, 2019 at 6:00 p.m.</p>

FROM: Vice President and Corporate Secretary

Cote d'Ivoire - Urban Water Supply and Sanitation Project

Additional Financing

Project Paper

Attached is the Project Appraisal Document regarding a proposed additional credit to Cote d'Ivoire for the Urban Water Supply and Sanitation Project (IDA/R2019-0195/1), which is being processed on an absence-of-objection basis.

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Report No: PAD3325

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT PAPER
ON A
PROPOSED ADDITIONAL CREDIT

IN THE AMOUNT OF EUR 133.8 MILLION
(US\$150.0 MILLION EQUIVALENT)

TO THE

REPUBLIC OF COTE D'IVOIRE

FOR THE

URBAN WATER SUPPLY AND SANITATION PROJECT
(FORMERLY COTE D'IVOIRE URBAN WATER SUPPLY PROJECT)

JUNE 4, 2019

Water Global Practice
Africa Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective April 30, 2019)

Currency Unit = EUR

0.891 EUR = US\$1

CFAF 588.00 = US\$1

FISCAL YEAR

January 1 - December 31

Regional Vice President: Hafez M. H. Ghanem

Country Director: Pierre Frank Laporte

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Practice Manager: Yogita Mumssen

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ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
BP	Bank Policy
CBA	Cost-benefit Analysis
CFAF	West African CFA franc
CE	Citizen Engagement
CPF	Country Partnership Framework
EIRR	Economic Internal Rate of Return
EOPT	End-of-Project Target
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FIRR	Financial Internal Rate of Return
FM	Financial Management
FY	Fiscal Year
GBV	Gender-based Violence
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GoCI	Government of Côte d'Ivoire
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IFC	International Finance Corporation
IGF	Directorate of Inspection (<i>Inspection Générale des Finances</i>)
JMP	Joint Monitoring Programme
M&E	Monitoring and Evaluation
MDG	Millennium Development Goal
MFD	Maximizing Finance for Development
MH	Ministry of Water (<i>Ministère de l'Hydraulique</i>)
MHM	Menstrual Hygiene Management
MINASS	Ministry of Sanitation and Public Hygiene (<i>Ministère de l'Assainissement et de la Salubrité Publique</i>)
NPV	Net Present Value
NRW	Non-Revenue Water
O&M	Operation and Maintenance
ONAD	National Sanitation and Drainage Agency (<i>Office National de l'Assainissement et du Drainage</i>)
ONEP	National Drinking Water Agency (<i>Office National de l'Eau Potable</i>)
OP	Operational Policy
PAD	Project Appraisal Document
PCU	Project Coordination Unit
PDO	Project Development Objective
PIM	Project Implementation Manual
PIR	Institutions and Regulation

PPP	Public-Private Partnership
PPSD	Procurement Project Strategy for Development
PRICI	Emergency Infrastructure Renewal Project (P124715)
RAP	Resettlement Action Plan
RF	Results Framework
RPF	Resettlement Policy Framework
SCD	Systematic Country Diagnostic
SDG	Sustainable Development Goal
SIA	Social Impact Assessments
SODECI	Côte d'Ivoire Water Utility (<i>Société de Distribution d'Eau de Côte d'Ivoire</i>)
TA	Technical Assistance
ToR	Terms of Reference
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene
WB	World Bank
WHO	World Health Organization
WTP	Water Treatment Plant

Côte d'Ivoire

Additional Financing for the Urban Water Supply and Sanitation Project
(formerly Urban Water Supply Project)

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BASIC INFORMATION – PARENT (Urban Water Supply Project - P156739)

Country Cote d'Ivoire	Product Line IBRD/IDA	Team Leader(s) Veronique Verdeil		
Project ID P156739	Financing Instrument Investment Project Financing	Resp CC GWA07 (9390)	Req CC AFCF2 (6551)	Practice Area (Lead) Water

Implementing Agency: Cellule de Coordination du PRICI (CC-PRICI) - PREMU

Is this a regionally tagged project?	
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Bank/IFC Collaboration

No

Approval Date 09-Dec-2016	Closing Date 30-Jun-2022	Original Environmental Assessment Category Partial Assessment (B)	Current EA Category Partial Assessment (B)
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Financing & Implementation Modalities

<input type="checkbox"/> Multiphase Programmatic Approach [MPA]	<input type="checkbox"/> Contingent Emergency Response Component (CERC)
<input type="checkbox"/> Series of Projects (SOP)	<input type="checkbox"/> Fragile State(s)
<input type="checkbox"/> Disbursement-Linked Indicators (DLIs)	<input type="checkbox"/> Small State(s)
<input type="checkbox"/> Financial Intermediaries (FI)	<input type="checkbox"/> Fragile within a Non-fragile Country
<input type="checkbox"/> Project-Based Guarantee	<input type="checkbox"/> Conflict
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made disaster
<input type="checkbox"/> Alternate Procurement Arrangements (APA)	

Development Objective(s)



The proposed project development objective is to improve quality of, and increase access to, water services in selected urban areas and to strengthen capacity of ONEP for financial planning and financial management of the urban water supply sector.

Ratings (from Parent ISR)

	Implementation				Latest ISR
	31-Mar-2017	23-Oct-2017	04-Apr-2018	04-Oct-2018	29-Mar-2019
Progress towards achievement of PDO	S	S	S	S	S
Overall Implementation Progress (IP)	S	S	S	S	S
Overall Safeguards Rating	S	S	S	S	S
Overall Risk	S	S	S	S	S

BASIC INFORMATION – ADDITIONAL FINANCING (Urban Water Supply and Sanitation Project - P170502)

Project ID P170502	Project Name Urban Water Supply and Sanitation Project	Additional Financing Type Restructuring, Scale Up	Urgent Need or Capacity Constraints No
Financing instrument Investment Project Financing	Product line IBRD/IDA	Approval Date 25-Jun-2019	
Projected Date of Full Disbursement 29-Mar-2024	Bank/IFC Collaboration No		
Is this a regionally tagged project?			



No	
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Financing & Implementation Modalities

<input type="checkbox"/> Series of Projects (SOP)	<input type="checkbox"/> Fragile State(s)
<input type="checkbox"/> Disbursement-Linked Indicators (DLIs)	<input type="checkbox"/> Small State(s)
<input type="checkbox"/> Financial Intermediaries (FI)	<input type="checkbox"/> Fragile within a Non-fragile Country
<input type="checkbox"/> Project-Based Guarantee	<input type="checkbox"/> Conflict
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made disaster
<input type="checkbox"/> Alternate Procurement Arrangements (APA)	
<input type="checkbox"/> Contingent Emergency Response Component (CERC)	

Disbursement Summary (from Parent ISR)

Source of Funds	Net Commitments	Total Disbursed	Remaining Balance	Disbursed
IBRD				%
IDA	50.00	33.01	18.26	64 %
Grants				%

PROJECT FINANCING DATA – ADDITIONAL FINANCING (Urban Water Supply and Sanitation Project - P170502)

FINANCING DATA (US\$, Millions)

SUMMARY (Total Financing)

	Current Financing	Proposed Additional Financing	Total Proposed Financing
Total Project Cost	50.00	150.00	200.00



Total Financing	50.00	150.00	200.00
of which IBRD/IDA	50.00	150.00	200.00
Financing Gap	0.00	0.00	0.00

DETAILS - Additional Financing

World Bank Group Financing

International Development Association (IDA)	150.00
IDA Credit	150.00

IDA Resources (in US\$, Millions)

	Credit Amount	Grant Amount	Guarantee Amount	Total Amount
National PBA	150.00	0.00	0.00	150.00
Total	150.00	0.00	0.00	150.00

COMPLIANCE

Policy

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

Yes No

Does the project require any other Policy waiver(s)?

Yes No

INSTITUTIONAL DATA

Practice Area (Lead)

Water



Contributing Practice Areas

Social, Urban, Rural and Resilience Global Practice

Climate Change and Disaster Screening

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

Gender Tag

Does the project plan to undertake any of the following?

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF

Yes

b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment

Yes

c. Include Indicators in results framework to monitor outcomes from actions identified in (b)

Yes

PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
Mouhamed Fadel Ndaw	Team Leader (ADM Responsible)	Water Supply and Sanitation	GWA07
Veronique Verdeil	Team Leader	Water Supply and Sanitation	GWA07
Maurice Adoni	Procurement Specialist (ADM Responsible)	Procurement	GGOPF
Jean Charles Amon Kra	Financial Management Specialist (ADM Responsible)	Financial Management	GGOAW
Abdoul Wahabi Seini	Social Specialist (ADM Responsible)	Social Development	GSU01
Abdoulaye Gadiere	Environmental Specialist (ADM Responsible)	Environment	GENA2
Aissatou Seck	Team Member	Legal	LEGAM



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Edichi Brigitte Andoh Epse Mobongol	Team Member	Environment	GENA2
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Guy Tchakounte Tchabo	Team Member	Administrative Support	GWA07
Jean Vincent Koua	Team Member	Administrative Support	GWA07
Johanna van Tilburg	Safeguards Advisor/ESSA	Safeguards	OPSSP
Julie Nyamien Messoum Kouame	Team Member	Administrative Support	AFCF2
Madio Fall	Team Member	Water Supply and Sanitation	GWA07
Mahine Diop	Team Member	Sanitation	GSU19
Mariame Bamba	Team Member	Administrative Support	AFCF2
Marie Roger Augustin	Team Member	Legal	LEGAM
Moussa Coulibaly	Team Member	Water Supply and Sanitation	GWA07
Ndiaga Samb	Team Member	Social Development	GSU01
Rebecca Jean Gilsdorf	Team Member	Water Supply and Sanitation	GWA07
Salamata Bal	Team Member	Social Development	GSU01
Sanjay Pahuja	Team Member	Water Resources Management	GWA07
Sophie Martine Olivia Wernert	Counsel	Legal	LEGAM
Sunil W. Mathrani	Team Member	Sustainable Development	AFCF2
Xavier Henri Maitrèrobert	Team Member	Water Supply and Sanitation	GWA07
Extended Team			
Name	Title	Organization	Location



I. BACKGROUND AND RATIONALE FOR ADDITIONAL FINANCING

A. Introduction

1. This Project Paper seeks the approval of the Executive Directors to (a) provide an additional credit in the amount of EUR 133.8 million (US\$150 million equivalent) to the Republic of Côte d'Ivoire for the proposed Urban Water Supply and Sanitation Project.

2. **The proposed Additional Financing (AF) is intended to finance the costs associated with scaled-up activities to (i) increase the impact of the well-performing parent project; (ii) double the total number of beneficiaries; and (iii) strengthen the management of social and environmental impacts and sustainability of improved water supply and sanitation services.** The magnitude and scope of the proposed scale-up will result in restructuring the original project Urban Water Supply Project (US\$50 million equivalent, P156739) to reflect the revised project development objectives, components, activities and indicators. The Financing Agreement will be amended to revise the legal name and extend the period of implementation of the project by 22 months.

3. **Scaled-up and additional activities of the AF will contribute to the World Bank Group corporate mandates** to support Côte d'Ivoire in achieving medium and long-term outcomes, namely, to: (i) provide water and sanitation services as key contributors to the development of human capital; (ii) strengthen utility performance and help create an enabling environment for private financing in a capital-intensive sector; (iii) promote digital technologies to facilitate the use of water resources and service delivery data; (iv) address an inequality linked to gender by providing girls in schools with access to sanitation facilities that are equipped for menstrual hygiene management (MHM); and (v) address climate-related risks that could undermine the project effectiveness and build resilience for the beneficiaries, un particular by improving water resources management.

B. Country and Sector Context

4. **Population growth.** The population of Côte d'Ivoire is estimated at 24.3 million people. During and in the aftermath of the political crisis (2002–2011), the country experienced important internal migrations that have increased demand for housing and urban services, including water supply and sanitation, in some of the largest cities, especially Abidjan. Currently, 56 percent of the country's population lives in urban areas, and urban growth remains high, at 5 percent annually. By 2050, the share of urban population is projected to increase to two-thirds.

5. **Economy.** Côte d'Ivoire is continuing its healthy recovery from a decade-long civil war. The country is the largest economy in francophone Sub-Saharan Africa, and the third-largest in West Africa, with a Gross Domestic Product (GDP) of US\$39.91 billion in 2017. The country's GDP grew at a rate of 7.7 percent in 2017 and around 7.4 percent in 2018, while inflation has remained below 3 percent. Growth is expected to continue at a rate above 7 percent in 2019, reflecting buoyant domestic demand, steady foreign direct investment, and continued public spending, particularly on infrastructure. The business environment and development of the private sector have improved significantly, heightening the country's competitiveness. Côte d'Ivoire moved up from 168th in the 2010 World Bank Doing Business ranking to 122nd in 2019. The economy, however, remains vulnerable to external shocks, especially the volatility in the prices of the country's main export commodities (that is, cocoa, cashew



nuts, palm oil, and cotton) and climatic changes, as well as, to political uncertainty, especially in the preparation of the next Presidential elections scheduled in 2020.

6. **Poverty.** Despite fast and sustained growth, poverty has declined only marginally, from 29.1 percent in 2008 to 25.2 percent in 2015 (based on US\$1.90 a day poverty line, 2011 purchasing power parity). Using the national poverty line, the poverty rate has also decreased but remains at 46.3 percent in 2015. However, as revealed by the 2015 Living Standards Measurement Survey, living conditions in urban areas have worsened, and urban poverty has increased from 29.5 percent in 2008 to 35.9 percent in 2015. There are high spatial disparities in poverty incidence across the country, with the city of Abidjan displaying the lowest poverty rate (22.7 percent).

7. **Human development.** Despite these macroeconomic achievements, the country's human development and other social outcomes are still below those of most countries with comparable per capita income. In the 2018 Human Development Index of the United Nations Development Programme, Côte d'Ivoire ranked 170th of 189 countries. On average, people complete 7.68 years of schooling, whereas the regional average is 8.2. The under-5 mortality rate is 88.8 deaths per 1,000 births (2017), against the Sub-Saharan Africa (SSA) average of 83.2 and the lower-middle-income average of 52.8. Below average school performance and high disease burden result in Côte d'Ivoire having a Human Capital Index¹ of 0.35, making it the ninth lowest globally. As urban growth continues, fully leveraging human capital in the country will require increased investments in the urban water supply and sanitation sectors, which directly impact disease burden and stunting and thus also improve educational attainment.

Sector and Institutional Challenges

8. **Water resources and climate change vulnerability.** Côte d'Ivoire is located along the Gulf of Guinea in West Africa. Its climate ranges from equatorial along the southern coasts, tropical in the middle, and semiarid in the far north. The country is blessed with abundant water resources with four major river systems running southwards. However, floods have repeatedly hit Côte d'Ivoire, mostly in the south where the highest amount of rainfall occurs. Additionally, with the combined effect of changing patterns in rainfall and temperatures, droughts are expected to increasingly impact the semi-arid northern savannah region in the coming century. Rising sea level is also likely to affect the coastal part of the country.² Addressing this situation calls for improved protection, conservation and management of water resources through new policies, strategies and project designs.

9. **Institutional framework.** Water sector planning and development was previously within the responsibility of the Ministry of Economic Infrastructure. The creation of the Ministry of Water (*Ministère de l'Hydraulique*, MH) in 2018 to take over this mandate demonstrates a willingness to reinforce water among the Government's priorities. Sector development, asset management (but not ownership) and monitoring of service delivery has been partly delegated to the National Water Agency (*Office National de l'Eau Potable*, ONEP) since 2009. Delivery of water services in urban and semi urban areas has been contracted out to a private sector company (*Société de Distribution d'Eau de Côte d'Ivoire*, SODECI), through the longest running public-private partnership (PPP) for urban water in West Africa. The sanitation sector is under the oversight of the Ministry of Sanitation and Public

¹ The Human Capital Index quantifies the contribution of health and education to the productivity of the next generation of workers.

² World Bank. 2018. *Pour que demain ne meure jamais : la Côte d'Ivoire face au changement climatique (French)*. Washington, DC: World Bank.



Hygiene (*Ministère de l'Assainissement et de la Salubrité Publique, MINASS*). A dedicated public agency (*Office National de l'Assainissement et du Drainage, ONAD*), was created in 2011 to foster efforts to increase the access to quality sanitation services and develop drainage and flood management for the country.

10. **Access to water services.** The political crisis has strongly affected access to water services. The portion of the population served dropped by 15 percentage points between 2000 and 2011.³ Access to improved water sources was estimated at 80 percent nationwide (Joint Monitoring Programme (JMP) 2015),⁴ below the 84.5 percent target of the Millennium Development Goals (MDGs). Only 70 percent of the urban population has access to piped water (65 percent is considered safely managed), with a significant disparity between Abidjan (90 percent) and other urban centers (45 percent). Underinvestment during the crisis and high population growth have led to severe deficits in water production throughout the country. Large investment programs in Abidjan have helped close the gap, but deficits are still acute in many secondary centers, which may be exacerbated by inconsistent rainfall.

11. **Quality of water supply services.** Although services have started to recover since 2014, in general reliability and sustainability of service delivery deteriorated substantially during the political crisis due to the lack of investment and effective maintenance. Key indicators are below the performance of comparable regional utilities, as shown in Table 1 below.

Table 1 - Benchmarking of Operating Performance Indicators (2018)

	Côte d'Ivoire	Senegal	Burkina Faso	Niger
Number of service connections	1,028,930	588,489	350,686	220,780
Access to piped water (urban areas, %)	71	98	86	85
Household connections ratio (%)	70	89	65	58
Average service hours per day	20	23	23	22
Non-Revenue Water (NRW) (%)	27	20	23	15
Bill collection ratio - private clients (%)	85	95	98	89
No. of staff per 1,000 connections	2.0	1.8	2.7	2.9
Average water tariff (West African francs (CFAF)/m3)	401	482	504	304
Compliance with bacteriological standards (% of samples)	96	99	100	99

Source: ICEA-Espelia, 2018. *Technical audit of the contracts and agreements in the urban water sector*⁵

12. Customer tariffs have not been adjusted since 2004, and the *affermage* contract with SODECI does not include explicit objectives or incentives to improve performance. This situation has resulted in very limited

³ Data from the International Benchmarking Network (IBNET).

⁴ http://files.unicef.org/publications/files/Progress_on_Sanitation_and_Drinking_Water_2015_Update_.pdf

⁵ ICEA-Espelia, 2018. *Audit technique des contrats et conventions dans le secteur de l'eau potable en milieu urbain*.



capacity for the sector to self-finance renewal and expansion of investments to meet an increasing demand for high-quality water services.

13. **Access to sanitation services.** Only 30 percent of the population (an estimated 45 percent in urban areas), have access to basic sanitation, which is far below the MDG target of 81 percent. Additionally, the JMP reports that 35 percent of schools in urban areas lack improved sanitation facilities (2017). Access to networked sewerage services is about 11 percent, mostly in Abidjan,⁶ and the remaining urban population rely on on-site sanitation. The informal private sector is largely responsible for pit/tank emptying, but most cities lack any treatment site for disposal, so wastewater and fecal sludge are often discharged untreated. Additionally, few Master Plans have been developed in secondary cities, and there is limited capacity to undertake such measures without external support.

C. Original Project Features and Performance

14. The IDA credit of EUR 44.8 million (US\$50 million equivalent) for the Côte d'Ivoire Urban Water Supply Project was approved on December 9, 2016. The Financing Agreement was signed on February 20, 2017 and became effective on May 17, 2017. The original Project Development Objective (PDO) is "to improve quality of, and increase access to, water services in selected urban areas and to strengthen capacity of ONEP for financial planning and financial management of the urban water supply sector."

15. To achieve these objectives, the project includes two components:

(a) **Component A: Urban Water Supply (US\$45.6 million equivalent)** finances an investment program comprising the construction of water treatment plants (WTPs), boreholes, water intakes, pumping stations, storage tanks, water transmission lines and distribution networks in selected urban centers, as well as a program of household water connections.⁷ New and rehabilitated infrastructure are designed to reduce the gap in production, storage and distribution capacity that has severely affected service delivery in the last decade. It will result in improving the quality of water services for (i) households already connected to the public network and returning customers (who had previously de-activated their household connections due to the intermittent or discontinued service delivery) and (ii) first-time and poorer customers targeted by the project's social connections. In total, the project will benefit an estimated 549,000 direct beneficiaries in eight urban centers: Tiassalé, N'Douci, N'Zianouan, Agboville, Bingerville, Béoumi, Ferkessédougou, and Korhogo.

(b) **Component B: Institutional Support (US\$4.4 million equivalent)** supports the institutional strengthening of the urban water sector (including an inventory of sector assets, development of a financial model, and an audit of the conventions and contracts governing the sector) and capacity building activities to

⁶ The sanitation network in Abidjan is operated by SODECI under a specific affermage contract. Access to sewer in Abidjan is estimated at 40 percent.

⁷ A program of providing subsidized household connections to poor households (see Annex 1 for further details). The use of subsidized household water connections is motivated by experience in many other parts of Sub-Saharan Africa, especially West Africa, where the high connection cost is often the greatest barrier to households connecting to networked supplies. As an example, in Côte d'Ivoire, the average cost of a household connection is CFAF 150,000. This is particularly important given that in many contexts poor unconnected households actually pay more for water than those connected to the networked (who are often wealthier households). By providing subsidized connections, these households, in most cases, will benefit from improved water supply and a reduced financial burden.



strengthen the financial planning and management, operations monitoring, and project management in the sector.

16. **Since inception, the project has been rated satisfactory on both the achievement of the PDO and on implementation progress.** Ninety-seven percent of the credit has been committed, and all works contracts are under implementation. It is expected that the credit will be fully disbursed before the end of 2020, which is 18 months before the current closing date (June 30, 2022). Procurement and Financial Management (FM) ratings are satisfactory. The 2018 financial audit did not raise any qualified opinion and interim unaudited financial reports are submitted on time and are deemed satisfactory. The project has complied with all legal covenants. Project implementation has complied with both the Environmental and Social Management Framework (ESMF) and the Resettlement Policy Framework (RPF), which were approved and published in September 2016. Other safeguards instruments (specific Environmental and Social Impact Assessments [ESIAs] and Resettlement Action Plans [RAPs]) have been prepared and deemed satisfactory, and their implementation has not raised issues to date.

17. **The status of the project's components are as follows:**

- (a) Component A, supporting urban water supply works in eight centers, has been progressing at a good pace. The construction of transmission and distribution networks is close to completion. The execution of civil works for production and storage capacity is over 50 percent. The works are expected to be fully completed before the mid-term review, planned for mid-2020. The kick-off of the social connection program, planned in mid-2019, will allow to start providing people with access to improved water services.
- (b) Component B, supporting the strengthening of the urban water sector, is in its final stage. The main institutional studies, namely the technical audit of current agreements in the urban water sector, the design and implementation of a financial model and the inventory and valuation of assets and liabilities, have been completed. The studies highlight key issues and recommendations with regards to institutional, operational and financial performance of the sector. A comprehensive action plan including capacity building activities will be implemented based on these recommendations.

D. Rationale for the Additional Financing

18. **The Government of Côte d'Ivoire (GoCI) has requested an AF in view of the following:**

- (a) **Continued focus on increasing access to quality water supply in secondary centers.** Water deficits and limited access continue to be critical challenges in secondary cities, where only 45 percent of households have access to piped supply. The use of social connections will help address this challenge by providing subsidized household connections to the poorest households. The ongoing project has demonstrated a satisfactory performance to date and is a solid vehicle with strong capacity to implement a scaled-up program.
- (b) **Further aligning the project with the 'Social Program of the Government 2019-2020' and its objective to improve human capital.** The program is targeted towards the poorest populations, especially women and youth, with the aim to increase their living conditions and economic opportunities. Access to affordable water and sanitation services is part of a multifaceted program including more efficient health services, better education, and professional skills development, among others. The project covers secondary cities, small towns, rural areas as well as new social housing programs in the greater Abidjan areas. In addition to



the new social water connections of the parent project, the AF will provide additional social connections for the poorest households, based on demand, as well as new/rehabilitated water connections and sanitation facilities in health care centers and schools.

- (c) **Addressing water resources vulnerabilities linked to climate variability, water quality and pollution.** As learned from the severe water crisis that affected the city of Bouaké in Spring 2018, water resources monitoring and watershed management are critical to maintaining service delivery. Better planning will help diversify the sources of water and build long term supply capacity. Preventing the contamination of water resources is also a matter of public health, raising the issue of the lack of adequate sanitation and treatment solutions. By equipping new water monitoring stations and financing studies on water resources, as well as including a sanitation component, the AF will contribute to the alleviation of risks of water shortages and pollution of water resources in the future.
- (d) **Improving the sector operational and financial performance, including through continued private sector engagement.** Further sectoral reforms will be conducive to maximizing finance for development (MFD) in the long term. Improvements in key indicators such as NRW and collection ratios should be incentivized to optimize water revenues and reduce costs, helping address the current operational deficit and the huge financing needs facing the sector. This requires a review of options to improve the performance of the current *affermage* contract, as well as tariff and budget decisions, to stabilize, in a socially and fiscally sustainable manner, sector financing in the coming decades.

19. **The AF will scale up the number of beneficiaries to 1.2 million people total, compared to the original target of 549,000 beneficiaries.** The urban centers covered by the parent project are experiencing fast population growth, resulting in a need for increased production and distribution capacity, as well as the expansion of quality water services to underserved populations in these centers and surrounding areas. Feasibility studies for an equivalent of US\$60 million of additional investments are underway and will be completed by approval, contributing to project readiness. The AF will also finance technical studies for other centers to help the Government build a bankable investment portfolio and attract investments in the future.

20. **The AF will increase the focus on human capital investments and environmental sustainability through a focus on much-needed improvements in urban sanitation.** A decision was made during the preparation of the parent project to strictly focus on water supply, given the severe shortages and the limited financing. At this stage, the Government would like to use the AF to also provide support to the urban sanitation sector, in line with its current priorities on improving sanitation service chains, developing tools for better sector management, expanding access to public services, and promoting behavior change. Given that this sector is comparatively less developed in Côte d'Ivoire, the project will provide support to investments, but will prioritize developing the enabling environment and planning processes. Infrastructure rehabilitation and construction, in parallel with



promotion of good hygiene practices (including MHM), will be undertaken at schools⁸ and health centers,⁹ which are critical facilities for impacting human capital, through reduction in stunting and associated long-term learning and cognitive deficits.

21. **The AF will further strengthen the institutional framework of the urban water sector and its capacity to better manage sector development, including through an environment conducive to MFD.** The AF will support the implementation of the sector studies completed under the parent project to improve the operational and financial performance of the sector and reform its current contractual framework. Priority will be given to the introduction of incentive mechanisms in the current lease contract between the GoCI and SODECI and the implementation of contract monitoring and regulation mechanisms. The financial model developed under the parent project, will be implemented to support decision-making for the distribution of funding between tariffs, internal government resources, development partners and potential private/commercial financing. Sector financing will be further strengthened as part of the strategic water sector plan being developed under the project. Social and fiscal sustainability of the sector in the long run is key to ensure investments will translate into positive benefits for the populations. To support ONEP in assuming its role as sector asset manager and developer, digital technologies will be introduced, for example for leak detection, asset monitoring, and planning of asset development or renewal. Improving asset management and the performance of the water operator will strongly support the creation of an MFD-enabling environment and support the achievement of sustainable financing (by balancing scarce public investments and private participation).

22. **The AF will support the improvement of water resources management, including using new digital technologies, to better address vulnerability to climate variability and water security.** Restoring and expanding the national hydrologic measurement system throughout the country to collect and analyze hydrological data will help better monitor the availability of water resources and inform the choice and sizing of investments in water supply systems. The information system will be publicly available. Strategic studies will also help assess particularly vulnerable aquifers or the feasibility of large bulk water transfers.

23. **The AF will offer an opportunity to promote gender and social inclusion and to foster accountability through citizen engagement (CE).** The AF will further implement the CE strategy that has been developed under the parent project. Core activities to date have been focused on ensuring that populations are well informed of the ongoing works and aware of the benefits expected from the social connection campaign, procedures to apply, and mechanisms to provide feedback. Under the AF, more attention will be given to accountability and transparency through IT tools to allow beneficiaries, especially women and vulnerable people, to raise their voice. Additionally, the school sanitation facilities will be designed to address girls' specific needs.

24. **The AF is the preferred financing mechanism,** because compared to preparing a new operation, it will bring development benefits to the Recipient, such as: (i) cost-effectiveness as technical studies for a large part of

⁸ According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), an estimated 10 percent of girls in Sub-Saharan Africa miss school during their period – and may eventually drop out – often due to the lack of proper sanitation and hygiene facilities at school. By building and rehabilitating existing facilities, and providing improved menstrual hygiene programming, in the long run, there should be an increase in girl's attendance in school and an increase in the attainment of their human capital potential.

⁹ Hygiene facilities in health centers are critical to support handwashing for visitors and staff. Neonatal fatality declines by 41 percent when mothers and birth attendants practice handwashing with soap (Rhee, et al. (2008) Maternal and birth attendant hand washing and neonatal mortality in southern Nepal. *Archives of pediatrics & adolescent medicine*, 162(7), 603-608).



proposed investments are already underway and will allow procurement packages to be more quickly available; (ii) time savings associated with the project preparation process, allowing the Recipient quick access to additional funds while maintaining the positive momentum of the results achieved to date; and (iii) capitalizing on the current implementation arrangements, which have generated satisfactory results under the ongoing project.

II. DESCRIPTION OF ADDITIONAL FINANCING

A. Summary Description of AF Activities

25. For the parent project, project locations were prioritized by the Government based on factors linked to existing water supply (e.g., production deficits and access rates, size of urban settlements and number of active and inactive connections, etc.). For the AF, the original eight sites were selected to multiply the impacts of the parent project, and new cities were added following the same approach, with priority given to locations with marked production deficits and lower rates of existing service coverage. The following paragraphs provide a summary of the proposed new activities and restructured naming of the components. Annex 1 includes a detailed description of all project components and planned activities and provides additional information on the project locations. Annex 2 provides a detailed cost breakdown of currently proposed activities.

26. Component A. Urban Water Supply (original US\$45.6 million, AF US\$101.7 million, total US\$147.3 million equivalent): Under this component, the AF will scale up the activities of the parent project by expanding the target populations, both within the existing centers and in additional centers to address the gaps in water production and distribution and improve service delivery in each location, hence contributing to make beneficiaries in the targeted areas more resilient to potential droughts and floods. The AF will include the following activities:

- (a) In the eight existing centers of the parent project: Tiassale/N'Douci/N'Zianouan, Agboville, Korhogo/Ferkéssédougou, Bingerville and Béoumi, the AF will finance (i) the construction of WTPs, boreholes, water intakes, pumping stations and storage tanks (reservoirs); (ii) the expansion of distribution networks; and (iii) the installation of 13,000 social water connections, to provide adequate water services to nearby small towns and communities who could not benefit from the parent project investment, representing a doubling of the targeted population;
- (b) In the additional cities selected for the AF: Dabou, Issia, Niakara and Songon, investments will focus on (i) the construction of additional production capacity (WTP, water intakes, pumping stations, new and rehabilitated boreholes) and storage capacity (tanks) aimed at addressing deficits; (ii) the construction of water transmission lines and expansion of water distribution networks; and (iii) the installation of 8,000 social water connections to address both water deficits and limited access rates in these centers; and
- (c) Performing relevant technical studies and socio-environmental studies and supervision of works.

27. Component B: Urban Sanitation (US\$18.9 million equivalent): In the long run, to ensure the sustainability of water investments, it is critical to also address sanitation and thereby mitigate the potential adverse impacts



on people's health, the environment, and broader water resources management. This new component on sanitation has therefore been added to the project.¹⁰

28. The AF will finance a program of activities including studies, investments and hygiene promotion for:
- (a) **The development of a new National Sanitation Strategy that will consider the technical, financial, institutional and regulatory needs of the sector.** This strategy will be in line with the Government's approach to private sector engagement and will mainstream the Government's desired approach to household engagement and behavior change messaging;
 - (b) **The planning process and development of sanitation and drainage master plans in selected cities.** Following necessary assessments, these master plans, like the strategy, will incorporate technical, financial, and social dimensions, as well as service delivery model options for the sector. The service models will consider the full sanitation service chain – from point-of-use containment through emptying, transport, treatment and end use. This type of planning process is in line with global best practice and aligns with the World Bank's ongoing sanitation initiative, coined Citywide Inclusive Sanitation. To further support future investments, the master plans will include development of detailed designs for priority interventions in each city;
 - (c) **Construction and rehabilitation/upgrading of water, sanitation and hygiene (WASH) facilities for selected schools¹¹ and health facilities** in all the project areas (and the associated technical and socio-environmental studies and supervision of works). At schools, the facilities will be designed incorporating direct feedback from female students, to ensure the facilities address their unique needs for MHM. To ensure consideration of the full sanitation service chain, the project will also provide capacity building to ONAD through technical assistance (TA) to develop management plans for the constructed facilities and help improve the quality of relevant portions of the sanitation service chain
 - (d) **Extensive hygiene education programs** through hygiene promotion and awareness campaigns that will lead to effective behavior change and better hygienic practices. In schools, the hygiene messaging will include special focus on MHM.

29. Component C: Urban Water Sector Strengthening¹² (original US\$1.8 million, AF US\$24.1 million, total US\$25.9 million equivalent): The parent project included strategic activities to support the sector and provide stakeholders with key tools to better develop and manage the sector, such as a financial model and an asset inventory. The AF gives an opportunity to further strengthen the sector and help respond to the strong commitment of the Government, notably through the recently created MH. Innovative technologies will be introduced to address water resource management and issues with access to water services. In line with the

¹⁰ This new Component B fully replaces the parent project's Component B (Institutional Support) as defined in paragraph 15 (b) above.

¹¹ Based on the Ministry of Health's most recent annual assessment (*Statistiques Scolaires 2018*), 43 percent of schools in the project areas lack latrines and 64 percent of schools lack access to a water point.

¹² This component, as restructured and renamed, builds on activities of the parent project and finances new ones with the objective to further strengthen the urban water sector. The US\$1.8 million refer to the activities financed under the original financing (as part of the parent project's Component B: Institutional Support) and aimed to support (i) the institutional strengthening of the sector, namely: an inventory of urban water supply sector assets, the development of a financial model for the urban water supply sector and an audit of the Affermage Contract and the ONEP Agreement; and (ii) and capacity building for ONEP in financial planning and operations monitoring.



studies funded by the parent project, new activities will focus on addressing the challenges pertaining to the existing PPP framework. These MFD-enabling activities will improve the sector environment for future private engagement and commercial financing for the sector. The AF will finance the following sets of activities:

- (a) **Support to the Division of Hydrology, within the MH**, to ensure proper attention is given to water resources management in water investment planning, in the context of current and expected climate change impacts, including: (i) studies on water resources quality and planning; (ii) design, installation and maintenance of hydrological information collection and monitoring stations that use new technologies to digitally transfer, analyze and share hydrological data; and (iii) capacity strengthening for the Division;
- (b) **Support to the MH and ONEP** to better manage their respective mandates, including: (i) TA for the implementation of key activities outlined in the sector audit action plan, in support of policy and regulatory reforms; (ii) a study to inform the development of a strategic water sector plan for the achievement of Sustainable Development Goal 6 (SDG6), which will outline the vision and set the targets, investment needs, and scope for private sector engagement/financing; (iii) capacity strengthening, including to assess and build the MH's expertise in key functions for project management; and (iv) support, through TA, to the preparation of the next generation of sector reform. This next generation of reform will include more performance targets and incentives in the current PPP contract, strengthening of the financial autonomy of ONEP, an increase in ONEP's capacity to monitor sector assets and performance, an enhancement of the sector's accountability to citizens, and further strengthening of the enabling environment for the sector to attract more private finance;
- (c) **Support the improvement of the sector performance**, with respect to financial and operational efficiency. The AF will finance: (i) the contract of a private enterprise, competitively selected, to pilot (in southern Abidjan) an approach to NRW reduction, including establishment of District Metered Areas (DMAs), using equipment to detect leaks, incorporating smart metering, and identifying priority investments to be renewed; and (ii) the purchase of goods, such as distribution networks and hydraulics and electromechanical equipment, that will be incorporated in the sector assets, further optimizing renewal costs for which ONEP is responsible, further supported with implementation of a new approach for asset management that uses clear diagnostics and new technologies, as appropriate.

30. **Component D: Project Management¹³ (original US\$2.5 million, AF US\$5.3 million, total US\$7.9 million):** This component will cover: (i) the costs, incurred by the Project Coordination Unit (PCU), to manage and implement the project; and (ii) the costs of the project implementation support contracts with ONEP, ONAD and the MH, including human resources from each institution dedicated to the implementation of relevant activities of the AF. The overall share of project management costs will be reduced from 5.1 percent to 3.9 percent.

¹³ With the addition, through the AF, of a new component on sanitation (now Component B) and increased focus on strengthening the urban water sector (now Component C), the project as restructured now includes this new Component D strictly focused on project management. The US\$2.5 million refer to the activities financed under the original financing (as part of the parent project's Component B: Institutional Support) and aimed to support operations and strengthened capacity of the PCU and ONEP in Project management.



B. Other changes

31. **Project Development Objectives.** The original PDO was “to improve quality of, and increase access to, water services in selected urban areas and to strengthen capacity of ONEP for financial planning and financial management of the urban water supply sector.” The magnitude and scope of the AF is different than that of the parent project. Consequently, the original Theory of Change, including long-term development outcomes, project objectives and related activities, have all been revisited.

32. The proposed revised PDO is “to increase access and quality of water services and access to sanitation in selected urban areas, and to improve planning and monitoring of the urban water sector.”

33. **Results Framework (RF).** The project RF will be updated to align with the revised PDO and revised Theory of Change and scaled-up or additional activities to support them. Table 2 below presents the revised PDO and intermediate indicators. More details on the rationale for change, new or revised end-of-project-targets (EOPT) and description of all indicators are presented in the RF in section VIII.

Table 2 – Summary of RF Changes

<i>Current (PAD)</i>	<i>Proposed changes</i>
PDO indicators	
Direct project beneficiaries,	Change in the EOPT value: increased from 549,000 to 1,200,000
of which female (%)	No change
People in urban areas provided with access to improved water sources under the project	Change in the EOPT value: increased from 180,000 to 390,000 people.
People with access to enhanced water supply services due to the project	Change in the EOPT value: increased from 369,000 to 810,000 people
	<u>New.</u> Number of students with access to improved sanitation facilities in schools under the project EOPT value: 90,000 students
Average hours of water supply in centers targeted by the project	Dropped
Sector financial model used for financial planning and decision making	No change
	<u>New:</u> Strategic Sector Plan towards SDG6 approved (yes/no) EOPT value: Yes
Intermediate indicators	
New piped household water connections resulting from the project intervention	Change in the EOPT value: increased from 10,000 to 31,000 water connections
Inactive household connections re-activated in centers targeted by the project	No change
Production capacity constructed under the project (m ³ per day)	Change in the EOPT value: increased from 33,000 m ³ to 92,000 m ³
Water storage capacity constructed under the project (m ³)	Change in the EOPT value: increased from 2,300 m ³ to 14,600 m ³



Current (PAD)	Proposed changes
PDO indicators	
Water transmission and distribution pipes constructed under the project (km)	Change in the EOPT value: increased from 113 km to 952 km
Direct beneficiaries involved in the consultation process	Change of definition: <i>Number of people reached by local communication campaigns for the social connection program</i> Change in the EOPT: from 18,000 households to 585,000 people
Improvement in customer satisfaction (%)	Change of definition: <i>Improvement in beneficiaries' satisfaction</i> Change in the EOPT: from 90% to 80%
	<u>New</u> : <i>Number of schools benefiting from new/rehabilitated WASH facilities</i> EOPT value: 375
	<u>New</u> : <i>Number of health centers benefiting from new/rehabilitated WASH facilities</i> EOPT value: 50
	<u>New</u> : <i>Number of female students who gain access to menstrual hygiene management (MHM)- equipped WASH facilities at school</i> EOPT value: 9,000
	<u>New</u> : <i>National Sanitation Sector Strategy approved (yes/no)</i> EOPT value: Yes
	<u>New</u> : <i>Number of sanitation and drainage master plans approved</i> EOPT value: 5
Completion of the audit of contracts between Government, ONEP and SODECI	No change
Completion of assets inventory	No change
Completion of financial model	No change
	<u>New</u> : <i>Number of hydrologic information collection and monitoring stations installed and operational</i> EOPT value: 35
	<u>New</u> : <i>District Meter Areas (DMAs) established in a pilot area in Abidjan water distribution network (yes/no)</i> EOPT value: Yes
	<u>New</u> : <i>Report on sector asset management monitoring available (yes/no)</i> EOPT value: Yes
	<u>New</u> : <i>A web-based sector M&E platform that uses digital technology operational (yes/no)</i> EOPT value: Yes

34. **Theory of Change.** The Theory of Change has been updated to reflect the changes to the PDO. The full revised Theory of Change can be found in Annex 5 and is based on the following logic:

- (a) The water infrastructure component activities of expanding treatment and storage capacity will result in increased output of potable water, which will enable additional connections to meet the growing demand in secondary urban centers, leading to improved access to water services and contributing to long-term impacts on health and human capital improvements and resilience to climate-related risks;



- (b) The sanitation investments and associated hygiene messaging/communication will result in increased access to sanitation in schools and health centers and cause positive long-term impacts on health and human capital improvements;
- (c) The new strategic water sector plan will help the Government prepare the next generation of sector reform, reflecting its ambitions for the achievement of the water and sanitation SDGs, in part, by improving the enabling environment for private investment. The enabling environment will be further strengthened due to improved sector operational performance and social accountability (through the introduction of performance-based approaches to reduce water losses and implementation of CE strategy). Support to hydrologic stations and the asset inventory will allow the Government to better monitor its assets (natural and otherwise). Better monitoring and an improved enabling environment for private sector engagement, will allow the Government to better plan for long-term sustainability.
35. **Project Name.** To reflect the incorporation of sanitation activities, the project legal name will be amended from the current '*Urban Water Supply Project*' to '*Urban Water Supply and Sanitation Project*.'
36. **Project Duration.** The project closing date will be extended by 22 months, from June 30, 2022 to April 30, 2024, to ensure sufficient time to implement the scaled-up activities and fully disburse the additional resources. The project implementation schedule and disbursement projections will be revised accordingly.
37. **Implementation Arrangements.** The successful implementation of the parent project has demonstrated the satisfactory performance of the existing PCU to manage a scaled-up program. To take account of the additional activities under the AF, the agreements between the various entities involved in implementation will be slightly revised, particularly to reflect the recent creation of the MH and the inclusion of the sanitation component. The capacity of the CPU will be strengthened to carry out the additional work incurred by expanded breath of the project. The implementation arrangements are further described in Annex 3.
38. **FM, Procurement, and Safeguards.** Changes are detailed in the Appraisal Summary below. There is no change in environmental assessment rating and no new safeguard policies are triggered as part of the AF.

C. Consistency with the Country Partnership Framework and World Bank Poverty Goals

39. **The proposed AF is fully in line with the existing Country Partnership Framework (CPF) for 2016-2019**, (Report No. 96515-CI, discussed by the Board of Executive Directors on August 17, 2015), extended with the Performance and Learning Review (Report No. 122566-CI, discussed by the Board of Executive Directors on April 24, 2018). Focus Area 1 on "Accelerating Sustainable Private Sector-Led Growth" includes an objective on strengthening economic infrastructure, including "improvements in access to water and sanitation services in selected secondary urban centers, by expanding water production and distribution capacities and facilitating access to services, and increasing the resilience of the water supply, particularly for the poor, through social water connections and public stand posts programs; and supporting the implementation of the urban water sector reform and strengthening capacities to deliver and manage services." Additionally, under Focus Area 2, "Building Human Capital for Economic Development and Social Cohesion," one of the three priorities is to improve delivery of water and health services.
40. The project is also aligned with the development vision, as set out in the current National Development Plan of Côte d'Ivoire (2016-2020), which promotes the development of human capital and strengthens



infrastructure throughout the country, including through improving access to water and sanitation services. It is also aligned with the objectives of the 'Social Program of the Government 2019-2020,' which was launched in January 2019. Its water component aims at reducing water deficits and increasing access to drinking water services in secondary cities, small centers and rural areas as well as in new social housing programs in the greater Abidjan areas. This program also supplements the efforts being undertaken through the 'Water for All' Program 2017-2020, which aims to provide 450,000 subsidized household connections and to increase access to water services to the poorest populations.

41. **Further, the project will contribute directly to the World Bank's goals of eradicating poverty and fostering shared prosperity** by increasing access and quality of drinking water services to an estimated 1.2 million people and providing access to improved sanitation facilities to an estimated 90,000 students. Access to safe drinking water and improved sanitation are shown to have significant positive impacts on health, particularly for young children who are the most vulnerable to diarrheal and related illnesses. Investments of this nature are particularly important in Côte d'Ivoire, whose current score on the human capital index is 0.35 (out of 1), compared against the regional average of 0.40 in Sub-Saharan Africa.

III. KEY RISKS

42. **The overall risk associated with the AF is rated substantial**, in view of the country context, the scale of the AF, nature of the proposed activities and related risks, as well as the weaknesses and strengths identified during the parent project implementation period.

43. The **politics and governance risk** are **substantial**. Despite a return to relative stability, there are uncertainties around the next Presidential election planned for October 2020. Some political decisions, and administrative processes, may be delayed due to the pre- and post-electoral agendas. For example, the implementation of the action plan to consolidate the financial viability of the sector may be similarly affected.

44. The **macroeconomic risk** is **substantial**. The Government may have some difficulties to control current expenditures with the Presidential election approaching. The country remains vulnerable to external shocks and weather conditions that can adversely impact fiscal revenues, economic growth as well as the income of population. This would contribute to affect project contractors and slow down implementation.

45. The **sector strategies and policies risk** is revised to **substantial**. The Government has demonstrated its strong commitment to further develop the water sector and willingness to follow up on the recommendations outlined by the technical audit of the sector financed by the parent project. However, the discussions around the institutional and financial reforms needed for the sector may prove difficult, for examples for revisions of the tariffs for end users, which have remained unchanged since 2004. This would continue to weigh on the financial equilibrium of the sector. Revisiting the provisions of a future contract with a private operator may also be difficult. To mitigate the risk, the project will provide TA to assist in carrying out strategic studies, including joint work with the International Finance Corporation (IFC) to create a conducive environment for sustainable sector financing, as well as investments to consolidate the sector assets.

46. The **institutional capacity for implementation and sustainability risk** remains **substantial**. Although the PCU and ONEP have demonstrated their capacity to implement the parent project, in light of the scale up and



additional activities (as part of the AF), these institutions need to be further strengthened to fully assume their mandates. Additionally, the AF supports capacity development for several directorates of the new MH. Further, while the capacity of ONAD has already been tested and proved satisfactory under the IDA-funded Emergency Infrastructure Renewal Project (PRICI, P124715), the addition of ONAD as a key project stakeholder responsible for technical management of sanitation activities, under supervision of the MINASS, will need specific attention to ensure good cooperation between these entities.

47. Other risks associated with the AF are assessed as **moderate**:

- (a) **Technical design.** The works that are contemplated under Components A and B of the AF do not generate technical issues and the technologies are fully mastered by ONEP, SODECI, and ONAD. In addition, the satisfactory outcome of the bidding of water works under the original project demonstrated that there is an adequate level of competition for contracts in Côte d'Ivoire. However, sanitation activities, although already implemented by ONAD in other centers, were not included in the original project, which will need careful supervision. Works and activities contemplated in component C of the AF (piloting NRW reduction, installation of hydrological stations, and web-based monitoring and evaluation [M&E] platform) include innovative technologies and approaches that will require strong support from the World Bank team to provide TA and share international best practices.
- (b) **Fiduciary.** The procurement processes under the original project have gone smoothly and all unaudited intermediate and annual financial reports have been of good quality. Technical studies for over fifty percent of the water works investments are already underway and procurement methods discussed in the Procurement Plan Strategy for Development (PPSD) have been discussed to ensure flexibility and good market response to the bidding processes.
- (c) **Environmental and social risk.** Proposed activities for the rehabilitation and expansion of water supply infrastructure are expected to have moderate, site-specific and reversible adverse impacts. The activities proposed for the sanitation component are also expected to generate only moderate and site-specific adverse impacts. Both increased access to better water supply and sanitation service will, on the other hand, generate positive impacts for the beneficiary population. Water supplied at the new connections will be of higher quality than alternative sources used by unserved households. Sanitation facilities will be designed so that excreta will be safely contained.
- (d) **Stakeholders.** The social connection campaign funded under the original project will kick-off when the AF becomes effective, which will strongly decrease the risk of social tensions that existed at the time of the parent project's preparation. Therefore, this risk has been revised from substantial to moderate. Similarly, existing customers will experience the benefits of the works of the original project. CE activities have started and will continue under the AF to mitigate any risks. The sanitation master planning will also incorporate CE activities to ensure full alignment with households needs and priorities, which will further mitigate stakeholder risks.
- (e) **Others.** The screening undertaken at the AF Concept Stage confirmed that the potential climate and disaster risks on the project components and subsector (water supply) and in the targeted locations were moderate. Infrastructure works and studies financed under both the parent and AF project will help reduce



(through support to adaptive and mitigative measures) potential negative climate impacts on the beneficiary population.

IV. APPRAISAL SUMMARY

A. Economic and Financial Analysis

48. **Project benefits.** The benefits expected from the core activities of Component A, including the initial investments and the AF, will accrue to the urban population of over 1,000,000 in the 12 select centers from (a) new access to piped water for about 390,000 people (210,000 added through the AF) who are not currently served and who will benefit from 31,000 subsidized household connections and 8,000 reactivated household connections and (b) the restoration of continuous water services to about 810,000 people (450,000 added through the AF) who are already served by the existing water systems. Pilot activities in Abidjan (Component C) will help design future programs to contribute to NRW reduction when the activities are later scaled up, in addition to the benefits linked to improved sector planning, decision making, and monitoring – including for water resources and asset management. Under Component B, access to improved WASH facilities in schools (for 90,000 students) and health centers will provide direct health benefits, especially the avoided costs of waterborne diseases. Both these investments will support improved human capital.

49. **Rationale for Public Sector Intervention.** Under this project, public sector financing is justified as the proposed investments target secondary urban centers, which generate less revenues overall for the sector (Abidjan representing over 60 percent of SODECI's water sales), focus on the poorest populations and provide WASH facilities in public establishments, which tend to be less attractive to the private sector. However, private sector participation for the delivery of urban water services is well established in Côte d'Ivoire through the existing PPP arrangement with SODECI, a private operator. Even with the PPP, in place for more than sixty years, most investments have continued to be financed by the Government. Compared to some years ago, the Government has recently begun discussing agreements for private financing of water production investments. Using public financing under the project, additional studies and TA will support further laying the groundwork for increased private sector participation of this nature, in a fiscally and financially sustainable way.

50. **World Bank's Added Value.** This project will broaden the World Bank's support to the restoration and expansion of urban water services in Côte d'Ivoire that began under emergency multisectoral operations in 2008. The World Bank involvement, beyond the financing of priority works, will help improve the functioning of the existing PPP arrangements by mainstreaming the use of effective sector management tools (that have been successfully applied in West Africa). The project team will also draw on expertise and resources from across the World Bank Group to provide TA to strengthen the current *affermage* arrangement and the Government's capacity for future PPP transactions. The World Bank also has a strong record of supporting countries in developing sanitation strategies and master planning, supporting investments in public WASH facilities and hygiene/behavior change campaigns – all of which are part of the AF activities.

51. **Cost-benefit Analysis (CBA) for the Water Supply Investments.** The CBA carried out for the original project was updated to assess the economic viability of the overall water investments under Component A, which encompasses about 73 percent of the total project costs. Project benefits include (i) the consumer surplus accruing to beneficiaries shifting from other water sources to water service connections, having continuous and less



expensive access to increased water consumption; (ii) additional water sales and revenues for the sector; and (iii) cost savings resulting from performance improvements. Project costs include investment costs, incremental operating costs, and commercial and maintenance costs. The full details of the CBA are provided in Annex 4.

52. **Economic internal rate of return (EIRR).** The EIRR of the water investments in the expanded perimeter of the AF is estimated at 10.6 percent and the net present value (NPV), using a discount rate of 6 percent, is estimated at US\$54.0 million. Both the EIRR and the NPV are higher than the ones of the initial CBA, respectively at 7.0 percent and US\$5.5 million. Thus, the CBA of the water supply investments confirms the economic justification of the AF – even without quantifying additional positive externalities linked to human development indicators and sustainable economic development. Additionally, estimated green house gas (GHG) emissions generated by the project have a minimal impact on the EIRR (Annex 4).

53. The economic returns in the new centers are slightly lower than those seen in the parent project centers. In the new centers, population density is relatively low, and access rates are extremely limited, providing access to piped water comes at a high cost per capita.¹⁴ However, in line with the Government's objective to leave no one behind and to support the social aspects of this policy, it was decided that the IDA financing would help reach these poorer households who could not be included in the original project due to its limited envelope.

54. **Financial analysis.** The financial impact of project activities was assessed by the (Financial internal rate of return (FIRR) derived from the CBA. The FIRR, which reflects the rate of return computed from the perspective of the combined partners of the sector (Government, ONEP, sector funds, and SODECI), is estimated at -4.38 percent (at a 6 percent discount rate), much lower than the 1.4 percent estimated in the initial financial analysis. This confirms the prevalence of non-cash generating benefits in the overall project benefits and demonstrates that the financial benefits do not cover the financial costs.

55. As analyzed in detail in the diagnostic of the sector financed by the parent project,¹⁵ the freeze of tariffs since 2004, while positive for the customers in the social tranche of the tariff, dramatically weighs on the sector revenues and overall financial sustainability. ONEP financial resources are too limited to cover its costs, preventing adequate renewal of sector assets and the Development Water Fund is also in deficit as it bears part of the operational deficit of SODECI. The National Water Fund is affected by the limited bill collection ratio (both funds are funded by a percentage of the customer tariff); currently it cannot assume its core mandate – to pay the debt service of the sector – and is instead involved in resource mobilization. The action plan developed based on the recommendations of the sector audit include a range of actions for the Government to improve the financial situation of the sector and rethink flows of funds within an improved contractual framework.

56. **Benefits of the Sanitation Investments.** Sanitation activities financed by the AF will also yield benefits, especially in improving human capital. There is abundant literature about the positive impacts of sanitation and

¹⁴ This is confirmed by the long-term marginal cost of water in the targeted centers, which is much higher than the average revenue per cubic meter sold in those areas (CFAF 773 per m³).

¹⁵ ICEA-Espelia, 2018. *Audit technique des contrats et conventions dans le secteur de l'eau potable en milieu urbain.*



hygiene improvements, along with increased access to quality water services,¹⁶ and examples of similar IDA-funded programs implemented in other countries of the region provide strong evidence regarding the social, environmental and economic benefits expected from such investments. Studies also show that providing latrines at school reduces absenteeism among the targeted school-age population, and that separate latrines for girls, including when designed for proper management of menstrual hygiene, substantially increase school attendance and reduce girls' school dropout rates, resulting in better education and ultimately increased economic opportunities for young women. Adequate WASH facilities and better hygiene in health care centers¹⁷ also provide strong positive externalities. The combined effect of the sanitation and water supply investments, including access to increased quantity and quality of water and a cleaner environment with less germs and sources of contamination from dilapidated latrines or open defecation, also contributes to avoided costs for diarrheal diseases (treatment, opportunity cost of time saved from sickness available for income-generating activities)

57. **Benefits of the Sector Support Investments.** As stated above, improved water resource management and activities related to NRW will generate other beneficial externalities in terms of climate adaptation co-benefits and resilience of water infrastructure to seasonal and future climate variability. The Division of Hydrology within the MH will be supported through studies on water resources management planning focused on strategic rivers and aquifers to inform the design and decision making on large water systems, including Abidjan. The rehabilitation and expansion of the national hydrological information collection platform will strengthen the monitoring of water resources and help better anticipate and mitigate potential drought or flooding risks.

B. Technical

58. The proposed AF is based on existing government priority programs. Component A is based on an existing investment program, prioritized by MH and designed by ONEP, that aims to restore water services in the targeted urban centers. The proposed rehabilitation and expansion of water production and treatment facilities, as well as storage and distribution will increase the quantity of water and quality of service provided to existing customers. Support to and expansion of the social connection program will support the Government's prioritization of expanding access to water supply, in line with SDG6. Under the parent project, and other programs, ONEP and SODECI have demonstrated their capacity to implement these civil works and connection programs. No major technical issues are expected as the technologies used for water supply are proven and well established. Additionally, ONEP and the MH have demonstrated strong commitment to implement the activities proposed under Component C to support the urban water sector.

59. For Component B, the proposed activities are in line with MINASS' sanitation sector policy and on-site sanitation strategy and priority investments needs of the Ministries of Health and of Education (in the project

¹⁶ Say et al. (2014). Global causes of maternal death: a WHO systematic analysis, *The Lancet* 2(6):232-333; Rhee et al., (2008). Maternal and birth attendant hand washing and neonatal mortality in southern Nepal, *Arch Pediatr Adolesc Med.* 162(7):603-608; Do et al. (2018) Can environmental policy reduce infant mortality? Evidence from the Ganga Pollution Cases, *Journal of Development Economics.* 133:306-325; Adukia (2017). Sanitation and Education, *American Economic Journal: Applied Economics.* 9(2):23-59; Van Eijk et al. (2016). Menstrual hygiene management among adolescent girls in India: a systematic review and meta-analysis, *BMJ* 6(3).

¹⁷ WHO/UNICEF JMP recent global report on WASH in Healthcare Facilities concluded that 2 billion people use health care facilities that lack basic water services, 1.5 billion people use health care facilities with no sanitation services, 43% of health care facilities do not have hand hygiene at point of use and 17 million women in Least Developed Countries give birth in health care facilities with inadequate water, sanitation and hygiene.



areas). The investments will provide access to improved WASH services at health centers and schools, which will provide secondary benefits to health and school attendance. ONAD has demonstrated sufficient capacity for the proposed activities and works under the project. As with the water supply investments, the planned sanitation works, and sanitation activities are not expected to have any significant technical issues as the technologies and approaches being used are proven and well established in the sector. As necessary, schools and health centers will also be provided with water supply access (through the network, where technically feasible).

60. **Readiness.** Procurement packages totaling US\$60 million (of the AF US\$150 million) will be ready at effectiveness. The necessary assessments, detailed studies and bidding documents of the water works investments in the original centers are being prepared under the parent project. Several terms of reference (ToR) for water resources management studies are also already in the making and will be ready to be procured by effectiveness. The action plan based on the completed institutional studies is being finalized and some key priority activities to be financed by the project are planned to start by effectiveness.

C. Financial Management

61. FM performance under the parent project has been satisfactory to date. FM arrangements for the AF will be based on the existing arrangements in place. The PCU under the oversight of the project's Steering Committee will keep the overall fiduciary responsibility for the restructured project (parent and AF). The PCU is familiar with the World Bank FM requirements. Staffing, including the accountant and the disbursement assistant, who were hired at the beginning of the parent project, has remained adequate and proper books of accounts and supporting documents have been maintained for all expenditures. The financial audit for the first year of the project's implementation that ended on December 31, 2017 was submitted on time and was not qualified. The interim unaudited financial reports for the ongoing project are also submitted on time and deemed acceptable.

62. In line with the principles of mainstreaming project implementation arrangements within the Government, the project will continue to benefit from the support of the financial controller from the Ministry of Budget and the public accountant from the Ministry of Finance who have been assigned to the PCU. In addition, as per a 2018 national *Arrêté*, the Directorate of Inspection of the Ministry of Finance (*Inspection Générale des Finances*, IGF) will be involved to strengthen the internal audit function of the project. As is already the case for the financial controller and accountant, IGF activities will be funded by the Government's own resources. The original Project Implementation Manual (PIM) will be updated, at the latest two months after effectiveness, to reflect lessons learned from the implementation of the parent project, scaled-up scope and revised institutional and implementation arrangements, including FM and procurement procedures.

D. Procurement

63. Procurement performance under the parent project has been satisfactory to date. The procurement team of the PCU is fully experienced in World Bank procedures. Procurement of the restructured project (parent and AF) will be carried out in accordance with the "*World Bank Procurement Regulations for Recipients under Investment Project Financing*", dated July 2016, revised November 2017 and August 2018, which have replaced the "*Guidelines: Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers*" and the "*Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers*," both dated January 2011 and revised in July 2014.



“Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants”, dated October 15, 2006 and revised in January 2011 and as of July 1, 2016 will continue to apply.

64. **The Procurement Project Strategy for Development (PPSD)** has been developed to analyze the key features of the AF and related procurement risks and opportunities, building on the lessons learned from the parent project and similar IDA-funded projects. Over 70 percent of the total value of the US\$150 million AF will be used for works contracts for water supply and sanitation rehabilitation and development. While there is a market with qualified national and international contractors, potential risks include the unavailability of key experts initially proposed by contractors, delays in receiving imported works materials and delays in national procurement approval channels. Several specialized consultant services requiring high qualifications in water resources management or sector reform will be performed.

65. Procurement and consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and schedule have been agreed between the Recipient and the World Bank at negotiations in the Procurement Plan for the first 18 months of implementation aligned with the PPSD. The plan will be updated at least annually and as required to reflect actual project needs and improvements in institutional capacity.

E. Environment (including Safeguards)

66. **Climate change and risks screening.** The project has been assessed against its potential climate and disaster risks, which are considered moderate. The targeted project locations are most likely to be impacted by temperature changes¹⁸ and precipitation changes¹⁹ (and changes in flood conditions, though floods are already a concern in some locations). Under the project, climate risk management measures, through both infrastructure and soft investments, will generate adaptation and mitigation co-benefits focused on preparing the country for managing these specific challenges.

67. **Climate change adaptation co-benefits.** Infrastructure for water production and storage capacity will increase water availability to address demand (including consideration of predicted continued population growth) for the next 30 years in a sustainable and integrated approach, enhance water use efficiency and build resilience by coping with seasonal temperature and rainfall variability. At country level, project activities will improve the availability and use of information on water resources to inform sustainable management. The updated monitoring system of hydrological data and soft activities and studies will help improve water resources management and prediction of droughts and floods. These activities will contribute to improving water security in the long run. Sanitation and drainage master plans, to be realized in selected cities, will also help identify potential water pollution and flooding risks and plan investments to adapt to and/or mitigate them.

68. **Climate change mitigation co-benefits.** Water works financed by the project will help reduce water losses and energy consumption, both in selected centers and through the pilot program to reduce leakages in Abidjan. Water efficiency improvements will be further supported through better financial planning for the sector (as

¹⁸ In Côte d'Ivoire, the total number of hot days (temperature above 35°C) is expected to increase by 62.3 days by 2050 and mean annual temperature will rise by 1.9°C over the same period.

¹⁹ Precipitation changes will vary significantly in different parts of the country and are difficult to fully predict at this stage. But it is likely that some areas will experience significantly more rainfall whereas others will experience significantly less (though drought conditions in project sites are not anticipated to change significantly).



appropriately set tariffs can help encourage water efficiency). Project investments will also prioritize energy-saving options, such as gravity-fed systems in selected areas. Additionally, Component C will support studies on water resources planning, water quality assessments, and energy savings for the sector. Targeted beneficiaries will be provided with a continuous water supply and increased average consumption per capita, which will result in reducing the use of alternative sources of water and related pollution and energy use induced by motorized alternatives (private wells, water trucks) and using bottled water (or more frequently water packaged in small bags). Although during the project period, GHG emissions may increase, project activities (such as reductions in physical losses linked to NRW reduction, piloted under the project) are anticipated to generate reductions in GHG emissions in the long run.

69. **Based on the activities proposed for the AF and the assessment of environmental and social risks, the AF will remain rated as EA Category B, as was the parent project.** The AF aims to expand the water production and distribution capacity of centers where the parent project is already under implementation. The AF will also benefit additional beneficiaries in other centers by expanding the geographic scope of the ongoing project to rehabilitate and expand existing piped water schemes. Proposed works under the sanitation component will be limited to sanitation facilities in schools and health centers. Providing safe drinking water and adequate facilities and promoting behavior change and hygiene will also positively impact people's health and protect the quality of water resources and the environment. Potential adverse impacts associated with such activities are site-specific, moderate and reversible. No potential significant and irreversible adverse impact, direct or indirect, is expected to occur from project activities either during the construction or operation phase. In addition, the overall project environment and social impact was assessed as *significantly positive* for the quality of life improvements and reduction of water-related diseases.

70. **The operational policies pertaining to the AF remain the same as those triggered under the parent project,** namely: Environmental Assessment (Operational Policy (OP)/Bank Policy (BP) 4.01); Physical Cultural Resources (OP/BP 4.11) and Involuntary Resettlement (OP/BP 4.12).²⁰ In compliance with OP/BP 4.01 and OP/BP 4.11, the Recipient has updated the ESMF prepared under the parent project to take into account scaled-up and additional activities for which characteristics and project sites are not yet known. The ESMF was consulted upon with all relevant stakeholder groups, both public and private, and civil society and disclosed in-country and on the World Bank website on May 4, 2019. The ESMF describes the procedures and processes to be followed in preparing and disclosing site-specific safeguard instruments (e.g., ESIA, including Environmental and Social Management Plans [ESMPs]), as may be required, as soon as the exact locations and scope of sub-project activities are known. It also contains measures and plans to reduce, mitigate, and/or offset adverse impacts and enhance positive impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing project impacts. Specific ESIA, including ESMPs, will be prepared once the design studies are completed and specific sites fully identified.

71. **Occupational, Health and Safety.** Safeguards documents include guidelines on Occupational, Health and Safety (EHS/OHS) that clearly mention that Company's Environmental and Social Management Plan (C-ESMP) must be approved by the PCU and their partners prior to commencement of works. Moreover, the tender

²⁰ The combined parent and AF project will remain under the safeguards operational policies instead of the new environmental and social framework and norms that came into force on October 1, 2018.



documents and the contracts for main contractors as well as the sub-contractors must also include sections related to EHS/OHS.

72. **The Recipient has demonstrated satisfactory capacity in planning and implementing environmental and social safeguard measures.** All required safeguards instruments under the parent project were duly prepared, approved and implemented in a satisfactory manner. Government funding was available to enable the full execution of the RAPs without delays. The overall safeguards performance has been rated satisfactory since effectiveness. The PCU has maintained a qualified staff comprising one social and one environmental safeguard specialists. The parent project also funded two such specialists to strengthen the capacity of ONEP in safeguards management. The same will be applied under the AF to the benefit of ONAD, with the objective to further strengthen the safeguards function. Any other capacity strengthening measure deemed necessary to improve the safeguard function in this operation will be taken at relevant levels. Overall, it is reasonable to assume that the Recipient, through the PCU, has the necessary capacity to prepare good quality and timely safeguards instruments (ESIAs/ESMPs and Social Impact Assessments (SIAs)/RAPs as necessary) that will be required for the respective project locations and proposed works. ToR for the relevant consultancies will be prepared once the ongoing design studies are completed and the specific works sites known.

F. Social (including Safeguards)

73. **Involuntary Resettlement, OP/BP 4.12.** The project will include rights-of-way for the water distribution networks and minimal land acquisition for water production, transmission, and storage and distribution facilities. The specific additional locations of project sites are not yet known and will be determined once the design studies are completed. Similarly, specific locations of proposed new sanitation facilities in schools and health centers will only be determined after completion of a diagnostic of the sanitation situation in the project areas and relevant technical studies. Therefore, in compliance with the World Bank safeguards operational policies and national laws and regulations, the Recipient has prepared an updated RPF. The RPF was consulted upon and disclosed in-country and on the World Bank's website on May 2, 2019. The RPF outlines the principles and procedures to be followed in the event of land acquisition, impact on assets, loss of livelihoods or restriction to sources of income. In compliance with OP/BP 4.12, as soon as project sites are identified, the Recipient will prepare site-specific SIAs to determine whether land will be acquired and/or activities will create restrictions of access or loss of assets. Wherever necessary, specific RAPs, in accordance to the SIA results, will be prepared in consultation with the affected stakeholders, submitted to the World Bank for approval, and fully executed before the commencement on the ground of related civil works.

74. **Labor Influx and Gender-based Violence (GBV).** Based on the experience to date on the eight sites already targeted under the parent project, there is minimal expected labor influx risks related to the works for the AF. Further, based on the GBV screening tool, the project currently has a score 9.75, which means the project is low risk. However, to ensure proper management of potential labor influx, specific provisions will be included in the ESMF and related safeguards activities. GBV consideration will be detailed in the specific ESMPs and codes of conduct required as contractual obligations from all contractors. These codes of conduct will be individually signed by all the workers present in the work sites, including the management staff. The ESMPs will also include clear rules on child protection, management of HIV/AIDS prevention plans and related measures to mitigate the possibility of GBV in project sites, particularly around the school and health centers sites.



75. **Gender and inclusion.** As part of Component B, investments will be made in sanitation and hygiene facilities for schools and health clinics. At present, 35 percent of urban schools lack access to any sanitation facilities (and nationally 51 percent of primary schools and 12 percent of secondary schools lack access). In the project locations, 375 schools and 50 health centers lack access to WASH facilities and will benefit from new access under the project. This lack of facilities differentially impacts young girls who are menstruating, which can negatively affect their regularity at school and negatively impact their academic performance. According to UNESCO, one in ten girls in Sub-Saharan Africa miss school during their menstrual cycle (2014).²¹ Under the project, to ensure the facilities will be tailored to the particular needs of young girls (and female teachers), the toilets will be equipped with specific facilities adapted to the needs of women, in particular by providing bins for sanitary napkin disposal, handwashing spaces, stalls with locks, and adequate natural lighting. Additionally, at least one stall at each location will provide access for people with physical disabilities, and this facility will be equipped with the necessary materials for girls. The project will result in 9,000 female students gaining access to facilities, and this indicator will be tracked as part of the project RF.

76. **Citizen engagement.** A CE strategy document was developed under the parent project. In this framework, consultations with various stakeholders including beneficiary populations, local authorities, civil society organizations, etc. have taken place on all project sites. This has enabled increased ownership of the project objectives and resulted in smooth implementation of the project to date. Local CE committees including beneficiary populations and other local stakeholders and local representatives of SODECI have been established in all urban centers of the parent project, and will be established in the additional four centers, to monitor the implementation of the CE plan. Nongovernmental organizations (NGOs) are being recruited to support its implementation. Ongoing activities focus on consultations and communication for the social water connection program. These activities build on, among others, existing communication mechanisms between the service provider (SODECI) and customers, including a call center (see Annex 1 for some additional examples). To inform the CE indicator, a baseline survey, measuring beneficiary satisfaction before the deployment of the social connection campaign, was conducted under the parent project. Similar surveys will be conducted at mid-term and closing of the project to monitor progress in beneficiary satisfaction and will complement the annual client satisfaction assessment carried out by SODECI.

77. Findings from the baseline survey are important to further develop CE activities. Overall, only 47 percent of the surveyed population are satisfied by their current water supply (from SODECI or others). Sixty-three percent of the people surveyed who are current clients of SODECI are dissatisfied mostly by intermittent service, often unannounced and for long durations, and incidentally, bills to be paid despite these recurrent water cuts, as well as by poor water quality at the tap. Such constraints will be addressed by the project investments to restore a continuous service, improve water treatment and reduce potential contamination in replacing dilapidated pipes by new ones. In comparison, only 46 percent of those who are currently not clients of SODECI report they are not satisfied, citing the poor quality of SODECI service to balance the inconvenience of not being connected – or reason for having decided to de-activate their connection. While they express their willingness to access to private household connection when the project works will help address the water shortages, they mention the connection

²¹ United Nations Educational, Scientific and Cultural Organization (2014). *Good Policy and Practice in Health Education, 9: Puberty Education and Menstrual Hygiene Management*.



cost as the main constraint to access SODECI service. The social connection program under the project will directly address this concern in providing a total of 31,000 subsidized connections.

78. The survey findings have been shared with the existing local CE committees and will be communicated back to the citizens through public consultations. Quarterly meetings are planned to further collect their feedback, especially when the infrastructure of the parent project will become operational in the original centers, and when works will start in the additional centers. The CE plan also include various mechanisms to communicate on the project, such as media campaigns and local radios, including through griots in vernacular languages, inform the citizens and close the feedback loop to promote service improvements. For instance, open houses in SODECI commercial centers will be organized to respond to citizens' questions and clarify the processes for getting a connection, the different items of a water bill or available mechanisms to report issues. Local CE committees will also be involved in collecting and addressing grievances (see below), reporting back to beneficiaries. In addition, hygiene and behavior change campaigns will provide additional opportunities to communicate with citizens and get their feedback, especially through kids at school, with a multiplier effect on siblings, families and communities.

79. **Grievance Redress Mechanism (GRM).** Under the parent project, a GRM has been proposed based on consultations with the local populations, local authorities and representatives of ONEP and SODECI in each project site. It allows affected individuals to report problems or concerns related to the project through different channels. The grievances will be handled, according to their nature and level of severity, by the contractor, the service provider, the communal office or the local CE committees through the State's local representatives (*Préfets*) as chair of said committees. The PCU will be informed in all cases and responsible for properly settling each grievance and tracking them in a systematic manner. To date, according to the quarterly environmental and social report produced by the PCU, only five minor complaints related to the works environment were reported and handled directly by the respective contractors and supervision engineers. Additionally, SODECI has a customer complaints management system that is accessible to all clients (for complaints and questions related to the works, billing, etc.). The World Bank's social and environmental team will also hold capacity building sessions for the PCU on the GRM. This will be an opportunity to review and improve the system put in place by the project.

V. WORLD BANK GRIEVANCE REDRESS

80. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.



VI SUMMARY TABLE OF CHANGES

	Changed	Not Changed
Project's Development Objectives	✓	
Results Framework	✓	
Components and Cost	✓	
Loan Closing Date(s)	✓	
Reallocation between Disbursement Categories	✓	
Safeguard Policies Triggered	✓	
Procurement	✓	
Implementing Agency		✓
Cancellations Proposed		✓
Disbursements Arrangements		✓
EA category		✓
Legal Covenants		✓
APA Reliance		✓
Other Change(s)		✓

VII DETAILED CHANGE(S)

PROJECT DEVELOPMENT OBJECTIVE

Current PDO

The proposed project development objective is to improve quality of, and increase access to, water services in



selected urban areas and to strengthen capacity of ONEP for financial planning and financial management of the urban water supply sector.

Proposed New PDO

The revised project development objective is: to increase access and quality of water services and access to sanitation in selected urban areas, and to improve planning and monitoring of the urban water sector.

COMPONENTS

Current Component Name	Current Cost (US\$, millions)	Action	Proposed Component Name	Proposed Cost (US\$, millions)
Component A - Urban water supply	45.64	Revised	Component A - Urban water supply	147.30
Component B - Institutional support	4.36	Revised	Component B - Urban Sanitation	18.90
	0.00	New	Component C - Urban Water Sector Strengthening	25.90
	0.00	New	Component D - Project management	7.90
TOTAL	50.00			200.00

LOAN CLOSING DATE(S)

Ln/Cr/Tf	Status	Original Closing	Current Closing(s)	Proposed Closing	Proposed Deadline for Withdrawal Applications
IDA-59210	Effective	30-Jun-2022	30-Jun-2022	30-Apr-2024	30-Aug-2024

REALLOCATION BETWEEN DISBURSEMENT CATEGORIES

Current Allocation	Actuals + Committed	Proposed Allocation	Financing % (Type Total)	
			Current	Proposed

IDA-59210-001 | Currency: EUR

iLap Category Sequence No: 1

Current Expenditure Category: GDS,WKS,NCS,CS,OC,TRG for Parts A(i)-(v), C(i)(b), C(v) and D(i) of the Project



	44,800,000.00	23,851,996.39	44,800,000.00	100.00	100.00
Total	44,800,000.00	23,851,996.39	44,800,000.00		

Expected Disbursements (in US\$)

Fiscal Year	Annual	Cumulative
2017	5,113,826.06	5,113,826.06
2018	15,249,580.71	20,363,406.77
2019	12,644,264.30	33,007,671.07
2020	33,000,000.00	66,007,671.07
2021	42,000,000.00	108,007,671.07
2022	46,000,000.00	154,007,671.07
2023	28,000,000.00	182,007,671.07
2024	17,992,328.93	200,000,000.00

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Latest ISR Rating	Current Rating
Political and Governance	● Substantial	● Substantial
Macroeconomic	● Moderate	● Substantial
Sector Strategies and Policies	● Moderate	● Substantial
Technical Design of Project or Program	● Low	● Moderate
Institutional Capacity for Implementation and Sustainability	● Substantial	● Substantial
Fiduciary	● Moderate	● Moderate
Environment and Social	● Moderate	● Moderate
Stakeholders	● Substantial	● Moderate
Other	● Substantial	● Moderate
Overall	● Substantial	● Substantial



COMPLIANCE

Change in Safeguard Policies Triggered

Yes

Safeguard Policies Triggered	Current	Proposed
Environmental Assessment OP/BP 4.01	Yes	Yes
Performance Standards for Private Sector Activities OP/BP 4.03	No	No
Natural Habitats OP/BP 4.04	No	No
Forests OP/BP 4.36	No	No
Pest Management OP 4.09	No	No
Physical Cultural Resources OP/BP 4.11	Yes	Yes
Indigenous Peoples OP/BP 4.10	No	No
Involuntary Resettlement OP/BP 4.12	Yes	Yes
Safety of Dams OP/BP 4.37	No	No
Projects on International Waterways OP/BP 7.50	No	No
Projects in Disputed Areas OP/BP 7.60	No	No

LEGAL COVENANTS – Urban Water Supply and Sanitation Project (P170502)

Sections and Description

Schedule 2, Section I, A.1:

Not later than one (1) month after the Effective Date or at a later date agreed upon with the Association, the Recipient shall reestablish, and thereafter maintain throughout Project implementation, a steering committee (“Steering Committee”) whose updated mandate, terms of reference and composition shall be acceptable to the



Association: (i) to be responsible for overall oversight and strategic leadership of the Project; and (ii) to verify that activities are consistent with sector strategy and ensure cross-sectoral coordination with other line-ministries. The Steering Committee shall be chaired by the Minister of Water or their designate, and include representatives inter alia of the Ministry of Economy and Finance, the Ministry of Budget, and the Ministry of Sanitation and Public Hygiene.

Schedule 2, Section I, B.1:

To facilitate the carrying out of the Project, the Recipient shall, not later than one (1) month after the Effective Date or at a later date agreed upon with the Association, update to the satisfaction of the Association, and maintain the contract entered into with the PCU under the Original Project, vesting responsibility in the PCU for the overall management, monitoring and supervision of the Project, and setting out details of the roles and responsibilities of the PCU under the Project ("PCU Project Implementation Support Contract").

Schedule 2, Section I, B.2:

To facilitate the carrying out of Parts A and C of the Project, the Recipient shall, not later than one (1) month after the Effective Date or at a later date agreed upon with the Association, update to the satisfaction of the Association, and maintain the contract entered into with ONEP and the PCU under the Original Project, vesting responsibility in ONEP for the technical management of Parts A and C of the Project, and specifying ONEP's roles and responsibilities ("ONEP Project Implementation Support Contract").

Schedule 2, Section I, B.3:

To facilitate the carrying out of Part B of the Project, the Recipient shall, not later than one (1) month after the Effective Date or at a later date agreed upon with the Association, enter into an implementation support contract with ONAD and the PCU, satisfactory to the Association, vesting responsibility in ONAD for the technical management of Part B of the Project, and specifying ONAD's roles and responsibilities ("ONAD Project Implementation Support Contract").

Schedule 2, Section I, C.2:

No later than two (2) months after the Effective Date or at a later date agreed upon with the Association, the Recipient shall update the Project Implementation Manual to include inter alia provisions relating to institutional arrangements, additional activities under the Project, financial management and procurement procedures, in a manner and substance satisfactory to the Association, to reflect the specific content and design of the Project and ensure consistency with its objectives.

Schedule 2, Section IV, A.1:

Not later than one (1) month after the Effective Date or at a later date agreed upon with the Association, the Recipient shall have updated the accounting software under the Original Project, to the satisfaction of the Association.

Schedule 2, Section IV, A.2(A):

Not later than three (3) months after the Effective Date or at a later date agreed upon with the Association, the Recipient shall: (A) provide evidence satisfactory to the Association that dedicated funds and other resources, including staffing and budget, have been provided pursuant to Section 5.03 of the General Conditions to: (i)



strengthen the internal audit function for the Project; and (ii) conduct reviews of transactions under the Project at least bi-annually.

Schedule 2, Section IV, A.2(B):

Not later than three (3) months after the Effective Date or at a later date agreed upon with the Association, the Recipient shall: (B) have revised the terms of reference of the external auditor to include the new scope and activities added to the Project, to the satisfaction of the Association.

Conditions

Type	Description
Disbursement	Schedule 2, Section III, B.1(b): Notwithstanding the provisions of Part A above, no withdrawal shall be made under Category (2), until and unless proceeds under the Original Financing have entirely disbursed.



VIII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Cote d'Ivoire

Urban Water Supply and Sanitation Project

Project Development Objective(s)

The revised project development objective is: to increase access and quality of water services and access to sanitation in selected urban areas, and to improve planning and monitoring of the urban water sector.

Project Development Objective Indicators by Objectives/ Outcomes

Indicator Name	DLI	Baseline	End Target
Increase access and quality of water services in selected urban areas (Action: This Objective has been Revised)			
Direct project beneficiaries (Number)		0.00	1,200,000.00
Action: This indicator has been Revised			
Female beneficiaries (Percentage)		0.00	48.70
Number of people in urban areas provided with access to improved water sources under the project (Number)		0.00	390,000.00
Action: This indicator has been Revised			
People with access to enhanced water supply services due to the project (Number)		0.00	810,000.00



Indicator Name	DLI	Baseline	End Target
Action: This indicator has been Revised			
Average hours of water supply in centers targeted by the Project (Hours)		20.00	24.00
Action: This indicator has been Marked for Deletion	Rationale: <i>This indicator is proposed for deletion because it is difficult to measure and the outcome (continuity of service) is already included in the 'number of people with new and enhanced access to water services' (service delivered is 24/7).</i>		
Increase access to sanitation in selected urban areas (Action: This Objective is New)			
Number of students with access to improved sanitation facilities in schools under the project (Number)		0.00	90,000.00
Action: This indicator is New	Rationale: <i>In line with the expanded scope of the PDO to include sanitation, a PDO level indicator is added and focuses on access to sanitation / WASH facilities in schools (the project does not include domestic latrines).</i>		
Strengthen capacity for improved planning and monitoring of the urban water sector (Action: This Objective has been Revised)			
Sector financial model used for financial planning and decision making (Yes/No)		No	Yes
Action: This indicator has been Revised			
Strategic Sector Plan towards SDG6 approved (Yes/No)		No	Yes
Action: This indicator is New	Rationale: <i>The Government does not have clear strategic orientations that would help the Ministry in charge of water and ONEP to plan investments and develop the urban water supply sector in a sustainable manner. A draft Letter of Sector Policy has been prepared in 2016 and needs to be updated and formally endorsed. A Strategic Sector Plan, coupled with other tools such as the financial model developed with support of the parent project, will set the vision, targets, investment needs and sources of financing to achieve the water SDGs. It will consider options for private sector engagement/financing.</i>		



Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline	End Target
Component A - Urban water supply			
New piped household water connections resulting from the project intervention (Number)		0.00	31,000.00
<i>Action: This indicator has been Revised</i>			
Inactive household connections re-activated in centers targeted by the Project (Number)		0.00	8,000.00
Production capacity constructed under the project (Cubic Meter(m3))		0.00	92,000.00
<i>Action: This indicator has been Revised</i>			
Water storage capacity constructed under the project (Cubic Meter(m3))		0.00	14,600.00
<i>Action: This indicator has been Revised</i>			
Water transmission and distribution pipes constructed under the project (Kilometers)		0.00	952.00
<i>Action: This indicator has been Revised</i>			
Number of people reached by local communication campaigns for the social connection program (Number)		0.00	585,000.00
<i>Action: This indicator has been Revised</i>	<p>Rationale: <i>1/ The initial definition related to a number of people, but the figure was actually a number of households. Additionally, the target value was initially underestimated as it exactly matched the number of households expected to benefit from new social connections. In reality, such campaigns aim to reach a larger number of people to ensure a subset of these reached by the campaign will be interested and eligible to get a connection.</i></p>		



Indicator Name	DLI	Baseline	End Target
		<p><i>2/ The initial name of the indicator was unclear and has been updated to better reflect the intended definition - namely those who are reached by planned consultations and communication campaigns for the social connection program.</i></p>	
Improvement in beneficiaries' satisfaction (Percentage)		30.00	80.00
<p><i>Action: This indicator has been Revised</i></p>		<p>Rationale: <i>The focus of the indicator is revised to include not only the existing clients of SODECI, but also people with no household connection. The measure of satisfaction from both groups will better reflect the level of (dis)satisfaction of the project beneficiaries. In addition, data from SODECI on customer satisfaction are not readily and based on an index that is difficult to use. The target value of the indicator is revised from 90% to 80%, which is a more realistic objective given the revised scope of the indicator.</i></p>	
<p>Component B - Urban Sanitation (Action: This Component is New)</p>			
Number of schools benefiting from new/rehabilitated WASH facilities (Number)		0.00	375.00
<p><i>Action: This indicator is New</i></p>		<p>Rationale: <i>In line with the expanded scope of the PDO to include sanitation, this indicator will track the number of schools that benefit from new/rehabilitated WASH facilities in the project target centers.</i></p>	
Number of health centers benefiting from new and/or rehabilitated WASH facilities (Number)		0.00	50.00
<p><i>Action: This indicator is New</i></p>		<p>Rationale: <i>In line with the expanded scope of the PDO to include sanitation, this indicator will track access to WASH facilities in health centers in the project target areas.</i></p>	
Number of female students who gain access to menstrual hygiene management (MHM)-equipped WASH facilities at school (Number)		0.00	9,000.00
<p><i>Action: This indicator is New</i></p>		<p>Rationale: <i>In line with the expanded scope of the PDO to include sanitation, and to reflect the project's aims to fill an important</i></p>	



Indicator Name	DLI	Baseline	End Target
		<i>existing gender gap, this indicator will track the number of female students who gain access to WASH facilities that are equipped for MHM.</i>	
National Sanitation Sector Strategy Approved (Yes/No)		No	Yes
Action: This indicator is New		Rationale: <i>In line with the expanded scope of the PDO to include sanitation, this indicator will track the process of the national sanitation sector strategy.</i>	
Number of sanitation and drainage master plans approved (Number)		0.00	5.00
Action: This indicator is New		Rationale: <i>In line with the expanded scope of the PDO to include sanitation, the project will support planning for the sector through the development of sanitation and drainage master plans for selected cities.</i>	
Component C - Strengthen the Urban Water Sector (Action: This Component has been Revised)			
Completion of the audit of contracts between Government, ONEP and SODECI (Yes/No)		No	Yes
Completion of financial model (Yes/No)		No	Yes
Completion of assets inventory (Yes/No)		No	Yes
Number of hydrologic information collection and monitoring stations installed and operational (Number)		0.00	35.00
Action: This indicator is New		Rationale: <i>In line with the pillar of the PDO focused on improving the planning and monitoring of the urban water sector, this indicator will track some of the capacity strengthening for monitoring water resources management (Division of Hydrology, Ministry of Water).</i>	



Indicator Name	DLI	Baseline	End Target
Report on sector asset management monitoring available (Yes/No)		No	Yes
Action: This indicator is New	<p>Rationale: <i>To support the PDO's pillar (improved planning and monitoring of the urban water sector), this indicator will track asset management monitoring by ONEP (which is part of ONEP's mandate). The first step in this process was the inventory of assets and is to be followed by installation of software to help monitor assets and plan renewal and development. Capacity building for ONEP under both the parent project and the AF as well as appropriate use of such tools provided through the project shall enable ONEP to start producing a report to monitor sector asset management.</i></p>		
A web-based sector M&E platform that uses digital technology is operationalized (Yes/No)		No	Yes
Action: This indicator is New	<p>Rationale: <i>To ensure proper monitoring of project progress (including progress on works, procurement, indicators, FM, safeguards, etc.), the project will be supported with a web-based M&E platform. The M&E platform will be used for all components of the project.</i></p>		
District Meter Areas (DMAs) established in a pilot area in Abidjan water distribution network (Yes/No)		No	Yes
Action: This indicator is New	<p>Rationale: <i>This indicator will track a pilot activity including sectorization of a water distribution zone (district meter areas, DMAs) as an approach to help reduce leaks and identify assets to be renewed.</i></p>		



Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Direct project beneficiaries	Direct beneficiaries are people or groups who directly derive benefits from an intervention (i.e., children who benefit from an immunization program; families that have a new piped water connection). Please note that this indicator requires supplemental information. Supplemental Value: Female beneficiaries (percentage). Based on the assessment and definition of direct project beneficiaries, specify what proportion of the direct project beneficiaries are female. This indicator is calculated as a percentage.	Annual	Progress reports from PCU		PCU
Female beneficiaries	Based on the assessment and definition of direct project beneficiaries, specify what percentage of the beneficiaries are female.				
Number of people in urban areas provided with access to improved water sources under the project	This indicator measures the actual number of people in urban areas who benefited	Annual	Progress reports from PCU	The PCU, with advice from ONEP, will use the data of the	SODECI



	<p>from improved water supply services that have been constructed under the project. Guidance on "improved water sources": Improved water sources include piped household connections (house or yard connections), public standpipe, boreholes, protected dug well, protected spring and rainwater collection; and do not include, inter alia, water provided through tanker truck, or vendor, unprotected well, unprotected spring, surface water (river, pond, dam, lake, stream, irrigation channel), or bottled water. The definition follows the UNICEF-WHO Joint Monitoring Program definition and is the standard definition used to track progress on the Millennium Development Goals.</p> <p>The ratio used for the project, consistent with ONEP demand assumptions, is: 1</p>			<p>activity reports from SODECI to compute the target achievement based on the total number of new and re-activated household connections supported by the project x 10 people per connection.</p>	
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	<p>household connection for 10 people. The number of connections considered is the sum of: (i) the number of new piped household water connections resulting from the project intervention, and (ii) the number of inactive household connections re-activated in the centers targeted by the project.</p>				
<p>People with access to enhanced water supply services due to the project</p>	<p>This indicator measures the cumulative number of people in urban areas currently having access to piped, but intermittent water services who will receive reliable water services with regard to continuity of the water distribution (24/7 water supply) with adequate pressure (1 bar) at the tap, thanks to new facilities constructed under the project. The ratio used is: 1 connection for 10 people.</p>	<p>Annual</p>	<p>Progress reports from PCU</p>	<p>Water pressure and continuity of service are standard measures of the service operator that SODECI tracks through water production, storage and distribution metering equipment. Its customer database provides the number of existing connections in the project areas and can therefore track those effectively provided with enhanced services. The PCU, with advice from ONEP, will use the data of the activity reports from SODECI to compute</p>	<p>ONEP and SODECI</p>



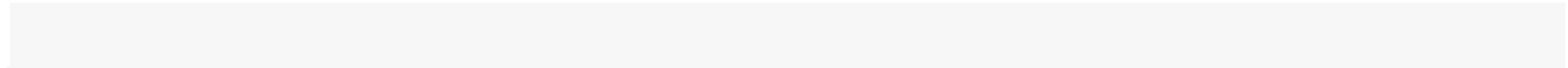
				the target achievement based on the number of enhanced household connections supported by the project x 10 people per connection.	
Average hours of water supply in centers targeted by the Project	This indicator measures the continuity of water services in the centers targeted by the project. (Methodology to be defined by ONEP's Control Department of Operations and Quality [La Direction du Contrôle de l'Exploitation et de la Qualité]).	ONEP	Surveys by ONEP		Annual
Number of students with access to improved sanitation facilities in schools under the project	The indicator measures the total number of students (girls and boys) who will get access to improved WASH facilities in the public, primary schools targeted by the project - including access to water, latrines/toilets, and handwashing stations. Ratios from the Ministry of Education are: 1 toilet and 3 urinals for 100 boys; 3 toilets for 100 girls.	Annual	ONAD and PCU progress reports	ONAD will collect data from the WASH facilities works contracts (in coordination with supervising engineers); the Ministry of Education will collect information from the selected schools and confirm the ratios used to translate the number of facilities in a number of students (Annual Statistics).	ONAD, Ministry of Education
Sector financial model used for financial	Sector financial model	Annual	Presentation	ONEP and the PCU will	ONEP, Ministry of



planning and decision making	endorsed by sector partners and used to validate investment financing decisions and propose tariff revisions.		of scenarios/resu Its produced through financial model by ONEP	collect information on the satisfactory completion of the consultant contract for the development of the model, including meetings or workshops to discuss the interim report with other sector stakeholders and clear the final report (and model and hands-on training as additional deliverables). ONEP as main user of the model will prepare presentations including discussions on key variables (financing sources, water price, tariff, etc.) and investment financing scenarios, for further discussion with sector stakeholders and proposals to the Ministry of Water. The Ministry of Water will provide evidence of approving related measures and actions taken to promote such proposals for the	Water
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				decision of the Government (e.g. communication to the Council of Minister, official supporting letter, etc.).	
Strategic Sector Plan towards SDG6 approved	The Strategic Sector Plan including an updated Letter of Sector Policy, has been prepared and formally approved by the Government.	Once	Copy of the approved Sector Policy Letter shared with PCU	The Ministry of Water will work with the PCU throughout the process of preparing and elaborating the Sector Policy Letter and Strategic Sector Plan. Progress will be tracked at different steps (terms of reference, contract for consultant services, validation workshops, etc.).	Ministry of Water.



Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
New piped household water connections resulting from the project intervention	Number of new piped household water connections which result from the project intervention. Piped	Annual	Activity reports from SODECI	As service provider, SODECI tracks all contracts with new customers; every new household water	SODECI



	household water connections are defined as connections that provide piped water to the consumer through either a house or yard connection. Hence, they do not include, inter alia, standpipes, protected wells, boreholes, protected springs, piped water provided through tanker trucks, water sold by vendors, unprotected wells, unprotected springs, rivers, ponds and other surface water bodies, or bottled water.			connection benefiting from the project support (subsidized connection) will be identified by a code in the customer database.	
Inactive household connections re-activated in centers targeted by the Project	Reactivation of inactive connections will start once the civil works will become operational.	SODECI	Activity reports from SODECI		Annual
Production capacity constructed under the project	Capacity of production facilities (water treatment plants, boreholes) constructed under the project (assuming 20 hours of operation per day).	Annual	Progress reports form supervising engineers	ONEP will work with the supervising engineers for the water supply works contracts to check and consolidate data	ONEP
Water storage capacity constructed under the project	Capacity of water storage tanks constructed under the project (headworks and distribution storage tanks).	Annual	Progress reports from supervising engineers	ONEP will work with the supervising engineers for the water supply works contracts to check	ONEP



				and consolidate data	
Water transmission and distribution pipes constructed under the project	Length of water pipes (transmission and distribution) constructed under the project.	Annual	Progress reports from supervising engineers	ONEP will work with the supervising engineers for the water supply works contracts to check and consolidate data	ONEP
Number of people reached by local communication campaigns for the social connection program	Number of persons involved in the consultation process designed to select beneficiaries of social connections and reactivated connections. The indicator is calculated as such: [expected number of new/reactivated household connections (390,000) x 10 people per connection] x 150% - the increase being a reasonable proxy for the additional number of people reached who may not be eligible or interested in connecting through the program. Additionally, it is recognized that some attendees at consultations may represent multiple households and some	Annual	Reports of consultation process, including signed lists of participants, minutes, etc.	The PCU teams will work with the NGOs/firms selected to support the implementation of the social connection program and fair and transparent selection of beneficiaries of such subsidized connections. Local citizen engagement committees will also share data/information emerging from regular committees meetings with the citizens/beneficiary populations as input to the process.	PCU



	households may send multiple attendees - this figure also allows for greater flexibility in this regard, as the indicator will be measured, in practice, based on names of those who attend these events.				
Improvement in beneficiaries' satisfaction	<p>* Initial definition: Percentage of water customers satisfied with quality and reliability of service.</p> <p>* Revised definition: Percentage of project beneficiaries satisfied (existing customers and people with no household connection) with quality of water service.</p> <p>The survey findings are to be shared with the local citizen engagement committees established in all project areas (local authorities, populations, other local groups, SODECI) so they can be communicated back to the citizens through public consultations. The committees will meet quarterly to further collect</p>	Baseline (before works are operational), mid-term review and project completion	Household survey reports by NGOs or firms recruited by the project	The satisfaction surveys (baseline, mid-term, closing) include several criteria on the perceived quality of service (reliability, water quality, cost of water, process to getting connecting, process to interact with the service provider, etc.) and an assessment of the overall (dis)satisfaction, disaggregated by target groups (with existing connection / currently not connected) and gender. The PCU M&E team will work with the NGOs/firms in charge of the survey to monitor survey implementation and quality deliverables. Both PCU M&E and Safeguards/Social	PCU based on beneficiary satisfaction survey reports



	<p>beneficiary feedback on project implementation and resulting impacts on their water supply or satisfaction more broadly. Additional mechanisms (radio and media campaigns; communications material (e.g. brochures) and plays by griots; open houses at SODECI agencies and other public events) will be used to interact with the citizens, to (i) inform them and (ii) help the project focus on priority needs and promote or speed up service improvements based on their feedback.</p>			<p>Development Team will work in close coordination with the citizen engagement local committees to organize regular (quarterly) gathering to consult beneficiary populations and provide them with feedback on issues related to the project and measures taken to address them (including implementation progress).</p>	
<p>Number of schools benefiting from new/rehabilitated WASH facilities</p>	<p>Number of schools in the project areas that benefit from new or rehabilitated/up-graded WASH facilities. Each school has 6 classes of 40 students each. A single 'block' will be constructed per school that includes separate stalls for male/female students, with at least one stall equipped for MHM for girls, and at</p>	<p>Annual</p>	<p>ONAD and PCU progress reports.</p>	<p>ONAD will collect data on the WASH facilities works contracts; the Ministry of Education will provide information/data on the targeted schools. Figure will be based on monitoring of works contracts</p>	<p>ONAD</p>



	least one stall equipped to be accessible for people with disabilities.				
Number of health centers benefiting from new and/or rehabilitated WASH facilities	Number of health centers (clinics, hospitals, etc.) in the project areas that benefit from new and/or rehabilitated/upgraded WASH facilities. As health centers vary in size, some health centers may receive more 'blocks' and/or more stalls than others, but this is based on realistic estimates of usage.	Annual	ONAD and PCU progress reports.	ONAD will collect data based on the implementation of sanitation works contracts in the selected health centers; the Ministry of Health will collect relevant information on the health centers.	ONAD in coordination with the Ministry of Health
Number of female students who gain access to menstrual hygiene management (MHM)-equipped WASH facilities at school	The number of female students who gain access at school to new and/or rehabilitated/upgraded WASH facilities that are equipped to support girls for MHM. The features of these facilities are anticipated to include: individual stalls with locks, sufficient natural lighting, solid waste management, private space for hand washing and other cleaning. The designs will be revised through consultation with female students to reflect their	Annual	ONAD and PCU progress reports.	ONAD will collect data on WASH facilities works contracts, specifically on the construction of facilities equipped to support girls for MHM; the Ministry of Education will provide updated information on the targeted schools.	ONAD and Ministry of Education.



	priority needs for such facilities.				
National Sanitation Sector Strategy Approved	Approval of a National Sanitation Sector Strategy, which covers and aligns subsectors' strategies for urban and rural sanitation, including both sewerage and on-site solutions for fecal waste management, as well as drainage management. The strategy will reflect the Government's overarching approach to technical, financial, social/behavioral, and institutional aspects of sanitation services (including the role of the private sector) - and in line with existing sector policies, strategies and other core documents.	Once	Copy of the Strategy approved by competent national authorities shared with the PCU.	ONAD will work with the Ministry in charge of Sanitation and other relevant stakeholders to ensure the completion of the Strategy and its formal approval at Government level.	ONAD
Number of sanitation and drainage master plans approved	Approval of city-level sanitation and drainage master plans	Annual	ONAD and PCU progress reports	ONAD will provide regular updates to the PCU to report on the status of implementation and approval of the different master plans.	ONAD
Completion of the audit of contracts between Government, ONEP and SODECI	Technical audit of affermage contract and of	ONEP	Progress reports from		



	the agreement between ONEP and the MIE completed.		PCU		
Completion of financial model	Sector financial model finalized and shared by project actors (MIE, ONEP, SODECI).	ONEP	Progress reports from PCU		
Completion of assets inventory	Assets inventory completed.	ONEP	Progress reports from PCU		
Number of hydrologic information collection and monitoring stations installed and operational	Number of hydrologic data collection and monitoring stations that are equipped and functional (i.e., collecting data).	Annual	PCU progress reports with evidence of data collected from the respective stations	MH will inform the PCU on the number of stations installed, from which data collected are digitally transferred to the server hosted by the Division of Hydrology	Division of Hydrology of the Ministry of Water
Report on sector asset management monitoring available	Production of a report that summarizes the sector assets, including current data at the time of report writing and description of asset changes over time.	Annual	ONEP	The report will be based on ONEP's sector asset management monitoring system (including inventory and regular updates through appropriate software)	ONEP
A web-based sector M&E platform that uses digital technology is operationalized	Functionality of a web-based M&E system for collecting, storing and analyzing project data	Semi-annual	PCU project reports	PCU (and relevant actors) produces summary reports based on data from M&E database, showing current state of works, progress on indicators,	PCU



				and state of project FM, procurement and safeguards as provided by the respective PCU experts and focal points.	
District Meter Areas (DMAs) established in a pilot area in Abidjan water distribution network	District Meter Areas (DMAs) are established	Annual	Contractor contract, final report, validated by ONEP	PCU and ONEP will monitor progress of the contractor's contract and actual progress of establishing the district meter areas in the pilot zone in Abidjan.	ONEP

Annex 1: Description of Additional Activities

1. This annex provides a detailed description of the situation in Côte d'Ivoire and the activities financed under the AF. A similar annex is provided in the project appraisal document (PAD) that summarizes the parent project activities.

Background on Potable Water Supply

2. Prior to the start of the parent project (2015), all targeted centers, with the exception of Bingerville, exhibited either a relatively low access rate or a substantial proportion of inactive connections. In addition, the backlog of renewal investments in the centers led to the deterioration of existing facilities, particularly for production facilities (using both surface water and groundwater) and for water storage facilities. The deteriorated condition of facilities, compounded by other deficiencies, led to various sustainability issues in the delivery of water services, which are listed in Table 1.1.

Table 1.1 - Water Supply Problems and Associated Impacts for all Project Locations

Project Locations	Problems	Impacts
<i>Parent Project Locations</i>		
Tiassale/N'Douci	Deteriorated water intake and insufficient production capacity.	Intermittent service throughout the towns and absence of service in high-lying areas, leading the population to use unsafe water river. Installing new service connections was not possible.
N'Zianouan	Urban center equipped with defective rural water facilities (no service from SODECI).	No water service
Agboville	Eutrophication of the raw water reservoir prevents effective water treatment in the dry season. WTP functioning at 200 percent of design capacity year-round.	Undrinkable water in the dry season (due to color and odor issues). Intermittent service or lack of service leading to termination of service contracts by water customers. Installing new service connections is not possible.
Korhogo	Deteriorated raw water transmission pipe and insufficient production capacity.	Intermittent service. High proportion of inactive connections.
Ferkéssédougou	Raw water intake not functioning during the dry season. Deteriorated WTP	Intermittent service Very high proportion of inactive connections
Bingerville	City supplied from Abidjan production facilities. Insufficient water storage facilities.	Installing new service connections is not possible, particularly in new housing developments.
Béoumi	Raw water reservoir empty in the dry season and receiving urban wastewater all year long.	No water service in dry season (replaced by truck service).



Project Locations	Problems	Impacts
Additional Locations as part of the AF		
Dabou	Area with strong demographic growth Insufficient water storage WTP is dilapidated	Impossible to make new connection, especially in new subdivisions
Issia	150 percent saturation rate with 45 percent connection rate Highly degraded treatment works and inadequate production/storage Eutrophication of the raw water reservoir, preventing the effective treatment of water during the dry season WTP operating at 200 percent of its capacity year-round	Limited access and intermittent service for potable water supply
Niakara	The existing production is weak and there is insufficient supply to meet existing demand (currently meeting about 17.5 percent of demand)	Limited access and intermittent service for potable water supply
Songon	The existing production is weak, and the current production only meets 27.5 percent of demand. There is a need for increased water supply from groundwater sources.	Recently completed drilling cannot be commissioned. Certain areas within the city completely lack access to water through the piped network

3. Table 1.2 shows the current water coverage rates for the original centers (those covered both under the parent project and the AF).

Table 1.2 - Water Access in the Targeted Centers of the Parent Project (2018)

	Tiassalé /N'Douci	N'Zianouan	Agboville	Korhogo	Ferkéssédougou	Bingerville	Béoumi
Population	74,827	20,563	115,842	278,688	65,633	105,481	71,947
No. active connections	6,586	0	9,548	17,412	5,037	17,606	3,804
Production (l/cap/day)	31	0	28	30	32	83	17

Source: ONEP 2018, latest available data.

4. Table 1.3 shows similar figures for the centers added as part of the AF. These locations suffer from similar problems as those seen in the original centers, and consequently, the approach to addressing water supply in the additional centers will be similar to what was done in the parent project. In other words, the project will primarily support rehabilitation of deteriorated facilities as well as expansion of the core network within the main urban centers.



Table 1.3 - Water Access in the Targeted Centers of the AF (2018)

	Dabou	Issia	Niakara	Songon
Population	95,375	92,612	56,317	59,947
No. active connections	11,589	3,115	975	3,294
Production (l/cap/day)	53	19	10	16

Source: ONEP 2018, latest available data.

Background on Urban Water Sector: Policy, Institutions and Regulation (PIR)

5. Prior to the parent project, a number of challenges with respect to urban water supply PIR were noted and activities were incorporated (under the original Component B) to help address these challenges. The original activities focused on three key sectoral studies that have already been completed. These studies included: a technical audit of current contracts and agreements in the urban water sector, the design and implementation of a financial model, and a study on the valuation of sector assets and liabilities.

6. At the time of appraisal for the parent project, the absence of information on the value of fixed assets and of consolidated financial statements prevented the development of a clear financial picture of the sector. The sector audit has provided much needed information in this regard, and there is now clarity on the financial state of the sector. However, sector regulation is still hampered by (a) the impact of the crisis on billing and collection, specifically the use of makeshift solutions to keep the sector running by compensating SODECI's losses and (b) the fact that the public party to the PPP largely depends on SODECI's willingness to share detailed information, without which the Government is not in a position to develop adequate tools for financial planning and rate setting.

Background on Urban Sanitation

7. There is an increasing need to address urban sanitation challenges, as currently only 45 percent of urban households have access to basic sanitation, and 4 percent of households still practice open defecation as their primary sanitation solution (and this percentage jumps to 21.5 percent when considering the poorest quintile) (JMP 2017). There is no existing estimate of the portion of households accessing safely managed services, but treatment does not exist in most cities. Additionally, in Côte d'Ivoire, only 28 percent of households have access to basic hygiene services (facilities are on-site and soap and water are available) and 42 percent of households do not have access to any hygiene facilities (JMP 2017).

8. Additionally, the JMP reports that in urban areas 35 percent of schools lack improved sanitation facilities (2017) and based on the Ministry of Health's most recent annual assessment (*Statistiques Scolaires* 2018), in the project areas 43 percent of schools lack latrines and 64 percent of schools lack access to a water point. Addressing sanitation is fully in line with the Government's prioritization of meeting the SDGs (notably SDG6) and is aligned with the existing CPF (as further detailed in the main text).



Detailed Project Activities

9. The detailed project activities, together with their costs are listed below.

1. **Component A. Urban Water Supply (original US\$45.6 million, AF US\$101.7 million, total US\$147.3 million):** Under the AF, this component will include three areas of activities: 1) water supply expansion in the existing eight project locations (to further expand networks following the rehabilitation and initial expansion carried out under the parent project); 2) water supply improvements and expansion in four additional cities; and 3) technical studies to inform the works and monitoring of supervision of works, as well as relevant socio-environmental studies. These activities will also contribute to adaptation to and mitigation of climate change impacts in the targeted areas, especially with respect to potential droughts and floods.

2. *Activity A1 – Water Supply in Existing Project Centers (US\$58.1 million).* For each of the existing project locations, the following activities are planned, with highlighted locations referring to the additional communities included as part of the scale up:

(a) Tiassale/N'Douci/N'Zianouan (US\$15.7 million)

- i. Construction of new reservoirs (2000 m³, 30 m high; 1000 m³, 30 m high)
- ii. A new boosting station towards Sikensi (180 m³/h),
- iii. Main distribution network expansion including DN400 cast iron pipes (36km); DN 200 PVC PN 10 pipes (20 km) to connect M'Brimbo, Bodo and Boussourko; and DN 160 PVC PN 10 pipes (30 km),
- iv. Distribution network expansion using 63 to 200 mm pipes (50km), and
- v. 2,000 new household connections;

(b) Agboville (US\$10.1 million)

- i. Construction of new reservoirs (300m³, 15 m high at Grand Yapo; 500m³, 15 m high at Attobrou),
- ii. New boosting stations (at Erymakoudjé and Loaguié),
- iii. New chlorination posts (at Attoubrou and Loaguié),
- iv. Network expansion, including DN 200 PVC PN 10 pipes (8km between Arrikoville and Laoguié); DN200 cast iron pipes (45 km, towards Grand Morié and Grand Yapo),
- v. Distribution network expansion using 63 to 200 mm pipes (70km), and
- vi. 2,000 new household connections;

(c) Korhogo/Ferkéssédougou (US\$15.3 million)

- i. Expansion of the existing pumping station (800 m³/h),
- ii. New treatment plant (800 m³/h),
- iii. New reservoir (3,000 m³ in Ferké),
- iv. Pipeline to connect new reservoir to existing 600 m³ reservoir using DN400 cast iron pipe (10 km)



- v. Distribution network expansion using 63 to 200 mm pipes (100km), and
 - vi. 3,500 new household connections;
- (d) Bingerville (US\$13.1 million)
- i. New source wells drilled (150 m³/h),
 - ii. New treatment plant (1,000 m³/h),
 - iii. Network expansion, including DN300 cast iron pipes (20 km) and DN400 cast iron pipes (20 km),
 - iv. Distribution network expansion using 63 to 200 mm pipes (110 km), and
 - v. 3,000 new household connections; and
- (e) Béoumi (US\$4.0 million)
- i. New boosting post (50 m³/h),
 - ii. Distribution network expansion using 63 to 200 mm pipes (110 km), and
 - iii. 2,500 new household connections.
3. *Activity A2 – Water Supply in Additional Project Centers (US\$35.46 million).* For the additional project cities, which are being added as part of the AF, the following works are planned:
- (a) Dabou (US\$8.0 million)
- i. New boreholes (150 m³/h) and rehabilitation of existing wells,
 - ii. New treatment plant (500 m³/h),
 - iii. New reservoir (2,000 m³, 30 m high),
 - iv. Network expansion, including DN300 cast iron pipes (5 km) and DN400 cast iron pipes (5 km),
 - v. Distribution network expansion using 63 to 200 mm pipes (25 km), and
 - vi. 2,000 new household connections;
- (b) Issia (US\$12.0 million)
- i. New raw water intake (500 m³/h),
 - ii. New treatment plant (500 m³/h),
 - iii. New reservoir (1000 m³, 15 m high),
 - iv. Network expansion, including DN300 cast iron pipes (20 km),
 - v. Distribution network expansion using 63 to 200 mm pipes (50 km), and
 - i. 2,000 new household connections;
- (c) Niakara (US\$7.8 million)
- i. New raw water intake (200 m³/h),
 - ii. New treatment plant (200 m³/h),
 - iii. New reservoir (500 m³, 15 m high),
 - iv. Network expansion, including DN300 cast iron pipes (25 km),



- v. Distribution network expansion using 63 to 200 mm pipes (50 km), and
 - vi. 2,000 new household connections; and
- (d) Songon (US\$7.7 million)
- i. New raw water intake (200 m³/h),
 - ii. New treatment plant (500 m³/h),
 - iii. New reservoir (2,000 m³, 30 m high),
 - iv. Network expansion, including DN300 cast iron pipes (2 km) and DN400 cast iron pipes (3 km),
 - v. Distribution network expansion using 63 to 200 mm pipes (25 km), and
 - vi. 2,000 new household connections.

4. For both activities A1 and A2, new household connections will be made following SODECL's social connection protocol. The social connections provide potable water connections to the most disadvantaged households in a city, who have never been connected to the network. These connections are subsidized by the Government, mostly through financial partners. To be eligible for these connections, the following criteria must be met: (i) the number of water points in the house is limited to three; (ii) a single water supply connection is provided per lot; and (iii) the water supply connection cannot be used for commercial purposes (except for sites currently under construction). SODECL produces a number of consumer-friendly materials to help inform current and potential clients of the processes for getting a connection, the different types of connections and the associated fees. Figure 1.1 provides a few examples of figures from these materials.

Figure 1.1 - Client Orientation Materials by SODECL





5. Under the parent project, a number of connections that were suspended due to critical shortages (leading to full service interruption) were reactivated. These connections could be reactivated thanks to the increased water production, allowing for full pressure and service continuity. At the time of the AF preparation, the number of suspended connections in the parent project centers has not changed, and in the additional centers, where the total number of existing connections is low, there are very few suspended connections. Therefore, only the number of reactivated connections (considered as new connections) expected under the parent project will be included in the results framework.

6. When a connection is suspended, SODECI removes the water meter and gives the client his/her balance (for the consumption advance and the additional cancellation notice). To be eligible for reactivation, the household must: (i) never have had their connection suspended due to fraud; (ii) reside in a zone where the quality of service was weak prior to PREMU (for which ONEP will draw up a relevant map;), (iii) have paid all water bills; and (iv) not be related to the predecessor, in the case where he/she inherited a suspended or terminated connection linked to non-payment.

7. *Activity A3 (US\$8.1 million).* This activity will finance technical studies for the works in each location (US\$3.57 million) and supervision contracts for all works (US\$4.55 million), as well as relevant socio-environmental studies. As part of the technical studies, a new master plan for Abidjan (with a time horizon till 2035) will be developed.

8. **Component B: Urban Sanitation (US\$18.9 million):** This new component is being added as part of the AF, in response to the increasing need to address urban sanitation challenges. It replaces the parent project's Component B: Institutional Support, as defined in paragraph 15 (b) in the main text.

9. The component will include four activities: (1) support for the development of a national sanitation policy; (2) support to the development of sanitation master plans in selected cities; (3) construction and rehabilitation of water, sanitation and hygiene (WASH) facilities for schools and health centers and capacity building through TA to support creation of operation and maintenance (O&M) plans for constructed facilities as well as development of sanitation service chains; and (4) hygiene promotion campaigns.



10. *Activity B1 – Development of a National Sanitation Sector Strategy (US\$1.0 million).* This activity will support the development of a National Sanitation Sector Strategy. ONAD has an existing strategy on rural sanitation (supported by the United Nations Children’s Fund, UNICEF) and is in the process of developing a non-sewered sanitation strategy (with support from the African Development Bank [AfDB] and the Bill and Melinda Gates Foundation). To bring these two strategies together, and incorporate urban sewerage sanitation and drainage, a national sanitation strategy will be developed. This strategy will also reflect existing priorities and approaches within ONAD related to private sector roles in the sector, hygiene/behavior change messaging, and related topics.

11. *Activity B2 – Development of Sanitation Master Plans in selected cities (US\$2.7 million).* This activity will finance the development of sanitation and drainage master plans for selected centers, including Tiassalé/N’Douci/Sikensi, Agboville, Dabou, Issia, and Béoumi. The first step will be a detailed assessment of existing sanitation services in each location. The master plans will then be developed in a participatory manner, in line with ONAD’s approach and international good practice, wherein relevant government stakeholders, community members, civil society organizations (CSOs), etc. will be consulted throughout the process. The master plans will incorporate a mix of technical solutions (e.g., sewers and on-site services) based on what is both technically feasible and financially viable in different locations. Beyond informing infrastructure needs, the master plans will include details on institutional, regulatory, financial and social needs to support the city’s long-term goals for urban sanitation, in line with the national strategy being developed and other national policies.

12. *Activity B3 – Construction of WASH facilities in schools and health centers (US\$14.4 million).* This activity will include construction or rehabilitation of water supply, latrines/toilets, and handwashing stations in an estimated 375 schools and 50 health centers in all project locations. The facilities will be designed to include the needs of girls/women who are menstruating. The specific needs will be informed through consultation with future beneficiaries, but design features are anticipated to include, individual stalls, locks, sufficient natural lighting, handwashing stations in private areas, and solid waste management facilities. This activity will also finance the preparatory studies, works supervision and monitoring contracts, and studies to inform the O&M models to maintain the WASH facilities in the schools and health centers.

13. Additionally, to support planning for the full sanitation service chain, this activity will support capacity building through TA to inform technical studies for formalizing and improving the quality of relevant portions of the sanitation service chain.

14. *Activity B4 – Hygiene promotion campaigns (US\$0.9 million).* A community hygiene sensitization campaign will be developed and rolled out under this activity. It will also include specific messaging for use in the schools under the project, including a focus on menstrual hygiene management. The hygiene messaging will be in line with the Sector Strategy developed under Activity B1.



15. **Component C: Urban Water Sector Strengthening²² (original US\$1.8 million, AF US\$24.1 million, total US\$25.9 million):** The parent project included limited support to strategic activities to support sector strengthening and provide stakeholders with key tools to better develop and manage the sector. The AF gives an opportunity to further strengthen the sector to help respond to the strong commitment of the Government, through the recently created MH, to address the challenges with water resource management and access to water services. Based on the findings of the studies funded by the parent project, new activities will focus on addressing the challenges pertaining to the existing PPP framework, with a focus on providing evidence to support decision making for the next generation PPP arrangements, in line with the government's growing interest in further private sector involvement in the sector, including future private sector financing. It includes three activities: (1) support to the MH and ONEP; (2) support to the Division of Hydrology within the MH; and (3) support for the strengthening of the sector operational performance.

16. *Activity C1 – Support to the Division of Hydrology (US\$3.9 million).* The Division of Hydrology, within the MH, will be supported through studies on water resources management planning, focused on strategic geographic areas, including Abidjan. These studies will focus on support for design and decision making for large water systems, issues of water quality, and the potential use of groundwater resources as an alternative to surface water in some areas, taking into account current and expected climate change impacts.

17. This activity will also support the design, installation and maintenance of hydrological information collection and monitoring stations (using new technologies) to strengthen digital data collection, analysis and data sharing for monitoring of water resources. The Division of Hydrology will also be supported with key capacity strengthening activities.

18. *Activity C2 – Support to MH and ONEP (US\$2.3 million).* This activity will provide support to the recently created MH and ONEP to better manage their respective mandates, including: implementation of key activities from the sector audit action plan, in support of policy and regulatory reforms (e.g., development of a sector policy letter and water quality management support); a study to inform development of a strategic water sector plan for achievement of the SDG6,²³ outlining the vision for the sector as well as targets, investment needs and priority actions; capacity strengthening to help build the new Ministry's expertise on key project management functions; and TA to support the preparation of the next generation of PPP reform in the urban water sector (as the current PPP contract will expire in 2022). The support to the next generation of PPP reform will prioritize strengthening the use of performance targets, improved financial autonomy for ONEP, increased capacity for ONEP to act as the sector asset

²² This component, as restructured and renamed, builds on activities of the parent project and finances new ones with the objective to further strengthen the urban water sector. The US\$1.8 million refer to the activities financed under the original financing (as part of the parent project's Component B: Institutional Support) and aimed to support: (i) the institutional strengthening of the sector, namely: an inventory of urban water supply sector assets, the development of a financial model for the urban water supply sector and an audit of the Affermage Contract and the ONEP Agreement; and (ii) and capacity building for ONEP in financial planning and operations monitoring.

²³ By 2030, achieve universal and equitable access to safe and affordable drinking water for all.

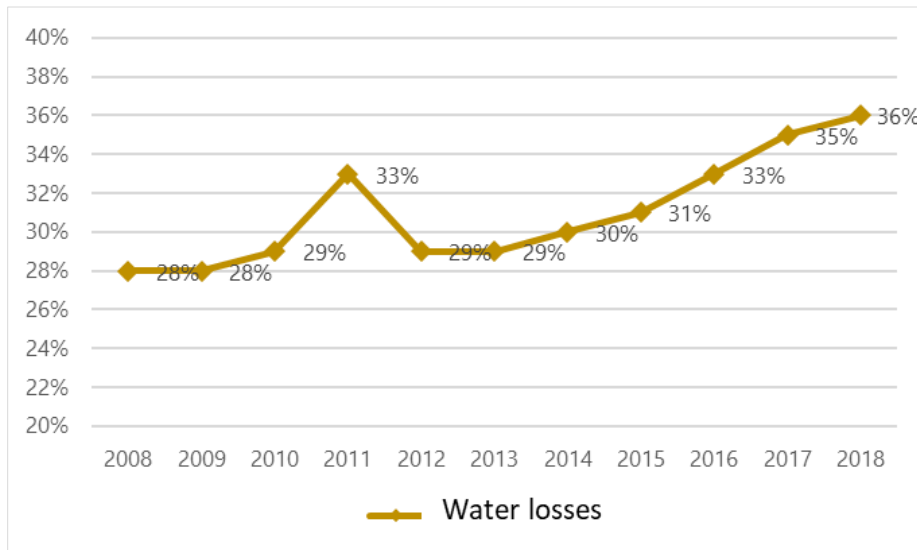


manager, enhancement of CE and citizen accountability mechanisms, and other support to attract private sector financing.

19. *Activity C3 – Support the strengthening of the sector operational and financial performance (US\$17.86 million).* This activity will focus on two areas: (i) piloting of new NRW management approaches in Abidjan and (ii) support to ONEP for its asset management mandate. The existing water supply network in Abidjan, managed by SODECI, has degraded significantly over the past decades, leading to increased NRW over time. Figure 1.2 shows the change in NRW from 2008 to 2018. At present, SODECI experiences around 36 percent NRW, compared to the 12 percent seen in secondary cities. The non-revenue water in Abidjan is equal to around 58.5 million m³ of water each year, which is equivalent to losses of 23 billion FCFA per year. To address the ongoing NRW challenges in Abidjan (and elsewhere in Côte d’Ivoire), the project will support ONEP and SODECI with a program to pilot approaches for reducing NRW, focusing on minimizing leaks in existing networks in the southern district of Abidjan.

20. The program will define and implement a comprehensive and integrated strategy in three stages: (i) selection of the pilot zones and assessment of baseline levels of losses; (ii) reduction of technical and commercial losses; and (iii) maintenance of the level of NRW achieved under phase 2. These activities will be carried out by hiring a specialized firm recruited competitively under the project to implement sectorization, through district metered areas, and use new technologies to support the daily work of SODECI (in line with its contract) on leak detection and network pressure management. This approach will clearly identify the urgent needs for renewing hydraulics and electromechanical equipment and distribution networks. For this activity, ONEP will contract the specialized firm, and SODECI will carry out the detection and repair of leaks. These roles and responsibilities will be clearly defined in the contract.

Figure 1.2 - Non-Revenue Water in Abidjan from 2008-2018





21. This activity will also support ONEP to strengthen its role as asset manager, through the acquisition of key equipment (e.g., pipes, valves, etc.) and networks whose renewal is under ONEP's responsibility. In parallel, ONEP will be supported to develop a new asset management system that will incorporate the use of clear diagnostics and new technologies, as appropriate.

22. **Component D: Project Management²⁴ (original US\$2.5 million, AF US\$5.3 million, total US\$7.9 million):** This component will cover the costs of managing and implementing the project. It will include support for acquisition, training and staff costs of the PCU, as well as costs of the project implementation support contracts between MH and the PCU, between the PCU and ONEP and between the PCU and ONAD. These agreements include the costs of personnel from each institution dedicated to the project and other core funding to ensure adequate resources to support project implementation.

²⁴ With the addition, through the AF, of a new component on sanitation (now Component B) and increased focus on strengthening the urban water sector (now Component C), the project as restructured now includes this new Component D strictly focused on project management. The US\$2.5 million refer to the activities financed under the original financing (as part of the parent project's Component B: Institutional Support) and aimed to support operations and strengthened capacity of the PCU and ONEP in Project management.

Annex 2: Detailed Costs of AF Activities

N°	Components	Cost (M FCFA)	Cost (US\$ million)
A	URBAN WATER SUPPLY	56,980	101.7
A.1	Water Supply in Existing Project Centers	32,574	58.1
A.1.1	Tiassalé/N'Douci/N'Zianouan	8,802	15.7
A.1.2	Agboville et sous-préfecture	5,639	10.1
A.1.3	Korhogo/Ferkessédougou	8,593	15.3
A.1.4	Bingerville	7,315	13.1
A.1.5	Béoumi and surrounding areas	2,225	4.0
A.2	Water Supply in Additional Project Centers	19,857	35.5
A.2.1	Dabou	4,506	8.0
A.2.2	Issia and surrounding areas	6,711	12.0
A.2.4	Songon	4,290	7.7
A.2.6	Niakara	4,350	7.8
A.3	Technical (including Socio-Environmental) Studies and Supervision of Works	4,550	8.1
A.3.1	Technical Studies	2,000	3.6
A.3.1.1	Technical studies for Korhogo	150	0.3
A.3.1.2	Technical studies for Dabou	200	0.4
A.3.1.3	Technical studies for Issia	200	0.4
A.3.1.4	Assessments and technical studies for Vavoua and Zuénoula	350	0.6
A.3.1.5	Technical studies for Niakara	200	0.4
A.3.1.6	Technical studies for Songon	150	0.3
A.3.1.7	Technical studies for Prikro	150	0.3
A.3.1.8	Water Supply Master Plan for Abidjan (horizon 2035)	600	1.1
A.3.2	Supervision and Monitoring of Works	2,550	4.6
A.3.2.1	Supervision and monitoring of works in Tiassalé/N'Douci/Sikensi and surrounding areas	430	0.8
A.3.2.2	Supervision and monitoring of works in Agboville and sub-préfecture	250	0.4
A.3.2.3	Supervision and monitoring of works in Korhogo/Ferkessédougou and surrounding areas	400	0.7



A.3.2.4	Supervision and monitoring of works in Bingerville	360	0.6
A.3.2.5	Supervision and monitoring of works in Béoumi and surrounding areas	110	0.2
A.3.2.6	Supervision and monitoring of works in Dabou	220	0.4
A.3.2.7	Supervision and monitoring of works in Issia and surrounding areas	330	0.6
A.3.2.8	Supervision and monitoring of works in Songon	200	0.4
A.3.2.9	Supervision and monitoring of works in Niakara	250	0.4
B	URBAN SANITATION	10,600	18.9
B.1	Strategic Studies	550	1.0
B.1.1	National Sector Strategy for Urban Sanitation and Drainage	550	1.0
B.2	Planning Studies	1,500	2.7
B.2.1	Sanitation and Drainage master plan for Tiassalé/N'Douci/Sikensi	300	0.5
B.2.2	Sanitation and Drainage master plan for Agboville	300	0.5
B.2.3	Sanitation and Drainage master plan for Dabou	300	0.5
B.2.4	Sanitation and Drainage master plan for Issia	300	0.5
B.2.5	Sanitation and Drainage master plan for Béoumi	300	0.5
B.3	Sanitation Works and Relevant Studies in Project Centers	8,050	14.4
B.3.1	Construction of WASH facilities in schools and health centers	7,000	12.5
B.3.2	Technical Studies, Supervision and Monitoring of Works	1,050	1.9
B.3.2.1	Technical studies and environmental and social assessments for WASH facilities in schools and health centers	300	0.5
B.3.2.2	Study to assess O&M models for constructed WASH facilities in schools and health centers	300	0.5
B.3.2.3	Supervision and Monitoring of works for WASH facilities in schools and health centers	450	0.8
B.4	Hygiene Promotion	500	0.9
B.4.1	Hygiene/Behavior change campaigns	500	0.9
C	URBAN WATER SECTOR STRENGTHENING	13,500	24.1
C.1	Water Resources Management	2,200	3.9
C.1.1	Support to the Division of Hydrology for hydrologic stations and data collection platform	1,000	1.8
C.1.2	Study on the quality of raw water and evaluation of findings from diagnostic report on reservoirs/dams used for drinking water supply	400	0.7
C.1.3	Study on groundwater vulnerability in Abidjan at the lagoon sand quarry	400	0.7
C.1.4	Study on groundwater utilization in Dabou and Niéky	400	0.7



C.2	Institutional Strengthening	1,300.00	2.3
C.2.1	Support for the development of a strategic water sector plan for achieving SDG6	200	0.4
C.2.2	Support for the development and adoption of a sector policy letter	50	0.1
C.2.3	Support to the elaboration of the next affermage contract	450	0.8
C.2.4	Capacity support to ONEP for its asset management mandate, water quality monitoring and regulation of the affermage contract	300	0.5
C.2.5	Support to MH	300	0.5
C.3	Support to the NRW Pilot in Southern Abidjan	10,000	17.9
C.3.1	Network management assessment	200	0.4
C.3.2	Firm to design DMZ and create a program for the pilot NRW activities and acquisition of hydraulic and electromechanical	4,000	7.1
C.3.3	Acquisition of materials for rehabilitation of the network and connections	4,800	8.6
C.3.4	Acquisition of materials for 10,000 connections	1,000	1.8
D	PROJECT MANAGEMENT	2,980	5.3
D.1	Project Operations	1,000	1.8
D.2	Support ONEP to implement the project	380	0.7
D.3	Support ONAD to implement the project	250	0.4
D.4	Support CI-Energies to implement the project	100	0.2
D.5	Acquisition of materials	200	0.4
D.6	Technical audits	150	0.3
D.7	Financial and accounting audits for the project	100	0.2
D.8	Citizen engagement activities	300	0.5
D.9	Communication activities	100	0.2
D.10	Continued training for project personnel (PREMU/ONEP/ONAD)	200	0.4
D.11	Project evaluation (impact evaluations, satisfaction surveys, and creation of online platform)	200	0.4
	GRAND TOTAL	84,060	150.0



Annex 3: Project Institutional and Implementation Arrangements

1. The implementation arrangements used under the parent project have been carried out to the World Bank's satisfaction. Their replication is expected to expedite implementation. However, to take account of the scaled-up and additional activities under the AF, the project management framework and work relations between the various entities contributing to implementation will be slightly revised.
2. **Institutional arrangements for implementation.** The project will continue to be implemented by the existing PCU, which experience in World Bank procedures has been instrumental in the satisfactory implementation of the parent project. The existing PCU will ensure the management and overall coordination of the proposed project. It will (a) manage the implementation of all project components; (b) carry out FM and procurement; (c) prepare annual work plans and budgets, to be approved by the project's Steering Committee and IDA; (d) ensure M&E and reporting (including safeguards and financial reporting); and (e) carry out citizen engagement and communication activities. The PCU's capacity will be strengthened to carry out the additional work incurred by expanded breath of the project.
3. For the AF, the Implementation Support Contract between the Recipient and the PCU will be updated to (a) reflect the new role and scope of responsibility of the Ministry of Water (previously embedded in the Ministry of Economic Infrastructure) and (b) ensure adequate resources to carry out the management of the project. The contract will also be revised to ensure better coordination of stakeholders involved in the project. The existing Implementation Support Contract between the ONEP and the PCU will also be updated to reflect the expanded scope of ONEP's responsibility in the technical management of the water components of the project. A similar Implementation Support Contract will be established between ONAD and the PCU for the technical management of the new sanitation component. All Implementation Support Contracts will detail the respective roles and responsibilities of, respectively, ONEP, ONAD, the MH and the PCU, as well as the resources and expertise that will be dedicated to the successful implementation of related activities.
4. The mandate and the composition of the project's Steering Committee will be updated to reflect the transfer of chairmanship from the Ministry of Economic Infrastructure (in the parent project) to the new Ministry of Water and ensure the adequate representation of MINASS. The aforementioned changes in institutional arrangements will be dated covenants in the legal agreement for the AF. In addition, capacity building and training activities are budgeted in the project costing to further strengthen the capacity of ONEP, ONAD and the MH.
5. **Procedures and manuals.** The PIM will be updated to reflect the scaled-up, additional and revised project activities and arrangement. Additionally, the existing FM and procurement procedures manual, which was prepared for the parent project, will be used for the AF following minor updates to reflect the AF. The update of the PIM will be set as a dated covenant.
6. **Monitoring & Evaluation.** M&E will be managed by the PCU, which includes an experienced M&E unit. The unit will collect data from ONEP, SODECI, ONAD, and works supervision teams to elaborate the



project monitoring indicators. The new sanitation activities will be tracked by ONAD and works supervision teams. The other M&E arrangements will remain unchanged.

7. **Procurement.** Procurement performance under the parent project has been satisfactory to date. The procurement team of the PCU is fully experienced in World Bank procedures. Procurement of the restructured project (parent and AF) will be carried out in accordance with the “World Bank Procurement Regulations for Recipient under Investment Project Financing”, dated July 2016, revised November 2017 and August 2018. “Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants,” dated October 15, 2006 and revised in January 2011 and as of July 1, 2016 will continue to apply.

8. The PPSD has been developed to analyze the key features of the AF and related procurement risks and opportunities, building on the lessons learned from the parent project and similar IDA-financed projects. A Procurement Plan, aligned with the PPSD, for the first 18 months of implementation has been agreed between the Recipient and the World Bank at negotiations.

9. **Financial Management.** FM performance under the parent project has been satisfactory to date. FM arrangements for the AF will be based on the existing arrangements in place. In line with the principles of mainstreaming project implementation arrangements within the Government, the project will continue to benefit from the support of the financial controller from the Ministry of Budget and the public accountant from the Ministry of Finance, who have been assigned to the PCU and have demonstrated adequate overall performance. In addition, as per a 2018 national *Arrêté*, the IGF will be involved to strengthen the internal audit function of the project. As is already the case for the financial controller and accountant, the activities of IGF will be funded by the Government’s own resources.

10. As part of the AF, the following legal covenants are being added to the project.

Table 3.1 - FM Action Plan

Action	Responsible Party	Deadline and Conditionality
1. Update the PIM, including FM and procurement procedures	PCU	Two months following AF effectiveness
2. Update the configuration of the accounting software	PCU	One month following AF effectiveness
3. Ensure adequate resources to strengthen the internal audit function of the project (IGF and Internal auditor) through at least bi-annual review of transactions covering FM, procurement and operations	MEF/IGF/PCU	Three months following AF effectiveness
4. Revise the ToR of the external auditor to reflect the expanded scope of the project and audit.	PCU	Three months following AF effectiveness

11. **Disbursements.** Disbursement arrangements will remain unchanged. A new Designated Account (DA) will be opened at the Central Bank (BCEAO) and a Project Account (PA) in a commercial bank under



terms and conditions acceptable to IDA. Disbursements will be made against submission of Statements of Expenditures (SOE) or other available methods (reimbursement, direct payment and special commitment).

Table 3.2 - Eligible Expenditures

Category	Amount of the Credit Allocated (expressed in EUR)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Goods, works, non-consulting services, consulting services, Operating Costs and Training for the Project, except Parts A(i)-(v), C(i)(b), C(v) and D(i)	43,800,000	100%
(2) Goods, works, consulting and non-consulting services, consultants' and non-consulting services, Operating Costs and Training for Parts A(i)-(v), C(v) and D(i) of the Project	90,000,000	100%
TOTAL AMOUNT	133,800,000	



Annex 4: Detailed Economic Analysis

1. This annex aims to update the cost-benefit analysis (CBA) carried out for the original project by considering (a) the actual implementation, to date, of the original project and (b) the economic and financial impact of the activities proposed in the AF.

Methodology and Scope

2. The original CBA has been updated to assess the EIRR and the NPV of activities carried out under the original project and scaled-up activities under the proposed AF. The CBA methodology remains the same as what was used at the time of appraisal for the parent project, and assumptions have been reviewed to consider the expanded scope of the project. The project will benefit 12 urban centers and their surrounding areas/nearby settlements, in contrast with the parent project (which covered eight urban centers and provided minimal interventions outside the urban centers), equivalent to a total of 1,088,613 people currently living in these centers (2018) against 511,872 people (2016).

3. As explained in the project description, water supply investment activities help (a) address the current water shortages and restore adequate service quality (e.g., in terms of continuity) to households in 12 urban centers through increased production and storage capacity and (b) expand access to water services by implementing social (subsidized) household connection programs. The CBA considers an investment program consisting of the water supply component, encompassing 73 percent of the total project costs, and the incremental (with/without project) costs and benefits associated with these investments. The exclusion of the other components in the CBA is due to the difficulty in finding quantifiable benefits linked to these project activities.

4. Within the CBA, project benefits include the increased water consumption, the consumer surplus accruing to beneficiaries shifting to the piped network from other water sources (e.g., reduced coping costs), and cost savings that result from the improvement of operational performance of the water systems. Project costs include capital costs (100 percent of the cost of activities under the original project and the AF), incremental operating costs (energy and chemicals costs, commercial costs linked to the new customers, and maintenance costs), and renewal costs. The update of the analysis considers the time schedule of investments, including the actual implementation of the original project and the planned implementation of the AF activities. All calculations are carried out over a 40-year period, using constant prices and excluding taxes and financing costs.

5. **Investment costs.** The cost estimates are drawn from design studies and the outcome of recent bids carried out by ONEP and the PCU. Detailed investment costs of the water systems are given in Table 4.1. It should be noted that overall, compared to the parent project, investments have tripled while the expected beneficiaries are only doubling, resulting in an average increased investment cost per capita compared to the original project. The increased costs per capita are linked to expansion of the distribution networks needed to reach beneficiaries, both in densifying networks in the cities themselves (all centers) and in additional neighborhoods and smaller centers in the outskirts of the eight original cities. In those areas with relatively low population density and very limited access rates, providing access to piped water



comes at a high cost per capita.²⁵ However, in line with the Government’s objective to leave no one behind, it was decided that the IDA financing would help reaching these poorer households who could not be included in the original project due to a limited envelope.

Table 4.1 - Investment Costs for the Economic Analysis (CFAF, millions)

Water Systems	Water Systems	Parent Project Cost Estimate	AF Cost Estimate	Total Project Cost Estimate
8 original centers and surrounding areas	Agboville	5,800	5,889	11,688
	Béoumi	2,792	2,335	5,127
	N'Douci/Tiassalé/ N'Zianouan/Sikensi	4,462	9,332	13,794
	Korhogo/Ferkéssédougou	6,087	9,143	15,230
	Bingerville	6,068	7,674	13,743
4 additional centers	Dabou		4,926	4,926
	Issia		7,211	7,211
	Niakara		4,800	4,800
	Songon		4,640	4,640
Total	Total	25,209	57,080	82,289

Source: ONEP and PCU.

6. **Incremental operating costs.** As the project facilities will often replace deteriorated facilities, the variable costs (energy and chemicals) may be substantially modified. The energy and chemical costs of the new facilities are drawn from design studies and reflect energy and chemical use efficiency gains over existing deteriorated facilities. The costs also reflect the increased unit cost of electricity, which has risen since the beginning of the project. Other operating costs are estimated based on current SODECI expenditures. The specific conditions and design in each center (groundwater level, gravity-fed system or not, distance between the production/storage facility and the settlements to be serviced) translate into differentiated operating expenses in the different project locations. Yet, despite the increased cost of energy since the original CBA, overall the project will help decrease the cost of energy and chemicals for O&M. Table 4.2 provides estimates of the average operating costs (in the original centers, additional centers, and the 12 centers) in the with/without project situation.

²⁵ This is confirmed by the long-term marginal cost of water in the targeted centers, which is much higher than the average revenue per cubic meter sold in those areas (CFAF 773 per m³).



Table 4.2 - Average Operating Costs in different locations (CFAF/m³)

Water System	Energy Cost (CFAF/m ³ produced)		Chemicals Cost (CFAF/m ³ produced)	
	Without Project	With Project	Without Project	With Project
8 original centers and extensions	38.13	43.88	28.53	21.26
4 additional centers	42.35	20.08	37.69	26.66
All centers	39.82	34.36	32.19	23.42
Commercial costs	CFAF 3,000 per connection per year			
Maintenance costs	0.5 percent of investment costs per year			

Source: ONEP/SODECI and World Bank estimates.

7. **Incremental benefits.** Considering the population growth projections in the different centers (National Census, 2014), the projected beneficiaries will be 1,200,000 by the end of the project (2024), compared to 549,000 expected at the end of the original project (2022). The new infrastructure for production, transportation and storage will be used to reduce water deficits in affected areas and generate additional water consumption for existing users. In addition, the project investments will progressively generate cost savings resulting from design features and the improvement of operational performance. The incremental benefits generated by the project activities are listed in Table 4.3.

Table 4.3 - Project Benefits

Development Objective/Activities	Incremental Benefits
Increasing access to safe water (new service connections)	Incremental water revenues from new connections and reactivated connections. Consumer surplus accruing to beneficiaries (390,000 total), including savings on water expenses compared to alternative vendors, additional water consumption per capita, and safe water consumption.
Improving the quality of water services (existing consumers)	For 810,000 people with existing connections will benefit from enhanced services, i.e., continuous supply, at regular pressure, enabling increased water consumption.

8. **Incremental revenues.** The incremental consumption, water prices, and revenues are estimated based on current data on water consumption and current water rates. The assumptions used for estimating incremental revenues are summarized in Table 4.4.



Table 4.4- Assumptions on average consumption by location

Urban center	Number of People Served per Connection	Consumption (lpcd)	Average Revenue (CFAF/m ³)
8 original centers	12.47	55	266
4 additional centers	15.98	50	238
All centers	13.29	54	257

Source: ONEP/SODECI and World Bank estimates.

9. **Consumer surplus.** The consumer surplus is equal to the increase of water consumption multiplied by the difference of the water price paid before and after the project and by the price elasticity (0.5). Households with no access to private piped water are supplied by neighbors and vendors (private boreholes, trucks, water bags) and, in small urban settlements, possibly by handpumps (as there are no public standposts in Côte d'Ivoire). The average daily consumption ranges from 10 to 30 liters per capita depending on the context (lower consumption in smaller and less dense neighborhoods; higher consumption in the centers located in the greater Abidjan area). The average sale price of CFAF 1,250 per m³ (equivalent to CFAF 25 per bucket of 20 liters) used in the original analysis has been revised to account for (1) higher prices charged by vendors in situations of acute shortages (prices may be up to 4 times higher) and (2) the use handpumps for a very limited expense or rivers for free (particularly in the extended semi-urban target areas of the AF). Consequently, for the CBA, the average vending price used is CFAF 2,700 per m³, which is 10 times the average rate charged through a piped network service bill in those areas.

10. **EIRR and NPV.** Table 4.5 provides the results of (a) the PAD analysis and (b) the results of the updated analysis for the overall project.

Table 4.5 - Results of the Updated Economic Analysis

	Unit	PAD Results	Updated Results		
			Original 8 centers and extensions	4 additional centers	Total Project
NPV (using 6 percent discount rate)	US\$, millions	5.51	44.12	9.91	54.03
EIRR	%	7.03	10.97	9.30	10.57
LTMC* (using 6 percent discount rate)	CFAF/m ³	490	778	626	773

*LTMC: long-term marginal cost of water

11. The EIRR of the water investments in the expanded perimeter of the AF is estimated at 10.6 percent and the net present value (NPV), using a discount rate of 6 percent, is estimated at US\$54.0



million. Both the EIRR and the NPV are higher than the ones of the initial CBA, respectively at 7.0 percent and US\$5.5 million. Thus, the CBA of the water supply investments confirms the economic justification of the AF – even without quantifying additional positive externalities linked to human development indicators and sustainable economic development. Additionally, estimated GHG emissions generated by the project have a minimal impact on the EIRR.

12. The economic returns in the new centers are slightly lower than those seen in the parent project centers. In the new centers, population density is relatively low, and access rates are extremely limited, providing access to piped water comes at a high cost per capita.²⁶ However, in line with the Government's objective to leave no one behind, it was decided that the IDA financing would help reach these poorer households who could not be included in the original project due to its limited envelope.

13. **Sensitivity analysis.** A range of scenarios has been developed to test the sensitivity of the EIRR to the main elements of the analysis. A potential increase of operational costs has a quasi-null impact on the EIRR. The sensitivity to increased investment cost is more important, because if the investment costs increase by 20 percent or more, the NPV will be negative. However, such an increase is very unlikely given the market and experience of the initial project with efficient competitive biddings.

14. The analysis is also sensitive, albeit moderately, to a scenario of decreased demand (and sales), with a negative NPV occurring if demand/sales decrease by over 25 percent. However, an inadequate demand response to the project activities is very unlikely, given the high demand in the project areas and communication from the project that has raised strong expectations. Variations in the consumer surplus are the highest contributors to the variation of the EIRR. For beneficiaries of the social connection program, expenses for water will on average be reduced by a factor of five, while per capita consumption will increase by a factor of five, from 10 to 15 liters per capita per day to 50 to 60 (depending on density and household size in the respective areas). As the production capacity is designed to address increasing demand, it will generate additional capacity to the sector to increase the number of service connections and multiply benefits similar to the ones raised by the project to additional populations.

15. To conclude, the CBA of the water supply investments confirms the economic justification of the AF – even without quantifying additional positive externalities linked to human development indicators and sustainable economic development, and despite GHG emissions generated by the project during the implementation period.

16. **Shadow price of carbon and GHG emissions.** Based on the World Bank's standard model for estimating GHG emissions from water sector projects, this project will result in a net increase of 7.8 kg of CO₂ per person per year. This figure translates into a net total of 8,256 tons of CO₂ annually (equal to 247,693 tons over the life of the project). Using a range of estimated values of the shadow price of carbon (from US\$40 and US\$80 per ton), the EIRR would only slightly decrease from the baseline scenario of 10.57 percent to 10.16 percent or 9.75 percent. This relatively minor change demonstrates the project's

²⁶ This is confirmed by the long-term marginal cost of water (LTMC) in the targeted centers, which is much higher than the average revenue per cubic meter sold in those areas (CFAF 773 per m³).



infrastructure investments have a low impact on GHG emissions and confirms there is a strong economic case for the project despite the increase in emissions.

17. **Financial analysis.** The financial impact of project activities is assessed by the FIRR derived from the cost-benefit analysis. Financial calculations take into account the financial revenues and costs in the with/without project situations, including taxes and excluding non-cash generating benefits (consumer surplus). This FIRR reflects the rate of return computed from the perspective of the combined partners of the sector (Government, ONEP, sector funds, and SODECI). The FIRR is estimated at -4.38 percent (at a 6 percent discount rate), much lower than the 1.4 percent estimated in the initial CBA. This confirms the prevalence of non-cash generating benefits in the overall project benefits and demonstrates that the financial benefits do not cover the financial costs.

18. As analyzed in detail in the technical audit of the sector that has been financed by the parent project,²⁷ the freeze of tariffs since 2004, while positive for the customers in the social tranche of the tariff, dramatically weighs on the sector revenues and overall financial sustainability. ONEP financial resources are too limited to cover its costs, preventing adequate renewal of sector assets. The Development Water Fund is also in deficit since 2012 as it bears part of the operational deficit of the operator SODECI. The National Water Fund is in better shape but is also affected by the limited bill collection ratio (both funds are funded by a percentage of the customer tariff). However, the National Water Fund currently cannot assume its core mandate – to pay the debt service of the sector – and is instead involved in resource mobilization. The action plan developed based on the recommendations of the sector audit include a range of actions for the Government to improve the financial situation of the sector and rethink flows of funds within an improved contractual framework.

19. **Benefits of the Sanitation Investments.** Sanitation activities financed by the AF will also yield benefits, especially linked to improvements in human capital. For Component B, the school and health center WASH facilities, it is difficult to calculate an EIRR based on limited existing data in Côte d'Ivoire. However, there is abundant literature about the positive impacts of sanitation and hygiene improvements, along with increased access to quality water services.²⁸ Likewise, examples of similar IDA-funded programs implemented in other countries of the region also provide evidence regarding the social, environmental and economic benefits expected from such investments.

20. WASH facilities and better hygiene promotion at school can impact human capital development, especially for female students. There is evidence that providing latrines at school reduces absenteeism among the targeted school-age population, and that separate latrines for girls, including when designed

²⁷ ICEA-Espelia, 2018. *Audit technique des contrats et conventions dans le secteur de l'eau potable en milieu urbain*

²⁸ Say et al. (2014). Global causes of maternal death: a WHO systematic analysis, *The Lancet* 2(6):232-333; Rhee et al., (2008). Maternal and birth attendant hand washing and neonatal mortality in southern Nepal, *Arch Pediatr Adolesc Med.* 162(7):603-608; Do et al. (2018) Can environmental policy reduce infant mortality? Evidence from the Ganga Pollution Cases, *Journal of Development Economics.* 133:306-325; Adukia (2017). Sanitation and Education, *American Economic Journal: Applied Economics.* 9(2):23-59; Van Eijk et al. (2016). Menstrual hygiene management among adolescent girls in India: a systematic review and meta-analysis, *BMJ* 6(3).



for proper management of menstrual hygiene, substantially increase school attendance²⁹ and reduction in girls' school dropout rates, resulting in better education and further increased economic opportunities for young adult women. Adequate WASH facilities and better hygiene in health care centers³⁰ also provide strong positive externalities. For example, handwashing with soap by mothers and birth attendants has been shown to reduce neonatal fatality by 41 percent (Rhee, et al. 2008).

21. The combined effect of the sanitation and water supply investments (including access to increased quantity and quality of water) can result in a cleaner environment with less germs and fewer sources of fecal contamination. These improvements also contribute to avoided costs (treatment, economic time lost) for diarrheal diseases (health treatment, opportunity cost of time saved from sickness available for income-generating activities)

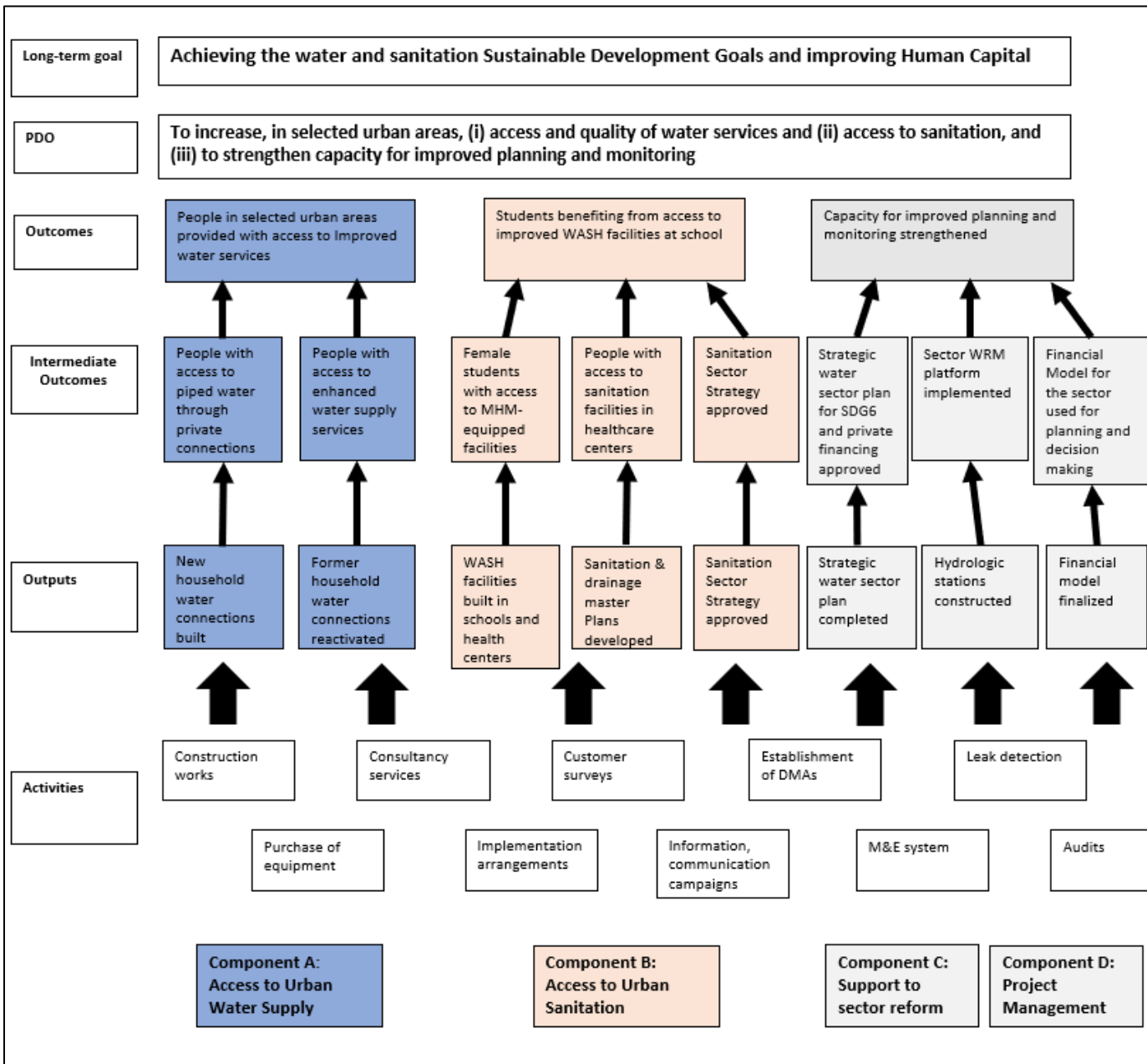
22. **Benefits of the Sector Support Investments.** As stated above, improved water resource management and activities related to NRW will generate other beneficial externalities in terms of GHG mitigation and climate co-benefits adaptation, in part by creating more resilient water infrastructure that is adaptable to seasonal and future climate variability. The Division of Hydrology, in the MH, will be supported through studies on water resource management planning, focused on the design and decision making for strategic rivers and aquifers on large water systems, including in Abidjan. The rehabilitation and expansion of the national hydrological information collection platform will strengthen the monitoring of water resources and help anticipate and mitigate potential drought or flooding risks in the future.

23. More specifically, the existing water supply network in Abidjan has degraded significantly over the past decades, NRW has increased over time. NRW in Abidjan is equal to around 58.5 million m³ each year, which is equivalent to losses of 23 billion CFAF per year. The pilot NRW-reduction program in Abidjan is expected to significantly contribute to reduction of losses in the targeted area; yet it was not possible to carry out a specific analysis and calculate an EIRR for this investment package as the exact scope and detailed investments are not precisely known at this stage. It will nevertheless bring a significant contribution to cutting the GHG emissions associated with the production and transport of the water currently leaking through the network in the late period of the project and beyond, especially as this pilot approach is expected to be scaled up. Lower leakage levels will also contribute to reducing water shortages and improving service levels in the economic capital city and reducing water withdrawals from the existing sources. This will positively impact economic growth and human capital. Finally, the project will contribute to unquantifiable benefits from laying the foundations for institutional reform.

²⁹ UNESCO estimates 10 percent of girls in Sub-Saharan Africa miss school during their period, often due to the lack of proper WASH facilities.

³⁰ WHO/UNICEF JMP recent global report on WASH in Healthcare Facilities concluded that 2 billion people use health care facilities that lack basic water services, 1.5 billion people use health care facilities with no sanitation services, 43% of health care facilities do not have hand hygiene at point of use and 17 million women in Least Developed Countries give birth in health care facilities with inadequate water, sanitation and hygiene.

Annex 5: Revised Theory of Change





Annex 6: Map of Project Locations

