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Report No: PAD00166

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GRANT

IN THE AMOUNT OF SDR 53.3 MILLION
(US\$70.0 MILLION EQUIVALENT)

TO THE

CENTRAL AFRICAN REPUBLIC

FOR A

CENTRAL AFRICAN REPUBLIC INCLUSIVE AND RESILIENT CITIES PROJECT

August 12, 2024

Urban, Resilience, and Land Global Practice
Western and Central Africa

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CURRENCY EQUIVALENTS

(Exchange Rate Effective June 30, 2024)

Currency Unit = Special Drawing
Rights (SDR)

US\$1 = SDR 0.76025970

FISCAL YEAR

January 1 - December 31

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ABBREVIATIONS AND ACRONYMS

AFD	French Development Agency (<i>Agence Française de Développement</i>)
AfDB	African Development Bank
AM	Accountability Mechanism
BCA	Benefit-Cost Analysis
CAR	Central African Republic
CCC	Community Coordination Committee
CDQ	Neighborhood Development Committee (<i>Comité de Développement de Quartier</i>)
CERC	Contingency Emergency Response Component
CMT	Contract Management Team
CPF	Country Partnership Framework
DA	Designated Account
DRM	Disaster and Risk Management
ESMF	Environmental and Social Management Framework
ESF	Environmental and Social Framework
E&S	Environmental and Social
EU	European Union
EWS	Early Warning System
FCV	Fragility, Conflict, and Violence
FM	Financial Management
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GEMS	Geo-Enabling Monitoring and Supervision
GHG	Greenhouse Gas
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
IDP	Internally Displaced Person
IFR	Interim Financial Report
IGF	General Inspectorate of Finance (<i>Inspection Générale des Finances</i>)
IMDC	International MRCC Database Consortium
IPF	Investment Project Financing
IRR	Internal Rate of Return
LIPW	Labor-Intensive Public Works
M&E	Monitoring and Evaluation
MEPCI	Ministry of Economy (<i>Ministère de l'Économie, du Plan et de la Coopération Internationale</i>)
METP	Ministry of Public Works (<i>Ministère de l'Équipement et des Travaux Publics</i>)
MFB	Ministry of Finance and Budget
MINUSCA	United Nations Multidimensional Integrated Stabilization Mission for CAR
MIS	Management Information System
MPC	Marginal Propensity to Consume
MTR	Midterm Review
MURFVH	Ministry of Urban Development, Land Reform and Housing (<i>Ministère de l'Urbanisme, de la Réforme Foncière, de la Ville et de l'Habitat</i>)
NAP	National Adaptation Plan
NbS	Nature-Based Solutions
NDC	Nationally Determined Contribution

NGO	Nongovernmental Organization
NPV	Net Present Value
O&M	Operation and Maintenance
OHADA	Organization for the Harmonization of Business Law in Africa
OMEX	Operations and Maintenance Expenditure
PFM	Public Financial Management
PIU	Project Implementation Unit
POM	Project Operations Manual
PPSD	Project Procurement Strategy for Development
PROVIR	Inclusive and Resilient Cities Project (<i>Projet Villes Inclusives et Résilientes</i>)
RCPCA	National Peace Recovery and Consolidation Plan in CAR (<i>Plan de Relèvement et de Consolidation de la Paix en RCA</i>)
RPF	Resettlement Policy Framework
SAI	Supreme Audit Institution
SEA/SH	Sexual Exploitation and Assault/Sexual Harassment
SEP	Stakeholder Engagement Plan
STEP	Systematic Tracking of Exchanges in Procurement
TOR	Terms of Reference
TSA	Treasury Single Account
UNHCR	United Nations High Commissioner for Refugees
UR	Urbanization Review
WAM	West African Monsoon
WBG	World Bank Group



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DATASHEET

BASIC INFORMATION

Project Beneficiary(ies) Central African Republic	Operation Name CAR Inclusive and Resilient Cities Project		
Operation ID P178774	Financing Instrument Investment Project Financing (IPF)	Environmental and Social Risk Classification Substantial	

Financing & Implementation Modalities

<input type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input checked="" type="checkbox"/> Contingent Emergency Response Component (CERC)
<input type="checkbox"/> Series of Projects (SOP)	<input checked="" type="checkbox"/> Fragile State(s)
<input type="checkbox"/> Performance-Based Conditions (PBCs)	<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 checked="" type="checkbox"/> Conflict
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made Disaster
<input type="checkbox"/> Alternative Procurement Arrangements (APA)	<input type="checkbox"/> Hands-on Expanded Implementation Support (HEIS)

Expected Approval Date 10-Sept-2024	Expected Closing Date 31-Aug-2029
Bank/IFC Collaboration No	

Proposed Development Objective(s)

The project development objective is to improve access to climate-resilient infrastructure and basic services in selected cities.

Components

Component Name	Cost (US\$)
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Investments in Flood and Erosion Risks Reduction	45.00
Neighborhood Infrastructure and Basic Services	20.00
Project management	5.00
Contingency Emergency Response Component	0.00

Organizations

Borrower: Central African Republic
Implementing Agency: Ministry of Urban Development, Land Reform and Housing

PROJECT FINANCING DATA (US\$, Millions)

Maximizing Finance for Development

Is this an MFD-Enabling Project (MFD-EP)? No
Is this project Private Capital Enabling (PCE)? No

SUMMARY

Total Operation Cost	70.00
Total Financing	70.00
of which IBRD/IDA	70.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	70.00
IDA Grant	70.00

IDA Resources (US\$, Millions)



	Credit Amount	Grant Amount	SML Amount	Guarantee Amount	Total Amount
National Performance-Based Allocations (PBA)	0.00	70.00	0.00	0.00	70.00
Total	0.00	70.00	0.00	0.00	70.00

Expected Disbursements (US\$, Millions)

WB Fiscal Year	2025	2026	2027	2028	2029
Annual	5.00	10.00	15.00	17.00	23.00
Cumulative	5.00	15.00	30.00	47.00	70.00

PRACTICE AREA(S)

Practice Area (Lead)

Urban, Resilience and Land

Contributing Practice Areas

Social Sustainability and Inclusion; Transport; Water

CLIMATE

Climate Change and Disaster Screening

Yes, it has been screened and the results are discussed in the Operation Document

SYSTEMATIC OPERATIONS RISK- RATING TOOL (SORT)

Risk Category

Rating

1. Political and Governance

● High

2. Macroeconomic

● Substantial

3. Sector Strategies and Policies

● Substantial

4. Technical Design of Project or Program

● Substantial

5. Institutional Capacity for Implementation and Sustainability

● High



6. Fiduciary	● Substantial
7. Environment and Social	● Substantial
8. Stakeholders	● High
9. Other	● High
10. Overall	● High

POLICY COMPLIANCE

Policy

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

Yes No

Does the project require any waivers of Bank policies?

Yes No

ENVIRONMENTAL AND SOCIAL

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

E & S Standards	Relevance
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 10: Stakeholder Engagement and Information Disclosure	Relevant
ESS 2: Labor and Working Conditions	Relevant
ESS 3: Resource Efficiency and Pollution Prevention and Management	Relevant
ESS 4: Community Health and Safety	Relevant
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
ESS 8: Cultural Heritage	Relevant
ESS 9: Financial Intermediaries	Not Currently Relevant



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

LEGAL

Legal Covenants

Sections and Description

Schedule 2. Section I. A. 2. (a): Not later than one (1) month after the Effective Date, the Recipient shall establish and maintain, at all times during the implementation of the Project, a steering committee with a mandate, composition and resources satisfactory to the Association (“National Steering Committee”).

Schedule 2. Section I. A. 3. (d): Not later than three (3) months after the Effective Date, the Recipient shall have recruited and appointed an accountant and internal auditor under terms of reference, and with qualifications and experience satisfactory to the Association.

Schedule 2. Section I. A. 3. (e): Not later than six (6) months after the Effective Date, the Recipient shall have recruited and appointed an independent external auditor under terms of reference, and with qualifications and experience satisfactory to the Association.

Schedule 2. Section I. A. 3. (g): Not later than three (3) months after the Effective Date, the Recipient shall have recruited and appointed a security specialist under terms of reference, and with qualifications and experience satisfactory to the Association.

Schedule 2. Section I. A. 4: Without limitation upon the provisions of paragraphs 1, not later than three (3) months after the Effective Date the Recipient shall establish and maintain, at all times during the implementation of the Project, Regional PIU in Selected Cities, as further detailed in the POM, with a team comprised of a local coordinator, a social development assistant and an environmental assistant all under terms of reference, and with qualifications and experience satisfactory to the Association.

Schedule 2. Section I. A. 5 (a): Not later than three (3) months after the Effective Date the Recipient shall establish and maintain, at all times during the implementation of the Project, technical committees in Selected Cities with a mandate, composition and resources satisfactory to the Association (“Project Local Technical Committee”).

Schedule 2. Section I. B. 1: The Recipient shall, and shall cause the Project Implementing Entity to, no later than one (1) month after the Effective Date, or any later date agreed by the Association, update under terms of reference acceptable to the Association, and furnish the Association, an implementation manual for the Project containing detailed arrangements and procedures for: (i) institutional coordination and day-to-day execution of the Project; (ii) Project budgeting, disbursement and financial management; (iii) procurement; (iv) monitoring, evaluation, reporting and communication; (v) environmental and social risks monitoring and mitigation; (vi) operational modules outlining implementation, organizational, administrative, monitoring, financial management, disbursement, procurement,; and (vii) such other arrangements and procedures as shall be required for the Project (“Project Operation Manual” or “POM”).

Schedule 2. Section I. E: The Recipient shall no later than two (2) months from the Effective Date establish and thereafter maintain at all times during the implementation of the Project, a grievance redress mechanism, under terms and structure satisfactory to the Association.

ESCP: Hire or appoint One (1) Environmental Specialist, one (1) Social Specialist, (1) Gender/GBV specialist, (1) Security specialist, no later than 2 months after the Effective Date and thereafter maintain these positions throughout Project implementation.



ESCP: Prepare, disclose, consult upon, LMP no later than two months after the project effective date and before civil works start, and thereafter implement the LMP throughout Project implementation.

ESCP: Prepare, consult upon, and disclose no later than 2 months after the Project Effective Date, and thereafter adopt and implement the SEA/SH Action Plan throughout Project implementation.

ESCP: Prepare, consult upon, and disclose SRA and SMP no later than 2 months after the Project Effective Date, and thereafter adopt and implement the SRA and SMP throughout Project implementation.

Conditions

Type	Citation	Description	Financing Source
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I. STRATEGIC CONTEXT

A. Country Context

1. **The Central African Republic (CAR) is one of the most fragile countries in the world, due to repeated cycles of conflict and political instability.** Since gaining independence in 1960, CAR, a landlocked country in Central Africa with a population of 6.1 million, has endured a series of coups and armed conflicts, resulting in limited intervals of political stability. Civil unrest culminated in 2013 when armed groups from the northeastern regions overthrew the government, leading to 3,000–6,000 civilian casualties in the subsequent years. The return to constitutional legality in 2016, marked by the election of the president of the republic and the establishment of a presidency elected by universal suffrage, made it possible to sign eight peace agreements.¹ However, progress toward stability in CAR remains slow, with recurring instances of armed violence, particularly prevalent in the northern, northwest, central, and eastern regions. A 17,800-personnel United Nations Multidimensional Integrated Stabilization Mission for CAR (MINUSCA) established in 2014 contributes to greater security, especially in urban centers. This state of profound fragility predominantly stems from, and consequently exacerbates, widespread discontent rooted in weak social cohesion, social and regional disparities, and persistent insecurity.² In addition to the civilian death toll, the 2013 crisis led to the displacement of more than 1.2 million people (25 percent of the population) causing a major humanitarian crisis; a total of 511,803 CAR nationals are still internally displaced as of December 2023, while 751,979 have sought refuge abroad.³

2. **The 2013 crisis was particularly violent with ripple effects across the country on the economic front.** The gross domestic product (GDP) dropped by 36.7 percent from 2012 to 2013,⁴ from US\$2.51 billion to US\$1.69 billion, and import and export volumes dropped by 95 and 98 percent, respectively. Over five years (2013–2017), the country experienced a cumulated loss of approximately 42.0 percent in GDP per capita compared to a scenario without such insecurity.⁵ CAR's economy has been relatively stable in more recent years with an average growth rate of 4.1 percent between 2015 and 2019.⁶ However, the country's slow economic recovery was further hampered by COVID-19, a lingering food crisis and fuel shortages. Despite some successful efforts to tackle CAR's combined humanitarian and economic crises, which was made possible by the relative peace, the country endured the local effects of the COVID-19 pandemic and the regional and international conflicts. Such macro events further isolated the country and disrupted the global flows of goods and trade on which CAR depends, weakening CAR's economic recovery with drastic consequences on food price surges.

3. **Poverty and regional disparities are widespread.** Poverty is widespread and deep in CAR, which is one of the poorest countries in the world. In 2021, 65.7 percent of the population—3.9 million people—were living below the international extreme poverty line (US\$2.15 per day, 2017 purchasing power parity). The microsimulation projections that combine sectoral GDP growth forecasts with the Harmonized Household Living Conditions Survey data suggest that this situation is unlikely to change much in the next five years, with more than 65.5 percent of the population living in extreme poverty in 2022. In 2020, the country ranked 188 out of 189 in the Human Development Index (0.397)⁷ and scored 0.29 on the Human Capital Index, compared to 0.547 and 0.40, respectively, for the Sub-Saharan Africa region average in the

¹ Including the so-called Khartoum Agreement signed on February 6, 2019, in Bangui by the Central African Government and 14 armed groups following peace talks held in Sudan.

² Conflict and fragility are mainly driven by (a) a lack of social cohesion at every level of society; (b) centralized institutions with limited legitimacy; (c) social and regional disparities between Bangui and the periphery and between the East and the rest of the country; (d) capture of scarce natural resources; (e) lack of prosecution of criminals involved in the successive cycles of violence; and (f) a lasting state of insecurity. World Bank. 2016. *Central African Republic Fragility Assessment*.

³ United Nations High Commissioner for Refugees (UNHCR) Africa. 2021. *Central African Republic situation*. [Link](#).

⁴ World Bank. 2022. *Country Economic Memorandum. Central African Republic: From Fragility to Accelerated and Inclusive Growth*.

⁵ Mandon et al. 2023. "Stuck in a Conflict Trap: The Case of the Central African Republic Civil War." World Bank Policy Research Paper, 10624.

⁶ World Bank. 2022. *Central African Republic: From Fragility to Accelerated and Inclusive Growth*.

⁷ The Global Economy. 2023. *Human Development Ranking*. [Link](#).



same year. At the regional level, CAR ranks last among its Central African Economic and Monetary Community counterparts on life expectancy and social inclusion. Regional disparities between Bangui and the periphery and between the east and the rest of the country are stark. About 60 percent of CAR's population live in rural areas, which are home to about 70 percent of the country's poor. The eastern and northeastern regions in particular are isolated and difficult to reach, especially in the rainy season, and lag behind the rest of the country in terms of access to services and socioeconomic development.

4. **Climate change is increasing the risk of natural hazards.** CAR is exposed to numerous natural hazards, with floods, erosions, landslides, wildfires, and droughts at the forefront.⁸ Vulnerability to these hazards is exacerbated by poverty and political insecurity, as compounding shocks have affected the ability to respond and bounce back. Hydromet stations have been damaged in the repeated conflicts, affecting the quality and frequency of climate-related data collection.⁹ CAR ranks second globally in terms of high vulnerability to climate change and low readiness to improve resilience, after Chad.¹⁰ Despite the lack of accurate data and modeling exercises across CAR, it is generally understood that rainfall is projected to become substantially more variable with a likely increase in frequency and intensity of extreme rainfall events.¹¹ The country is not equipped to face intense rainfall, which has been increasingly observed since 1970 and can lead to riverbank erosion and/or overflows as well as landslides and waterlogging of agricultural fields.¹² In 2019, an estimated 100,000 people were displaced due to floods, which is more than a sevenfold increase in impact compared to earlier floods.¹³ In 2022, torrential rains displaced 22,450 people, destroyed 2,000 houses and a dozen bridges, and flooded thousands of latrines and wells.¹⁴ Further, accelerating desertification that aggravates the disappearance of pasture and arable land in southern Chad and in northern CAR is already fueling conflict in rural CAR as herders are pushed further south, competing for water and grazing land in CAR.¹⁵

5. **Gender disparities and gender-based violence (GBV) are high in CAR.** Women's potential remains hindered in CAR. For gender equality, the Human Development Index ranks CAR 159 out of 162 countries. More than half of the girls do not complete primary school compared to 30 percent of boys. Against the backdrop of other cultural and societal norms that do not support women's empowerment and skills development, this educational void partly contributes to early marriage and pregnancies—in CAR, 61 percent of women ages 20–24 are married before 18, while adolescent birth rate was 122 per 1,000 women ages 15–19 as of 2020, a number higher than the average of 98 per 1,000 women in Sub-Saharan Africa.¹⁶ Maternal mortality is estimated at 882 per 100,000 live births. Labor force participation of women is estimated at 61 percent (against 80 percent for men), and most women are engaged in agriculture (96 percent). Women also have limited voice in CAR—for instance, only 8.6 percent of parliamentary seats were held by women as of February 2021. Moreover, GBV is widespread—in 2018, 20.9 percent of women ages 15–49 years reported that they had been subject to physical and/or sexual violence by a current or former intimate partner in the previous 12 months. About 80 percent of men believe wife beating is justified; 92 percent believe violent disciplining of children is justified.¹⁷ Access to

⁸ World Bank. 2021. *Climate Risk Country Profile: Central African Republic*.

⁹ CAR Ministry of Environment, Ecology and Sustainable Development (*Ministère de l'Environnement de l'Ecologie et du Développement Durable en RCA*). 2013. *Deuxième Communication Nationale de la République Centrafricaine*. [Link](#)

¹⁰ Notre Dame Global Adaptation Initiative. 2024. *Country Rankings*. [Link](#).

¹¹ More generally, the country's climate and economy are heavily tied to the West African Monsoon (WAM), a phenomenon dictating rainy and dry season. The WAM itself is dependent on the cycles of North Atlantic Sea surface temperature and global climate cycles such as El Niño-Southern Oscillation.

¹² World Bank. 2022. *Central African Republic: Leveraging Cities to Build Resilience and Re-establish the Social Contract*.

¹³ More than 100,000 people left their homes in 2019, compared to only 9,300 and 15,000 in 2018 and 2020, respectively. This was the result of heavy rains that destroyed more than 10,000 homes.

¹⁴ United Nations Office for the Coordination of Humanitarian Affairs. 2022. *Situation Report*. Central African Republic.

¹⁵ World Bank. 2016. *Risk and Resilience Assessment for the Central African Republic*.

¹⁶ World Bank Open Data.

¹⁷ World Bank. 2019. *CAR Systematic Country Diagnostic*.



services and opportunities as well as vulnerability to violence is even more challenging for displaced women, who lack the resources and agency required to protect their interests.¹⁸

B. Sectoral and Institutional Context

6. **CAR is experiencing rapid urban growth and economic concentration but is not yet reaping agglomeration benefits.** CAR has one of the lowest population densities in the world. It ranks at the 125th position with only eight people per km². Urbanization increased, slowly but steadily, between 1970 and 2020 with an average growth rate of 0.8 percent per year.¹⁹ CAR is now 42 percent urban and this is projected to increase to 60 percent by 2050.²⁰ Most of the urban population resides in Bangui (1.4 million),²¹ while Berberati, the second largest city,²² has a population exceeding 150,000 and smaller cities host fewer than 50,000 inhabitants each. A sharp increase of the urban growth rate from less than 1 percent to 3 percent between 2013 and 2019 was observed, driven by displacement due to the conflict. Urban expansion is primarily occurring through sprawl, elevating the costs associated with extending access to services and infrastructure.²³ Urbanization is not yielding sufficient economic opportunities and benefits yet, particularly in the formal sector, and due to this, urban areas continue to experience high poverty rates (30–60 percent) and low employment rates.²⁴ Also, urban GDP across CAR—both absolute and per capita—witnessed a decline from 2000 to 2015.²⁵ Urban areas are hindered by unplanned urbanization, effects of past conflicts, governance deficits, and climate change.²⁶ Their growth and sustainability are compromised by several factors, including congestion, inadequate housing, and climate-induced risks like flooding and extreme heat.

7. **CAR's cities and towns are sorely lacking in services.** Around 86 percent of households in Bangui or 78 percent in other urban areas have access to safe drinking water compared to an average of 89 percent for Central and West Africa.²⁷ Access to sanitation is also poor—around 50 percent in Bangui and 44 percent in other urban areas. These shares have declined due to destruction of infrastructure and not keeping pace with population growth, and this scarcity affects people's health and productivity.²⁸ Other problems include lack of access to electricity (32 percent on average for other urban areas compared to 60 percent in Bangui), solid waste management, absence of paved roads, and poor housing standards. In secondary cities, the Government's presence is weaker than in Bangui and has further eroded as a result of the latest conflict, with negative effects on the social contract. Urban communes often play a limited role in addressing major service deficits, due to insufficient mandates (for instance, water supply and sanitation) and resources, leading CAR citizens to often rely on churches, the private sector, and self-help. Municipalities are generally also poorly equipped to respond to disasters and do not have the tools for risk reduction. Basic data and climate risk assessments, as well as early warning mechanisms, are missing. Also, there is a lack of proper operation and maintenance (O&M) financing and capabilities to improve the resilience of infrastructure.

¹⁸ Background paper for World Bank, *Gender and Forced Displacement in Cities*, 2023.

¹⁹ United Nations Department of Economic and Social Affairs World Urbanization Prospects .2018.

²⁰ World Bank data, 2024, Population estimates and projections, Central African Republic, [Link](#).

²¹ Central African Institute of Statistics, Economic and Social Studies (*Institut Centrafricain des Statistiques et des Etudes Economiques et Sociales*) (2021).

²² In fact, Bimbo is the second largest city, but it is part of the Bangui agglomeration and prefecture and included in Bangui 's scope for investments.

²³ Population growth exceeded built-up growth 2000–2015 in most cities, suggesting that development occurs without matching infrastructure extension.

²⁴ World Bank. 2023. *Informal Sector Enterprise Surveys: Profile of Cities in the Central African Republic*. [Link](#).

²⁵ Global Human Settlement Urban Centre Database 2015.

²⁶ World Bank. 2019. *CAR Country Partnership Framework*. [Link](#).

²⁷ Data for Bangui and other areas from UNICEF. 2021. *Multiple Indicator Cluster Survey 2018–2019, Sixth Edition*. MICS6RCA, Central African Republic. [LinTHatk1](#). [Link2](#) ; World Bank World Development Indicators 2020

²⁸ World Bank. 2022. *Central African Republic: Leveraging Cities to Build Resilience and Re-establish the Social Contract*.



8. **CAR cities serve as safe havens for the population and economic activities.** The MINUSCA has established strongholds in Bangui and in the main secondary cities.²⁹ Together with the presence of governmental Central African Armed Forces, this has successfully protected urban areas and contributed to secure the population, including the displaced, and preserve CAR's economic interests, as Bangui alone represents 70 percent of the country's GDP.³⁰ As safe havens, urban centers offer an opportunity for the Government and local authorities to reassert their presence and provide resilient and inclusive infrastructure and services to communities. Combined with increased use of citizen engagement mechanisms and inclusive decision-making processes, this would contribute to rebuild the social contract.

9. **While offering pathways to better security and economic development, cities face substantial challenges linked to fragility, conflict, and violence (FCV).** In addition to the destruction of infrastructure by the successive conflicts, cities have been affected by forced displacement, as most displaced people migrate to neighboring towns or internally displaced persons (IDPs) camp sites in urban areas. In Bangui, urban growth observed during 2013–2019 (peak of the latest conflict) is 40 percent higher in comparison with the pre-crisis rate and coincides with the increased conflict-induced displacement trends. Similar patterns corroborate this trend in secondary cities, with 15 percent of the population in Berberati and Bambari estimated to be IDPs.³¹ There are still 522,000 registered IDPs in CAR (94,300 in Bangui), of which 109,000 live in IDP sites (32,000 in Bangui) and the rest in private homes or host families.³² About 86 percent of internal displacement is driven by conflict and the remaining 14 percent is due to floods, fire, and droughts.³³ Displacement is creating additional pressure on already saturated urban services and infrastructure. IDPs are often the first victims of disasters and climate change as they are more exposed (because they are more likely to settle in areas prone to disaster risks) and have lower coping capacity, with dire impacts on their health, welfare, and food security.³⁴ Built-up area exposed to river and rainwater flooding has increased in the past decades, particularly since 2006, and a high share of these are informal (60 percent in Bangui).³⁵ This creates a vicious cycle between increased sprawl, poverty, and vulnerability, complicating even further the provision of basic services. Informal areas tend to have inexpensive housing limited access to services and higher exposure to flooding.

10. **Cities in CAR face multiple climate-related risks, particularly floods and erosion.** In Bangui, 81 percent of the densest settlement areas are estimated to be exposed to flooding. Urban roads, markets, schools, and others related urban assets and networks are damaged, interrupted, or disconnected yearly during the rainy season. In August 2021 in Bangui, 4,120 people were affected by torrential rain, including 2,307 children, 48 pregnant women, 172 nursing mothers, and 23 elderly people.³⁶ Climate-related challenges do not act in isolation and complex interactions and compounding effects create a web of uncertainties and potential disasters. The lack of green areas and deforestation affect local air quality and exacerbate urban heat island effects. Water shortages, enhanced fire risks, and wind gusts are also increasingly experienced in urban areas and risks compound and interact.³⁷ The impacts of disasters on agriculture, transport, and power networks not only have local impacts on access to jobs, markets, and essential services but also national ripple effects on trade, food security, and communication. The impacts of climate-related hazards are expected to become worse

²⁹ World Bank. 2019. *CAR Systematic Country Diagnostic*; World Bank. 2022. *Leveraging Cities*.

³⁰ Data on GDP from Ghosh et al. 2010. "Shedding Light on the Global Distribution of Economic Activity." *The Open Geography Journal* (3): 148–161. [Link](#).

³¹ UNHCR data as of January 2024.

³² United Nations Office for the Coordination of Humanitarian Affairs data as of January 2024.

³³ International Organization for Migration data as of January 2024.

³⁴ World Bank. 2023. *Central African Republic Poverty Assessment 2023*. [Link](#).

³⁵ About 60–90 percent of built-up areas in main CAR cities are estimated to be informal (60–70 percent in Bangui, 80 percent in Berberati, 65 percent in Bambari, and 90 percent in Birao) - World Bank. 2022. *Leveraging Cities Report*. A high proportion of urban residents are seen as living in slums conditions in CAR and this share has consistently and increasingly been higher than in other comparator countries in Sub-Saharan Africa. World Bank. 2022. *World Development indicators*.

³⁶ CAR floods situation report 2022. [Link](#).

³⁷ Wind gusts had affected more than 20,000 people in CAR as of 2022 and particularly damaged housing (National Disaster Risk Management Plan, *Stratégie Nationale de Réduction des Risques et Catastrophes* 2022).



with climate change. Preliminary evidence suggests an increase in rainwater flood risk in most of CAR's main urban areas.³⁸ The provision of basic services is further impaired during disasters and there is a heightened risk of waterborne diseases. Urban infrastructures like roads, schools, and markets are also frequently disrupted by disasters.³⁹ In Bangui, 29 percent of schools, 46 percent of major roads, 33 percent of hospitals, and 75 percent of police stations are located in a flood risk zone.⁴⁰ In Berberati, which experiences a considerable rate of annual soil loss,⁴¹ a main transport axis to and from the airport is regularly inaccessible due to a combination of erosion and flooding.

11. Hydromet services have been disrupted by internal conflicts and urban populations and public institutions are not adequately informed of potential climatic events. Almost all meteorological and hydrological observation networks have been damaged by conflict and have ceased to operate. Only three operational synoptic stations (Berberati, Bouar, and Bangui-M'Poko) remain in operation. Bangui-M'Poko operated by the National Aviation authorities is the only station that provides data and information for civil aviation services at the Bangui airport. The hydromet network also includes two partially functional hydrological stations in Bangui operated by the Weather Service (*Direction Générale de la Météorologie*, DGM). The Hydraulic Services (*Direction Générale des Ressources Hydrauliques*, DGRH), which is responsible for resource planning and management, intends to set up an operational hydrology service to support the National Integrated Water Resources Management Program and the protection of hydraulic infrastructure against flooding and erosion. The World Meteorological Organization, United Nations Office for Disaster Risk Reduction, and World Bank have supported hydromet services and early warning systems (EWSs) against the background of the National Strategy for Disaster Risk Reduction, which includes the development of a national platform for disaster reduction, which remains to be operationalized.

12. Decentralization has recently gained momentum as a means of contributing to long-term stabilization but is still facing serious challenges hampering its operationalization. Against the background of a long history of decentralization policy in CAR (1964, 1988, and 2020 legislations), a renewed political commitment toward decentralization and local government empowerment has been incorporated into the national strategy for post-conflict state rebuilding and reconciliation to improve service delivery and bring government closer to the people.⁴² It is also a key commitment from the Government in the Political Agreement for Peace and Reconciliation (*Accord Politique pour la Paix et la Reconciliation*), signed by the Government and 14 armed groups in February 2019. Numerous challenges remain, including fully implementing decentralization laws,⁴³ holding local elections, and ensuring local staffing. Although efforts have been made to prepare municipal and regional elections, the latter have been subject to delays since the beginning of 2022.

13. In such a challenging and fragile environment, investing in cities to increase inclusion and improve their resilience to shocks and stresses (conflict, disasters and climate change) is a key priority for CAR. Cities provide the opportunity to integrate the spatial, economic, social, and environmental dimensions needed to build resilient places and support resilient communities. Focusing on key urban areas that host most of the displaced people makes practical sense as they are safer and investments can be more cost-effective. The needs in secondary cities are substantial and even Bangui requires support to ensure that service delivery and resilience can keep up with population growth and the role of the capital as major economic hub and motor of the national economy. To transform CAR cities into true spaces of opportunity and motors of national development, there is an imperative for strategic, inclusive urbanization efforts that

³⁸ REACH. 2020. *Central African Republic Flood and Susceptibility Risk*. [Link](#).

³⁹ Floodlist. 2022. *Central African Republic - Floods Cause Fatalities, Hundreds of Homes Destroyed*. [Link](#); International Federation of Red Cross. 2022. *Central African Republic: Floods – Final Report*. [Link](#).

⁴⁰ World Bank. 2022. *Bangui City Scan - City Resilience Program*. Flood risk (combined river and rainwater) zones with a minimum depth of 15 cm.

⁴¹ World Bank. 2023. *Inclusive and Resilient Cities Project (Projet Villes Inclusives et Résilientes, PROVIR): Technical Mission Report on Erosion in Berberati*. (internal report, unpublished).

⁴² Central African Republic: National Recovery and Peacebuilding Plan 2017–21.

⁴³ World Bank. 2022. *Central African Republic: Leveraging Cities to Build Resilience and Re-establish the Social Contract*.



enhance resilience, improve urban planning, and manage resources effectively. Some strategic plans such as the Sustainable Energy Access and Climate Action Plan in Bangui, the National Disaster Risk Management Plan, and the adaptation strategy already provide the framework of action, priorities, and opportunity to engage in multi-donor and multi-stakeholder dialogues for coordinated resilience investments in urban areas across the country. These measures can help mitigate climate impacts and regional disparities, paving the way for sustained growth, poverty reduction, and enhanced safety and resilience for all citizens. As highlighted in the Urbanization Review (UR),⁴⁴ Bangui, Berberati, Birao, and Bambari emerge as priority cities within that context.

C. Relevance to Higher Level Objectives

14. **The CAR Inclusive and Resilience Cities Project (*Projet Villes Inclusives et Résilientes*, PROVIR) aligns with the key priorities of the World Bank Group (WBG).** It supports the WBG climate change and resilience agenda, including the Climate Change Action Plan (2021–2025), with the goals of promoting green, resilient, inclusive development and competitive cities, especially through investments that build human capital, strengthen service delivery, close gender gaps, and create jobs and investments in climate-resilient infrastructure. This will reduce the potential future carbon footprint and increase resilience to climate change. Consistent with the WBG FCV Strategy, the project uses a flexible approach to enable it to respond to changing circumstances and is adapted to address drivers of fragility and conflict in the country. Its approach rests on robust analysis from the 2017 Fragility Assessment and its 2019 update, as well as from the forthcoming Country Climate and Development Report, particularly in terms of the climate, development, and fragility nexus and the critical role played by urban areas in building resilience.

15. **The project supports the focus areas of the Country Partnership Framework (CPF) for CAR (FY21–FY25),⁴⁵ which aligns with the WBG Strategy for Africa that aims to create sustainable and inclusive growth, strengthen human capital, and build resilience to fragility and climate change.** The project contributes to both the focus areas of the CPF: ‘Human Capital and Connectivity to Boost Stabilization, Inclusion and Resilience’ and ‘Economic Management and Improved Governance to Build State Legitimacy and Foster Growth’. This will be done through investments to improve service delivery, local governance, and resilience to natural hazards, which will contribute to foster inclusion and establish a positive presence of the state. The creation of temporary jobs through labor-intensive public works (LIPW) will also contribute to stability.

16. **The project is aligned with the National Peace Recovery and Consolidation Plan in CAR (*Plan de Relèvement et de Consolidation de la Paix en RCA*, RCPCA).** The RCPCA is an ambitious framework for all consolidation and development efforts. It identifies the country’s main priorities grouped in three pillars: (1) supporting peace, security, and reconciliation; (2) renewing the social contract between the state and the population; and (3) promoting economic recovery and boosting productive sectors. Focus will be given to reducing regional imbalances, promoting transparency and accountability, building the capacity of public institutions and civil society organizations, and promoting gender equity. The plan recognizes that supporting resilience is an essential foundation to recovery and peacebuilding.

17. **The project will also align with CAR’s National Adaptation Plan (NAP) and its Nationally Determined Contribution (NDC).** The NAP aligns with the RCPCA and further focuses on climate change adaptation at the sectoral level, particularly infrastructure resilience. CAR’s vision for mitigation aims to promote low-emission development of carbon, by reducing emissions by 10–25 percent by 2030 (unconditional scenario and conditional) compared to the trend scenario. It is broken down into several objectives: (a) valorizing renewable energy resources and energy saving; (b) promoting agroecology; (c) ensuring sustainable exploitation of natural resources; and (d) improving the living environment (improving knowledge about vulnerability of habitat and infrastructure, identifying adaptation options; modeling climate change; evaluating risks, impacts, and vulnerabilities, and integrating these into the sector planning).

⁴⁴ World Bank. 2022. *Central African Republic: Leveraging Cities to Build Resilience and Re-establish the Social Contract*.

⁴⁵ World Bank (2020). *Country Partnership Framework (CPF) for CAR (FY21-FY25)*. Report No. 150618-CF



The project contributes to the NDC, particularly to point (d), by addressing climate change adaptation and improving livability and resilience through its investments in flood and erosion risk reduction and basic infrastructure and services.

II. PROJECT DESCRIPTION

A. Project Development Objective (PDO)

PDO Statement

18. The PDO is to improve access to climate-resilient infrastructure and basic services in selected cities.

PDO Level Indicators

19. The PDO indicators are the following:

- (a) People protected from floods or erosion risks (disaggregated by gender)
- (b) People provided with improved urban living conditions (disaggregated by gender)

B. Project Components

20. **The project will primarily focus on the cities of Bangui and Berberati, which have been selected because of their population size, their vulnerability to climate change risks, and their lower security risks.** However, the project's targeting is designed to be flexible and open to the possibility of other cities being selected if circumstances change, particularly in terms of security, displacement, and natural disasters risks. Other secondary cities that could be considered include Birao and Bambari, among others. If local circumstances require a city to be replaced and/or added to the project's target cities, a rapid assessment will be carried out on the basis of vulnerability and feasibility criteria to select this city. Priority investments in the replacement city will be drawn from additional analysis combined with qualitative approaches relying on participatory processes and involving local authorities, civil societies, and local communities, including vulnerable groups. Further details will be provided in the Project Operations Manual (POM). Although the project is not designed as a Series of Projects or Multiphase Programmatic Approach, it holds the long-term perspective of scaling up and including other cities incrementally following a sequence derived from the evolution of the spatial distribution of fragility in the country.

21. **The project will encourage LIPW in the construction and rehabilitation of infrastructure.** Civil works' design will maximize LIPW opportunities and will be included in the contracts of construction firms, which will be responsible for direct payment of LIPW beneficiaries. Emphasis will be placed on selecting LIPW beneficiaries in the vicinity of civil works and, within these target areas, on including social groups facing marginalization or barriers to participation (for example, women, youth, refugees, IDPs, returnees and host communities, people with disabilities), ensuring their access to daily wage labor opportunities.

22. **Investments have been packaged and sequenced to optimize impact and avoid implementation delays.** Investments under Component 2 will be financed during the first 18 months of implementation. They were designed as 'quick win' interventions to target vulnerable populations, notably the most vulnerable groups such as IDPs. Hazard exposure, poverty level and the presence of IDPs served as selection criteria against the background of the project's two pillars—resilience and inclusion. Investments were further prioritized through community consultations combined with flood and erosion risk analysis to ensure that the investments are inclusive and focus on the most vulnerable groups. Investments under Component 1 will be financed during year 2 and 3 of implementation. They are more complex and require sound technical studies. In Bangui, they translate into spot interventions to optimize impacts. In the case of Berberati, which is more limited in population size and urban footprint, structuring investments are included in the



allocated budget. In addition to the geographical overlap between the two components, investments have been designed to be complementary and combine resilience with developmental objectives. The most exposed neighborhoods, and most vulnerable populations benefiting from larger resilient investments under Component 1, will also benefit from improved access to basic services. This incremental approach is particularly well-suited to fragile environments, as initial investments will be implemented to visibly improve living conditions in neighborhoods while preparations are being made for structural investments in the same neighborhoods that will have a city-wide impact on resilience.

23. **The component will support hybrid O&M approaches**—that is, a combination of public expenditure and community-based maintenance, with a particular focus on engagement of women, IDPs and other vulnerable populations, will be pursued and tailored to specific investments. In Bangui, market-based options will also be explored in select neighborhoods where demand for services and willingness to pay are higher. To ensure accountability for government-led O&M, the project will work with national and subnational government counterparts to provide seed funding to the municipality to support the sustainability of selected climate risk reduction investments. The emphasis will be placed on strengthening existing structures within municipalities responsible for the upkeep and maintenance of infrastructure and benefit from support in materials and equipment under Component 1. O&M needs under Component 2 will be supported mainly with self-established maintenance mechanisms complemented with technical assistance provided to strengthen the capacity of existing neighborhood development associations (for example, Neighborhood Development Committee [*Comité de Développement de Quartier*, CDQ]).

24. **Adaptation to climate change is the direct driver for intervention under both Components 1 and 2.** As detailed in Annex 2, the prioritization of investments, particularly roads and pedestrian pathways, drainage, and nature-based solutions (NbS), was aimed to support climate adaptation directly. Road resurfacing is introduced solely to increase resilience to flood risk, not for maintenance, and proper drainage is essential to mitigate the exacerbating effects of climate change.

Component 1. Investments in Flood and Erosion Risks Reduction (US\$45 million equivalent)

Subcomponent 1.1. Infrastructure for Flood and Erosion Risks Reduction (US\$40 million equivalent)

25. The subcomponent will finance physical infrastructure for risk reduction of climate events (for example, flood and erosion) and related technical assessments, including feasibility studies, detailed engineering designs, and safeguard assessments and contracts with international engineering supervision firms. The proposed budget allocation first considers the city population size and its economic weight. It also considers the scale of needs in basic infrastructure and finally the capacity to implement the project, particularly heavy investments. As a reminder, Bangui is a main city of the CAR with a 1.4 million population, which received a large part of the people displaced during the last conflict. Berberati is a secondary town with a population of 103,541 and a moderate project implementation capacity.

26. **Bangui (US\$30 million equivalent).** Activities will include critical spot interventions for flood risk reduction. Ongoing pre-feasibility studies expected to be completed in August 2024 will inform the exact solutions, locations, and physical investments for climate risk reduction. These include hydraulic/hydrological/geotechnical and technical analysis of flood and erosion hazards including climate projections such as future rainfall patterns, exposure of people and assets, and the vulnerabilities of exposed communities in at-risk neighborhoods of Bangui (that is, exposed to natural hazards and vulnerable). Eligible investments may include urban flood control measures such as stormwater drainage, including related works for the construction and/or renovation of culverts, bridges, canal outlet, and so on; water retention basins; dredging; and, whenever appropriate, NbS.

27. **Berberati (US\$10 million equivalent).** Activities will include structuring investments for flood and soil erosion management. Ongoing pre-feasibility studies expected to be completed in August 2024 will inform the exact solutions, locations, and physical investments for climate risk reduction. These include hydraulic/hydrological/geotechnical and



technical analysis of flood and soil erosion hazards including climate projections such as future rainfall patterns, exposure of people and assets, and the vulnerabilities of exposed communities in at-risk neighborhoods of Berberati (that is, exposed to natural hazards and vulnerable). Eligible investments may include primary road resurfacing, critical spots (culverts, bridges, canal outlet, and so on), stormwater drainage, water retention basins, dredging of primary drains, and NbS for headward gully erosion stabilization and slope stabilization (for example, Krainer walls and slope planting).

Subcomponent 1.2. Institutional Support for Climate Risk Integrated Planning and Urban Management (US\$5 million equivalent)

28. **Climate-risk-informed integrated urban planning and urban management capacities in focused cities.** Main activities will include (a) risk-informed, integrated urban plans combining three dimensions (urban planning, drainage, and flood and erosion risk management) and (b) related technical assistance to essential urban planning stakeholders. The integrated plan aims to help determine where and how development—including urban sprawl and forced displacement to the city—occurs under current and projected climate and urban growth dynamics. These plans will be complemented with the preparation, development, and implementation of basic people-centered flood EWS (that is, purchasing and installing a limited number of synoptic and hydrological stations, including small infrastructure works associated with their installation and exploitation, to monitor flood and erosion susceptibility) as well as capacity strengthening of essential EWS stakeholders (for example, the Ministry of Humanitarian Action, Meteorological Services, Civil Protection and Red Cross, among others).

29. **State and municipal capacity strengthening for urban planning and disaster risk management (DRM).** Activities in focus cities will include capacity strengthening training on climate risk integrated planning and urban management commensurate with each city's existing capacity and prospects in terms of roles and the objectives that can be met during the time frame of the Project. In addition, it is expected that project activities under Components 1 and 2 will have opportunities for capacity building as municipalities will play a leading role in their design and implementation. Capacity-strengthening activities will be intricately linked to investments under those components.

Component 2. Neighborhood Infrastructure and Basic Services (US\$20 million equivalent)

30. This component will support investments in local-level, climate resilient socioeconomic infrastructure. Pre-feasibility studies involved wide local consultations process in 13 priority neighborhoods (nine in Bangui and four in Berberati) (see Section IV Technical Analysis and Annex 4 for details on prioritization criteria linked to climate resilience and social inclusion and maps). The process was primarily led by the Ministry of Urban Development, Land Reform, and Housing (*Ministère de l'Urbanisme, de la réforme foncière, de la ville et de l'habitat*, MURFVH) and the Bangui and Berberati municipalities, thus building their capacity and contributing to stronger trust in institutions. The component will also finance contracts with engineering supervision firms.

31. **Investments in each city have been packaged in two main categories**—(a) roads and drainage and (b) building rehabilitation and public spaces—and sequenced and allotted considering budget and geographic clustering to minimize the number of contracts and allow small and medium local firms to compete. In addition, all investments have been designed considering operational and implementation aspects, including accessibility criteria and material and machinery availability. The budget ventilation is based on the ratio of priority zones between the two cities.

32. **Bangui (US\$15 million equivalent).** Beneficiary neighborhoods are grouped in nine zones: Zone 1 (Quartiers Ramandji, Boulata, Cité Boeing and Cité Dameca), Zone 2 (Lipia 2, Lipia 4, Sangba, Dedengue 4 et 5), Zone 3 (Lando 2), Zone 4 (Banga 2, Ngouciment 1 et Ben-zvi centre), Zone 5 (Mpoko Bac 2, Gbanikola 1 et 2), Zone 6 (Ngaragba Gbotoro, Ngatoua, Toaka, Gbangouma 4 et Saint Paul 1), Zone 7 (Galabadja sinistrés, Galabadja 1, 2, 3 et 4), Zone 8 (Gbakassa 1, Ngou catere 1 et 2 et Kokoro canal), and Zone 9 (Cité Sato, Poto poto 1 et 2). Activities will include 4.6 km of secondary road rehabilitation (resurfacing), 20.4 km of tertiary road rehabilitation and corresponding tertiary drainage, 3.4 km of



green drainage (bioswale), 34.8 km of pedestrian pathway rehabilitation, 17 pedestrian footbridges' construction, one crossroads' rehabilitation, one health center building's rehabilitation, nine school buildings' and courtyards' rehabilitation (existing schools), eight small markets' rehabilitation (for example, warehouse and fence), and 11 public spaces' rehabilitation (for example, green spaces, recreational and education spaces, and taxi-moto public space). Activities have been selected in a participatory manner during preparation (see section IV Technical Analysis). All neighborhood infrastructure and basic services will adopt disaster- and climate-resilient design standards and prioritize NbS whenever feasible. For example, roads and pedestrian pathways including their respective drainage system (concrete and bioswale), which are critical to manage stormwater and prevent flooding and soil erosion, are designed and dimensioned to integrate climate change projections (SSP5). All technical and environmental and social (E&S) studies are expected to be completed in September 2024.

33. **Berberati (US\$5 million equivalent).** Beneficiary neighborhoods are grouped in four zones: Zone 1 (Poto Poto, Ngou Ciment 2, Djambala 1,2 and 8), Zone 2 (Sambanda 1 ad 3), Zone 3 (Ndao, Baba Salao and Kasai 1), and Zone 4 (City-Center). Activities will include 4.4 km of secondary road rehabilitation (resurfacing), two crossroads' rehabilitation (including drainage), 2.3 km of secondary drainage infrastructure construction, 9.7 km of green drainage (bioswale) construction, 16.6 km of pedestrians pathway rehabilitation, four school buildings' and courtyards' rehabilitation (existing schools), five small markets' rehabilitation (for example, warehouse and fence), and eight open spaces' rehabilitation (for example, green spaces, recreational and education spaces, and taxi-moto public space). Activities have been selected in a participatory manner during preparation (see section IV Technical Analysis). All neighborhood infrastructure and basic services will adopt disaster- and climate-resilient design standards and prioritize NbS whenever feasible. For example, roads and pedestrian pathways including their respective drainage system (concrete and bioswale), which are critical elements to manage stormwater and prevent flooding and soil erosion, are designed and dimensioned to integrate climate change projections (SSP5). All technical and E&S studies are expected to be completed in September 2024.

Component 3: Project Management (US\$5 million equivalent)

34. This component will support activities including (a) the planning, implementation, and technical oversight of program activities; (b) effective social and environmental risk management; and (c) financial management (FM) and procurement. This will include the daily operation of the Project Implementation Unit (PIU). Relevant government agencies at the national, regional, and local levels will be involved in the implementation process with adequate capacity-building support. Activities will include (a) communications and community outreach and awareness-raising campaigns, including on disaster risks, deforestation, rainwater management and run off, solid waste management and informal housing, and (b) monitoring and evaluation (M&E) arrangements. Innovative implementation mechanisms such as digital monitoring/supervision tools, including remote sensing and Geo-Enabling Monitoring and Supervision (GEMS), will be used in the project's M&E mechanisms.

35. **The project will support the capacity building of the PIU and MURFVH more broadly,** based on an assessment of their technical competencies in the areas of FM, procurement, human resource management, project planning, M&E, community engagement methods, and safeguards. The project will ensure that civil servants work closely with the technical consultants hired by the PIU to facilitate on-the-job learning. MURFVH will be supported to lead the municipalities performance evaluation and oversight of subproject implementation.

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

36. **A CERC is included in the project per the Investment Project Financing Policy, paragraphs 12 and 13, for Situations of Urgent Need of Assistance and Capacity Constraints.** This will allow for rapid reallocation of project uncommitted funds in the event of an eligible emergency as defined in OP 8.00. A CERC Manual will guide the activation and implementation of the CERC, and an Emergency Action Plan will be prepared to confirm activities and financing for a specific event.



37. The component costs are summarized in Table 1.

Table 1. Component Costs

Components	Title	Budget Bangui (US\$ million)	Budget Berberati (US\$ million)
C1 (US\$ 45 million)	Infrastructure Investments for Flood and Erosion Risk Reduction	30	10
	Institutional support for Climate Risk Integrated Planning and Management	3.5	1.5
C2 (US\$ 20 million)	Neighborhood Infrastructure and Basic Services	15	5
C3 (US\$ 5 million)	Project Management	-	-
C4 (US\$ 0 million)	CERC	-	-

C. Project Beneficiaries

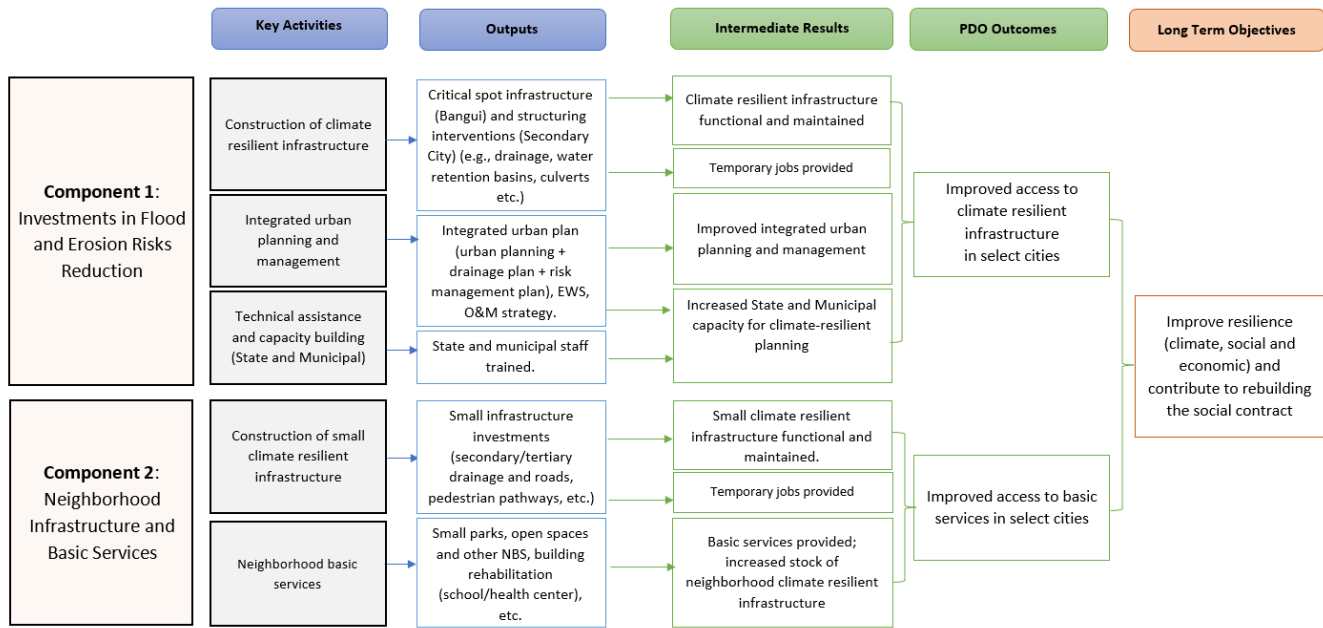
38. **The proposed project will benefit an estimated 1.6 million people.**⁴⁶ The beneficiaries will include populations affected by flooding and erosion risks and vulnerable groups including refugees, IDPs, returnees, women, and youth. They will be provided with better access to basic services and climate-resilient infrastructure. Direct beneficiaries from infrastructure investments under Component 1 are estimated at 800,000 and direct beneficiaries from neighborhood investments under Component 2 are estimated at 177,400, with the following breakdown: 135,400 in Bangui (or 10 percent of the population) and 42,000 in Berberati (or 50 percent of the population).

⁴⁶ Population estimated from WorldPop (2020).



D. Results Chain

Figure 1. Results Chain/Theory of Change



Critical Assumptions: (a) Adequate coordination mechanisms are in place among the implementing agency, technical agencies, and local communities to promote a good prioritization and ownership of the investments; (b) procurement processes advance smoothly and have adequate market response; (c) local suppliers of goods, works and services can meet the demands of the proposed investments; and (d) security environment safe and secure enough to allow civil works implementation.

Gender Inclusion Results Chain

39. **Women are disproportionately affected by natural disasters in CAR cities.** In a context that is already challenging for women whose upward socioeconomic opportunities are constrained by higher underemployment, salary discrimination, and limited education, floods constitute an additional, direct economic threat to women. Revenue loss may result from reduced job accessibility because transportation networks are disrupted by floods. Women-led businesses such as retails located in vulnerable neighborhoods exposed to flooding can suffer from merchandise damage and revenue loss following floods. Revenue losses affect women’s ability to support critical household expenditure such as food, water, and health care of children, which worsens with waterborne diseases during floods. Displaced women face additional risks and challenges, due to their specific vulnerabilities: loss of assets, higher poverty, lack of social network, and residence in disadvantaged neighborhood that are more vulnerable to floodings. When flooding causes additional forced displacement, women are also exposed to GBV in a setting where safe shelters are not immediately provided. Women’s leadership role is limited in the decision-making process of urban planning and flood risk management.

40. **Gender gaps.** Three gaps were identified: (a) voice and agency in urban planning focused on flood and erosion risk management; (b) women’s dual economic loss from exposure to displacement and climate events; and (c) women’s access to basic social services. The project will contribute to filling the last two gaps partly by prioritizing geographic targeting of investments in vulnerable areas, especially the ones hosting IDPs. More broadly, women are at the center of the consultations and investments under the activities planned under Subcomponent 1.1 and Component 2, where women are not only beneficiaries but also active proponents and implementers. However, the project’s main focus will be on addressing the first gap through measures aiming at increasing women voice and agency in urban planning, focusing on flood and erosion risk management, especially through the granting of a leadership role to women in local climate adaptation planning committees (Subcomponent 1.2). Women’s leadership in local climate adaptation planning



committees and key stakeholder meetings to design and implement project activities will contribute to ensuring that urban public spaces, infrastructure, and services are designed in a safe and gender-sensitive manner. Measures to ensure that women’s specific needs to lead local climate adaptation planning committees and key stakeholder meetings will be taken (for example, place and timing of meetings, facilitation techniques, backup arrangements for women leaders).

Table 2. Gender Gap Analysis

Gender Gaps	Actions	Indicators
<ul style="list-style-type: none"> • Women’s representation in decision-making process is low, especially with urban planning focusing on flood risk management. • Women have poorer access to basic social services. • Women are more affected (socially, economically) by natural hazards such as flooding and erosion. 	<ul style="list-style-type: none"> • Enhance the participation of women in the management of the local climate adaptation planning committees, including as leaders for these committees. • Tailor urban planning for climate adaptation to increase opportunities for women and incorporate gender consideration in infrastructure design. • Build women’s capacity and promote knowledge around flood risk and erosion due to climate change. 	<ul style="list-style-type: none"> • Women in a leadership position for the local climate adaptation planning committees (Percentage)

E. Rationale for World Bank Involvement and Role of Partners

41. **The World Bank is in a unique position to share its regional and global experience in service delivery and climate resilience, especially in FCV contexts.** It has a comparative advantage in long-term development and extensive institutional strengthening experience in FCV-affected countries. Similar work in other FCV countries such as the Democratic Republic of Congo, Mali, Niger, Nigeria, Somalia, and South Sudan offers opportunities to apply lessons learned for tailored approaches in CAR. Also, given the enormous development needs in the country, the World Bank is among the only financiers with the capacity to invest at scale in those cities.

42. **Development partners also play a key role in supporting the Government’s urban development and resilience agenda.** The European Union (EU), the United Nations Development Programme, the African Development Bank (AfDB) and the French Development Agency (*Agence Française de Développement, AFD*) have been engaged in various aspects of local governance and urban development and resilience in CAR. The EU, through its Urban Economic and Social Reconstruction program (*Programme de Reconstruction Economique et Sociale Urbain*), invested in the rehabilitation of roads and contributed to better access to health and education infrastructure in Bangui. Efforts to connect cities are also being made through the AFD’s project to link Bangui to the country’s northern region. The AfDB’s Cross-border Water Resource and Infrastructure Development Project between the Democratic Republic of Congo and CAR (*Projet de Développement des Infrastructures et de valorisation de la Ressource en Eau Transfrontalière entre la République Centrafricaine et la République Démocratique du Congo*) includes water investments in Bangui (intake capacity increase from 1,500 m³ to 6,500 m³ and more 3,000 households’ connection) and support health and education investments. Previous and ongoing World Bank-financed operations also present synergies, notably the collaboration between the urban and social protection and jobs sectors (Service Delivery and Support to Communities affected by Displacement Project - P161591), the transport sector (Emergency Infrastructure and Connectivity Recovery Project - P176450), agriculture (Emergency Food Crisis Response Project - P176754), and social sustainability and inclusion (Local Governance and Community resilience Project - P178699). The World Bank will continue optimizing synergies with ongoing operations and coordinating with these partners to leverage their work and ensure complementarity among the various interventions.



F. Lessons Learned and Reflected in the Project Design

43. **The project's design embeds experience from recent World Bank-financed projects in CAR (for example, CAR Emergency Food Crisis Response Project [P176754] and LONDO Project [P152512]) and recent projects in FCV settings, particularly in low-capacity environments.** This experience shows that

- **Using a spatially driven multisectoral approach (that combines investments in infrastructure, basic services, economic development, and community engagement) is key to achieving inclusive, transformative development,** which has a greater impact and avoids thinly spread investments. Part of this integrated approach is to strengthen local institutions so that they can respond to community needs, which helps foster a social contract that is often fractured or absent in fragile environments;
- **Flexible design and adaptive implementation in a fragile and conflict-affected environment is even more important than for a project in a stable environment.** Flexibility helps the project better face the inherent uncertainties, including conflict and security related risks, and reallocate resources when needed. In this project, such flexibility is sought through the multisector nature of interventions, the targeting of several neighborhoods within the same city, and flexibility of targeting for secondary cities;
- **Involving communities in the selection of activities while ensuring that vulnerable groups such as women, youth, displaced populations, minorities, and people with disabilities actively participate in the decision-making process ensures greater ownership and sustainability of investments.** Global experience suggests that consultations with and participation of target beneficiaries have instrumental benefits (better needs assessments, greater efficiency and sustainability of investments) and value-based benefits (empowerment and capacity building of affected communities, inclusion of marginalized groups);
- **Procurement strategies are critical in FCV environments to ensure quality outputs and proper participation of the local private sector.** Well-designed procurement documents, with a breakdown of works by infrastructure type (education, health, water infrastructure, and so on) and by project area, enable the recruitment of construction companies with solid local knowledge, in terms of social and security issues and market-competitive pricing; and
- **Engaging with beneficiaries is crucial to any impactful flood risk management strategy, especially in FCV countries with lesser institutional capacity.** Insights from past flood management projects show that coordinating the planning and construction of drainage infrastructure with municipalities and local residents helps gain acceptance and ownership. Social facilitators play a key role in involving the community and beneficiaries in investments, operations, maintenance, and support for behavioral change and strengthening the capabilities of local formal and informal stakeholder groups.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

44. **Overall project implementation responsibility is vested with a new PIU in MURFVH.** The PIU will be responsible for day-to-day project management and will include all fiduciary, safeguards, technical, and results information for transmission to the World Bank. It will also be responsible for contracting external audits of the project and recruiting an internal auditor. The PIU will also screen and approve project investments that local institutions propose. The PIU has been formally constituted and operationalized during project preparation and already includes eight key positions (coordinator, adjunct coordinator, procurement specialist, FM specialist, environmental safeguards specialist, social safeguards specialist, GBV specialist, and an administrative assistant). Other recruitments will include an accountant, an



M&E specialist (proficient in GEMS), and other technical experts (for example, engineering, security, community liaison, and communications).

45. **A light PIU office will be established in Berberati.** A smaller decentralized PIU office will be established in Berberati and will include at least a local coordinator, a social development assistant, and an environmental assistant. The light PIU office will be responsible for local coordination, planning, and monitoring of implementation of activities in Berberati. It will provide reports to the central PIU for consolidation and then for review by the Technical Committee and submission to the Steering Committee for validation. It will liaise with state deconcentrated services and local governments as well as the local civil society, including the representatives of marginalized groups. It will help prepare the meetings of the Community Coordination Committee (CCC). The mandate of the Berberati office will not include fiduciary responsibilities.

46. **Beneficiary communities will be involved in project implementation and oversights in several ways.** Community representatives will be part of the CCCs. In addition, community representatives have been involved in selected physical investment under Component 2 and continue to be involved in the design of all investments, to optimize their utility in the local communities (for example, public spaces and other green infrastructure).

47. **Municipal authorities will play an important role in coordinating activities among local stakeholders and ensuring strong involvement of communities.** The local authorities of Bangui and Berberati will play a leading role during implementation of investments and in citizen engagement, in close collaboration with the PIU and State services. They will not have any fiduciary role in project implementation.

48. **Overseeing entities will be created at both the national and local levels.** The POM will provide details on the composition and mandate of these entities.

49. **A National Steering Committee** will be set up to oversee and strategically guide the implementation of PROVIR as well as to ensure consistency with national strategies and coordination among national-level stakeholders. It will provide policy and general guidance, make strategic decisions, and provide overall oversight for project implementation, with alignment and complementarity with ongoing or planned projects and initiatives. It will ensure that a comprehensive, coherent approach is taken to supporting project activities. It will facilitate sectoral buy-in and coordination of activities across all relevant ministries and institutions, including with development partners. The National Steering Committee will be chaired by the Ministry of Economy (*Ministère de l'Économie, du Plan et de la Coopération Interantionale*, MEPCI), with vice presidency of MURFVH, and have the participation of relevant ministries including Ministry of Public Works (*Ministère de l'Équipement et des Travaux Publics*, METP), Humanitarian Action, Interior and Decentralization, Environment, Water and forests, and Energy and Hydraulic Resources, among others, as well as the municipalities of Bangui and Berberati.

50. **Local Technical Committees** will be set up in Bangui and Berberati and chaired by MURFVH and co-chaired by its mayor. The committees will include representatives from relevant ministries (MURFVH, MEPCI, METP, Finance, Humanitarian Action, Social Affairs, Interior and Decentralization, Transport and Civil Aviation, Environment, Water and Forests, Energy and Hydraulic Resources, Health, and Education, among others), the prefecture (L'Ombella Mpoko in the case of Bangui to cover Begoua and Bimbo), the Arrondissements' Mayors (nine in the case of Bangui, in addition to Begoua and Bimbo's mayors), and representatives from civil society.

51. **CCCs** will be established in Bangui and Berberati and chaired by a designated community representative (for example, the existing president of the Arrondissement committee). CCCs will include local representatives from the community (for example, Chef de Groupe and CDQ included in the project neighborhood priority investment areas, among others), and include women, youth, IDPs, returnees, minorities and disabled persons. They will ensure operational coordination among stakeholders at the community level and be consulted during subprojects' design.



B. Results Monitoring and Evaluation Arrangements

52. **The PIU will prepare quarterly and annual progress reports for the World Bank and leverage GEMS tools for activity mapping and data collection.** The PIU will collect and analyze all data and results generated under the project and prepare progress reports for the World Bank’s review and approval. The PIU will have an M&E unit whose responsibility will be to gather and consolidate data for M&E. If needed, consultant(s) will be hired locally to provide M&E services, including data collection and analysis for reporting on project results (for example, indicators, outputs, and outcomes). Finally, PROVIR will use GEMS to map and monitor project investments to inform decisions on targeting, sector priorities, and operational challenges. To the extent possible, indicators will be disaggregated by gender. In-depth evaluations will be conducted for the midterm review (MTR) and at the end of the project.

C. Sustainability

53. **Institutional coordination and sustainability of investments.** The solutions for climate resilience involve multiple stakeholders intervening in the planning, design, implementation, and management of civil works; service provision; maintenance; and monitoring. PROVIR builds on the institutional mandate and on the convening power of MURFVH to bring together and build coordination mechanisms among agencies at the central, prefecture, and local levels, which will be critical to developing sustainable approaches for flood and erosion management and, more broadly, for urban development in the long term and in the context of climate change. The National Steering Committee will ensure that multisectoral approaches are developed, building on existing interventions, and in coordination with sector strategies. At the local level, the sustainability of investments will be coordinated through capacity-building efforts of municipalities and the establishment of O&M committees of the public infrastructure built under the project.

54. **Citizen engagement.** Changing the way in which local communities understand and learn about ways to prevent and adapt to flooding and erosion will be fundamental to addressing risks in the future. Understanding local community dynamics with the aim of empowering communities to develop approaches to, among others, reducing deforestation and land clearing, managing rainwater and runoff, and managing solid waste and informal housing will be critical to complement and ensure the sustainability of government efforts to mitigate impacts of flooding and erosions. Community ownership, engagement, training, participation, and implementation of interventions under the project have been built into all project interventions. CCCs representing target communities will meet regularly to inform project decisions and validate subproject selection. Beneficiary surveys will be carried out at the MTR and project closure to assess the percentage of beneficiaries reporting satisfaction of project implementation. The data will be used to inform the project’s MTR, strengthen and calibrate implementation, and adjust the way the PIU and the relevant committees interact with the community. Beneficiary satisfaction will be tracked through the following indicator: Respondents satisfied with project interventions (percentage). A project-specific grievance redress mechanism (GRM) will be developed to capture and address grievances and other feedback from citizens. The GRM will be tracked through the following indicator: Grievances relayed through the GRM that are addressed in the specified time frame (percentage).

IV. PROJECT APPRAISAL SUMMARY

A. Technical and Economic Analysis

Technical Analysis

55. **City prioritization.** PROVIR’s city selection has been informed by the UR completed in June 2022 and with further participatory processes during project preparation. The initial scope was derived from the UR, which identified Bangui, Berberati, Birao, and Bambari as the first most critical cities based on resilience and inclusion criteria (further details on



this selection and prioritization process can be found in the UR).⁴⁷ The project scope was then narrowed during preparation to focus on Bangui and Berberati at first. Birao and Bambari, as well as other secondary cities, will be considered in subsequent phases of the project. PROVIR's initial focus on Bangui and Berberati is linked to population size and vulnerability to floods and erosion risks as well as security.

56. **Priority areas and neighborhood investment selection in Bangui and Berberati (Component 2).** A total of 13 priority zones (9 in Bangui and 4 in Berberati) have been identified to receive neighborhood investments. On average, each zone is about 80 ha and includes 12,000 inhabitants.⁴⁸ The population breakdown per city is as follows: Berberati - 42,000 (or approximately 50 percent of Berberati population) and Bangui - 135,400 (or approximately 10 percent of Bangui Population), totaling 177,400 direct beneficiaries.

57. **The 13 zones were selected for 'quick win' investments to target vulnerable populations, notably the most vulnerable people such as IDPs.** Three main criteria (hazard exposure, poverty level, and presence of IDPs) were used against the background of the project's two pillars: resilience and inclusion. The selection was first informed by global quantitative data (for example, global dataset like FATHOM for flood maps) and qualitative data (for example, Gender Urban Forced Development Deep Dive in Bangui and field visits) as well as several consultations with the municipalities in both cities, all 11 Arondissement Mayors for Bangui, the civil societies in both cities, and other partners (for example, UNHCR and Red Cross, among others). Once validated with all parties and the Ministry of Urban Planning, participatory workshops were conducted for each of the 13 zones from November 2023 to January 2024 to identify priority investments.

58. **Priority investments were further prioritized through community consultations combined with local flood and erosion risks analysis.** This process was designed to ensure that the investments in climate-resilient infrastructure and service delivery are inclusive and focus on the most vulnerable areas of cities in terms of both exposure to climate shocks such as floods and erosion and social vulnerability.

Paris Alignment

59. **The project is aligned with the adaptation and resilience and mitigation goals of the Paris Agreement.**

60. **Assessment and reduction of mitigation risks.** The project activities will not have a negative impact on the country's transition to a low greenhouse gas (GHG) emission development pathway nor lead to risks of carbon lock-in. Flood management and urban drainage as well as capacity strengthening are activities featured on the Joint Multilateral Development Bank list of activities considered universally aligned. Subcomponent 1.1 supports critical spot investments in climate risk reduction and most of the civil works under Component 2 are universally aligned (for example, NbS, urban parks, and open spaces). Subcomponent 1.2, which aims to improve the planning and urban management, could lead to higher GHG emissions through increased urban development. However, the risk of these activities will be reduced by promoting urban planning frameworks that will lead to low GHG emissions or limit additional GHG emissions as much as possible. Building rehabilitations under Component 2 will not lead to increased GHG emissions and solar energy will be used for any energy requirement. E&S studies will be conducted to inform proper design and management. Activities are therefore aligned, with no or low risk on mitigation.

61. **Assessment and reduction of adaptation risks.** As mentioned in paragraph 10 and Annex 2, CAR is highly vulnerable to floods and erosions. The project's activities are consistent with CAR's climate adaptation strategy (particularly NAP). All components are designed to address and reduce adaptation risks. The activities related to flood management and DRM will help further reduce the risk from flooding and erosion, and urban planning activities will promote climate adaptation, both for the risks of flooding and erosion (prevalent in the selected locations). Annex 2

⁴⁷ CAR UR: Leveraging Cities to Build Resilience and Reestablish the Social Contract (2022).

⁴⁸ Population estimates were calculated using WorldPop, adjusting with the building footprint of Digitize Africa data and using a household average of six persons.



provides more details. The residual adaptation risk for all activities is therefore expected to be acceptable, and the project is considered aligned with the Paris Agreement on adaptation and resilience.

Economic Analysis

62. **The economic analysis carried out for Component 2 as part of project preparation indicates that the investment is economically viable.** The project will reap intangible (better urban spatial planning, management, and sustainability of economic and social assets to increase the resilience and opportunities for all the population living in Bangui and Berberati) and tangible benefits in terms of the reduction of asset damage, ill-being, and foregone socioeconomic activity during future flood events. The economic analysis will be rerun and updated to cover the full project when the investment options and targets under Component 1 will be finalized in September 2024. In addition to the EWS investment that shows a sensible return on investment (US\$1.6 benefits for each US dollar spent), the economic analysis carried out for Component 2 to increase DRM efficiency with the support of communities, improve livelihood, and provide LIPW is also viable: a net present value (NPV) discounted at 6 percent over 20 years of US\$41.7 million, an economic internal rate of return (IRR) of 26 percent, and a benefit-cost ratio of 2.8. The component remains viable under optimistic and pessimistic scenarios when using different discount rates and varying costs and benefits (Annex 3).

B. Fiduciary

(i) Financial Management

63. **An FM assessment was undertaken to evaluate the adequacy of the project's FM arrangements.** The objective of this assessment was to determine whether the project implementing agency has acceptable FM arrangements for the project implementation. The project will be implemented by a new PIU to be established under the overall coordination of MURFVH. MURFVH has no experience in coordinating World Bank-financed projects. The FM assessment was carried out in accordance with the FM Manual for World Bank Investment Project Financing Operations that became effective on March 1, 2010, and reissued on September 7, 2021.

64. **The overall FM risk before the mitigation measures was considered High.** The proposed FM risk mitigation measures are considered adequate to reduce the residual risk to Substantial. An FM Action Plan is summarized in table 1.1. Subject to the successful completion of the actions recommended in the Action Plan to address the risks identified, the proposed FM arrangements are considered acceptable to the World Bank.

65. **The new PIU will recruit an accountant, and an internal auditor based on terms of reference (TOR) acceptable to the World Bank.** A POM will be developed. Transaction-based disbursements will apply. An initial advance in FCFA will be made into the Designated Account (DA). The internal control procedures will be documented in the POM and the General Inspectorate of Finance (*Inspection générale des finances*, IGF) will include the project in its audit program in the medium term. A multi-project and multi-site financial and accounting management software will be set up in a manner satisfactory to the World Bank. Furthermore, the interim financial report (IFR) will be submitted to the World Bank on a quarterly basis and within 45 days following the quarter. Finally, while waiting for arrangements completion with CAR's Supreme Audit Institution (*Cour des Comptes*, SAI) to start being involved in the process of the external auditors' selection and their reports reviewing, an independent external auditor will be appointed as per TOR agreed with the World Bank to carry out the project's external audit, and the audit report will be submitted within six months following the end of the fiscal year.

(ii) Procurement

66. **All procurement activities under the project will be carried out using the procedures stated** in the (a) World Bank Procurement Regulations for Investment Project Financing (IPF) Borrowers, dated September 2023 and (b) the '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, the IPF Anti-Corruption Guidelines. The Systematic Tracking of Exchanges in Procurement (STEP) tool will be used to plan, record, and track procurement transactions including post-review contracts.

67. **A PIU will be established within MURFVH.** The PIU will be responsible for all procurement under the project. The PIU will be staffed with an experienced procurement specialist with the relevant background and experience. The recruitment process has been completed. The procurement specialist will be supported by an assistant who will help record procurement documents in STEP. The PIU and key actors of the project including MURFVH’s staff will benefit from trainings and support for smooth implementation of the project. To avoid delays in the implementation of procurement activities, a Contract Management Team (CMT) comprising the PIU staff and members from MURFVH will be established in the PIU. The PIU will have a quality insurance role and oversee the preparation of all procurement documents (TORs, technical specifications, and bidding documents). The CMT will also monitor the execution of contracts and assess the performance of contractors/suppliers/consultants.

68. **A Project Procurement Strategy for Development (PPSD) has been prepared.** The PPSD as well as the Procurement Plan for the first 18 months of the project, has been submitted and cleared by the Bank. The PPSD aim to advance the use of procurement as a means for sustainable development, considering social, environmental, and economic impacts. The PPSD concludes that the cost of the works activities is about 79.97 percent of the procurement plan and open National Competitive Bidding will used as procurement method. The local private sector is highly recommended to bid in joint venture with international companies to reinforce their technical and financial capacities. The World Bank’s sustainable procurement guidance documents will be followed, and international best practices will be integrated as much as possible. Infrastructure contractors can be required to meet (a) multiple uses/benefits of construction works, (b) environmental co-benefits, (c) social co-benefits and job creation, and (d) climate action. During project preparation stage, the World Bank liaised with the beneficiaries to identify their sustainability priorities, such as policy screening and communities’ needs and expectations; conducted market research; and initiated the relevant procurement process designed and reflected in the PPSD.

69. **A POM will be developed for the project.** It will include a specific section on complaints and contract management considering the weaknesses noted in the implementation of the CAR Education Sector Plan Support Project (P173103; *Projet d’Appui au Plan Sectoriel de l’Education II*).

70. **The procurement risk associated with the procurement is assessed as ‘Substantial’.** The main risk is related to the limited knowledge of MURFVH, the delays that may happen in the establishment of the PIU, the weak technical and financial capacities of the local private sector as well as the integrity risks due to the allegations of fraud in the award of contracts in the Emergency Infrastructure and Connectivity Recovery Project (P176450). The PIU team as well as MURFVH’s staff implicated in the implementation of the project will be trained on the rules and procedures as stated in the World Bank’s Procurement Regulations. Special due diligence will be also conducted by evaluation committees and the World Bank to address fraud and collusion. In addition, the World Bank’s facilitated procurement will be used when applicable given the limited capacities noted in the country.

C. Legal Operational Policies

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	Yes
Projects in Disputed Area OP 7.60	No



71. The Policy on Projects on International Waterways (OP 7.50) applies because some of the project activities may impact water resources of the Ubangi River and the Sangha River, all of which are part of the Congo River system and are international waterways. In accordance with the Policy, other riparian countries were notified and no responses or objections have been received. Based on the outcome of the notification process and the assessment that the project will not cause appreciable harm, the Regional Vice President gave his approval to finalize project preparation on July 16, 2024.

D. Environmental and Social

72. **Environmental risks are rated as Substantial.** The main potential environmental risks are related to civil works associated with the construction and rehabilitation of medium-size community and climate-resilient infrastructure such as drainage and road works and public buildings such as schools and markets. These risks include (a) soil pollution and erosion risks due to construction and sourcing of materials; (b) water pollution from eroded land and spills and leaks of oils/chemical from vehicles and equipment; (c) air pollution and noise due to vehicles, machinery, concrete mixing, and civil works; (d) inaccurate siting of drainage and flood control infrastructure, water supply, and sanitation facilities which could result in increased flooding, water logging, and pollution; (e) occupational health and safety risks of workers; (f) community health and safety risks of residents, pedestrians, and local inhabitants due to works in congested and crowded areas, increased vector-borne diseases due to water logging or poor waste management, and provision of poor quality services including water supply due to lack of testing; (g) risks of traffic accidents due to movement of heavy machinery and vehicles, trench, and repair works; and (h) inadequate sourcing of materials (illegal quarrying) and storage of construction materials and poor waste management, including burning and indiscriminate dumping of dredged materials and other types of waste. Most of these risks are site specific, with standardized mitigation measures and with no expected potential long-term impacts on sensitive ecosystems or having irreversible consequences.

73. **Social risks are rated as Substantial.** They are associated with small- to moderate-scale civil works in Bangui and Berberati required for resilient infrastructure for flood and erosion risk reduction (Subcomponent 1.1) and neighborhood infrastructure (Component 2) works. Involuntary resettlement involving physical and/or economic displacement and disruption of community access to homes or social services is likely to result from Subcomponent 1.1 and Component 2 works. In Berberati and Bangui, works primarily include road resurfacing, critical spots' construction (for example, culverts, pedestrian bridges, and drainage outlet), drainage and water retention facilities, dredging, and NbS for headward gully erosion stabilization and slope stabilization. Within Component 2, with the exception of some drainage, the project will mostly conduct rehabilitation works to enhance neighborhood infrastructures and basic services. Road works will primarily include resurfacing of secondary and tertiary roads and pedestrian pathways on existing tracks. Works will also involve rehabilitation of crossroads, health center building rehabilitation, school buildings' and courtyards' rehabilitation, small markets' rehabilitation, public spaces, secondary drainage infrastructure, and green drainage (bioswale). Moreover, Environmental and Social Framework capacity of municipalities involved in supporting the sustainability of selected climate risk reduction investments is limited.

74. **Other relevant social risks** include small- to moderate-scale labor influx and risk associated Sexually Transmitted Disease - HIV/AIDS community incidences, significant sexual exploitation and abuse and sexual harassment (SEA/SH) risks on project communities, and the risk of exclusion of vulnerable groups such as returnees and IDPs from participating as community workers linked to Subcomponent 1.1 community-based maintenance. Strategic targeting approaches should have been developed through the Stakeholder Engagement Plan (SEP) to ensure that there is no exclusion or marginalization of any vulnerable groups. There may be limited client capacities for effective stakeholder engagement, which is the key element for a successful citizen engagement process and in support of specific activities such as resettlement. The SEP identified people who because of their age, gender, race, ethnicity, religion, physical, mental, or other disability, social, civic, or health status, sexual orientation, gender identity, or economic disadvantages may be more limited than others in their ability to participate and access to project benefits.



75. **Land acquisition risks.** The project may lead to temporary disruption of economic activities, obstacles to access properties due to land taking related to the works, and loss of land and other assets. A Resettlement Policy Framework (RPF) was prepared, consulted on, and disclosed⁴⁹ according to Environmental and Social Standards (ESS) 5 requirements to mitigate this risk, as the scope of resettlement and land acquisition (community and climate risk infrastructure) is unknown at this stage and given the unknown number of persons who will be directly or indirectly affected physically and economically by the planned works.

76. **Substantial SEA/SH risks.** The activities of Subcomponent 1.1 and Component 2 might also increase and exacerbate the risks of SEA/SH against women and young girls. The borrower will prepare an SEA/SH risk assessment to identify potential SEA/SH risks within the project community, existing mechanisms to address SEA/SH incidents, and measures to address SEA/SH. The assessment will be associated with an SEA/SH Action Plan and accountability and response plan. Moreover, to ensure timely SEA/SH interventions and response, the project will recruit a GBV specialist, as well as a dedicated nongovernmental organization (NGO) for general oversight with experienced GBV staff to monitor the implementation of the GBV Action Plan and ensure that all parties meet their responsibilities. The NGO will support SEA/SH case management, operationalization of SEA/SH-GRM, community sensitization, field monitoring of signing of codes of conduct by project workers, and training of workers involved in project works including LIPW. Further, for case management, project and worker GRMs will lean on the national GBV service mapping to develop the referral system. Also, as part of the SEA/SH Action Plan, the borrower will include funding to recruit GBV services providers to facilitate access to timely, safe, and confidential services for survivors.

77. **Security risks.** The project intends to implement certain activities in some communes affected by conflicts. Project sites might be situated in areas where non-state army groups outside government control may be present. Therefore, the risk of attacks on project workers, assets, and beneficiaries must be assessed and evaluated through the project security risk assessment and security management plan to determine the level of threats and mitigation measures.

78. **Other significant risks** which may prevent sound implementation of the standard E&S mitigation measures may arise due to inadequate technical and institutional capacity of the PIU, poor knowledge and commitment to implement E&S measures, inadequate attention to inclusion of E&S specifications in procurement contracts for goods and supplies, and poor supervision and monitoring of contractual obligations with the construction companies and suppliers.

79. **The project prepared E&S instruments to assess and identify all potential risks associated with the activities along with well-defined mitigation measures.** These include an Environmental and Social Management Framework (ESMF), an RPF, and an SEP. These instruments have been consulted and disclosed in-country on June 27, 2024, and on the World Bank website on July 25, 2024. In addition, a Labor Management Plan, an SEA/SH assessment, an SEA/SH Action Plan, a security risk assessment, and a security management plan will be prepared no later than two months after effectiveness. Site-specific instruments, including Environmental and Social Impact Assessments and Management Plans, for which prototypes will be prepared due to the high number of sites, and Resettlement Action Plans for Bangui and Berberati will start to be prepared in parallel for the neighborhood infrastructure works in each city. The project also prepared an Environmental and Social Commitment Plan⁵⁰. Capacity building and institutional strengthening have been supported by World Bank-funded E&S consultants, hired under the Hands-on Implementation Support Program during project preparation. The project has specific subcomponents focused on capacity building in E&S management, flood and erosion management, and emergency response. Supervision consultants will be obligated to include E&S expertise during supervision and monitoring of works.

⁴⁹ RPF was disclosed in-country on June 27, 2024 and on the World Bank website on July 25, 2024.

⁵⁰ Disclosed in-country on August 16, 2024 and on the World Bank website on August 13, 2024.



V. GRIEVANCE REDRESS SERVICES

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

VI. KEY RISKS

81. **The overall risk of the project is rated High.** The specific risks rated substantial or high and tailored mitigation measures, as assessed in accordance with the Systematic Operations Risk-Rating Tool, are described in this section.

82. **Political and governance risk is rated High.** The country has a history of political instability and conflict, and the ongoing security situation remains a significant concern due to internal factors including the widespread presence of armed groups and the risk of conflict spillover from neighboring countries, especially Sudan. The project will closely monitor the political environment and potential security implications that may affect project implementation. Mitigation measures include maintaining flexible project designs to adapt to changing circumstances and close coordination with relevant stakeholders, including the Government, local communities, and international partners. In addition, external interventions can inadvertently create some harm, and the injection of resources or reconfiguration of power dynamics has political economy implications. Risk mitigation measures will include (a) instituting a transparent and inclusive planning process; (b) helping foster social cohesion among different groups through participatory planning process; (c) establishing community coordination committees to involve stakeholders in project planning and implementation; and (d) strengthening monitoring for early identification of risks.

83. **Macroeconomic risk is rated Substantial.** Pressure points include (a) failure to repeal or mitigate the newly adopted tokenization law, which is likely to pose several systemic risks including macroeconomic and financial stability, money laundering, and derail prospects for economic recovery; (b) failure to implement bold policies to move gradually toward a sustainable price adjustment and a procurement mechanism to address fuel supply shortages and realize domestic revenue mobilization objectives, which is expected to weigh on economic growth and widen the overall fiscal deficit; (c) inability to mobilize concessional donor support; (d) a reversal in security gains; and (e) stronger than expected tightening of regional and global financial conditions. Should these risks materialize, CAR could dip into a yet deeper crisis, with the Government unable to pay wages, both domestic and external arrears reemerging. The macroeconomic situation will continue to be closely monitored.

84. **Sector strategies and policies risk is rated Substantial.** Despite the legal distribution of competencies, local governments face challenges due to insufficient capacity and resources. The Government heavily relies on external aid and informal structures to fill gaps in governance and service provision. Although communities and informal institutions traditionally contribute to fill these gaps, prolonged conflict has strained relationships within and between communities, weakening the effectiveness of traditional institutions. Trust in government is low, informal authorities are weakened, and social divisions caused by conflict have eroded social cohesion. Ministries responsible for urban affairs, resilience, local governance, and service delivery also struggle due to limited capacity and resources, with minimal public investment



in these areas. Implementation of conflict prevention and resilience strategies is essential for the project's success, and any delays or shortcomings in these efforts could pose a risk. Mitigation measures include strong stakeholder engagement, close collaboration with government ministries, and capacity-building activities to enhance local development and governance and strengthen the central and local administration.

85. **Technical design of the project is rated Substantial, due to challenges in reaching secondary cities, capacity constraints, and the need for coordination across multiple sectors.** To mitigate these risks, the project will employ remote supervision and collaboration with other sector projects. The establishment of PIU offices in cities will also help address these risks. Technical assistance and training will also be provided to local government entities to enhance their capacity.

86. **Institutional capacity for implementation and sustainability risk is rated High, associated with the limited administrative capacity at the national and local levels.** Lack of regular fiscal transfers to local governments for O&M of local service delivery and community infrastructure will likely continue. The project will address these challenges through capacity-building activities, engagement with service providers, reliance on communities and community-based groups for O&M, and links with various ministries and departments. However, sustainability risks remain high due to resource constraints and potential disruptions in decentralization efforts.

87. **Fiduciary risk is rated Substantial.** The overall fiduciary environment of the country is weak and fiduciary risk including fraud and corruption is high. The rating is mainly driven by nature of the activities involving a great number of stakeholders and beneficiaries in FCV environment, the weak internal control and funds flow challenges especially outside Bangui, and the overall weak fiduciary capacity including at the level of consultants recruited in the PIUs. Mitigation measures include building capacity and providing appropriate measures to strengthen project management and fiduciary controls. A PIU will be established under MURFVH with qualified staff to assume the fiduciary management of the project.

88. **Environmental and social risks are rated as Substantial, due to the nature and large range of types of civil works which are to be financed within crowded urban settings.** These types of works can typically have potential risks of pollution, waste generation, and occupational and community health and safety. While most of these risks are site specific and have standard mitigation measures, the limited capacity of the borrower and the FCV context of the activities can enhance the potential risks and impacts. Implementation of mitigation measures specified in Environmental and Social Framework (ESF) instruments (Environmental and Social Management Framework (ESMF), site-specific E&S Management Plans and Resettlement Action Plans, Labor Management Procedures, SEP, and GRM) and capacity building activities will help reduce the identified risks. More details on project specific E&S risks and relevance of ESF instruments are presented in the disclosed ESRS.

89. **Stakeholder risk is rated as High, due to deep-seated political divisions at the national level and the persistent prevalence of heightened violence and conflict dynamics in multiple regions of the country.** Additionally, any escalation in existing violence or the occurrence of new natural disasters could potentially lead to forced displacement, creating hurdles for the execution of project activities. To address these concerns, the project will incorporate several measures. These include ongoing conflict monitoring to continuously evaluate ground realities, allowing for adjustments to the project implementation approach or activities. The PIU will hire a community liaison and conflict specialist who will coordinate risk monitoring and mitigation efforts. The project will design activities to maintain social cohesion and mitigate conflicts, ensuring transparent selection criteria and community engagement.

90. **Other risk (Security) is High.** CAR remains under sustained risk of armed violence, especially in the northern, central, and eastern regions. The project will allow flexibility in resource allocation and sequence implementation based on security conditions. The project will develop a strategy for implementation in insecure areas, which defines objective criteria for classifying levels of insecurity and provides options to guide implementation considering the fluid security context. Minimum requirements on security risk assessments and reporting of incidents will be integrated into the ESMF



and the more detailed Security Management Plan. Coordination with relevant stakeholders and partners will also be a priority to address these risks.



VII. RESULTS FRAMEWORK AND MONITORING

PDO Indicators by PDO Outcomes

Baseline	Period 1	Period 2	Period 3	Period 4	Closing Period
Improve access to climate resilience infrastructure					
People protected from flood or erosion risks (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	80,000	250,000	500,000	1,200,000	1,600,000
➤ People protected from flood or erosion risks - Female (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	40,000	125,000	250,000	600,000	800,000
Improved access to basic services					
People provided with improved urban living conditions (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	50,000	177,000	400,000	600,000	800,000
➤ People provided with improved urban living conditions - Female (RMS requirement) (Number)					
0	25,000	88,500	200,000	300,000	400,000

Intermediate Indicators by Components

Baseline	Period 1	Period 2	Period 3	Period 4	Closing Period
Investments in Flood and Erosion Risks Reduction					
People benefiting from climate resilient infrastructure (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	80,000	250,000	500,000	1,200,000	1,600,000
➤ People benefiting from climate resilient infrastructure - Female (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	40,000	125,000	250,000	600,000	800,000
➤ People benefiting from climate resilient infrastructure - Youth (Number)					



Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	40,000	125,000	250,000	600,000	800,000
Area provided with new/improved drainage services (Hectare(Ha))					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	0	280	840	1,120	1,400
➤ Area provided with new drainage services (Hectare(Ha))					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	0	60	180	240	300
➤ Area provided with improved drainage services (Hectare(Ha))					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	0	220	660	880	1,100
Integrated urban planning and management tools (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	0	1	1	2	2
People trained (Number)					
Jun/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	50	200	300	400	500
➤ Female trained (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	25	100	150	200	250
➤ People trained at the Sate level (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	10	30	50	70	70
➤ People trained at the Municipal level (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	5	15	25	30	30
➤ People trained at the Community level (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	50	200	300	400	400
Women leading management committees for the local flood and erosion management committees (Percentage)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	0	5	15	25	30
Labor-intensive public works temporary jobs (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029



0	0	500	2,000	3,500	4,000
Cities benefitting from financial and technical assistance for sustainable and resilient urban services (e.g., flood management, green infrastructure) (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	0	1	1	2	2
Hydromet stations (e.g., hydrological and meteorological) functional and maintained (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	0	3	10	10	10
Neighborhood Infrastructure and Basic Services					
Secondary Roads Rehabilitated (Kilometers)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	2	6	9	9	9
➤Secondary drainage constructed (Kilometers)					
0	2	6	9	9	9
Tertiary Roads Rehabilitated (Kilometers)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	5	10	15	20.40	20.40
➤Tertiary drainage constructed (Kilometers)					
0	5	10	15	20.40	20.40
Pedestrian Pathways Rehabilitated (Kilometers)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	10	25	40	51.40	51.40
➤Pedestrian pathways drainage constructed (Kilometers)					
0	10	25	40	51.40	51.40
Pedestrian foodbridge constructed (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	2	7	15	17	17
Crossroads rehabilitated (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	0	1	2	3	3
Building/courtyard rehabilitated (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	2	6	10	14	14
➤School building/courtyard rehabilitated (Number)					
Jun/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029



0	2	6	10	13	13
➤ Health building/courtyard rehabilitated (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	0	1	1	1	1
Small market rehabilitated (fences, warehouse, etc.) (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	3	7	10	13	13
Small public spaces rehabilitated (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	5	10	15	17	19
Green drainage (bioswale) constructed (Kilometers)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	2	6	10	13.10	13..1
Sub projects reviewed and validated by citizens' Community Coordination Committees (CCC) (Percentage)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	100	100	100	100	100
Respondents satisfied with project interventions (Percentage)					
Sept/2024	Jun/2025	Dec/2026	Jun/2027	Jun/2028	Jun/2029
0	-	75	-	-	80
Labor-intensive public works temporary job created (Number)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	500	1,500	2,000	2,500	3,500
Project management					
Financial reports are submitted on time (Yes/No)					
Sept/2024	Feb/2025	Feb/2026	Feb/2027	Feb/2028	Feb/2029
No	Yes	Yes	Yes	Yes	Yes
Annual Work Plan and Budget is submitted on time (Yes/No)					
Oct/2024	Oct/2025	Oct/2026	Oct/2027	Oct/2028	Oct/2029
No	Yes	Yes	Yes	Yes	Yes
Grievances relayed through the GRM that are addressed in the specified timeframe (Percentage)					
Sept/2024	Jun/2025	Jun/2026	Jun/2027	Jun/2028	Jun/2029
0	60	70	80	90	100
Contingency Emergency Response Component					



Monitoring & Evaluation Plan: PDO Indicators by PDO Outcomes

Improve access to climate resilience infrastructure	
People protected from flood or erosion risks (Number)	
Description	Measures the total number of people protected from flood or erosion
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	Geospatial analysis and field investigation/survey. The indicator will be obtained by updating the flood maps using the flood's model available and then, updating with the infrastructure works for flood reduction implemented each year, allowing to define areas excluding flooding with people protected in relation to their initial situation.
Responsibility for Data Collection	MURFVH, PIU
People protected from flood or erosion risks - Female (Number)	
Description	Measures the total number of female protected from flood or erosion
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	50% of the numeric value of the indicator "People protected from flood or erosion"
Responsibility for Data Collection	MURFVH, PIU
Improved access to basic services	
People provided with improved urban living conditions (Number)	
Description	Measures the total number of people benefiting from city-wide and neighborhood infrastructure and basic services investments
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	Calculated on the basis on the percentage of investments completed, and used as a proxy to measure percentage of people benefit from them in a defined area
Responsibility for Data Collection	MURFVH, PIU
People provided with improved urban living conditions - Female (RMS requirement) (Number)	
Description	Measures the total number of female benefiting from city-wide and neighborhood infrastructure and basic services investments
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	50% of the numeric value of the indicator "People provided with improved urban living condition"
Responsibility for Data Collection	MURFVH, PIU

Monitoring & Evaluation Plan: Intermediate Results Indicators by Components

Investments in Flood and Erosion Risks Reduction	
People benefiting from climate-resilient infrastructure (Number)	
Description	Measures the total number of people benefiting from climate-resilient infrastructure
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data	Geospatial analysis and field investigation/survey. The indicator will be obtained by updating the flood maps using the



Collection	flood's model available and then, updating with the infrastructure works for flood reduction implemented each year, allowing to define areas excluding flooding with people protected in relation to their initial situation.
Responsibility for Data Collection	MURFVH, PIU
People benefiting from climate-resilient infrastructure - Female (Number)	
Description	Measures the total number of people benefiting from climate-resilient infrastructure
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	50% of the numeric value of the indicator "People benefiting from climate-resilient infrastructure"
Responsibility for Data Collection	MURFVH, PIU
People benefiting from climate-resilient infrastructure - Youth (Number)	
Description	Measures the total number of people benefiting from climate-resilient infrastructure
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	50% of the numeric value of the indicator "People benefiting from climate-resilient infrastructure"
Responsibility for Data Collection	MURFVH, PIU
Area provided with new/improved drainage services (Hectare(Ha))	
Description	This indicator measures the total area of land provided with irrigation and drainage services under the project, including in (a) the area provided with new irrigation and drainage services and (b) the area provided with improved irrigation and drainage services, expressed in hectare (ha).
Frequency	Annual
Data source	MIS, annual progress report, field visit
Methodology for Data Collection	Field investigation, geospatial analysis
Responsibility for Data Collection	MURFVH, PIU
Area provided with new drainage services (Hectare(Ha))	
Description	Measures in hectares the total area of land provided with new irrigation or drainage services
Frequency	Annual
Data source	MIS, annual progress report, field visit
Methodology for Data Collection	Field investigation, geospatial analysis
Responsibility for Data Collection	MURFVH, PIU
Area provided with improved drainage services (Hectare(Ha))	
Description	Measures in hectares the total area of land provided with improved irrigation or drainage services
Frequency	Annual
Data source	MIS, annual progress report, field visit
Methodology for Data Collection	Field investigation, geospatial analysis
Responsibility for Data Collection	MURFVH, PIU
Integrated urban planning and management tools (Number)	
Description	Measures the number of integrated urban planning management tool
Frequency	Annual
Data source	MIS, annual progress report



Methodology for Data Collection	MIS, annual progress report
Responsibility for Data Collection	MURFVH, PIU
People trained (Number)	
Description	Measures the total number of people receiving training aligned with the PDO and project scope
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	MIS, annual progress report
Responsibility for Data Collection	MURFVH, PIU
Female trained (Number)	
Description	Measures the total number of femal receiving training aligned with the PDO and project scope
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	MIS, annual progress report
Responsibility for Data Collection	MURFVH, PIU
People trained at the Sate level (Number)	
Description	Measures the total number of people at the State level receiving training aligned with the PDO and project scope
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	MIS, annual progress report
Responsibility for Data Collection	MURFVH, PIU
People trained at the Municipal level (Number)	
Description	Measures number of people at the Municipal level receiving training aligned with the PDO and project scope
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	MIS, annual progress report
Responsibility for Data Collection	MURFVH, PIU
People trained at the Community level (Number)	
Description	Measures number of people at the Community level receiving training aligned with the PDO and project scope
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	MIS, annual progress report
Responsibility for Data Collection	MURFVH, PIU
Women leading management committees for the local flood and erosion management committees (Percentage)	
Description	Measures the percentage of women leading local flood and erosion management committees
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	MIS, annual progress report



Responsibility for Data Collection	MURFVH, PIU
Labor-intensive public works temporary jobs (Number)	
Description	Measures the total number of temporary jobs created through LIPW
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	MIS, annual progress report
Responsibility for Data Collection	MURFVH, PIU
Cities benefitting from financial and technical assistance for sustainable and resilient urban services (for example, flood management, green infrastructure) (Number)	
Description	Measures the total number of cities that benefited from financial and technical assistance for sustainable and resilient urban services (for example, flood management, green infrastructure)
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	MIS, annual progress report
Responsibility for Data Collection	MURFVH, PIU
Hydromet stations (for example, hydrological and meteorological) functional and maintained (Number)	
Description	Measures the total number of hydromet stations (for example, hydrological and meteorological) functional and maintained.
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	MIS, annual progress report
Responsibility for Data Collection	MURFVH, PIU
Neighborhood Infrastructure and Basic Services	
Secondary Roads Rehabilitated (Kilometers)	
Description	Measures the total number of kilometers of secondary roads rehabilitated
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports
Methodology for Data Collection	MIS, annual progress report, including Supervision Misison reports
Responsibility for Data Collection	MURFVH, PIU
Secondary drainage constructed (Kilometers)	
Description	Measures the total number of kilometers of secondary drainage constructed
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports
Methodology for Data Collection	MIS, annual progress report, including Supervision Misison reports
Responsibility for Data Collection	MURFVH, PIU
Tertiary Roads Rehabilitated (Kilometers)	
Description	Measures the total number of kilometers of tertiary roads rehabilitated
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports



Methodology for Data Collection	MIS, annual progress report, including Supervision Misison reports
Responsibility for Data Collection	MURFVH, PIU
Tertiary drainage constructed (Kilometers)	
Description	Measures total number of kilometers of tertiary drainage constructed
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports
Methodology for Data Collection	MIS, annual progress report, including Supervision Misison reports
Responsibility for Data Collection	MURFVH, PIU
Pedestrian Pathways Rehabilitated (Kilometers)	
Description	Measures total number of kilometers of pedestrian pathways rehabilitated
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports
Methodology for Data Collection	MIS, annual progress report, including Supervision Misison reports
Responsibility for Data Collection	MURFVH, PIU
Pedestrian pathways drainage constructed (Kilometers)	
Description	Measures total number of kilometers of pedestrian pathways drainage constructed
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports
Methodology for Data Collection	MIS, annual progress report, including Supervision Misison reports
Responsibility for Data Collection	MURFVH, PIU
Pedestrian foodbridge constructed (Number)	
Description	Measures the total number of pedestrian footbridge constructed
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports
Methodology for Data Collection	MIS, annual progress report, including Supervision Misison reports
Responsibility for Data Collection	MURFVH, PIU
Crossroads rehabilitated (Number)	
Description	Measures total number of crossroads rehabilitated
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports
Methodology for Data Collection	MIS, annual progress report, including Supervision Misison reports
Responsibility for Data Collection	MURFVH, PIU
Building/courtyard rehabilitated (Number)	
Description	Measures the total number of building/courtard rehabilitated
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports
Methodology for Data Collection	MIS, annual progress report, including Supervision Misison reports



Responsibility for Data Collection	MURFVH, PIU
School building/courtyard rehabilitated (Number)	
Description	Measures total number of school building/courtyard rehabilitated
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports
Methodology for Data Collection	Percentage of the previous indicator (Number of building/courtyard rehabilitated)
Responsibility for Data Collection	MURFVH, PIU
Health building/courtyard rehabilitated (Number)	
Description	Measures total number of health building/courtyard rehabilitated
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports
Methodology for Data Collection	Percentage of the previous indicator (Number of building/courtyard rehabilitated)
Responsibility for Data Collection	MURFVH, PIU
Small market rehabilitated (fences, warehouse, etc.) (Number)	
Description	Measures total number of markets small rehabilitation executed
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports
Methodology for Data Collection	MIS, annual progress report, including Supervision Misison reports
Responsibility for Data Collection	MURFVH, PIU
Small public spaces rehabilitated (Number)	
Description	Measures total number of markets small rehabilitation executed
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports
Methodology for Data Collection	MIS, annual progress report, including Supervision Misison reports
Responsibility for Data Collection	MURFVH, PIU
Green drainage (bioswale) constructed (Kilometers)	
Description	Measures total number of markets small rehabilitation executed
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports
Methodology for Data Collection	MIS, annual progress report, including Supervision Misison reports
Responsibility for Data Collection	MURFVH, PIU
Sub projects reviewed and validated by citizens' Community Coordination Committees (CCC) (Percentage)	
Description	Measure the total number of subproject reviewed and validated by citizens'(CCC)
Frequency	Annual
Data source	MIS, annual progress report, including Supervision Misison reports
Methodology for Data Collection	MIS, annual progress report, including Supervision Misison reports
Responsibility for Data Collection	MURFVH, PIU, Survey firm



Respondents satisfied with project interventions (Percentage)	
Description	Measure the percentage of respondents satisfied with project interventions
Frequency	Midway and closing (MTR and ICR)
Data source	Field survey
Methodology for Data Collection	Field survey
Responsibility for Data Collection	MURFVH, PIU, Survey firm
Labor-intensive public works temporary job created (Number)	
Description	Measures the total number of temporary jobs created through LIPW
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	MIS, annual progress report
Responsibility for Data Collection	MURFVH, PIU
Project management	
Financial reports are submitted on time (Yes/No)	
Description	Measures if financial reports have been submitted on time
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	MIS, annual progress report
Responsibility for Data Collection	MURFVH, PIU
Annual Work Plan and Budget is submitted on time (Yes/No)	
Description	Measures if Annual Work Plan and Budget have been submitted on time
Frequency	Annual
Data source	MIS, annual progress report
Methodology for Data Collection	MIS, annual progress report
Responsibility for Data Collection	MURFVH, PIU
Grievances relayed through the GRM that are addressed in the specified timeframe (Percentage)	
Description	Measures the effectiveness of GRM of the project
Frequency	Annual
Data source	MIS, annual progress report, including <i>Maitrise d'Oeuvre Urbaine et Sociale</i> (MOUS) and Supervision Misison reports
Methodology for Data Collection	MIS, annual progress report
Responsibility for Data Collection	MURFVH, PIU





ANNEX 1: Implementation Arrangements and Support Plan

COUNTRY: Central African Republic
CAR Inclusive and Resilient Cities Project

Financial Management and Disbursements Arrangements

1. An FM assessment was undertaken to evaluate the adequacy of the project's FM arrangements. The objective of this assessment was to determine whether the project implementing agency has acceptable FM arrangements for the project implementation. The project will be implemented by a new PIU to be established under the overall coordination of MURFVH. MURFVH has no experiences in coordinating World Bank-financed projects. The FM assessment was carried out in accordance with the FM Manual for World Bank Investment Project Financing Operations that became effective on March 1, 2010, and reissued on September 7, 2021.
2. The overall FM risk before the mitigation measures was considered High. The proposed FM risk mitigation measures are considered adequate to reduce the residual risk to Substantial. An FM Action Plan is summarized in Table 1.1. Subject to the successful completion of the actions recommended in the Action Plan to address the risks identified, the proposed FM arrangements are considered acceptable to the World Bank.
3. The new PIU which is already staffed with an FM specialist, will recruit, within three months after effectiveness an accountant, and an internal auditor based on TOR acceptable to the World Bank. A POM will be developed. Transaction-based disbursements will apply. An initial advance in FCFA will be made into the DA. The internal control procedures will be documented in the POM and IGF will include the project in its audit program in the medium term. A multi-project and multi-site financial and accounting management software will be set up in a manner satisfactory to the World Bank. Furthermore, the IFR will be submitted to the World Bank on a quarterly basis and within 45 days following the quarter. Finally, while waiting for arrangements' completion with CAR's SAI to start being involved in the process of the external auditors' selection and their reports reviewing, an independent external auditor will be appointed as per TOR agreed with the World Bank to carry out the project's external audit, and the audit report will be submitted within six months following the end of the fiscal year.

Country Public Finance Management

4. The overall fiduciary environment of the country is weak and fiduciary risk including fraud and corruption is high. According to the 2023 Transparency International Corruption Index, CAR ranks 149 out of 180 countries. On public financial management (PFM), significant progress has been achieved toward the digitalization of government processes including with the launch of a new PFM information system and an online tax return system supported by the World Bank-financed Public Sector Digital Governance Project (P174620). CAR also adopted a new Public Finance Organic Law in 2018 aligned with the Economic Community of Central Africa directive; for treasury management, a Treasury Single Account (TSA) was set up and the Ministry of Finance and Budget (MFB) started using the central bank's settlement and clearing system for most government payments in 2020. A new law on the governance and accountability of state-owned enterprises was promulgated in January 2020, increasing the MFB's oversight powers. Despite notable achievements, CAR's PFM systems still exhibit overall weaknesses. Budget execution lags at 77 percent of the allocated primary expenditure (2020) due to cumbersome procedures, limited capacity in line ministries, and excessive concentration of PFM functions, leading to bottlenecks and delays in transaction processing. The full operationalization of the TSA has yet to be realized. Quarterly budget execution reports provide limited information on ministry expenditures, and external audit functions are underdeveloped, with an ill-equipped Court of Accounts and unaudited reports. Reflecting these weaknesses, CAR received a score of 2.5 on both Quality of Budgetary and Financial Management and Transparency, Accountability, and Corruption



in the Public Sector in the 2022 Country Policy and Institutional Assessment (CPIA). Public procurement remains a concern, marked by the frequent use of single-source selection and a lack of transparency in government bidding and contract awards. The project will support the development of capacity to enable achievement of its objectives. During the project implementation, and with the progress expected because of the implementation of the PFM reforms, the project could consider gradual switch toward the reliance of part of some country PFM systems when they are assessed adequate for use and present limited risks to the project.

Table 1.1. Inherent Risk Assessment, Mitigation Measures, and Residual Risks

Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Design	Residual Risk
Inherent risk	H		S
Country level <ul style="list-style-type: none"> • Post-conflict country, risky one from fiduciary perspective • Poor governance and slow pace of implementation of PFM reforms that might hamper the overall PFM environment 	H	Some PFM reforms being supported by some partners: <ul style="list-style-type: none"> • Public Sector Digital Governance Project (P174620) financed by the World Bank. • Commitments at the Government top level to fight corruption and introduce digitalization as a means to improve transparency 	H
Entity level <ul style="list-style-type: none"> • Weak fiduciary capacity • Nature of the operations (municipalities and other decentralized actors) involving a great number of stakeholders in FCV environment) may increase exposure to fiduciary risk 	H	<ul style="list-style-type: none"> • POM will provide details on procedures to strengthen controls over the identification, approval, and monitoring of the project activities. • The POM to clarify roles and responsibilities of the various stakeholders. • Capacity of the key stakeholders including citizens will be strengthened as well. 	S
Project level <ul style="list-style-type: none"> • The PIU to be established: PIU staff with limited knowledge and experience • Poor collaboration with and among the multiple sectors and stakeholders may increase fiduciary given the overall limited fiduciary capacity in the sector 	S	<ul style="list-style-type: none"> • Qualified fiduciary staff to be recruited within the PIU • Well-designed procedures combined with training to key stakeholders 	S
Control risk	S		S
Budgeting <ul style="list-style-type: none"> • The annual work plan and budget may be delayed and of poor quality due to capacity constraints and delay in the submission of the inputs from different sectors to for consolidation 	S	<ul style="list-style-type: none"> • The POM to define the arrangements for budget formulation, execution, and control. • Quarterly IFR will provide analysis of the budget performance. • Capacity of the stakeholders will be strengthened as well. 	S



Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Design	Residual Risk
Accounting <ul style="list-style-type: none"> Difficulty to track the project expenditures Weak capacity may undermine the timely production of accurate and reliable information 	S	<ul style="list-style-type: none"> An accounting software (multiple projects) will be purchased. World Bank implementation support mission will review the operational effectiveness of the accounting system. 	M
Internal controls and internal audit <ul style="list-style-type: none"> Internal control failure to identify significant control breakdown during the identification, approval, and execution of the Project activities Weak capacity of the implementers to understand and contribute to the effectiveness of the internal control processes 	H	<ul style="list-style-type: none"> An internal auditor will be hired while waiting for a capacity-building project for IGF to perform the internal audit function of the project in the medium term. Periodic reviews of the risk management and controls over the management of the project activities Use of GEMS to restrictions to field visits 	S
Funds flow <ul style="list-style-type: none"> Delays in processing and paying the beneficiaries due to additional internal controls Security threat in the country may pose a serious risk to payment of beneficiaries and availability of funds in risky areas 	H	<ul style="list-style-type: none"> Capacity of key players will be strengthened. Funds flow arrangements will be described in the POM, and the project's staff will be trained on the World Bank's disbursement procedures. 	S
Financial reporting <ul style="list-style-type: none"> Some delays in submitting good quality IFRs Poor quality of reports Some difficulties to get timely information from the government database over the management of targeted workers 	S	<ul style="list-style-type: none"> Accounting system and software to record the project's transactions Qualified and experienced FM staff will be recruited within the PIU. Capacity of the key stakeholders will be strengthened if required. Increased frequency of World Bank FM implementation support. 	M
External auditing <ul style="list-style-type: none"> Weak capacity of the SAI to audit the project transactions. Audit not carried out in compliance with acceptable audit standards Delays in submitting the audit report and implementing audit reports recommendations 	H	<ul style="list-style-type: none"> Audit TORs and short list of independent firms will be subject to the World Bank's review. IFR will be reviewed to enable the project to improve its quality so that financial statements are made available on time. Close monitoring of audit recommendations during FM implementation support. 	S



Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Design	Residual Risk
Fraud and corruption <ul style="list-style-type: none"> Nature of project activities prone to fraud, lack of transparency, and weak control of the process over the identification of eligible beneficiaries Colluding practices, abuse of administrative positions to benefit the project facilities 	H	<ul style="list-style-type: none"> Internal audit and control to be strengthened. Periodic review of the effectiveness of the risk management and controls over the management of the project activities. The POM will include anti-corruption measures with a specific safety mechanism that will enable citizens to denounce abuses or irregularities. 	S
Overall FM risk	H		S

Table 1.2. FM Action Plan

Action	Responsible Entity	Deadline and Conditionality
Staffing: <ul style="list-style-type: none"> Appoint one accountant within the PIU Appoint an internal auditor within the PIU 	PIU	<ul style="list-style-type: none"> No later than three months after the effectiveness date No later than three months after the effectiveness date
<ul style="list-style-type: none"> Develop the POM 	PIU	<ul style="list-style-type: none"> Before the effectiveness date
<ul style="list-style-type: none"> Recruit an independent external auditor in line with TOR approved by the World Bank 	PIU	<ul style="list-style-type: none"> No later than six months after the effectiveness date

Other Information about FM and Disbursements Arrangements

5. **Staffing.** For the implementation of this project, a new PIU will be established and staffed with an FM specialist already hired, an accountant, and an internal auditor to be recruited within three months after effectiveness based on TOR acceptable to the World Bank.

6. **Budgeting.** The PIU will prepare the project annual work plan and budget. The budget execution will be monitored on a quarterly basis through the IFR, and any variances will be explained and remedial measures indicated. The process to identify the activities to be undertaken and the role of the respective parties in the preparation, implementation, and monitoring of the budget will be developed in the manual of procedures.

Disbursement and Flow of Funds Arrangements

7. Disbursements will be made in accordance with the World Bank Disbursement Guidelines for Projects, dated February 1, 2017. Transaction-based disbursements will apply. An initial advance in FCFA will be made into the DA, and subsequent disbursements will be made against submission of statements of expenditures or records, as specified in the disbursement and financial information letter. The other methods of disbursing the funds (reimbursement, direct payment, and special commitment) will also be available to the project. More detail will be provided in the POM and the Disbursement and Financial Information Letter.



Figure 1.1. Funds Flow Diagram

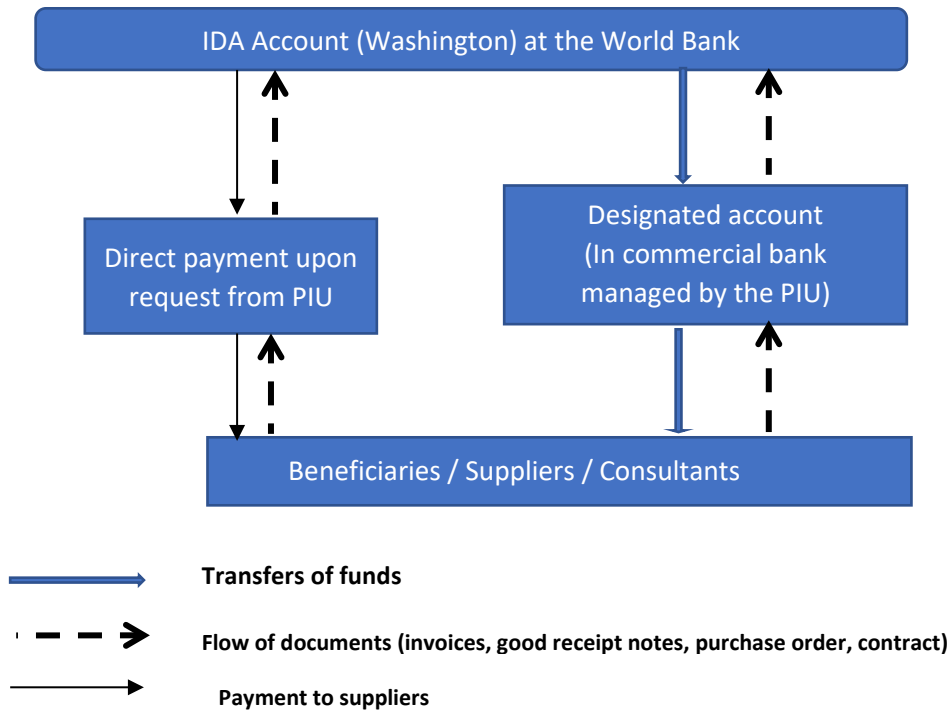


Table 1.3. Categories of Eligible Expenditure

Category	Amount of the Grant Allocated (expressed in SDR)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Goods, works, non-consulting services consulting services, Training and Operating Costs for the Project	49,695,890	100%
(2) Refund of Preparation Advance	3,604,110	Amount payable pursuant to Section 2.07 (a) of the General Conditions
(3) Emergency Expenditures under Part 4 of the Project	0	
TOTAL AMOUNT	53,300,000	

8. **Internal controls and internal audit.** The internal controls system and procedures will be detailed in the POM. An internal auditor will be hired three months after project effectiveness while waiting for a capacity-building project for IGF. It is foreseen that IGF in the medium term will perform the internal audit function of the project. The audit program will be submitted to the World Bank as well as the audit reports.

9. **Accounting policies and procedures.** CAR is a member of the Organization for the Harmonization of Business Law in Africa (OHADA) and thus adheres to SYSCOHADA, the accounting standards in use in the OHADA



country members. SYSCOHADA complies with the generally accepted international accounting standards. An accounting software with multi-project, multi-site, and multi-donor features and customized to generate its financial reports will be set up. This software must be installed within three months after project effectiveness. The project code and chart of accounts will reflect the specific needs of the Project.

10. **Reporting.** The FM team of the PIU will be required to prepare an IFR on a quarterly basis. The IFR will include (a) sources and use of funds; (b) use of funds per activity; (c) dedicated account and DA activities’ statement; and (d) use of funds according to procurement methods and thresholds. The format and content of the IFRs will be agreed with the client during negotiations. The IFR reports will be submitted to the World Bank 45 days after the end of the quarter to which they related.

11. **External financial audit.** While waiting for arrangements’ completion with CAR’s SAI to start being involved in the process of the external auditors’ selection and their reports reviewing, an independent external auditor will be appointed as per TOR agreed with the World Bank to carry out the project’s external audit. The short list will be reviewed by the World Bank. The audit will comply with the International Standards on Auditing. In line with the World Bank access to information policy, the audit reports will be disclosed. The external audit reports will be submitted to the World Bank, no later than six months following the end of the fiscal year.

12. **Transparency, accountability, and anti-corruption efforts will be supported** via a complaint handling mechanism; a communication strategy to inform the public through the media on all aspects of the project; and the publication on the implementing entity or Government websites of budgets, financial reports, and audited financial statements. The PIU will also have to deal with fraud and anti-corruption in accordance with the World Bank Anti-Corruption Guidelines referred to in the Financing Agreement. Furthermore, the POM will include a specific safety mechanism that will enable citizens to denounce abuses or irregularities.

13. **Implementation support plan.** FM implementation support missions will be carried out twice a year based on the substantial FM residual risk rating. Afterward, these FM implementation support missions will be conducted once per year as soon as the FM residual risk becomes Moderate. Implementation support will also include desk reviews such as the review of the IFRs and audit reports. In-depth reviews may be done where deemed necessary. The FM implementation support will include FM training missions for all implementing entities and will be an integrated part of the project’s implementation support plan.

Table 1.4. Summary of FM Activity

FM Activity	Frequency
Desk reviews	
Interim financial reports review	Quarterly
Audit report review of the project	Annually
Review of other relevant information such as interim internal control systems reports	Continuous as they become available
On-site visits	
Review of overall operation of the FM system	Twice per year (implementation support mission)
Monitoring of actions taken on issues highlighted in audit reports, auditors’ management letters, internal audit and other reports	As needed
Transaction reviews (if needed)	As needed
Capacity-building support	
FM training sessions	During implementation and as needed



ANNEX 2: Climate Change Adaptation and Mitigation

A. Vulnerability Context

1. **Adverse effects due to climate change, already affecting CAR, are having a range of links to urban development.**⁵¹ CAR is witnessing extreme rain and flood events and a prolongation of the dry season, which may influence agricultural productivity and damage infrastructure. Small farmers and the urban poor will be most vulnerable to these expected impacts of climate change. The impacts are amplified by the effects of rapid, poorly planned, urbanization, putting a high concentration of people, often the socially marginalized, and economic assets into the areas most at risk of natural disasters, such as flooding and extreme erosion.

2. **Urban areas are highly exposed to natural hazards such as flooding and erosion and have been recently exacerbated by climate change.** In Berberati, erosions are threatening housing and critical urban infrastructure and services. In Bangui, urban roads, markets, schools, and others related urban assets and networks are damaged, interrupted, or disconnected yearly during the rainy season. In August 2021 in Bangui, 4,120 people were affected by torrential rain, including 2,307 children, 48 pregnant women, 172 nursing mothers, and 23 elderly people. In July 2022, the city recorded 183 mm of rain in 48 hours, which flooded the international airport of Mpoko and blocked other transportation corridors (rail/roadways), destroyed 250 houses, and led to the death of 13 people.

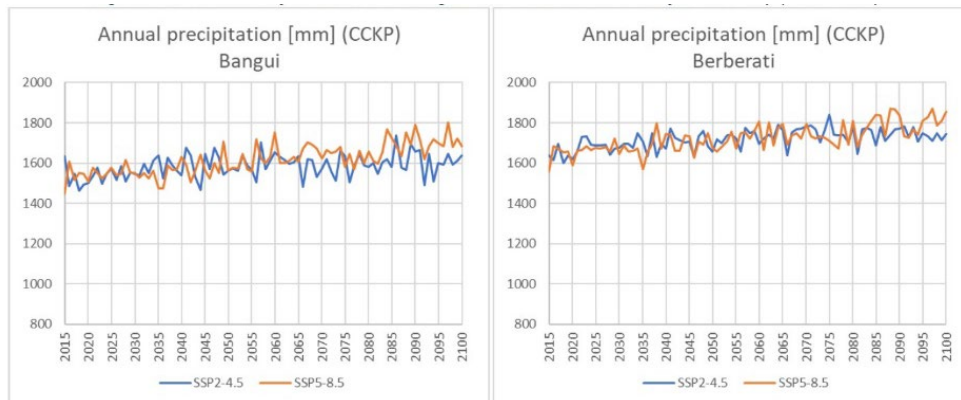
3. **Roads and pedestrian pathways are drivers of erosion and flood in urban areas.** The origins of soil erosion and flooding are multiple and include, among others, uncontrolled urban development combined with the lack of drainage, the sandy nature of the soil, non-sustainable urban agricultural practices, the lack of compacting during backfilling during civil works, and so on. These root causes contribute to the lack of adequate management of stormwater. Further exacerbating these risks, damaged roads and pedestrian pathways created by communities have become the new drainage in urban areas and the main cause for erosion and flooding. To address these risks and further combat the exacerbated threats of climate change, roads and pedestrian pathways require specific investments (for example, resurfacing to allow rainwater to reach drainage and porous surfacing and/or vegetablization of pedestrian pathways to increase rainwater penetration rate and structural, cascading elements to slow down the speed of water). Roads and pedestrian pathway investments are directly linked to climate change adaptation serving as the direct driver for intervention, like the 'roads for watershed management' approach.⁵¹

4. **In the selected cities of the project, climate change will affect population and the urban infrastructure and services severely.** Studies have been conducted to anticipate climate change and annual rainfall projections under different climate change scenarios (see Figure 2.1).

⁵¹ Green Roads for Water (World Bank 2021). <https://documents1.worldbank.org/curated/en/102951623742853259/pdf/Green-Roads-for-Water-Guidelines-for-Road-Infrastructure-in-Support-of-Water-Management-and-Climate-Resilience.pdf>



Figure 2.1. Annual Rainfall Trend According to SSP2-4.5 and SSP 5-8.5 for Bangui and Berberati⁵²



5. As shown in Figure 2.1, the scenario SSP2-4.5 indicates a precipitation increase ranging from 3 percent in the short term to 6 percent in the medium to long term for the cities of Bangui and Berberati. In the SSP5-8.5 scenario, short-term increases do not change significantly, amounting to 10 percent in Bangui and Berberati.

6. Several resources and references were used and include the following:

- “Le Bassin de l’Oubangui”, Jacques Callède, Yves Boulevert et Jean-Pierre Thiébaux, IRD Editions 2009
- “Evaluation Hydrologique de l’Afrique Sub-Saharienne - Pays de l’Afrique de l’Ouest - Rapport de pays: Centrafrique,” Mott MacDonald International, BCEOM, SOGREAH, ORSTOM, 1992. This is a broad hydrological study, useful to obtain information about stations outside the Oubangui catchment
- “Climate Risk Country Profile: Central African Republic” (2021) and the Climate Change Knowledge Portal both by World Bank.

7. Climate change will increase impacts on populations, damages, and loss due to more extreme weather event and higher frequency. Such impacts will be higher on vulnerable populations, particularly for IDPs. In the flood modeling developed for Bangui, the number of impacted people and damage cost were assessed under different climate change scenarios. This led to testing several mitigation plans (that is, combinations of different mitigation interventions that would reduce both the number of affected people and the damages/loss).

8. A detailed flood risk assessment, including climate change projections, has been conducted to inform the design of integrated road-drainage-slope stabilization works and other climate change adaptation measures. The modeling and analysis included the use of hydromet data on temperature, evaporation, humidity, wind, and precipitation to determine trends in precipitation and return levels of extreme climatic events of different durations, the development of a Digital Terrain Model using high resolution satellite imagery and orthophotos, the development of a detailed hydrological model using MIKE, and the modeling of the hydrogeological behavior of the local aquifer and its coupling with surface water during an extreme rainfall event. Validation of input hypothesis was conducted, and pessimistic hypothesis were retained (SSP5). Both input data and results were critically assessed and compared with older studies and other data sources, including satellite imagery comparison and field surveys.

⁵² World Bank. 2022. *Central African Republic: Leveraging Cities to Build Resilience and Re-establish the Social Contract*.



B. Intent to Address Vulnerability

9. **The project is closely aligned with the World Bank’s climate change and resilience agenda.** Climate change—as manifested by rising temperatures, increasing climate variability and a growing frequency and intensity of climate-related disasters such as floods and erosion—heavily affects vulnerable populations. The poor suffer disproportionately from climate change and climate-related disasters. They are often more affected, lose more when hit, and generally receive less support to cope and recover.² In the Action Plan on Climate Change Adaptation and Resilience, the World Bank acknowledges the urgency of the development impacts of climate change, especially in FCV countries, and commits to scaling up adaptation efforts to build resilience against climate and disaster impacts with a focus on interventions that directly target and engage with vulnerable population groups.³ The proposed project aims to build a better understanding of multiple natural hazard risks in Bangui and Berberati in CAR and improve the local communities’ capacities to cope with climate-related stresses. It is therefore closely aligned with the World Bank’s overarching Action Plan on Climate Change Adaptation and Resilience.

C. Link to Project Activities: Climate Mitigation and Adaptation by Subcomponent

10. All investments have been conducted with geographic targeting in relation to worsening climate change (multihazard mapping and risk assessment, including multiple return periods under different climate projection scenario).

11. **Subcomponent 1.1 (US\$40 million).** This subcomponent will support climate adaptation as activities including primary roads, drainage, and slope stabilization interventions are designed in an integrated manner to ensure flood reduction and erosion prevention measures and implemented in relation to the worsening effects of climate change. They will be designed to climate-resilient standards, in that they are planned, designed, built, and operated in a way that anticipates, prepares for, and adapts to changing climate conditions (using SSP5). Exact solutions, locations, and physical investments for climate risk reduction will be identified by ongoing pre-feasibility studies expected to be completed in August 2024. Initial outputs show the following cost distribution: roads (33 percent or US\$13.3 million), drainage (33 percent or US\$13.3 million), and headward and gully erosion stabilization (33 percent or US\$13.3 million). All three categories are integrated in a single solution to address current and future flooding and erosion threats using SSP5.

12. **Subcomponent 1.2 (US\$5 million).** This subcomponent will support climate adaptation as it focuses on developing plans to better protect populations and infrastructure from the worsening effects of climate change, notably increased flood and erosion risks. This subcomponent will finance structuring urban planning studies and contingency plans in Bangui and Berberati focusing on climate adaptation (US\$3 million). For each water basin within the greater Bangui and Berberati areas, a detailed urbanization plan focusing on climate adaptation, a flood risk management plan, and a drainage plan will be produced. Flood and erosion risk management plans are focused on protecting the areas of interest from a risk, which might increase with climate change. The planning process will identify the most sensitive areas with a view to implementing zoning regulations to prevent construction in areas exposed to the worsening effects of climate change. This subcomponent will also support climate mitigation, as the planning documents will enable further integrated infrastructure and nature-based solutions and lead to strategic pilot initiatives to better adapt the city to climate change. This subcomponent will also support climate adaptation as it focuses on capacity building of MURFVH and Bangui and Berberati municipality agents responsible for flood and erosion management in urban planning. Investments will include updated methodological guide adapted to the new roads/drainage/stabilization works, essential vehicles and tools necessary for road maintenance and drainage network cleaning, and infrastructure monitoring. In addition, adaptive O&M management approaches will also be incorporated to include flexibility from the outset to monitor and adjust to the worsening climate conditions over the lifetime of the newly constructed assets. In addition, this subcomponent



may also support capacity building of the Water Utility (*Société de Distribution d'Eau Centrafricaine*, SODECA) and other national agencies contributing to maintaining resilient infrastructure.

13. **Component 2 (US\$20 million).** This component supports climate adaptation as activities including neighborhood infrastructure—for example, secondary roads, drainage, buildings, and public spaces—are implemented in relation to worsening climate change (SSP5). They will be designed to climate-resilient standards, in that they are planned, designed, built, and operated in a way that anticipates, prepares for, and adapts to changing climate conditions.

- **Secondary roads and pedestrian pathways, drainage and slope stabilization (US\$13 million).** These activities will support climate adaptation as roads and pedestrian pathways, drainage, and slope stabilization will be designed to climate-resilient standards, in that they are planned, designed, built, and operated in a way that anticipates, prepares for, and adapts to changing climate conditions. Their primary goal, as an integrated solution, is to address current and future flooding and erosion threats under SSP5. In addition, given the projected increases in extreme temperature and rainfall, their design will consider. Potential climate-related hazards to these assets include increased flooding of roads and pedestrian pathways, drainage and slope failures, and washouts or material deterioration due to increased heat and adverse water effects; thus, roads, pathways, and drainage constructed under the project will be designed to mitigate against such hazards.
- **Building rehabilitation (US\$4.2 million) and public spaces (US\$2.8 million).** These activities will support climate mitigation because their design includes NbS to mitigate the worsening effect of climate, notably erosion and flooding. The building rehabilitation category (US\$4.2 million) includes approximately 30 percent of cost toward build structures that are rehabilitated and retrofitted for climate adaptation, and 70 percent of cost toward the open spaces within or in front of the perimeter of the build structure (for example, a school's courtyard and other private institutions' open spaces). The design of such institutional, private open spaces mainly includes NbS, coupled with drainage solutions to help improve the flooding issues encountered in the vicinity of the building while contributing to the larger area flood risk reduction strategy. Similarly, public spaces (US\$2.8 million), which are composed of up to 90 percent of green open spaces (for example, urban forests and pocket parks) and less than 10 percent of mixed-use open spaces (for example, proposed improvement of taxi-moto area shaded with trees) are all designed for climate adaptation and to contribute to the broader flood reduction strategy. These investments will support climate adaptation as all building and public spaces include investments in drainage that will be maintained in synergy with the flood risk mitigation and erosion control investments. All building rehabilitations are designed and retrofitted with the goal of adaptation and include some open spaces and vegetablization activities. Further support to climate adaptation is also generated because building and public spaces are designed to climate-resilient standards, in that they are planned, designed, built, and operated in a way that anticipates, prepares for, and adapts to changing climate conditions.



ANNEX 3: Economic Analysis

A. Rationale

1. The ex-ante economic analysis, which includes a benefit-cost analysis (BCA), a sensitivity analysis, and a scenario analysis, measures the expected net economic benefits and risks of the investments that are assessed on their own merits.
2. The BCA determines the viability of a project based on three main indicators:
 - NPV, which is the difference between the discounted total benefits and cost discounted at 6 percent.
 - Economic IRR, which is the discount rate that zeroes out the NPV (in other words, the interest rate that makes the NPV of all cash flows equal to zero). The IRR estimates the actual return on the project, expressed as a percentage interest rate.
 - Benefit-cost ratio, which is the ratio of the present value of benefits over the present value of costs over the lifetime of the project.
3. The sensitivity analysis allows to determine the switch-off points of the NPV when variables (costs and benefits) are increased or decreased.
4. The scenario analysis adds a layer of risk by looking at the project results using a combination of several discount rates with higher or lower costs and benefits.

B. Investments and Cost Used for the BCA

5. The economic analysis covers the project. However, Component 1's EWS will be considered in the analysis. The investments used in the economic analysis (see assumptions in Table 3.2) will increase the resilience of the targeted beneficiaries under Component 2 while improving their livelihoods. Investments will include NbS and LIPW to flood proof the targeted areas in Bangui and Berberati where the population will benefit from the improvement of their economic opportunities (for example, markets) and social services (for example, schools).
6. The project will produce tangible and intangible benefits although only the former is quantified and valued in this analysis. The intangible investments strengthen the enabling environment (EWS, capacity building, municipal planning, tier governments to cover operation and maintenance expenditures [OMEX] through community involvement to increase the sustainability and therefore the resilience of all the investments, and so on). These are essential for the hard investments to generate economic benefits in terms of (a) improving the well-being of the beneficiaries by reducing mortality, morbidity (infectious disease transmission before and after a flood) and injuries, damages, and lost opportunities associated with the floods and possibly droughts and (b) providing socioeconomic opportunities, notably agricultural potential due to efficient and resilient infrastructure, income generation activities, and so on. At the same time and as mentioned earlier, the development of an enabling environment yields intangible assets, with benefits that are difficult to quantify such as urban development plans unless they are implemented. As many more improvements offered cannot be quantified, this should be assumed to be a very low-bound benefit estimate. The investment costs were included in the economic cost-benefit analysis. In addition, significant O&M costs have been included, based on benchmarking studies. Therefore, the ex-ante economic analysis considers only the more quantifiable benefits from hard investments.
7. Table 3.1 presents the targeted population, areas, investments, and LIPW in Bangui and Berberati under Components 1 and 2.



Table 3.1. Beneficiaries, Area, Investment and LIPW by City, 2023

Prefecture	Bangui	Mambéré-Kadéï	Total
City/Town	Bangui	Berberati	
Density (inhabitants per ha)	224	15	
Component 1			
Beneficiaries (net)	750,000	50,000	800,000
Investment (US\$, millions)	30	10	40
Zone area (ha)	3,350	3,350	6.700
Component 2			
Beneficiaries (net)	135,400	42,000	177,400
Investment (US\$, millions)	15	5	20
Zone area (ha)	720	320	1,040
LIPW (number)			10,000
LIPW (Labor days based on 100 days per year per labor)			1,000,000

8. The economic analysis relies on different methods to value the quantifiable benefits of the project:

- (a) A dose-response method was adapted to derive the intensity and length of an event and its associated effects in CAR. The effects were derived for 31 categories of land use (urban, peri-urban, rural, road, ecosystems, and so on) in terms of GDP per ha (usually generated and the land use in terms of infrastructure and built-up area per ha and the effect of an event in terms of damages and lost opportunities for each category of land use. This method was used for Components 1 and 2 where most soft and hard investments will improve access and drainage management. As the dose-response method accounts for both assets and economic activities, better access, flood proofing, livelihood, and other social services, investments will be captured in the project benefit calculations. A conservative reduction in damages of 15 percent is considered for the benefits accruing from new and improvement investments of Components 1 and 2.
- (b) Socioeconomic improvements under Components 1 and 2 are not quantified but will generate addition benefits in terms averted diseases and premature death, cost-of-illness expenditures, etc. and could be considered in a BCA at the Mid-term Review.
- (c) Agro-products. The project will help create socioeconomic opportunities under Component 1 such as creating agricultural and drainage areas that could be considered in a BCA at the Mid-term Review.
- (d) EWS preventable death, injuries, diseases, and damages cost is based on recent literature gains after establishing an efficient EWS and will cover the entire PDO1 targeted population but will not be considered in the BCA to avoid double counting.
- (e) The multiplier effect on local economies from LIPW is calculated for both components.

C. Benefit Valuation Methods

Hydro-meteorological Event Producing Damages to Public, Private, and Religious Assets

9. For damages and forgone opportunities in terms of economic value added and damages to public and private assets including the transport infrastructure, the dose-response methodology builds on World Bank West



Africa Coastal Areas Program. Flood-Effect functions used dose-response methods to link the intensity and length of an event with its effects across 31 categories of land use value added and built-up assets. For direct tangible damage to assets (for example, buildings, infrastructure), damages reflect restoration costs and are mainly dependent on flood depth. In addition, indirect tangible damages include losses of stocks and losses due to interruption of production of goods or services (for example, transport). Both direct and indirect tangible damages can be expressed in monetary terms and depend on the values at risk and their vulnerability. Damage functions specify the percentage loss of the total value of an asset at risk, in function of flood characteristics (the flood depth, the duration, the water speed). These characteristics are part of the hazard assessment. Damage functions for direct damages are more certain compared to those for indirect losses, as the latter also depend on the duration of a flood event which was set at once per year. The generic method used builds on the results of the more detailed models and uses average damage functions that are applied to values at risk, expressed as US\$ per ha, sometimes different for the different land use categories (residential, industry, services, agriculture, and so on). Tangible assets are identified by using the GDP per ha, which is both an indicator for the assets at risk (buildings) and the impact on economic activities. GDP per ha can be estimated based on data for local GDP per capita and population density. In this particular case, only tangible assets and value added (notably, categories of urban land use as well as transportation are reported in Table 4.3) are considered in urban areas. The method is based on a dose-response function that relies on damage and risk per grid cell (1 ha). For a single event (for example, one type of flood), the damage per grid cell is calculated as follows:

Damage = (max value at risk) x (damage function),

where

- Max value at risk, including the value of the assets (buildings, infrastructure, and so on) (US\$ per ha), production values (US\$ per ha per year), and ecosystem services (US\$ per ha per year).
- Damage functions cover flooding.

10. Damage assessment methods per assessment cover the different damage categories (tangible, nontangible, direct, and indirect) and the indicators to be used to assess the damage. Damage functions and indicators for values at risk are estimated and damages are valued in monetary terms (US\$ per event). The first indicator is the area (ha) affected, differentiating between different land use categories, and the number of people affected.

11. Exposure assessments map the people, assets, production, and ecosystem service values at risk. The final indicators for the exposure assessment are the number of people (the number of victims at risk of dying or being injured in a flood event is calculated above by using the risk premium to reduce premature deaths and injuries), the surface (ha) per type of land use, and the values at risk. There are 31 land use categories and classes reflecting differences in the values at risk and vulnerabilities. Per grid cell of 1 ha, a single land use is defined based on a combination of information on population density (based on Worldpop land use maps) and land use characteristics (open street maps, land use maps, observations). Of interest for this analysis is the urban fabric which reflects a combination of residential land use and economic activities (services, small factories, and so on), public functions (education, health care), transport-related infrastructure (roads, bus stations, and so on), and agriculture. As land use maps were not combined with the hazard maps, the density will be used to determine the dose-response function to be used. The values at risk depend on the population density and the economic productivity per capita in the three municipalities based on their densities. Different subclasses that were calculated are not specified in Table 3.2 as the flood proofing does not cover categories such as ports or ecosystem services areas.



Table 3.2. CAR Land Use Categories

Land Use Category	Ind.	Description	Inhabitants per ha	Economic Activity	Land Use Built-Up Assets and Value Added (US\$ per ha in 2022 Prices)
Rural	R1	Rural 1	0–1	Agriculture	188
	R2	Rural 2	1–3	Agriculture	751
	R3	Rural 3	3–5	Agriculture	1,502
	R4	Rural 4	0–1	R1 + specific assets 2	746
	R5	Rural 5	1–3	R2 + specific assets 2	1,309
	R6	Rural 6	3–5	R3 + specific assets 2	2,060
	R7	Rural 7	0–1	R1 + specific assets 1	12,371
	R8	Rural 8	1–3	R2 + specific assets 1	12,934
	R9	Rural 9	3–5	R3 + specific assets 1	13,685
Urban	U1	Suburban 1	5–25	Services, small industry, transport	9,651
	U2	Suburban 2	25–50	As U1, but more dense	24,127
	U3	Urban 3	50–75	As U1, but more dense	56,902
	U4	Urban 4	75–125	As U1, but more dense	91,043
	U5	Urban 5	>125	As U1, but more dense	136,565
Urban +	U6	Peri-urban 6	5–25	U1 + specific assets 1	27,926
	U7	Peri-urban 7	25–50	U2 + specific assets 1	42,402
	U8	Urban 8	50–75	U3 + specific assets 1	81,269
	U9	Urban 9	75–125	U4 + specific assets 1	115,410
	U10	Urban 10	>125	U5 + specific assets 1	160,932

Source: Adapted from IMDC-Tractebel-UNESCO/IHE-Vito. 2017. Cost of environmental degradation, multi-hazard risk assessment and cost-benefit analysis of solutions for the coastal zone: D4b: COCED analysis. Paper prepared for the WACA Program and funded by the World Bank, and the Nordic Development Fund. Washington, D.C. (*Coût de la dégradation environnementale, évaluation du risque multi-aléas et analyse coût-bénéfice des solutions pour la zone côtière: D4b :Analyse du COCED. Document préparé pour le Programme WACA et financé par le Banque mondiale, et le Fond de Développement Nordique*).

12. For tangible damage in urban land uses, the values at risk include estimates of the value of the assets (buildings, infrastructure) and the value of goods and services produced in both cases. The dose-response function is a mixture of defining values at risk, based on GDP per ha while accounting for population density, specific land use areas, and the presence in urban and rural areas of specific assets (Table 3.2). The damage functions for floods (tangible damages and forgone economic value added) are based on the review of worldwide literature on flood damage functions in (Huizinga, Moel, and Szewczyk 2017). It must be noted that the information for Africa and notably CAR is limited and the selected damage functions are built on information for other continents. The dose retained for the dose-response function will be considered per ha as defined below where pluvial floods have a time span of less than 24 hours (Table 3.3) while fluvial pluvial floods have an average time span of about 26.78 days for the reported 24 flood events as derived from the Louvain database (EM-Dat) over the last 24 years (Table 3.4).



Table 3.3. CAR Damage Functions for Pluvial Floods (for example, few hours)

Ind.	Description Year	GDP per ha US\$ per ha in 2022 Prices	Water Depth (m)								
			0	0.5	1	1.5	2	3	4	5	6
			%								
R1	Rural 1	188	0	22	38	53	64	82	90	96	100
R2	Rural 2	751	0	22	38	53	64	82	90	96	100
R3	Rural 3	1,502	0	22	38	53	64	82	90	96	100
R4	Rural 4	746	0	22	38	53	64	82	90	96	100
R5	Rural 5	1,309	0	22	38	53	64	82	90	96	100
R6	Rural 6	2,060	0	22	38	53	64	82	90	96	100
R7	Rural 7	12,371	0	22	38	53	64	82	90	96	100
R8	Rural 8	12,934	0	22	38	53	64	82	90	96	100
R9	Rural 9	13,685	0	22	38	53	64	82	90	96	100
U1	Suburban 1	9,651	0	22	38	53	64	82	90	96	100
U2	Suburban 2	24,127	0	22	38	53	64	82	90	96	100
U3	Urban 3	56,902	0	22	38	53	64	82	90	96	100
U4	Urban 4	91,043	0	22	38	53	64	82	90	96	100
U5	Urban 5	136,565	0	22	38	53	64	82	90	96	100
U6	Peri-urban 6	27,926	0	22	38	53	64	82	90	96	100
U7	Peri-urban 7	42,402	0	22	38	53	64	82	90	96	100
U8	Urban 8	81,269	0	22	38	53	64	82	90	96	100
U9	Urban 9	115,410	0	22	38	53	64	82	90	96	100
U10	Urban 10	160,932	0	22	38	53	64	82	90	96	100

Source: Adapted from IMDC et al. (2017).

Table 3.4. CAR Damage Functions for Fluvial Floods (for example, several days)

Ind.	Description Year	GDP per ha US\$ per ha in 2022 Prices	Water Depth (m)								
			0	0.5	1	1.5	2	3	4	5	6
			%								
R1	Rural 1	188	0	24	42	58	70	90	99	100	100
R2	Rural 2	751	0	24	42	58	70	90	99	100	100
R3	Rural 3	1,502	0	24	42	58	70	90	99	100	100
R4	Rural 4	746	0	24	42	58	70	90	99	100	100
R5	Rural 5	1,309	0	24	42	58	70	90	99	100	100
R6	Rural 6	2,060	0	24	42	58	70	90	99	100	100
R7	Rural 7	12,371	0	24	42	58	70	90	99	100	100
R8	Rural 8	12,934	0	24	42	58	70	90	99	100	100
R9	Rural 9	13,685	0	24	42	58	70	90	99	100	100
U1	Suburban 1	9,651	0	24	42	58	70	90	99	100	100
U2	Suburban 2	24,127	0	24	42	58	70	90	99	100	100
U3	Urban 3	56,902	0	24	42	58	70	90	99	100	100
U4	Urban 4	91,043	0	24	42	58	70	90	99	100	100
U5	Urban 5	136,565	0	24	42	58	70	90	99	100	100
U6	Peri-urban 6	27,926	0	24	42	58	70	90	99	100	100
U7	Peri-urban 7	42,402	0	24	42	58	70	90	99	100	100



Ind.	Description Year	GDP per ha US\$ per ha in 2022 Prices	Water Depth (m)								
			0	0.5	1	1.5	2	3	4	5	6
			%								
U8	Urban 8	81,269	0	24	42	58	70	90	99	100	100
U9	Urban 9	115,410	0	24	42	58	70	90	99	100	100
U10	Urban 10	160,932	0	24	42	58	70	90	99	100	100

Source: Adapted from IMDC et al. (2017).

13. The human burden averted from disaster events and risks will be derived from the past 24 years where 15 out of 24 events occurred in at least one of the three targeted urban areas. The event likelihood per year is 100 percent over 2000–2023. The human burden risk amounts to US\$4.3 million, which seems undervalued due to the EM-Dat data discrepancy as not all events and their impact are systematically reported.

Table 3.5. CAR Human Burden of Disaster Events and Risks over 2000–2023

Input	Last 24 Years: 2000–2023				
	Event	Affected	Injured	Death	Total
Period mid-population considered (number)	4,751,087				
Storm and flood data over period (number)	24	111,513	179	22	
Return period (years between events)	1.00				
Event likelihood per year over the period (%)	100				
Average duration of event (days per event)	26.78				
Average people affected per event (number)		4,646	7	1	
GDP ₂₀₂₂ and Value of Statistical Life (VSL) ₂₀₂₂ per capita (10% of VSL used for injured); GDP/day used for affected (US\$)		1	2,034	20,338	
Yearly risk over period (US\$)		145,600	15,209	18,311	179,120
Total risk over period (US\$)		3,494,392	365,014	439,467	4,298,873
Population 2000: 3,759,170					
Population 2023: 5,743,003					
2000–2023 Midpoint: 4,751,087					

Source: Derived from EM-Dat and World Development Indicator (2024).

14. The dose-response function will be used in Bangui and Berberati based on the density (188 and 131 inhabitants per ha, respectively [see Table 3.1]) and built-up areas (assumed to be equivalent to U10 and U5, respectively [see Tables 3.2 and 3.3]). A conservative mean estimate between short- to long-term event duration will be used based on Table 3.4 with a likelihood of yearly events.

Early Warning Systems

15. Benefits from the EWS activity under Subcomponent 1.3 will help reduce asset damages, improve well-being (premature death, diseases, and injuries), and avert economic losses. Economic literature suggests that benefits vary from 1:4 to 1:36 per dollar invested (Hallegatte 2012). The latter estimates incorporate three types of benefits: (a) avoided asset losses due to natural disasters; (b) saved lives per year; and (c) additional economic benefits. The third category is the most important one (representing up to three-fourths of potential benefits), is less robust from an empirical point of view, and does not necessarily apply to poor countries. A more recent multicountry analysis provides new evidence, assuming that state-of-the-art EWSs are efficiently operated. The asset loss from storms, floods, and tsunamis is reduced by up to 20 percent on average (Hallegatte et al. 2017). In other words, the new evidence suggests that installing and operating a state-of-the-art EWSs can reduce asset



damages and improve well-being between 1 and up to 1:35 per dollar invested which is higher than the previous estimates as only the first two types of benefits are considered. In this case, a conservative approach is assumed as the EWS is a basic people-centric configuration with a few equipment (that is, purchasing a limited number of synoptic and hydrological stations to monitor flood and erosion susceptibility as well as strengthening capacities of essential EWS stakeholders (for example, Ministry of Humanitarian Action, Meteorological Services, Civil Protection, and Red Cross, among others). Therefore, the benefits per dollar invested will consider the lower-bound ratio of 1:4 per dollar invested. The economic costs of the investments were estimated at US\$1 million with a yearly OMEG of 5 percent of capital costs with benefits started accruing in 2030 and are annualized over the remaining 14 years. The NPV reached US\$0.7 million discounted at 6 percent over 20 years with an IRR of 14 percent and a present value of benefit over cost ratio of 1.6. However, the benefits will not be included on the Component 2 BCA to avoid double counting.

Economic Multiplier Effect due to Labor-Income Activities

16. With regard to the persons who will be temporarily employed through LIPW over five years, the 5 million men-women-days over five years will be employed. The number of days is equally annualized from 2025 to 2029 over the project period. A multiplier effect, which is caused by additional funds from investments causing the proportional increase in the overall income of the economy, is used to have the net effect on the GDP. It is assumed that persons employed belong to low-income households and accumulate very little wealth. The aggregate marginal propensity to consume (MPC) out of transitory income ranges between 0.2 and 0.4 and is consistent with most of the large estimates of the MPC reported in empirical studies in low-income countries (Carroll et al. 2017). Therefore, a midpoint MPC is used to derive the net effect on GDP that is considered as a benefit to the economy. The person-day of employment is derived from the current wages based on the country’s total GDP in 2022 (US\$, L is total labor force, s is labor compensation share of GDP (Penn World Tables),⁵³ and annual working days is on average 250 days per year. Table 3.6 considered the targeted population under Components 1 and 2 and the LIPW was prorated by each city’s investments under Component 1 and Component 2. However, only Component 2 LIPW results will be used in the BCA.

17. The calculation of the multiplier formula is follows:

$$k = 1 / (1 - MPC),$$

where

- k is the multiplier

Table 3.6. Income Effect on Local Economies of Component 1

Component 1	2022	2023	2024	2025	2026	2027	2028	2029	Total
Expenditure				565,143	576,446	587,975	599,734	611,729	
MPC				0.3	0.3	0.3	0.3	0.3	
Multiplier (K)				1.4	1.4	1.4	1.4	1.4	
Change in real GDP				807,347	823,494	839,964	856,763	873,899	4,201,467
GDP per capita (US\$)	427.1	435.6	444.3	453.2	462.3	471.5	480.9	490.6	
Wage per capita per day (US\$)	0.81	0.82	0.84	0.86	0.87	0.89	0.91	0.93	
Employment man-days				660,000	660,000	660,000	660,000	660,000	3,300,000

Source: Carroll et al. (2017); Penn World Table; and World Development Indicator (2024).

Note: Wage per capita per day real growth is set at 2 percent annually.

⁵³ [PWT 10.01 | Penn World Table | Groningen Growth and Development Centre | University of Groningen \(rug.nl\)](#)



Table 3.7. Income Effect on Local Economies of Component 2

Component 1	2022	2023	2024	2025	2026	2027	2028	2029	Total
Expenditure				291,134	296,957	302,896	308,954	315,133	
MPC				0.3	0.3	0.3	0.3	0.3	
Multiplier (K)				1.4	1.4	1.4	1.4	1.4	
Change in real GDP				415,906	424,224	432,709	441,363	450,190	2,164,392
GDP per capita (US\$)	427.1	435.6	444.3	453.2	462.3	471.5	480.9	490.6	
Wage per capita per day (US\$)	0.81	0.82	0.84	0.86	0.87	0.89	0.91	0.93	
Employment man-days				340,000	340,000	340,000	340,000	340,000	1,700,000

Source: Carroll et al. (2017); Penn World Table; and World Development Indicator (2024).

Note: Wage per capita per day real growth is set at 2 percent annually.

18. The budgeted costs are included in Component 1 and 2 hard investments whereas the total net effect of the multiplier on local GDP amounts to US\$4.2 million and US\$2.2 million, respectively, from 2025 to 2029 (Tables 3.6 and 3.7).

Additional Assumptions

19. Additional assumptions are considered for the economic analysis:

- The economic analysis assesses the project on its own merits and will consider the benefits over a return period of 20 years.
- An actual discount rate of 6 percent per year recommended by the World Bank is used for the economic analysis. The right-of-way including the price of land and any structures upon it is unaccounted for in the analysis.
- The total economic cost used in the BCA for Component 2 stands at US\$20 million and is annualized from 2025 to 2029.
- The benefits appear as indicated in the target indicators of the project’s Results Framework.
- All costs are in 2023 constant prices and no inflation is considered.
- OMEX of infrastructure is considered in the analysis with 5 percent of the investment cost as three government tiers are expected to earmark and allocate funds in the future for mainly community-based OMEX.
- Population is projected based on an annual population growth rate as derived from the United Nations.⁹³
- The dose-response function GDP per ha growth projection is set at 2 percent annually starting 2024.
- The valuation of the CO₂e that will accrue at the global level is neither calculated at this stage nor included under the flow of benefits in the economic analysis.

D. Results of the BCA

20. The economic analysis is based only on the tangible quantifiable benefits of Component 2 of the project. Component 2 will also reap tangible and intangible benefits that are not quantified. The economic analysis was performed by using a 6 percent social discount rate (as suggested by the World Bank since 2016) starting from 2025



over 20 years based on the opportunity cost of capital and country risk over the project period. Table 3.8 summarizes the results of the economic analysis with a 20-year return period. When considering the entire investment envelope including the studies of Component 2, the project is viable. The project has an NPV of US\$41.7 million as well as an economic IRR of 26 percent and positive present value benefit over cost ratio of 2.8. The sensitivity analysis shows that the investment is more sensitive to a reduction in benefits than in costs. The project remains viable with 4 percent and 8 percent discount rates. Under the optimistic scenario with a 10 percent increase in benefits and a 10 percent reduction in costs, the project generates an NPV of US\$67.4 million discounted at 4 percent, an economic IRR of 30 percent, and a present value benefit-cost ratio of 3.9. Under the pessimistic scenario with a 10 percent increase in costs and a 10 percent reduction in benefits, the project generates an NPV of US\$23.5 million discounted at 8 percent, an economic IRR of 21 percent, and a present value benefit-cost ratio of 2.

Table 3.8. Cost/Benefit, Sensitivity, and Scenario Analysis Summary with a 20-Year Return Period

Key Economic Indicators	Project		
	Over 20 Years Discounted at		
Scenario	4% <i>Optimistic</i>	6% <i>Base Case</i>	8% <i>Pessimistic</i>
Cost/benefit analysis			
NPV (US\$ Million)	56.5	41.7	30.7
ERR (%)	26	26	26
Present value benefit/cost ratio	3.2	2.8	2.5
Viability	Yes	Yes	Yes
Sensitivity analysis	<i>Benefit + 10% & Cost - 10%</i>		<i>Cost + 10% & Benefit - 10%</i>
NPV (US\$, millions)	67.4	41.7	23.5
ERR (%)	30	26	21
Present value benefit/cost ratio	3.9	2.8	2.0
Switch-off point			
>cost = <benefit (%)	±55	±47	±39
>cost (%)	+241	+180	+105
<benefit (%)	-71	-64	-50

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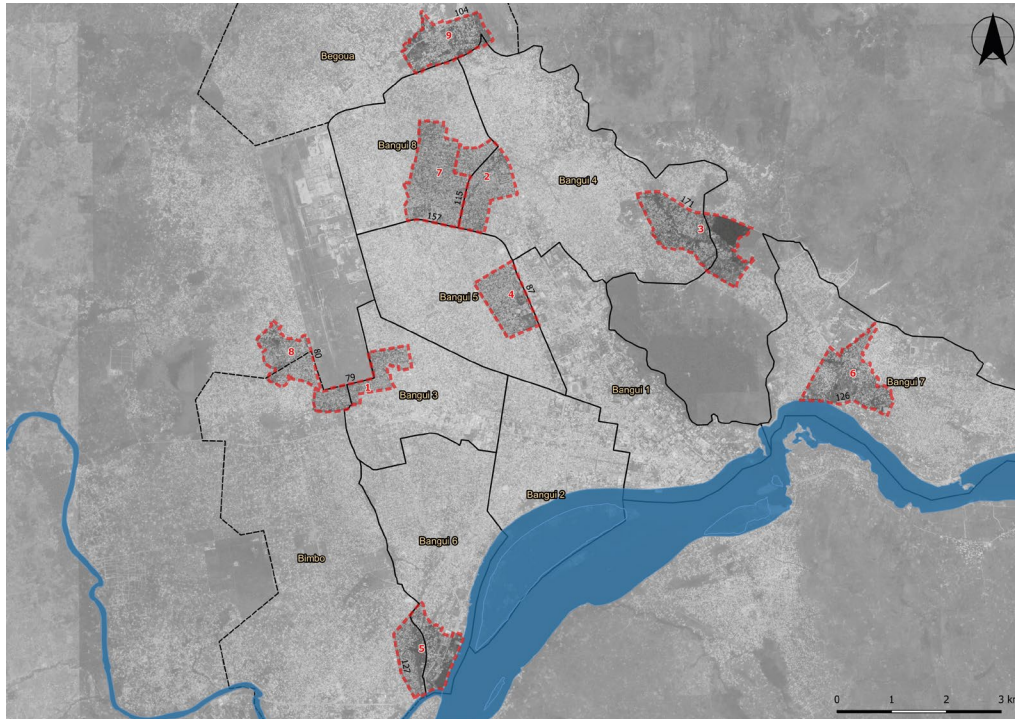
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Worldpop Density website: <<https://www.worldpop.org/geodata/summary?id=42902>>



ANNEX 4: Maps

Map 4.1. Priority Neighborhoods in Bangui



Map 4.2. Priority Neighborhoods in Berberati

