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Report No: PAD1868

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF USD 73.3 MILLION

TO THE

MUNICIPALITY OF FORTALEZA, BRAZIL

WITH THE GUARANTEE OF THE FEDERATIVE REPUBLIC OF BRAZIL

FOR A

FORTALEZA SUSTAINABLE URBAN DEVELOPMENT PROJECT
Programa Fortaleza Cidade Sustentável

{RVP/CD CLEARANCE DATE - SAME AS ON MOP}

Social, Urban, Rural and Resilience Global Practice
Brazil Country Management Unit
Latin America and Caribbean Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective March 30, 2017)

Currency Unit	=	BRL
3.145	=	USD 1
USD	=	SDR 1

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AGEFIS	Fortaleza Inspection Agency (*Agência de Fiscalização de Fortaleza)*
ARAP	Abbreviated Resettlement Plan
BNDES	National Development Bank (*Banco Nacional de Desenvolvimento Econômico e Social*)
BRL	Brazilian Reais
BRT	Bus Rapid Transit
CAF	Development Bank of Latin America
CAGECE	Water and Sewage Company of Ceará (*Companhia de Água e Esgoto do Ceará*)
CEGEF	Financial Management Cell (*Célula de Gestão Financeira*)
CGM	General Controller of the Municipality (Controladoria Geral do Município)
CLFOR	Central Procurement Unit (*Comissão Central de Licitações de Fortaleza*)
DRENURB	Fortaleza's Urban Drainage Program (*Programa de Drenagem Urbana de Fortaleza*)
ESIA	Environmental and Social Impacts Assessment
ESMF	Environmental and Social Management Framework
FM	Financial Management
FUNDEMA	Environmental Defense Fund (*Fundo de Defesa do Meio Ambiente*)
FUNDURB	Urban Development Fund (*Fundo de Desenvolvimento Urbano*)
GDP	Gross Domestic Product
GRS	Grievance Redress Service
HABITAFOR	Municipal Secretariat of Housing Development (*Secretaria Municipal do Desenvolvimento Habitacional*)
IBGE	Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística*)
IDB	Inter-American Development Bank
IPSAS	International Public Sector Accounting Standards
MCASP	Manual of Brazilian Accounting Standards (*Manual de Contabilidade Aplicada ao Setor Público*)
M&E	Monitoring & Evaluation

NBCASP	Brazilian Accounting Rules (*Normas Brasileiras de Contabilidade Aplicadas ao Setor Público*)
OP	Operational Policy
OUC	Urban Operation (*Operaçao Urbana Consorciada*)
PAC	National Infrastructure Growth Acceleration Program (*Programa de Aceleração do Crescimento*)
PDO	Project Development Objective
PDP	Master Plan (*Plano Diretor Participativo*)
PFM	Public Financial Management
PGM	Attorney General of the Municipality (*Procuradoria Geral do Município*)
PMF	Municipal Government of Fortaleza (*Prefeitura Municipal de Fortaleza*)
PMU	Project Management Unit
PPSD	Project Procurement Strategy for Development
RAP	Resettlement Action Plan
RDQ	Rachel de Queiroz
RPF	Resettlement Policy Framework
SCSP	Municipal Secretariat of Conservation and Public Services (*Secretaria Municipal da Conservação e Serviços Públicos*)
SDI	Spatial Data Infrastructure
SEFIN	Municipal Secretariat of Finance (*Secretaria Municipal de Finanças*)
SEINF	Municipal Secretariat of Infrastructure (*Secretaria Municipal de Infraestrutura*)
SEMACE	Ceara State Secretariat of Environment (*Superintendência Estadual do Meio Ambiente do Ceara*)
SER	Regional Executive Secretariat (*Secretaria Executiva Regional*)
SEPOG	Municipal Secretariat of Planning, Budgeting and Management (*Secretaria de Planejamento, Orçamento e Gestão*)
SEUMA	Municipal Secretariat for Urban Development and Environment (*Secretaria Municipal do Urbanismo e Meio Ambiente*)
SORT	Systematic Operations Risk Rating Tool
SSPDS	State Secretariat for Public Safety and Social Defense (*Secretaria de Segurança Pública e Defesa Social)*
TCM	Municipal Audit Office (*Tribunal de Contas do Município*)
TOR	Terms of Reference
UFC	Federal University of Ceará (*Universidade Federal do Ceará*)
VM	Vertente Marítima

Regional Vice President:	Jorge Familiar
Country Director:	Martin Raiser
Senior Global Practice Director:	Ede Jorge Ijjasz-Vasquez
Practice Manager:	Ming Zhang
Task Team Leaders:	Catalina Marulanda, Emanuela Monteiro

BRAZIL
Fortaleza Sustainable Urban Development Project

TABLE OF CONTENTS

Page

BRAZIL
Fortaleza Sustainable Urban Development Project

DATA SHEET

Basic Information		
Project ID P153012	EA Category B - Partial Assessment	Team Leader(s) Catalina Marulanda, Emanuela Monteiro
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [ ]	
Project Implementation Start Date 31-Mar-2018	Project Implementation End Date 31-Mar-2024	
Expected Effectiveness Date 31-Mar-2018	Expected Closing Date 31-Mar-2024	
Joint IFC No		

Practice Manager	Senior Global Practice Director	Country Director	Regional Vice President
Ming Zhang	Ede Jorge Ijjasz-Vasquez	Martin Raiser	Jorge Familiar

Borrower: Municipality of Fortaleza

Responsible Agency: Secretaria Municipal de Urbanismo e Meio Ambiente (SEUMA)

Contact:	Agueda Muniz	Title:	Secretaria Municipal de Urbanismo e Meio Ambiente
Telephone No.:	55853452-6903	Email:	agueda.muniz@fortaleza.ce.gov.br

Project Financing Data(in USD Million)

[X]	Loan	[ ]	IDA Grant	[ ]	Guarantee
[ ]	Credit	[ ]	Grant	[ ]	Other

Total Project Cost:	146.60	Total Bank Financing:	73.30
Financing Gap:	0.00		

Financing Source	**Amount**
Borrower	73.30
International Bank for Reconstruction and Development	73.30
Total	146.60

Expected Disbursements (in USD Million)

Fiscal Year	2017	2018	2019	2020	2021	2022	2023	2024
Annual	0.00	2.50	6.00	11.00	15.00	15.00	15.00	8.80
Cumulative	0.00	2.50	8.50	19.50	34.50	49.50	64.50	73.30

Institutional Data

Practice Area (Lead)

Social, Urban, Rural and Resilience Global Practice

Contributing Practice Areas

Water

Proposed Development Objective(s)

The objectives of the Project are to: (a) strengthen the capacity of the Municipality of Fortaleza for land use planning and land-based financing; and (b) enhance urban environment and rehabilitate public spaces, through interventions in selected areas of the Vertente Marítima Basin and of the Rachel de Queiroz Park.

Components

Component Name	Cost (USD Millions)
Urban and Environmental Restoration	64.40
Strengthening Planning and Land-based Financing	76.00
Project Management	6.00
Front-End Feed	0.18

Systematic Operations Risk- Rating Tool (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Substantial
8. Stakeholders	Moderate
9. Other	
OVERALL	Substantial

Compliance

Policy

Does the project depart from the CAS in content or in other significant respects?	Yes [ ] No [X]

Does the project require any waivers of Bank policies?	Yes [ ]	No [X]
Have these been approved by Bank management?	Yes [ ]	No [ ]
Is approval for any policy waiver sought from the Board?	Yes [ ]	No [ ]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X]	No [ ]

Safeguard Policies Triggered by the Project	**Yes**	**No**
Environmental Assessment OP/BP 4.01	**X**	
Natural Habitats OP/BP 4.04	**X**	
Forests OP/BP 4.36		**X**
Pest Management OP 4.09	**X**	
Physical Cultural Resources OP/BP 4.11	**X**	
Indigenous Peoples OP/BP 4.10		**X**
Involuntary Resettlement OP/BP 4.12	**X**	
Safety of Dams OP/BP 4.37		**X**
Projects on International Waterways OP/BP 7.50		**X**
Projects in Disputed Areas OP/BP 7.60		**X**

Legal Covenants

Name	**Recurrent**	**Due Date**	**Frequency**
Safeguards implementation (Schedule 2, Section I.C.1)	**X**		Continuous

Description of Covenant

The Borrower, through SEUMA, shall implement the Project in accordance with the provisions of the Environmental and Social Management Framework (ESMF), the Resettlement Policy Framework (RPF), the Rachel de Queiroz Resettlement Action Plan No. 1 (RDQ PARK RAP No. 1), the Rachel de Queiroz Resettlement Action Plan No. 2 (RDQ PARK RAP No. 2), and any other Resettlement Action Plans (RAPs), as applicable.

Conditions

Source Of Fund	**Name**	**Type**
IBRD	The Operational Manual has been adopted by the Borrower	Effectiveness

Description of Condition

The Project Operational Manual has been adopted by SEUMA in form and substance acceptable to the Bank.

Source Of Fund	**Name**	**Type**
IBRD	The PMU has been established by the Borrower	Effectiveness

Description of Condition

The PMU has been established by the Borrower as provided in Section I.A.1 of Schedule 2 to the Loan Agreement and in a manner satisfactory to the Bank.

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Emanuela Monteiro	Team Leader (ADM Responsible)	Urban Specialist	Urban Development	GSU10
Catalina Marulanda	Team Leader	Lead Urban Specialist	Urban Development	GSU10
Sinue Aliram De Souza	Procurement Specialist (ADM Responsible)	Procurement Specialist	Procurement	GGO04
Susana Amaral	Financial Management Specialist	Sr Financial Management Specialist	Financial Management	GGO22
Alberto Coelho Gomes Costa	Safeguards Specialist	Senior Social Development Specialist	Social	GSU04
Antonio Cristian D'Amelj	Team Member	Senior Counsel	Legal	LEGLE
Beatriz Eraso Puig	Team Member	Urban Development Specialist	Urban Development	GSU10
Christopher Benjamin Dychala	Team Member	Junior Professional Associate	Financial Advisory and Banking Products	FABBK
Clarisse Torrens Borges Dall Acqua	Safeguards Specialist	Senior Environmental Specialist	Environment	GEN04
Claudia Patricia Pacheco Florez	Team Member	Program Assistant		GSU10
Frederico Ferreira Fonseca Pedroso	Team Member	Disaster Risk Management Specialist	Disaster Risk Management	GSU10
Isabella Micali Drossos	Team Member	Senior Counsel	Legal	LEGLE
Karina de Souza Marcelino	Team Member	Program Assistant		LCC5C
Marcos T. Abicalil	Team Member	Sr Water & Sanitation Spec.	Water and Sanitation	GWA04
Michele Martins	Team Member	Program Assistant		LCC5C
Tatiana Cristina O. de Abreu Souza	Team Member	Finance Officer	Disbursement	WFALN

Extended Team

Name	Title	Office Phone	Location
Ivan Eduardo Matiz	Cadaster Specialist	5714773736	
Luz Maria Gonzalez	Economist and Financial specialist		

Locations					
Country	**First Administrative Division**	**Location**	**Planned**	**Actual**	**Comments**
Brazil	Ceara	Fortaleza		**X**	

Consultants (Will be disclosed in the Monthly Operational Summary)	
Consultants Required?	Consultants will be required

I. STRATEGIC CONTEXT

A. Country Context

1. **Brazil's rapid urbanization process has been characterized by a lack of planning, poor access to basic services and inequality.** Cities are the center of the country's economic production, growth and capital. Urban agglomerations are the sources of much of Brazil's human, social and financial capital. More than 90 percent of the country's GDP is being generated in its cities. However, in most cities, rapid growth combined with insufficient planning has led to concentrated poverty and enduring inequality in urban areas, growth of informal settlements, insufficient access to basic services, congestion, high vulnerability to natural disasters, lack of quality public spaces, and environmental pollution. Today, cities face the challenge of overcoming these problems to promote social inclusion and improve livability, with limited financial resources.

2. **To promote the sustainable growth of urban areas, in 2001 the Brazilian Congress approved the Statute of the Cities (Law 10.257 of 2001).** The Statute provides municipal governments with guidelines for integrated urban and environmental planning, as well as tools and mechanisms for increased citizen participation and transparency. Moreover, it establishes technical, legal and fiscal instruments that allow cities to regulate and promote sustainable and inclusive urban land use and management[1]. However, after fifteen years, most cities still lack the capacity to take full advantage of these instruments, particularly the ability to incorporate land use and value capture instruments to increase municipal leverage over real estate and housing markets.

3. **Cities in Brazil will define most of the country's economic and social development for the next decades.** Not only mega-cities, but increasingly the other 60 growing cities with over 500,000 inhabitants attract people and businesses through economic and social opportunities. Most of them, particularly mid-size ones, are still expanding territorially and face strategic choices that could either drive wealth generation or lock-in costly development patterns in terms of access to infrastructure – housing, transport, basic services – increasing resource use, vulnerability to natural hazards, and social fragmentation. The need for integrated urban planning, more efficient land use and compact growth is pervasive among Brazilian cities, as is the need to provide all citizens with green, public spaces that will allow them to connect with others and to access urban amenities. This proposed Project addresses some of these urban challenges and supports investments and institutional strengthening needs that are common to local municipal governments. The results and lessons from the proposed Project will thus be replicable across the country.

B. Sectoral and Institutional Context

4. **Fortaleza, capital of the Northeastern state of Ceará, is the fifth largest city in the country with a population of almost 2.6 million people**. It concentrates approximately 29 percent of the State's population and 67 percent of the metropolitan region's population. It is the municipality with the largest GDP of the Northeast and the tenth largest in the country (R$ 43,402 million in 2012) (IBGE, 2014). The service sector is the key driver of the local economy,

[1] These instruments allow for the transferring of building rights, for the regularization of informal settlements, and for land value capture. They also incentivize the use of underutilized areas, as well as provide opportunities for partnerships between the public and the private sectors for the redevelopment of selected areas.

generating on average 68 percent of the annual GDP during the last decade (IBGE, 2014). Tourism is the largest sector within the service economy, steadily rising during the last decade.

5. **Fortaleza is characterized by high inequality levels, distinct and drastic socio-economic contrasts, and sharp spatial divides.** Some of the poorest areas and slums are located along the coast, as well as along the main water bodies in areas of high risk of flooding. Low income settlements have grown in the southern periphery, where urban growth took place in the 70's and 80's without accompanying access to basic services. Over 16 percent of the population lives in subnormal settlements (IBGE, 2010). Poverty and inequality levels have decreased over the past decades, but the Gini coefficient still remains amongst the highest compared to the other state capitals (IBGE, 2010).[2] In addition, in 2014 Fortaleza had the third highest annual homicide rate in Brazil (66.55 per 100,000 inhabitants) and the eight in the world.

6. **The city's rapid growth was not matched by adequate planning and investment, leading to deforestation and pollution.** The city has valuable environmental assets: it is flanked by long stretches of beaches, crossed by two main rivers and their tributaries, has an extensive network of lagoons, and formerly had a considerable network of green areas. However, rapid urbanization in past decades was not accompanied by adequate planning. As a result, the city has followed a sprawling growth pattern, characterized by the encroachment of environmentally protected areas, parks and green spaces. Investments in sanitation have not kept up with the growth, negatively impacting the urban environment. Only 46 percent of households are connected to the sewage network, and there is significant spatial variability in terms of access. Discharges of untreated sewage to water bodies have caused significant pollution of beaches, rivers and lagoons. The Municipal Government of Fortaleza (*Prefeitura Municipal de Fortaleza*, PMF) and the Water and Sewage Company of Ceará (*Companhia de Água e Esgoto do Ceará*, CAGECE), are implementing a Municipal Sanitation Plan to achieve universal service coverage and treatment of domestic sewage by 2033. This will require not only the expansion of the network and construction of treatment plants, but also the optimization of existing networks through an increase in number of connected households and a reduction in illegal discharges.

7. **The PMF recognizes the need to rehabilitate the urban environment, as well as to improve land use and occupation patterns in order to promote social inclusion and more sustainable growth.** This will require substantial investments in environmental restoration, infrastructure and public spaces, as well as strengthening urban planning, monitoring and management capacity. The PMF is currently financing sanitation, housing, and mobility projects across the city, but additional sources of revenue are needed to fund the investments necessary for the city's long-term transformation. The PMF recognizes the potential of land-based instruments defined by the Statute of Cities to drive urban transformation and to unlock revenues. Through the Municipal Secretariat for Urban Development and Environment (*Secretaria Municipal do Urbanismo e Meio Ambiente*, SEUMA), the city has piloted the implementation of land value capture instruments.[3] To date, three small-scale Urban Operations[4] (*Operações Urbanas Consorciadas,* OUCs) have been implemented and others are in different phases of development.

[3] The Master Plan allows the use of land-value capture instruments and defines areas where they can be applied.

[4] OUC is the legal instrument that allows both the private and public sectors to propose and enter partnerships with the objective of promoting the redevelopment of selected areas, provided there are proven social benefits. Within the limits of an OUC additional building rights can be negotiated.

However, the PMF does not have the institutional and technical capacity to take full advantage of the existing instruments and apply them in larger scale.

8. **Climate change risks.** The Northeastern states have a well-known history of drought with some cities, such as Fortaleza, also being affected by floods. The occurrence of extreme rainfall events, compounded with Fortaleza's unplanned urban growth and encroachment in high-risk areas, has resulted in significant vulnerability to flooding. As a result of climate change, it is expected that rainfall will decrease in the area but the frequency of intense rainfall events is expected to increase. A number of proposed investments under this Project will contribute to better flood management, as they will be designed with an integrated water management perspective. Hence, the Project will contribute to increasing the city's resilience and climate change adaptation capacity by reducing the extend and frequency of flood events.[5]

C. Higher Level Objectives to which the Project Contributes

9. **Setting the path for the long-term transformation of Fortaleza**. The proposed Project will help address some of Fortaleza's immediate needs to improve its urban environment and rehabilitate public spaces, with a direct impact in the livelihoods of low-income populations. Moreover, the Project will support the city to achieve its long-term development impacts by enhancing municipal capacity for urban planning, as well as promoting the use of urban instruments to increase own-source revenues and private sector financing of infrastructure. Greater municipal revenues can subsequently be used to finance infrastructure and address the needs of the most vulnerable population, realizing the PMF's vision for sustainable urban development. In line with this, proposed Project interventions– both spatially and thematically – were selected for their replication potential, as activities can be scaled up to other areas of the city in the future.

10. **Alignment with Country Partnership Strategy.** The Project is fully aligned with the Country Partnership Strategy FY 2012-2015[6]. It will contribute to: (i) increasing the efficiency of public investments, as a more efficient implementation of urban planning instruments is expected to increase the return on public investments and local tax collection capacity; (ii) improving quality and expand provision of public services for low income households, as investments in sanitation and restoration of green spaces will improve the living conditions of low income populations; and (iii) promoting regional economic development, as the Project is expected to attract private investment and contribute to the economic development of the second largest city of the Northeast Brazil, a priority region for the Bank's engagement. The Project is also aligned with the Systematic Country Diagnostic *Realizing Brazil's Potential and Fulfilling its Promises*[7], as it is consistent with the following priorities: (i) higher and more effective public and private investment, particularly in infrastructure and the efficient delivery of public services, targeted particularly to the B40; (ii) improve mechanisms for planning and implementation of public investment; and (iii) strengthen management of natural assets.

11. **The Project is fully aligned with the World Bank Group twin goals and with Sustainable Development Goals (SDG) No. 6 and 11.** Investments in sanitation and public spaces, regeneration of green areas, and Urban Operations will improve livability and quality of

[5] See further information in Annex 2 for the description of Subcomponent 1.1
[6] Report #63731-BR discussed by the Executive Directors on November 1, 2011. The new CPF is not available yet.
[7] Report #101431-BR

life, promote social inclusion, and reduce vulnerability, particularly of poor populations. Moreover, the implementation of strategic redevelopment operations are expected to result in increased employment opportunities in the medium term. The Project will strengthen the PMF's planning, implementation and management capacity, contributing towards a long-term transformation of Fortaleza into a more livable and productive city. The Project will also contribute to SDG 11 ("Make cities inclusive, safe, resilient and sustainable") targets of enhancing inclusive and sustainable urbanization, capacity for participatory, integrated and sustainable human settlement planning, and providing access to safe, inclusive and accessible green and public spaces; as well as SGD 6 ("Ensure availability and sustainable management of water and sanitation for all") targets to achieve access to adequate and equitable sanitation and improve water quality.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

12. The objectives of the Project are to: (a) strengthen the capacity of the Municipality of Fortaleza for land use planning and land-based financing; and (b) enhance urban environment and rehabilitate public spaces, through interventions in selected areas of the Vertente Marítima Basin and of the Rachel de Queiroz Park.

B. Project Beneficiaries

13. Direct beneficiaries amount to 305,628 people (of which 53% are female), identified as: (i) residents benefiting from interventions in the Rachel de Queiroz Park[8]; and (ii) residents of the coastal neighborhoods of the Northwestern end of the Vertente Marítima Basin.[9] All residents of Fortaleza (2.6 million people) would indirectly benefit of the proposed interventions.

C. PDO Level Results Indicators

14. Achievement of the PDO will be measured with the following Key Performance Indicators:

Table 1. PDO Indicators

Project Development Outcome Indicators	Correspondence with PDO
Component 1. Urban and Environmental Restoration	
1. Direct Project beneficiaries, of which female	Part (ii) of PDO
2. Percentage of sampling points along the western portion of the Vertente Marítima coastline with adequate bathing water quality (*balneabilidade*) during the dry season	Part (ii) of PDO
Component 2. Strengthening Planning and Land-based Financing	
3. Increase of Municipality of Fortaleza's own-source revenue capacity through planning and land-value capture instruments	Part (i) of PDO
4. Urban redevelopment operation (*Operação Urbana Consorciada* Rachel de Queiroz) in preparation and structured	Part (i) of PDO

[8] Beneficiaries are accounted taken into consideration the proposed Intermediate Results Indicator #3 (see Annex 1)
[9] Beneficiaries (160,195) were estimated as the population of Barra do Ceara, Carlito Pamplona, Cristo Redentor, Jacarecanga and Pirambu.

III. PROJECT DESCRIPTION

A. Project Components

15. **Component 1. Urban and Environmental Restoration (Estimated costs: USD 64.4 million, of which USD 52.1 million IBRD financing).** The objective is to promote urban and environmental restoration of selected areas of the city through selected investments in public spaces and sanitation. Implementation of these interventions also aims at strengthening the PMF's capacity for urban planning and environmental management. The Vertente Marítima Basin and the Rachel de Queiroz Park were selected as the primary areas of focus of the interventions (see Map in Annex 7) given their potential for replicability and to: (i) positively impact the livelihood of low income population in neighboring areas; (ii) leverage existing and future municipal investments in the area; (iii) transform central urban areas; (iv) introduce innovation in basic sanitation service provision; and (v) attract emerging interest of the private sector to invest in urban redevelopment of the area. Proposed interventions are divided in the following two Subcomponents:

16. *Subcomponent 1.1 - Restoration of Rachel de Queiroz (RDQ) Park*, through the improvement of, *inter alia*: (i) the overall accessibility, including access roads, paving and walking paths; (ii) basic amenities, including lighting, landscaping, signage, outdoor furnishings and sporting equipment; (iii) the connectivity of surrounding neighborhoods to bus transportation lines and commercial areas through, inter alia, bicycle paths and walking paths.

17. *Subcomponent 1.2 - Reducing point-source pollution along Vertente Marítima (VM) coastline,* through the carrying out of, *inter alia*, the following activities: (i) strengthening of the Borrower's monitoring and enforcement capacity to ensure selected households connect to the sewage network; (ii) financing sewage connections for low-income households; (iii) carrying out interventions for capturing and diverting dry-weather flows from storm water drains discharging along the coast; (iv) piloting on-site water resource treatment technologies to attenuate pollution in selected water bodies; and (v) carrying out communication and environmental education campaigns.

18. **Component 2. Strengthening Planning and Land-based Financing (Estimated costs: USD 76.0 million, of which USD 15.0 million IBRD financing).** The objective is to strengthen the capacity of the PMF for planning and land-based financing through two Subcomponents:

19. *Subcomponent 2.1 - Upgrade of planning instruments and licensing tools*, through the carrying out of, *inter alia*, the following activities: (i) the upgrade of the existing cadaster and the development of a spatial information platform; and (ii) the optimization of processes and services related to environmental and urban management.

20. *Subcomponent 2.2 - Implementation of land-based financing instruments*, through, *inter alia*: (i) designing and structuring of an OUC in selected areas surrounding the Rachel de Queiroz Park and its surroundings; and (ii) strengthening of SEUMA's capacity to promote urban redevelopment.

21. **Component 3. Project Management (Estimated costs: USD 6.0 million, all of which IBRD financing).** Provision of support for, inter alia: (i) the technical and administrative management and the monitoring and evaluation of the Project; (ii) the carrying out the Project's

financial management and procurement requirements; (iii) the carrying out of outreach activities in connection with the Project; (iv) the provision of equipment and training (on, inter alia, technical, environmental and social safeguards management) to SEUMA's staff for the purpose of Project implementation; and (v) the provision of technical assistance and supplies to strengthen the Borrower's auditing, financial control and procurement capacity.

B. Project Financing

22. The proposed Project will be partly financed by an IBRD loan in the amount of USD 73.3 million. Additional contribution will be provided by the PMF (USD 73.3 million). Further details, including costs by Subcomponent, are provided in Annex 6.

Table 2. Project Cost and Financing

Project Components	Project cost (USD million)	IBRD Financing (USD million)	% Financing
1. Urban and Environmental Restoration	64.4	52.1	81%
2. Strengthening Planning and Land-based Financing	76.0	15.0	20%
3. Project Management	6.0	6.0	100%
Total Costs			
Total Project Costs	146.4	73.1	50%
Front-End Fees	0.183	0.183	100%
Total Financing Required	**146.6**	**73.3**	**50%**

C. Lessons Learned and Reflected in the Project Design

23. **The Project design incorporates global best practices and experiences from the urban development sector, and draws key lessons from a comprehensive review of past Bank urban, water and sanitation projects in Brazil**.[10] A number of common lessons from closed projects were taken into account in the design, including: (i) setting realistic expectations of potential impacts, balancing scope and depth of project, by focusing interventions both thematically and geographically; (ii) aligning components with government strategies and investments, ensuring local implementation capacity, and simplifying institutional arrangements; (iii) minimizing the need for resettlement, and when needed, addressing financial and operational implications early on (see below); and (iv) ensuring the readiness of procurement packages at project effectiveness. More details on lessons learned and how they have been incorporated into the Project's design are presented in Annex 2.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

24. The Secretary of Urban Development and Environment (SEUMA) will be the Project's implementing agency. A Project Management Unit (PMU) will be created within SEUMA, comprised of a Project Coordinator and dedicated staff for Project Administration and Financial Management, and for Procurement. Technical and M&E functions will be performed by key staff

[10] A list of reviewed projects is included in Annex 2.

appointed within SEUMA's administrative and organizational structure. SEUMA will be responsible for executing project activities, with support from SEINF, UFC and the State Secretariat for Public Safety and Social Defense, *(Secretaria Estadual de Segurança Pública e Defesa Social*, SSPDS) for Subcomponent 1.1, AGEFIS and CAGECE for Subcomponent 1.2, and SEFIN for Subcomponent 2.1. Annex 3 provides further details.

25. A group of sector specific external individual consultants (in the areas of urban and environmental development, infrastructure financing instruments, and sanitation, among others) will be engaged to provide technical support, as needed, to the PMU and SEUMA's technical team. Although the PMF has no ongoing project with the Bank, some key staff in SEUMA have previous experience working with Bank financed projects at the State level. Additional technical assistance will be provided throughout Project implementation to strengthen SEUMA's project management capacity, including training in the areas of safeguards, procurement and financial management.

B. Results Monitoring and Evaluation

26. The Results Framework (RF) describes the PDO-level outcome indicators and the component-specific intermediate indicators and respective baselines and targets (Annex 1). M&E arrangements and responsibilities are described in detail in the Project Implementation Arrangements (Annex 3). They were set up to be simple and accessible: the necessary data to be collected outside of SEUMA depends on few institutions – namely SEFIN, CAGECE and SEMACE – all of which currently already perform Project related M&E functions, either as part of their institutional mandate, or under cooperation arrangements with SEUMA.

C. Sustainability

27. **Physical Sustainability**. The interventions proposed are fully aligned with the PMF's strategic view, as well as with SEUMA's mandate and programs.[11] Taking advantage of such links will ensure the Project remains a priority over time, while reducing its implementation risks. With regards to the long-term sustainability of the investments: (i) RDQ Park – The PMF, through the Municipal Secretariat of Conservation and Public Services (*Secretaria Municipal da Conservação e Serviços Públicos, SCSP),* will be responsible for the maintenance of the park. SEUMA will arrange cooperation agreements with private sector companies to support the maintenance of selected sections of the park, under the Program for the Adoption of Squares and Green Spaces[12]; (ii) sanitation-related investments – CAGECE will be responsible for the maintenance of sanitation assets (outside the households) to be financed; (iii) cadaster - SEFIN will be responsible for the maintenance and update of the upgraded cadaster, as per its institutional mandate.; and (iv) Fortaleza Online – SEUMA will allocate funds for its regular maintenance.

28. **Institutional sustainability**. The proposed design builds on existing technical and management capacity within SEUMA and fits into its organizational structure and daily operation,

[11] Examples are the Fortaleza's City Water Program (*Águas da Cidade*), the 100% Clean Seafront (*Orla 100% Balneável*) and the Natural Systems Network (*Rede de Sistemas Naturais*).
[12] Established in 2014 and successfully implemented in 86 public spaces as of May 2016.

ensuring ownership and sustainability. Technical assistance activities under Component 3 will contribute to improving SEUMA's institutional and technical capacity.

29. **Financial Sustainability.** A fiscal analysis confirmed that the PMF has the fiscal capacity to sustain the Project. In addition, proposed interventions to strengthen planning and land-based financing under Component 2 will result in an increase of municipal revenues and will bring a strong fiscal approach to investment in urban areas. However, there is a risk derived from the current macroeconomic situation in Brazil that could impact the Project (see section V. Key Risks).

30. **Climate change co-benefits.** On the basis of information available at Appraisal, it is estimated that 27% of the loan will result in climate change adaptation co-benefits. Namely investments under Subcomponent 1.1 for the environmental restoration of the RDQ park will contribute to flood control (see Annex 2 for further details).

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

31. **The Project's overall risk rating has been defined as Substantial.** The individual risks are ranked in the Systematic Operations Risk Rating Tool (SORT) included in the Datasheet. The description of the highest risks and planned mitigation actions are described below.

32. ***Political and Governance***. Municipal elections took place in October 2016, when the former Mayor got reelected for an additional four years' term, to be started in January 1, 2017. The majority of the key personnel involved in the Project are public servants and will most likely not rotate, but there is a risk that changes to the key Secretaries (including SEUMA) may occur, with a potential to negatively impact the Project. However, continuity with the proposed initiatives is foreseeable, even in the event of a change of government, given that the Project: (i) is grounded in the PMF's Development Plan, which was approved by municipal law with political and civil society support; (ii) focuses on restoration of the urban environment, a primary concern of all residents of Fortaleza; (iii) has a strong focus on the poorest areas and residents of the city; and (iv) promotes sustainable uses of land and public spaces.

33. ***Macroeconomic***. The current macroeconomic situation in Brazil could potentially impact the committed counterpart financing – representing 50 percent of the Project costs, as per national legislation – due to potential decrease in reduced transfers from the State and Federal levels**.** Nevertheless, the proposed Project is fully aligned with SEUMA's mandate and programs; a large part of the counterpart funding includes funds for activities that are under implementation with committed resources, or activities that have been procured and are awaiting contract award.

34. ***Institutional capacity for implementation and sustainability***. The implementing agency, SEUMA, has recently expanded its staff and has committed to creating a small dedicated PMU, in addition to assigning specific technical responsibilities under each component to their key technical staff. SEUMA's team was assessed during Preparation as technically strong. Nevertheless, SEUMA has traditionally been a service provider entity within the PMF rather than an implementing agency, and it will be the first time for them working with a development bank. During preparation, the Bank has undertaken a capacity evaluation not only of SEUMA, but also of the main partner agencies that will be directly involved in the implementation. Accordingly, (i)

implementation arrangement were set up to include additional technical support from external individual consultants; (ii) resources for technical assistance, capacity building and procurement have been allocated under Component 3; and (iii) cooperation agreements will be in place to ensure that specific roles and responsibilities of partner agencies are legally defined prior to the start of the interventions. Annex 3 provides further details.

35. ***Fiduciary.*** The FM Assessment identified the following major Project or entity related risks: (i) SEUMA staff does not have previous experience with World Bank financed projects; (ii) most of municipality staff are hired through outsourced selection process and not public "*concursos*"; (iii) SEFIN currently faces some challenges to adjust to the Manual of Brazilian Accounting Standards (*Manual de Contabilidade Aplicada ao Setor Público*, MCASP)[13]; and (iv) CGM and TCM need additional institutional strengthening and capacity building activities, to be financed by project's proceeds. In addition, the Procurement assessment identified the following: (i) SEUMA has conducted only few and simple procurement processes following local legislation, none of them for World Bank projects; and (ii) SEUMA's team procurement capacity needs strengthening and they will need to keep a procurement specialist dedicated exclusively to the Project. Considering these factors, the integrated fiduciary risk rating is Substantial. To mitigate the risks, capacity building activities have been incorporated by the FM and Procurement Specialists under Component 3. Section VI and Annex 3 provide further details on financial management and procurement aspects.

36. ***Environmental and Social***. The social and environmental assessment identified the following risks: (i) SEUMA staff does not have previous experience with World Bank environmental and social safeguard policies; and (ii) activities envisaged under Subcomponents 1.1 and 2.2 will have direct and/or potential adverse impacts related with involuntary resettlement. Although these adverse involuntary resettlement impacts are limited in scope and magnitude, the environmental and social risk rating is Substantial. To mitigate the risks, institutional arrangements for implementing Resettlement Action Plans (RAPs) will rely on (i) municipal agencies with significant experience in involuntary resettlement and low income housing policies in previous operations with other international organizations; and (ii) the hiring of specialized consultancy services to carry out the RAPs. SEUMA will keep overall overseeing, monitoring and evaluation responsibilities. The Bank will provide continuous implementation support.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

37. The Project was evaluated from economic and financial perspectives and complemented with sensitivity analysis (for details, see Annex 5).

38. **Economic analysis.** Components were evaluated using cost benefit analysis. Benefits from Subcomponent 1.1 were measured using properties' market price increase in a comparable area of Fortaleza. Benefits from Subcomponent 1.2 were measured using the monthly sewerage bill as an approximation of the willingness to pay. Health benefits resulting for improvements in bathing water quality along the coastline were added. Benefits from Subcomponent 2.1 were measured

[13] Equivalent to the International Public Sector Accounting Standards (IPSAS).

through increase of own-source revenues (through increase in property taxes resulting from improvements in the cadaster and collection of licensing fees through *Fortaleza Online*).

39. **Impact on economic development.** All components are economically viable, with returns higher than 9%. The overall Project yields a 32% return and net benefits of about USD 85 million. Total benefits are twice as much as the costs, which allows ample room for uncertainties along the lifetime of the interventions. The net benefits would be enough to cover all investment cost associated with Component 2, even though no benefits were measured for Subcomponent 2.2. When all investments are included, net benefit is USD 30 million and internal rate of return of 12%, above the 6% used as discount rate.

Table 3. Results of the Economic Evaluation[14]

Subcomponents	Preset Value of Cash-flows (000 USD)			
	Costs	Benefits	Net Benefits	IRR
1.1 Upgrading of the RDQ Park	51,827	70,734	18,907	27%
1.2 Reducing point-source pollution along VM coastline	14,542	18,293	3,751	9%
2.1. Upgrade of planning instruments and licensing tools	20,381	83,425	63,045	49%
Total Project	**86,749**	**172,452**	**85,703**	**32%**

40. **Sensitivity analysis.** Subcomponent 1.1 will present positive returns when properties appreciate at least 5.9 percent. For Subcomponent 1.2, the effective connection rate has to be at least 80 percent of the target; and investment cost cannot increase more than 30 percent. Subcomponent 2.1 will present positive returns when at least 40 percent of the revenue increase target is achieved. Results are assuring given that additional important benefits were not quantified, such as improvement of public safety, health and connectivity for residents in the RDQ Park area, development of new business opportunities and increase in tourism activities along the coast.

41. **Financial analysis.** From a financial perspective, the interventions generating revenue were evaluated, i.e. interventions to increase sewerage connections and benefits from the improvement of the Cadaster and implementation of *Fortaleza Online*. The PMF will also benefit from higher property tax revenues when properties appreciate as a result of the intervention in RDQ Park, estimated to be USD 2.2 million at net present value. This could be reinvested to improve the livelihood of low-income population in the area.

42. **Justification of public sector provision.** The Project will help promote a better integrated approach for the development of the city and constitute a first step in the planned long term transformation of Fortaleza. Public funding is the most appropriate instrument for this type of interventions that will not only improve the quality of life of the poorest population, but will also help boosting economic development and promoting private sector involvement. There will be opportunities for job creation, youth development, and community building.

[14] Costs and benefits were expressed at 2016 prices. Lifetime of the Project is expected to be 30 years for Component 1 and 10 years for Component 2. A discount rate of 6% was used, as per World Bank "Discounting Costs and Benefits in Economic Analysis of World Bank Projects", May 2016.

43. **Bank value added.** The Bank's global experience on design and implementation of urban development projects, its longtime involvement in Brazil on the urban sector spanning planning and redevelopment, municipal management, housing and neighborhood improvements, water and sanitation, social and environmental issues, and its ability to convene and bring relevant global knowledge will benefit the municipality of Fortaleza as it undertakes the proposed investment.

B. Technical

44. **Restoration of RDQ Park.** The PMF has hired a firm to develop a diagnostic and master plan for the park. The upgrade of the park will be carried out by sections to allow implementation flexibility. A preliminary implementation plan with the prioritization of the sections to be completed under each works stage was developed (see Annex 2).

45. **Reducing point-source pollution along VM coastline.** A pollution model assessing the extent to which streams and storm drains are contributing to the quality of the water in the seashore was completed to inform Project design. Based on its results, CAGECE, with SEUMA's inputs, simulated a number of scenarios to quantify the pollution reduction impact and costs of the proposed activities under each scenario. This led to the selection of the best-fit (more cost-effective) alternative, while also providing inputs for the development of Terms of Reference and technical specifications for key activities.

46. **Planning and monitoring instruments.** The PMF has advanced in the revision and approval of urban instruments (as described in Annex 2). A detailed action plan for the multipurpose cadaster and spatial information platform was developed in 2015 in coordination with SEFIN. Resources from the Spanish Fund for Latin America and the Caribbean (SFLAC) have been granted (USD 248,970) for the Bank to provide technical assistance to advance the preparatory work for this activity to be ready for bidding. Based on the ongoing experience with the *Fortaleza Online Program*, SEUMA is working to have the TORs ready for bidding.

47. **Implementation of land-based financing instruments.** An initial action plan was defined to address the next steps required to complete the preparation of the RDQ OUC design phase. This action plan was developed with the support of a consultant with extensive experience developing large-scale OUCs in São Paulo.

C. Financial Management (FM)

48. The Bank performed a FM Assessment for SEUMA, the project implementation unit.[15] The scope of the assessment included: (i) an evaluation of existing financial management systems in place to be used for project monitoring, accounting and reporting; (ii) review of staffing requirements; (iii) review of the flow of funds arrangements and disbursement methodology; (iv) review of internal control mechanisms in place; (v) discussion in regard to reporting requirements, including the format and content of Interim Financial Reports (IFRs); and (vi) review of internal and external audit arrangements.

[15] In accordance with OP/BP 10.00, Financial Management Manual for World Bank-Financed Investment Operations (effective March 1, 2010 and Issued (Retrofitted) February 4, 2015).

49. Overall, the evaluation found that (i) at the country level, Federal FM laws and regulations applicable to sub-nationals provide a strong FM framework for sub-nationals executing agencies, (ii) at the Municipality level, the fiscal transparency, accounting, reporting, internal controls and external audit in the municipality are considerate moderately satisfactory, due to some weakness in staffing at SEUMA and internal control institutional capacity. The assessment also identified project or entity related risks and opportunities, as described in Section V of the PAD.

50. The overall conclusion of the FM assessment is that (i) the FM arrangements for the proposed project are considered adequate, (ii) the funds flow, disbursements, monitoring, auditing and supervision arrangements have been designed to respond to the project's implementation arrangements, and (iii) and the residual overall FM risk associated with the project is rated as Substantial. Annex 3 provides further details on FM, disbursement and procurement aspects.

D. Procurement

51. The Bank performed a Procurement Assessment on June 2016 to evaluate the capacity of SEUMA to implement procurement actions. Procurement activities will be carried out by CLFOR (the PMF's central unit for execution, coordination and monitoring of procurement affairs) under SEUMA's overall coordination and monitoring. SEUMA's and CLFOR's responsibilities will include, but will not be limited to: procurement planning, implementation and monitoring, ensuring quality of bidding documents, and participating in bid evaluations. The Bank reviewed the organizational structure for project implementation and the interaction between the project's staff responsible for technical aspects (within SEUMA) and CLFOR, staff skills, quality and adequacy of supporting and control systems, and suitability of the laws, rules and regulations applicable. The assessment determined that the procurement focal staff designated for the project should be kept on SEUMA's team with exclusivity to assist project implementation. Based on the information at this moment the procurement risk is Substantial. The Borrower has agreed to implement the project in accordance with the New Procurement Framework (NPF). To this end, they have developed a draft procurement plan for the first eighteen months of project implementation, as well as a Project Procurement Strategy for Development (PPSD). Final versions were reviewed and approved by the Bank team on March 29, 2017.

E. Social (including Safeguards)

52. **Social Impacts.** The Project is expected to have overall positive social impacts and particularly benefit low income population, among which female headed households with children are overrepresented[16]. Targeted areas comprise low income neighborhoods that will benefit the most from access to better sanitation and quality public spaces with expected improvements in health and living conditions. Adverse impacts related with involuntary resettlement and gentrification could arise as infrastructure and accessibility to the RDQ Park are improved, and as the value of the land within the perimeter of the OUC increases. However, potential adverse impacts will be minimized and mitigated because: (i) the regulatory framework ruling the OUC legal instrument requires these operations have social and environmental benefits as pre-requisite, are defined with the participation of local residents, rely on shared decision-making and control

[16] To assess distributive gender impacts, the Project's monitoring and evaluation system includes gender sensitive intermediate results indicators

instances with broad citizen engagement and civil society participation, and include both an assessment of impacts on the neighborhood and an economic and social compensation plan; (ii) proper resettlement plans will be implemented setting early community engagement and participation; (iii) redeveloped areas will incorporate land-use parameters that promote mixed-use and provide solutions for low-income housing; and, (iv) complaints and compliments will be registered by a number of instruments for citizen engagement, social control and civil society participation in decision-making already in place – such as: the Secretariat's corporate site, the Secretariat's ombudsman office, and the extensive use of social media to communicate and interact with citizens. Citizen and civil society feedback will be regularly analyzed and utilized for adaptive planning and management.

53. **Involuntary Resettlement OP/BP 4.12**. This policy is triggered because activities envisaged under Sub-components 1.1, 2.1 and 2.2 are expected to have direct and/or potential adverse resettlement-related impacts. Proposed interventions for the restoration of the RDQ Park will require land acquisition and have direct adverse effects related with involuntary physical displacement. The scope and magnitude of the direct adverse impacts caused by activities that have already been defined are limited. The Borrower has prepared, consulted and publicly disclosed a Resettlement Policy Framework (RPF); two specific Abbreviated Resettlement Plans (ARAPs) were also prepared, the first to deal with the involuntary resettlement affecting 61 families, and the second regarding demand for acquisition of 94 plots of lands in the RDQ Park, the relocation of 4 commercial activities and temporary impacts during the works. The entitlement matrix in the RPF clearly outlines the resettlement assistance to be given to informal and non-opportunistic occupants[17]. The application of safeguard policies to the technical studies and assistance provided by the project for the upgrade of the Cadaster and the design of the municipal law of the RDQ OUC under Sub-components 2.1 and 2.2 will follow the guiding principles set at the World Bank's *Interim Guidelines on the Application of Safeguard Policies to Technical Assistance (TA) Activities in Bank-Financed Projects and Trust Funds Administered by the Bank.*

54. The PMF's institutional capacity to prepare and carry out ARAPs was assessed as adequate insofar as SEUMA will be supported by SEINF in the preparation of the ARAPs and by HABITAFOR in their implementation. Both entities have significant experience with involuntary resettlement issues and low-income housing policies working with international organizations.

[17] There is a plot of land owned by the Federal University of Ceara (*Universidade Federal do Ceará*, UFC) that was included in the Municipal Decree of creation of the Rachel de Queiroz Park (dated March 2016), which was object of encroachment and legal eviction processes dated September 2015. This location has been considered for inclusion in the RDQ Park (section 8B), but there are two issues that are currently impeding its incorporation. First, the land is owned by UFC and an agreement needs to be signed transferring it to the municipality. Second, the land has been recently invaded by encroachers and there is a pending court case. UFC took measures for their legal eviction prior of the issuance of the municipal decree creating the Park and for reasons not related with it. Regarding this people, it has been agreed that they will be covered by the RPF. However, given the various uncertainties around the situation, no RAP will be prepared for them at this time. If they are evicted prior to the handover of the land to be incorporated into the park, they shall be treated as a legacy resettlement linked to the project (i.e., there should be a review / resettlement audit of their displacement process to determine whether any retroactive measures are needed to ensure they receive entitlements as indicated in the RPF). If they are evicted after the land is handed over by UFC to the municipality, they shall be treated like any other group (i.e. an ARAP will be prepared, approved and implemented prior to their displacement). Only if the park ends up being redesigned to exclude the area in question, would they no longer be covered by the project RPF.

55. **Indigenous Peoples (OP/BP 4.10)**. The project does not trigger this policy because due to its geographical location, activities will not interfere with indigenous peoples and lands.

56. **Public Consultation**. SEUMA is committed to increase transparency and accountability, and as such has set up a number of instruments to communicate and interact with citizens and civil society organizations. During preparation, the Borrower carried out three public consultations to assess the appropriateness of social and environmental risk assessment and mitigation measures. The inputs received during the consultations were properly incorporated on the project's Environmental and Social Management Framework (ESMF), RPF and ARAPs. Citizens and civil society organizations have been involved in the design of the project for the RDQ Park through 5 public consultations carried out for the diagnostic and elaboration of the basic engineering designs. During implementation, there will be regular public postings near project construction sites to update local communities on project progress and an adequate grievance redress mechanism will also be broadly disseminated and available. The ARAPs envisage the operation of social offices at the affected neighborhoods and different channels of communication with the affected people.

F. Environment (including Safeguards)

57. **Environmental Assessment**. The project has been classified as environmental Category B. In compliance with OP 4.1, the Borrower has prepared an ESMF. The document contains the three essential instruments of environmental assessment: (i) a focused analysis of the social and environmental context, the potential positive and adverse impacts of the project, and the mitigating measures; (ii) the project socio-environmental management framework, including the criteria and screening procedures for the selection of interventions to be financed, which will be applied before the final selection of each investment subproject[18]; and (iii) an evaluation of Fortaleza's institutional capacity for environmental compliance. Principles of OP 4.01 were applied to the ESMF and with regards to proper consultation. The draft ESMF was reviewed by the Bank and publicly disclosed on August 16, 2016, and the final version was re-disclosed on January 24, 2017.

58. Two ARAPs were prepared under sub-component 1.1, given that the social assessment identified two specific locations within the area of the RDQ Park where potentially affected population are currently located that will need to be addressed under the project. An EMP for the Park will be needed to address potential impacts resulting from the investments financed under the project. However, the preparation of the Park-wide EMP will depend on the nature of specific interventions that will be carried out in the different areas of the park, which have not yet been defined. A master plan for the whole park has been prepared by the PMF, which proposes possible interventions in the different areas (including for example cycling paths, recreational equipment and community areas). However, the final engineering designs for the different interventions in the park require inputs from activities that will be financed under the project, inter alia, community outreach and participation, geotechnical characterization studies, pedestrian and bicycle traffic flow assessments, which will be carried out during the first two years of project implementation with Bank financing. Similarly, the typology of eligible investments under sub-component 1.2 has been defined, but the specific beneficiaries and the technical designs for the interventions that will be financed for each beneficiary will need to be determined during implementation, on a case-by-

[18] A first screening process has already been applied to some selected projects, and is included as an Annex of the ESMF.

case basis, through activities to be financed under the project (e.g. consultation with the communities, technical assessment). Based on these reasons, EMPs for each component cannot be prepared at this stage of project preparation and will be prepared within the first two years of implementation, in accordance with the approved ESMF. The preparation of EMPs under both components has been included as consulting services in the project's procurement plan.

59. **Natural Habitats OP/BP 4.04.** Some interventions for the recovery of green spaces and redevelopment of degraded areas could be proposed in areas considered by the state to be environmentally sensitive (i.e. in riparian areas – Permanent Preservation Areas, APP). OP 4.04 is triggered and planned activities that may affect natural habitats will follow World Bank policies.

60. **Pest Management OP 4.09.** The project is not expected to finance any pesticides or other chemical amendments that would trigger OP 4.09. Nevertheless, some amounts of herbicides could be used in the creation and maintenance of green areas and urban parks. In this case, the project would support the development of an Integrated Pest Management (IPM) for these areas. The need to use herbicides will be indicated in each sub-project, as well as the IPM measures to be adopted.

G. Other Safeguards Policies Triggered

61. **Physical Cultural Resources OP/BP 4.11**. Project implementation is not expected to cause negative impact on known Physical Cultural Resources (PCR). Proposed interventions with expected direct and negative impact on known archaeological, paleontological, historical or other culturally significant sites will not be eligible. However, they may include historical sites and/or archaeological findings. Impacts and procedures for "chance findings" from specific investments under Component 1 (if applicable) will be assessed. The Physical Cultural Resources Framework, included in the ESMF, contains relevant provisions to mitigate any potentially adverse impacts.

H. World Bank Grievance Redress

62. Communities and individuals who believe that they are adversely affected by a World Bank supported project may submit complaints to existing project-level grievance redress mechanisms or the 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 Inspection Panel which determines whether harm occurred, or could occur, as a result of World Bank non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service, please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

Annex 1: Results Framework and Monitoring

Country: Brazil

Project Name: Fortaleza Sustainable Urban Development Project (P153012)

Project Development Objectives

PDO Statement

The objectives of the Project are to: (a) strengthen the capacity of the Municipality of Fortaleza for land use planning and land-based financing; and (b) enhance urban environment and rehabilitate public spaces, through interventions in selected areas of the Vertente Marítima Basin and of the Rachel de Queiroz Park.

These results are at Project Level

Project Development Objective Indicators

Indicator Name	Baseline	Cumulative Target Values						
		YR1	YR2	YR3	YR4	YR5	YR6	End Target
1. Direct Project beneficiaries (Number) – (Core)	48,852[19]	48,852	64,898[20]	119,928[21]	280,123[22]	284,296[23]	305,628[24]	305,628
Female beneficiaries[25] (Percentage - Sub-Type: Supplemental) - (Core)	53.00	53.00	53.00	53.00	53.00	53.00	53.00	53.00

[19] The PMF has already upgraded section 4a of the RDQ Park. This investment has been included as part of the Project cost financed by the Borrower. Therefore, the beneficiaries of this intervention (as tracked by the IRI # 3) are included in the baseline.
[20] Value of YR1 plus population within 15-minute walking distance from section 6a of RDQ Park.
[21] Value of YR2 plus population within 15-minute walking distance from sections 1, 2, 5a, 8a and 9 of RDQ Park.
[22] Value of YR3 plus 160,195, which is the population of the five coastal neighborhoods in VM, benefiting from improved water quality.
[23] Value of YR4 plus population within 15-minute walking distance from sections 3, 4b, 5b, 6b and 7 of RDQ Park.
[24] Value of YR5 plus population within 15-minute walking distance from sections 10 and 8b of RDQ Park.
[25] Number of female beneficiaries will be calculated using the percentage of female population in the target neighborhoods, as measured by the Census. Estimated percentage of female population as of August 2016 is 53 percent.

2. Percentage of sampling points along the western portion of the *VM* coastline with adequate bathing water quality (*balneabilidade*) during the dry season (Percentage)	20.00[26]	20.00	20.00	20.00	40.00	60.00	80.00	80.00
3. Increase of Municipality of Fortaleza's own-source revenue capacity through planning and land-value capture instruments (Text)[27]								
3.1. Increase in property tax revenue		0%	0%	0%	5%	10%	20%	20%
3.2. Increase in revenues through *Fortaleza Online*		40%	60%	70%	80%	90%	100% i	100%
3.3. Increase in SEUMA's revenues from urban instruments		43%	43%	57%	72%	86%	115%	115%
4. Urban redevelopment pilot (*OUC RDQ*) in preparation and structured (P = in Preparation, S = Structured)	0	-	P	P	P	P	S	S

Intermediate Results Indicators

Indicator Name	Baseline	Cumulative Target Values						
		YR1	YR2	YR3	YR4	YR5	YR6	End Target
1. Number of people in urban areas provided with access to Improved Sanitation under the Project	0	0	0	3,067	9,867	18,533	27,200	27,200

[26] SEMACE regularly samples bathing water quality at 31 fixed sampling points along the Vertente Marítima coastline, 10 of which are in the Western portion where pilot interventions will be located. The baseline refers to current conditions (as of August 2016), under which 20% of the sampling points (Nos. 22 to 31) in the Western beaches have adequate bathing water quality (*própria*).

[27] The baseline and targets for this indicator will be revised during the first year of implementation.

(Number) – (Core)								
2. Feasible household connections to sewage network completed in western portion of the *VM* Basin (Percentage)	0.00	0.00	0.00	20.00	40.00	60.00	80.00	80.00
3. Number of residents within 15-minute walking distance to quality public space within the revitalized RDQ Park (Number)	48,852[28]	48,852[29]	64,898[30]	119,928[31]	119,928[32]	124,101[33]	145,433[34]	145,433
4. Increase of pedestrian and bicycle flows within areas of intervention in RDQ Park (Percentage)	0.00[35]	0.00	0.00	10.00	10.00	20.00	30.00	30.00
5. Multi-purpose cadaster upgraded and Spatial Information Platform under development (D= Under development; and O = Operational) (Text)	Functional cadaster used primarily for property tax collection purposes	D	D	D	D	O	O	Multi-purpose cadaster in use. SEFIN & SEUMA's data harmonized
6. Urban and Environmental permitting processes operational under *Fortaleza Online* (Number)	10.00	20.00	40.00	60.00	70.00	80.00	90.00	90.00
7. Formalization of built environment: increase in the number of cadaster entries (*inscrições cadastrais*) that meet formal construction procedures (Percentage)		10.00	20.00	25.00	30.00	35.00	40.00	40.00

[28] Residents living in Section 4a of the RDQ Park.
[29] Residents living in Section 4a of the RDQ Park.
[30] Value of YR1 + population within 15-minute walking distance from Section 6a of RDQ Park.
[31] Value of YR2 + population within 15-minute walking distance from Sections 1, 2, 5a, 8a and 9 of RDQ Park.
[32] Value of YR3.
[33] Value of YR4 + population within 15-minute walking distance from Sections 3, 4b, 5b, 6b and 7 of RDQ Park.
[34] Value of YR5 + population within 15-minute walking distance from Sections 10 and 8b of RDQ Park.
[35] The baseline and monitoring methodology for this indicator will be determined during the first year of implementation.

8. Communication and Community Engagement Strategy for OUC RDQ developed and under implementation (D = Developed; I = Under Implementation)	NA	D	D	I	I	I	I	Targets for community engagement, as defined in Strategy, have been achieved
9. Draft Law for OUC RDQ submitted for approval of *Câmara Municipal* (S = Submitted)	NA	-	-	-	-	-	S	Draft Law for OUC RDQ submitted for approval to *Câmara Municipal*

Indicator Description

Project Development Objective Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
1. Direct project Beneficiaries	Accounts for: (i) population of the five coastal neighborhoods of the north western end of the VM, who benefit from improved bathing water quality; and (ii) beneficiaries of intervention in RDQ Park, where the Project will finance interventions in 8 neighborhoods, as estimated in PDO Indicator 2.	Semi-annual	Progress report	SEUMA
Female beneficiaries	Based on the assessment and definition of direct project beneficiaries, specifies what percentage of the beneficiaries are female. According to census data, 53% of the Fortaleza Population are women (IBGE, 2014).	Semi-annual	Progress Report	SEUMA
2. Percentage of sampling points along the western portion of the *VM* coastline with adequate bathing water quality (*balneabilidade*) during the dry season	Bathing water quality of beaches is measured by SEMACE on a weekly basis, at 31 sampling points along VM coastline. Bathing water quality is rated as *Própria* or *Imprópria* depending on characteristics of water quality samples, and of conditions at the beach (following Resolution 274 of November 29, 2000 from the National Environmental Commission). This indicator will track, over a six-month period (dry season), the increase in the number of sampling events when bathing water quality was deemed *Própria*, at the 10 defined sampling points of the western portion of the VM (monitoring points 22 to 31).	Semi-annual	Progress report	SEUMA and SEMACE
3. Increase of Municipality of Fortaleza's own-source revenue capacity through planning and land-value capture instruments	The measured increases in municipal revenue will take into account separate sources: (i) increased collection of property tax (IPTU) due to updates of the cadaster; (ii) increased collection of PMF's revenues collected through *Fortaleza Online* services *(e.g.* formalization of existing properties, increased efficiency)*;* and (iii) increased collection of SEUMA's revenues collected from the use of urban instruments including *inter alia*, compensations for additional building rights and for land use change.	Semi-annual	Progress report	SEUMA and SEFIN
4. Urban redevelopment pilot (*Operação Urbana Consorciada Rachel de Queiroz*) in preparation and structured (P = in Preparation, S = Structured)	Indicator will track the different phases of preparation and structuring of the Urban Operation, as defined in Annex 3, including: (i) Definition of the OUC; (ii) Real estate and financial modeling; and (iii) Development of urban redevelopment project. The OUC will be considered "Structured" when its design has been completed and the draft Law has been prepared (See Annex 2 for detailed description of outputs of design phase).	Semi-annual	Progress report	SEUMA

Intermediate Results Indicators				
Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
1. Number of people in urban areas provided with access to improved sanitation under the Project (Number) – (Core)	Indicator tracks number of people with access to improved sanitation as a result of: (i) increased enforcement; (ii) pilot interventions that finance household connections; and (iii) communication and environmental education campaigns. Targets are calculated based on estimated number of connections completed multiplied by 3.4, which is the average number of people per household in Fortaleza (according to the IBGE).	Semi-annual	Progress report	SEUMA and CAGECE
2. Feasible household connections to sewage network completed in western portion of the VM Basin	Indicator tracks the percentage of feasible connections completed in the western portion of the VM, i.e. connected to the sewage network as a result of the Project. Feasible connections are those households that have access but are not connected to the primary sewage network (CAGECE labels them as "Factível" and "*LSI*"). The completion of the connections will be a result of: (i) increased enforcement; (ii) pilot interventions that finance household connections; and (iii) communication and environmental education campaigns in the area. The total number of feasible connections in Western VM basin is 5508 according to CAGECE.	Semi-annual	Progress report	SEUMA and CAGECE
3. Number of residents within 15-minute walking distance to quality public space within the revitalized Rachel de Queiroz Park	This proximity indicator will illustrate whether the distribution of public spaces is increasingly equitable in the area of influence of the project. Walking is the most typical means of transportation of the lowest income population. A 15-minute walking distance is a standard applied in several countries and deemed appropriate in Fortaleza. The criteria to define "quality public space" are the following: (i) the land use of the area is defined, by the zoning, as a park / leisure related one; (ii) there are existing amenities, such as public lighting, greening, sports and leisure facilities; (iii) the area is clean and well maintained; (iv) the population recognizes and utilizes the area on a frequent basis; (v) the area is accessible; (vi) the area is visible; and (vii) the area is safe. Modeling of accessibility will be done using OTPA (Urban Accessibility Tool). Analysis is based on 2010 census data.	Semi-annual	Model (OTPA - Urban Accessibility Tool)	SEUMA
4. Increase of pedestrian and bicycle flows within areas of intervention in *Rachel de Queiroz Park*	Field survey will be conducted to track increase pedestrian and bicycle traffic at specific locations, following adopted methodology. Monitoring of traffic flows will not be carried out during construction periods.	Semi-annual	Field survey	SEUMA

5. Multi-purpose cadaster upgraded and Spatial Information Platform under development (D= Under development; and O = Operational)	Indicator tracks the upgrading of the existing multi-purpose cadaster and the development of a Spatial Information Platform, as described in Annex 2. Development phases include: (i) institutional strengthening, capacity building and coordination; (ii) upgrade of existing system; and (iii) development and launch of spatial information platform. The multi-purpose cadaster will be consider to be *under development* during steps (i) and (ii), and *operational* during step (iii).	Semi-annual	Progress report	SEUMA and SEFIN
6. Urban and Environmental permitting processes operational under *Fortaleza Online*	This indicator will reflect the number of SEUMA's licensing processes (both urban and environmental) that can be carried out online, through SEUMA's platform.	Semi-annual	Progress report	SEUMA
7. Formalization of built environment: increase in the number of cadaster entries (*inscrições cadastrais*) that meet formal construction procedures	Increase of Fortaleza's formal built environment will be measured as the increase in number of cadaster entries (*inscrições cadastrais)* per year that have at least one of the following*:* adequacy of use, construction permit, operation permit, property tax inspection, general repairs, and environmental license. It is expected that the *Fortaleza Online* will incentivize and facilitate formalization, since the users will be able to electronically apply for the permits, submit documentation, and follow up the required processing steps, up until the payment and issuance of permits.	Semi-annual	Progress report	SEUMA
8. Communication and Community Engagement Strategy for *Operação Urbana Rachel de Queiroz* developed and under implementation (P = In preparation, D = Developed; I = under Implementation)	Strategy for involving the community in the design and implementation of urban redevelopment components of the Project will be developed and implemented by SEUMA.	Semi-annual	Progress report	SEUMA
9. Draft Law for *Operação Urbana Rachel de Queiroz* submitted for approval of *Câmara Municipal* (S = Submitted)	Implementation of the OUC PRQ will require approval by the municipal assembly of a Law that describes the objectives of the urban project and the changes to current norms (e.g. land use, density, construction parameters) that will be implemented within the perimeter of the OUC. SEUMA will be responsible for drafting the law and for submitting it for approval of the legislature.	Semi-annual	Progress report	SEUMA

Annex 2: Detailed Project Description

BRAZIL: Fortaleza Sustainable Urban Development Project

1. The PMF has put forward an ambitious Development Plan (*Plano Plurianual 2014-2017*) that focuses on promoting a more sustainable, inclusive local development. The city is implementing its Development Plan with support from the National Infrastructure Growth Acceleration Program (*Programa de Aceleração do Crescimento,* PAC), the Inter-American Development Bank (IDB), the Development Bank of Latin America (CAF). The city's Urban Drainage Program (*Programa de Drenagem Urbana de Fortaleza*, DRENURB) is also being implemented with support from CAF and the National Development Bank (*Banco Nacional de Desenvolvimento Econômico e Social,* BNDES). The proposed project will complement ongoing investments in the areas of transportation, sanitation, drainage and tourism, while enhancing the municipal planning and own-source revenue collection capacity. This Annex presents a detailed explanation of the proposed interventions and lessons learned from earlier projects incorporated in proposed design.

I. Project Description

Component 1. Urban and Environmental Restoration (USD 64.4 million, of which USD 52.1 million IBRD financing)

2. The objective of Component 1 is to promote urban and environmental restoration of selected areas of the city through investments in public spaces and sanitation. This component includes interventions in the following areas: (i) restoration of the RDQ Park and, (ii) wastewater management interventions. Map in Annex 7 shows the proposed areas of focus of the operation.

Subcomponent 1.1 - Restoration of Rachel de Queiroz Park

3. **The objective of this Subcomponent is to enable the restoration and upgrading of the RDQ Park.** The PMF has identified the lack of green areas and recreational spaces in the city as a key challenge to improve the quality of life of its citizens. To tackle this problem, under Fortaleza's Environmental Policy, the PMF is working to restore green spaces across the city through the Natural System's Network Program (*Rede de Sistemas Naturais*). Within the framework of this Program, the Subcomponent will focus on the restoration of RDQ Park, located in the western portion of the city (see Map in Annex 7). This linear park is 10 Km long and has an area of 140 hectares, the second largest public green area remaining in the city. The park crosses 14 neighborhoods (see Map A2-1) with a total population of 284,437 people and average income of R$ 626 according to the 2010 census. It traverses commercial and residential areas, including medium and low-income populations, substandard settlements, and large areas of institutional use, such as the campus of the UFC. Currently, only a limited area in the Northern end of the park has some amenities. The rest, while accessible in most parts (except the stretch that is within the limits of the UFC), is not a public space with equipment or infrastructure that would make it an attractive destination for the community to congregate, relax in a safe environment, exercise, build connections, support local merchants, etc.

4. **The restoration of the RDQ Park meets a historic demand of the local community and is expected to have a transformative effect the surrounding area**. The PMF sees this intervention as strategic, an investment in *placemaking*[36] that responds to a long-standing demand of the local community to restore the park, and that will promote the long-term redevelopment of the surrounding areas. Proposed interventions will include the improvement of, *inter alia*: (i) the overall accessibility, including access roads, paving and walking paths; (ii) basic amenities, including lighting, landscaping, signage, outdoor furnishings and sporting equipment; (iii) the connectivity of surrounding neighborhoods to bus transportation lines[37] and commercial areas through, inter alia, bicycle paths and walking paths.

5. **The upgrade of the park will be carried out by sections** (see Map A2-1). Section 4A of the park was already implemented earlier in 2015, in partnership with the private sector. A preliminary sequencing of the investments to be made under the project has been developed based on an assessment of the expected positive impacts (e.g. improvements in connectivity and environmental gains) and the degree of complexity for implementation (e.g. resettlement needs). Through an agreement with the owner of a shopping center in the area, works for Phase 0 of the park (section 6A) will be conducted during the first year of project implementation. Sections 1, 2, 5A, 8A and 9 will comprise Phase 1. Phase 2 will include sections 3, 4B, 5B, 6B and 7. Sections 10 and 8B are expected to be the last ones to be implemented, under Phase 3. No land acquisition or resettlement related costs will be financed through loan proceeds, as the Municipality has already budgeted for these costs as part of the mandatory counterpart investments. The works to be financed in the RDQ Park will anchor the PMF's participation in the RDQ OUC (see Subcomponent 2.2), which will aim to leverage private resources for redevelopment of the area around the park.

6. **The design of the RDQ park will address vulnerabilities related to climate change** (described in paragraph 8 of the main text). The RDQ Park, located in the Maranguapinho basin, is an area vulnerable to flooding. Investments will be designed to increase infiltration in the area and restore riparian vegetation. In addition, a system of constructed wetlands will be built in section 6B of the park. This system will be a series of shallow, densely-planted, man-made ponds that will help flood management in the area, in addition to providing a natural way to treat and remove pollutants from storm water. Based on information available at Appraisal, it is expected that overall these investments will represent about USD 18 million. Therefore, these interventions will contribute to improved flood management in the area, resulting in climate change adaptation co-benefits (estimated to represent 27% of the loan).[38]

[36] *Placemaking* refers to a collaborative process of shaping public spaces to maximize shared value. It facilitates the use of public spaces, focusing on the physical, cultural, and social identities that define a place (UN Habitat 2015).
[37] The park runs parallel to a major BRT transport corridor of the city (Av. Bezerra de Menezes/Mister Hull), which connects the city center to residential areas in the Western part of the city, also leading to Caucaia, a prominent municipality in Fortaleza Metropolitan Region.
[38] Estimated as USD 18 million from subcomponent 1.1 and prorated USD 1.66 million from Component 3 + Front-end fee.

Map A2-1 Rachel de Queiroz Park

Source: PMF

Subcomponent 1.2 - Reducing point-source pollution along* VM *coastline

7. **The objective of this Subcomponent is to demonstrate viable alternatives to reducing point- source pollution along the VM coastline, through selected initiatives that maximize the use of the existing sewerage network**. The VM basin includes a highly heterogonous group of 18 neighborhoods. According to the 2010 census, the area has a total population of 415,317 inhabitants with an average income of R$1,224. Whilst some of the richest neighborhoods in the city are located in this area, so are some of the poorest - six of them had an average income below the minimum salary in 2010. Although the primary sewerage network coverage is almost 100% (by far the highest in the city), the PMF estimates that 10% of the households (13,200 units) are still not connected, half of them located in the six poorest neighborhoods. Most of these households use (unmanaged) septic tanks, or are illegally discharging their effluents directly to the beach, in streams or in the storm drainage system. In spite of significant investments in sanitation infrastructure made by the PMF and by CAGECE in the VM basin over the past two decades, the quality of the water along the North coastline remains inadequate, primarily due to point-sources

of sewage[39]. This pollution is affecting quality of life of Fortaleza's population, as well as impacting one of the city's main tourism drivers.[40]

8. **The proposed Subcomponent will support the PMF's strategy to improve the quality of the city's water resources, focusing on the reduction of wastewater discharges along the coastline.** In 2013, the PMF, through SEUMA, launched the program *Aguas da Cidade* with the objective of reducing pollution in the city's water resources and improving water bathing quality along the city's beaches. This Subcomponent will support the *Aguas da Cidade* program by, first, demonstrating the possibility of improving water quality along the coastline through targeted pilot interventions aimed at reducing critical point-sources of pollution.[41] Second, maximizing the return on the investment of the sewage network in the VM basin, by increasing the volume of wastewater discharged into the network[42]. Third, identifying and piloting a combination of technical, institutional and operational measures specifically modelled and designed to address point sources of sewage pollution[43] along the VM beach. Individual measures, or a combination of approaches could be later scaled up by the PMF/CAGECE, as relevant, to address water quality issues in other areas of the city.

9. **This Subcomponent will involve the carrying out of, *inter alia,* the following activities**: (i) strengthening of the PMF's monitoring and enforcement capacity to ensure selected households connect to the sewage network; (ii) financing sewage connections for low-income households; (iii) carrying out interventions for capturing and diverting dry-weather flows from storm water drains discharging along the coast; (iv) piloting on-site water resource treatment technologies to attenuate pollution in selected water bodies; and (v) carrying out communication and environmental education campaigns. Specifically, activities include:

(i) Strengthening monitoring and enforcement capacity of PMF to ensure middle and high-income households connect to the sewage network. The current situation is that around 20% of the households of VM currently not connected to the sewage network - and therefore contributing to the pollution of the underground water or illegally discharging to storm water drains - are middle and high income. The objective of this Subcomponent

[39] Based on a model developed during the preparation of the Project, in partnership with CAGECE, there are 57 sources of pollution along the coast in the VM basin – 6 streams and 51 storm water drains. Two streams represent the main pollution sources: one located in the Eastern richer area (Riacho Maceió) and one in the Western poorer area (Riacho Seis Companheiros). In these two points, water quality in the seashore is not suitable for swimming at any point during the year, while at the other points, water quality varies throughout the year, particularly during the rainy and dry seasons.

[40] Vertente Marítima is a small drainage basin along the North portion of the city. 100% of the pollution in Fortaleza's North seashore is related to the contributions coming from this basin.

[41] The design of the intervention builds on experiences from other projects including: World Bank - BR Espírito Santo Integrated Sustainable Water Management Project (P130682); IADB - *Programa de Saneamento do Ceará* (BR-0324); *Companhia de Saneamento Básico do Estado de São Paulo* (SABESP) - *Se Liga na Rede*. The Project will also benefit from the results of the ongoing World Bank ESW on Emerging Practices from Latin America to Get Households Connected to Sewers (Water GP).

[42] By reducing the number of illegal connections, and increasing the number of connections of households, with a focus in the poorer areas of the VM currently not connected to the network.

[43] Earlier projects in Fortaleza (financed by the PMF, CAGECE, and others) that have financed connections of households to sewage networks, particularly in informal settlements, have faced many contractual and operational difficulties and have ultimately led to poor outcomes. The operationalization of a methodology that combines social and engineering works has been challenging, and continues to be a bottleneck to the scaling up of inter-domiciliary connections across cities in Brazil.

involves: (a) setting-up a temporary elite enforcement team (within SEUMA) dedicated exclusively to enforcement of connections of these households; (b) purchasing the required equipment to improve the effectiveness of the control and enforcement efforts (e.g. sewerage inspection robots); and (c) promoting capacity building, communication and education campaigns.

(ii) Financing connections for low-income households through pilot initiatives. This activity will finance pilot approaches to enable approximately 1,700 household connections, of the universe of 4,510 low-income households that are not connected to the network. Activities will focus on households located in the north-western side of the VM basin, where most of the low-income population live[44] along one of the most polluted sections of the coastline. Earlier experience from CAGECE has shown that these types of connections (of informal households) require special contractual arrangements that integrate civil works, education and communication campaigns and social work with individual households and with the community. These types of connections are the most challenging to complete. The objective of the pilots is to test and demonstrate the effectiveness and the viability of different contractual models (e.g. results-based contracts, self or community implemented connections, separate civil and social work), which could be scaled up in the future (by CAGECE or the PMF). If possible and based on earlier experiences in Brazil[45], specific activities will be targeted to female heads of household.

(iii) Capture and diversion of dry-weather flows from storm water drains discharging along the coast in low-income areas. Interventions will include the capture and diversion of effluent illegally discharged into storm water drains, which has been identified as one of the highest pollution sources along the coastline. During the dry season[46], effluent from selected storm water drains (carrying over 95 percent sewage) will be captured and diverted into the existing primary sewage network[47] for treatment, avoiding discharge into the ocean. Pilots will aim to demonstrate the viability and the effectiveness of capturing dry-season discharges at selected discharge points on the western end of the VM coastline, and the resulting impacts on bathing water quality of the receiving beaches. In the long-term, after all households in the VM have been connected to the sewage network and illegal discharges to storm water drains have been eliminated, dry-weather flow capture will no longer be needed. In the short to medium term, and while points-source pollution is acute, dry-weather flow capture offers a temporary solution to improve bathing water quality in the beaches of the VM.

(iv) Pilot on-site water resource treatment technologies to attenuate pollution in selected water bodies and/or streams discharging directly onto the VM. The *Seis Companheiros* and *Jacarecanga* streams, heavily polluted with sewage, discharge directly on the north western section of the VM beachfront, significantly impacting water bathing quality. Pilot interventions will be carried out under the project, in cooperation with CAGECE, to assess

[44] This area includes some of the poorest neighborhoods in Fortaleza: Pirambu (ranked 113 out of 119 in terms of average income level, according to the 2010 census), Cristo Redentor (108), Barra do Ceara (109) and Carlito Pamplona (83).

[45] As seen under earlier World Bank projects, specifically: Teresina Enhancing Municipal Governance and Quality of Life Project, and the Espírito Santo Integrated Sustainable Water Management Project.

[46] Dry-weather months refer to August to December.

[47] CAGECE has confirmed that in the north western part of the VM, the existing sewage network has available capacity to receive dry-weather effluents captured under the proposed pilot interventions.

the technical and financial viability of treatment technologies aimed at reducing pollution in the two streams (e.g. chemical treatment, UV treatment, phytoremediation). If successful and cost effective, pollution attenuation measures in selected streams could offer an additional solution to improving bathing water quality in selected VM beaches.

(v) Communication and environmental education campaigns. Communications and environmental education campaigns will be launched, in parallel to the enforcement efforts, to promote a more sustainable management of pollution sources in the VM, including illegal sewage discharges and solid waste management. Targeted communication media and educational campaigns will be designed for various audiences (e.g. high, medium and low income population, waste scavengers, and tourists)**.** Gender informed communication and education campaigns will be carried out, as relevant.

10. **The project will promote an innovative institutional approach for the implementation of wastewater management interventions.** While it is CAGECE's responsibility to lay and maintain the infrastructure sewerage network, it is the users' responsibility to conduct their own intra-domiciliary connections and pay the tariffs for service provision. The PMF, in turn, is responsible for enforcement measures and overall environmental control in the city. The PMF through SEUMA's Effluents Control Unit, signed in 2013 a technical cooperation agreement with CAGECE to inspect households and buildings not connected to the network and enforce fines when applicable. However, this approach has not resulted in significant progress given the limited resources from the PMF to undertake its controlling and enforcement role. In addition, it has not resolved the issue of facilitating the connections for low-income households. This project aims at strengthening the innovative collaboration agreement between the PMF and the State Water and Sanitation Utility company, ensuring coordination and engagement of the various responsible actors throughout the sewage service provision chain, particularly at the enforcement stage, where (typically) there is little follow up.

Component 2. Strengthening Planning and Land-based Financing (USD 76.0 million, of which USD 15.0 million IBRD financing)

11. **The objective of Component 2 is to strengthen the capacity of the PMF for planning and land-based financing.** This component includes: (i) planning and monitoring instruments; and (ii) land-based urban infrastructure financing instruments.

Subcomponent 2.1 - Upgrade of planning instruments and licensing tools

12. **The objective of this Subcomponent is to strengthen the PMF's capacity to promote planned urban development while leveraging the use of urban instruments to increase own-source revenues.** During the last three years, SEUMA has evolved from an environmental and urban monitoring and control agency, to an entity that drives urban planning, performs land use and environmental control, and provides faster and better quality services (among which urban and environmental permits). SEUMA has started the revision of urban legislation and of the instruments defined by the Brazilian City Statute[48], it has launched the Environmental Framework

[48] During 2015, the PMF approved the regulation of three instruments: (i) Regularization of works (*Regularização de Edificações*, Law N. 10.334/2015); (ii) Transfer of building rights (*Transferência do Direito de Construir*, Law N. 10.333/2015); and (iii) Land use modification award with costs (*Outorga Onerosa da Alteração de Uso do Solo* , Law N. 10.335/2015). The city's Master Plan of 2009 (*Plano Diretor Participativo*, PDP) and the Land Use and Zoning Law of 1996 (*Lei de Uso e Ocupação do Solo*, LUOS) are currently under revision. Having the new urban regulation

for the City (*Política Ambiental de Fortaleza*, 2013), and it has redefined its organizational and staffing structure to better respond to newly revised priorities. SEUMA is working towards being a more transparent and accessible institution, having opened partnerships and more direct channels of communication with other entities within PMF, with the citizens and with developers, and it has prioritized the implementation of a set of critical activities, such as the update and regulation of the urban planning instruments. The proposed activities under this Subcomponent will allow the PMF (and SEUMA) to complete its transformation into a more efficient and effective planning and monitoring agency.

13. **This Subcomponent will involve the carrying out of, *inter alia*, the following activitie**s: (i) the upgrade of the existing cadaster and the development of a spatial information platform; and (ii) the optimization of processes and services related to environmental and urban management. Specifically, activities include:

(i) *Upgrade of the existing cadaster and the development of a spatial information platform*. The PMF currently has a cadaster managed by SEFIN, used primarily for property tax collection purposes. The data on SEFIN's cadaster is not always consistent with that utilized by SEUMA for planning, environmental and urban licensing purposes. The objective of this Subcomponent is to build on SEFIN's system and to develop an integrated multipurpose cadaster, to be used as a planning tool for the city, improving the PMF access to land use, property and infrastructure information. A robust cadaster will be essential for the city to: (i) increase own source revenue from higher property tax collection; (ii) improve planning and urban redevelopment capacity; and (iii) develop and implement land-based financing instruments, including the proposed Urban Operation.

(ii) *Optimization of processes and services related to environmental and urban management*. In 2015, SEUMA launched *Fortaleza Online*, a program aimed at making over 80 of its licensing processes available online. *Fortaleza Online* aims not only to improve the efficiency of SEUMA's internal processes, but also to promote transparency, promote regularization of property (e.g. changes in land use, construction upgrades), and strengthen the relationship with citizens and developers. Currently there are 10 services available[49] and over 15 services in the pipeline, at different stages of development. The Project will support: (a) the design of roughly 40 new on-line processes to be provided through the existing platform (i.e. revision of the process, identification of technical requirements, design of online service, testing and implementation); and (b) improvements and updates in the system.

in place is essential to allow Fortaleza to conduct efficient planning and fully and more efficiently apply the existing instruments, in order to capture their potential social, urban and financial gains.

[49] The available services (in order of implementation date) are: (1) Prior consultation of locational appropriateness; (2) Approval of Solid Waste Management Plans; (3) Environmental license exemption for low risk activities; (4) Automatic construction permit; (5) Solid Waste Management Plan exemption; (6) Sanitary license for low risk activities; (7) Business license for low risk activities; (8) Building inspection certificate; (9) Certificate of Inspection Building exemption; (10) Environmental license exemption for civil construction. The 10 implemented services have already shown promising results. For example, the number of Solid Waste Management Plans approved has increased from 282 in 2015 to 4,620 in only eight months of operation of the online system. The number of processing days needed has also decreased significantly. For this service, for example, processing times went down from 60 working days to 2 working days. Since its inception, *Fortaleza Online* has resulted into increased revenues for the municipality, as many of the services have an associated fee.

Subcomponent 2.2. – Implementation of land-based financing instruments

14. **The objective of this Subcomponent is to assist the PMF in the identification, design and implementation of Urban Operations.** *OUCs* are a legal instrument that allows the private and public sectors to partner with the objective of promoting the redevelopment of selected areas, provided there are proven social benefits.[50] SEUMA has successfully implemented a number of small-scale OUCs[51], applying land-value capture instruments currently available under the local legislation to collect compensations (*Outorga Onerosa*) from private sector developers, primarily resulting from permits for land use changes. In the long-term, the PMF's goal is to take full advantage of the financial and transformational potential of OUCs, and following the example of São Paulo and Rio de Janeiro, to apply a broader menu of tools, such as Certificates of Additional Building Potential (*Certificados de Potencial Adicional de Construção*, CEPACs[52]) to finance urban redevelopment across the city. Specifically, with the resources raised from land value capture instruments in commercially attractive areas of the city, the PMF aims to finance basic infrastructure and service provision in the poorest areas of the city[53].

15. **This Subcomponent will involve**, *inter alia*: (i) designing and structuring of an OUC in selected areas surrounding the Rachel de Queiroz Park and its surroundings; and (ii) strengthening of SEUMA's capacity to promote urban redevelopment.

16. **Current legislation mandates how resources collected from the use of urban instruments must be administered**. As per the legal provisions in place in Fortaleza, revenues acquired by SEUMA through the collection of urban and environmental service fees, fines, environmental compensation measures and the utilization of the various urban development instruments enter into the municipality's Urban Development and Environmental Development funds (*Fundo de Desenvolvimento Urbano* - FUNDURB and *Fundo de Defesa do Meio Ambiente* - FUNDEMA). Given their nature (resources from these funds can be applied basically on urban and environmental education, preservation and improvements; social programs conducted in poor areas of the city; and urban and infrastructure improvements in areas poorly serviced or within OUCs), and in order to meet the mandatory counterpart requirements, PMF sought to include part

[50] Areas in which OUCs can be applicable are defined in the city's Master Plan. The first step for the utilization of this instrument is the identification of the area within the city in which there is potential for development. The Proposer (either public or private) then assigns specific limits, as well as particular objectives and scope of the OUC (social and environmental benefits are a pre-requisite). OUCs are usually conducted in areas with potential to attract private real estate interest. The OUC allows the municipality to capture land value increments associated with the land use changes. Specific regulation needs to be approved for each OUC.

[51] The OUCs implemented were small-scale operations focused on simple transactions conceding additional building rights and/or permits to private developers in exchange of some investments in infrastructure and urban amenities in the targeted area. These have been positive experiences for the city, resulting in localized impacts and additional revenues. However, the PMF does not have the institutional nor technical capacity to take full advantage of the range of instruments that exist today and apply them in larger scale transformational operations.
The OUCs that have been finalized are: OUC Riacho Maceió (Law 8503 of 2000), OUC Lagoa do Papicu (Law 9857 of 2011) and OUC Jóquei Club (Law 9333 of 2007). The OUCs identified that have already been approved by law are: OUC Dunas do Cocó (Law 8915 of 2004), OUC Sítio Tunga (Law 9778 of 2011), OUC Osório de Paiva (Law 10403 of 2015), OUC Lagoa da Sapiranga (Law 10404 of 2015). Other identified OUCs are: OUC Parque Rachel de Queiroz, OUC Vertente Marítima, OUC Parque do Rio Cocó, OUC Granja Lisboa.

[52] CEPACs are development rights, which are transferable and traded in the stock market.

[53] SEUMA is expecting to collect R$ 50 million over the course of 2016 just as a result of the implementation of the first transactions involving *Regularização de Edificações* and *Outorga Onerosa da Alteração de Uso do Solo*.

of these (those closely linked with components 1 and 2) within the project municipal counterpart share.

17. **Fortaleza's Master Plan designates the RDQ Park and its surroundings as areas of expansion, where compact, mixed-use development should be promoted, potentially through a large-scale OUC**. The area surrounding the RDQ Park has a number of interesting attributes that make it a good candidate for a large-scale OUC, including: (i) it is strategically located, connected to the metropolitan area and close to employment centers and the beach; (ii) it has operating sewerage and transport infrastructure (the RDQ park is surrounded by BRT lines and dedicated bus corridors); (iii) there is demand and interest from the private sector for commercial and residential construction, but current land use and construction parameters limit the supply of m^2; (iv) it is an important corridor that connects low-income population with jobs in the business district and in the touristic beach front; and (v) the area has high potential for economic development, as demonstrated by recent commercial developments. Therefore, there is an opportunity to leverage public investments in the area and to use land use planning instruments, such as an OUC, to promote the involvement of private sector in the redevelopment of the area. Under this component, the Project will support SEUMA in the design and structuring of the RDQ UOC, where the proposed investments in the Park (under Component 1) will serve as anchor to the proposed redevelopment, as well as government counterpart to the OUC. No land acquisition or resettlement related costs will be financed through loan proceeds, as the Municipality has already budgeted for these costs as part of the mandatory counterpart investments.

18. The structuring of the RDC OUC will follow a multi-stage approach and will require public engagement throughout the process. The project will support a series of activities including:

(i) *Definition of the OUC* - This first phase will involve, among others, preliminary data collection[54]; the development of PMF's vision for the OUC[55]; a preliminary definition of the perimeter of the OUC, and the preliminary urbanistic proposal, which lays out the framework for the potential transformation under the OUC; and

(ii) *Design of the OUC* - This phase will include, among others, an in-depth urban diagnostic of the OUC[56]; the development of the detailed urban redevelopment project[57]; an economic analysis to determine real estate market potential in the area, as well as the required share of investments by the private and the public sectors; an environmental impact analysis; and a communication plan to allow proper communication between the

[54] Including aspects such as existing infrastructure, current land uses, vacant or underdeveloped plots, cultural and architectural patrimony, spatial movement of people and traffic, public equipment, green spaces, and socioeconomic characteristics.

[55] Including defining the envisioned urban, social and economic transformations, target population, connectivity with other areas, target densities, and strategic sectoral guidelines (e.g. mobility, green areas, land use, public spaces/equipment's, etc.).

[56] Including (i) topography, drainage, land use, infrastructure; (ii) urban characteristics that are subject to changes (e.g. underutilized areas, low density, poor mobility); (iii) existing buildings, public equipment and structures of historical value; (iv) existing economic activities; (v) environmental aspects.

[57] Including aspects such as the perimeter of the OUC; proposed land uses; proposed population and employment densities; identification of the available additional construction area; proposed urban indexes and parameters within the OUC; mobility and accessibility; environmental aspects to take into consideration; public amenities and facilities; and proposed implementation strategy.

different stakeholders throughout the process. The actual design / structuring phase will be completed when all the technical and financial inputs to the preparation of the OUC Law are developed. From that point on, PMF will prepare the Law (in accordance with national and local legislation) and will undergo the *Implementation of the OUC*, which includes specific agreements with private sector partners and the monitoring of the OUC progress. The latter will occur beyond the project timeframe.

19. The project will incorporate measures to mitigate possible gentrification resulting from the RDQ OUC. As infrastructure and accessibility to the RDQ Park are improved, the value of land and of real estate in the surrounding neighborhoods and within the perimeter of the OUC will increase. All current residents of the area (both high and low income) will benefit from an increase in the value of their properties. However, there is a risk that lower-income residents of the area could be gradually displaced as more affluent owners move in, and as property taxes, land and real estate value, and the cost of service provision increase. The OUC regulatory framework is the main instrument to ensure that the risk of gentrification can be minimized and/or mitigated. It requires that OUCs include safeguard measures related with environmental sustainability, social inclusion and citizen participation. It also requires the assessment of impacts on the target neighborhoods and the participatory development of economic and social compensation plans for the directly affected population.

20. The project will ensure that the draft municipal law of the RDQ OUC requires the preparation of an assessment of impacts on target neighborhoods, and economic and social compensation plans. These will aim as much as possible at minimizing and mitigating potential adverse impacts and gentrification risks from urban upgrading interventions through, *inter alia*, measures that promote: (i) housing affordability and rent stabilization, (ii) inclusionary zoning ordinances to promote community development (e.g. mixed-use and transit-oriented development and density provisions), (iii) basic service provision to resident services; and broadly (iv) bringing the benefits of redevelopment investments to existing residents, including the provision of quality public spaces. The PMF will reinvest in the area the revenue collected as a result of the application of the OUC instrument, in support of such mitigating measures, as mandated by the country's regulatory framework ruling OUCs. Building on global lessons learned from comparable interventions, the project will incorporate mitigating measures that could be considered for Fortaleza, including, for instance, tenure regularization mechanisms that will allow low-income residents to remain in the area; property tax provisions for current residents of surrounding neighborhoods; early community engagement and participatory approaches; land use criteria to maintain low to medium income housing areas, and mixed uses areas with low-income housing requirements; and a tailored resettlement approach to fight gentrification-related risks.

Component 3. Project Management (Estimated costs: USD 6.0 million, all of which IBRD loan)

21. This component will support project management activities through, *inter alia*: (i) the technical and administrative management and the monitoring and evaluation of the Project; (ii) the carrying out the Project's financial management and procurement requirements; (iii) the carrying out of outreach activities in connection with the Project; (iv) the provision of equipment and training (on, inter alia, technical, environmental and social safeguards management) to SEUMA's

staff for the purpose of Project implementation; and (v) the provision of technical assistance and supplies to strengthen the Borrower's auditing, financial control and procurement capacity.

II. Lessons learned from earlier projects incorporated in proposed design

22. The Project design incorporates global best practices and experiences from the urban development sector, and draws key lessons from a comprehensive review of past Bank urban, water and sanitation projects in Brazil, as described in this section.

23. **The Project draws key lessons from a comprehensive review of past Bank urban projects in Brazil, including water and sanitation projects.**[58] A reviewed of closed projects revealed a number of common lessons that have been incorporated in the design of the proposed operation, to ensure the successful implementation of projects in an urban setting within the Brazilian context, as detailed below.

(a) Setting realistic expectations, balancing scope and depth of the project. The proposed interventions are focused both thematically and geographically. In addition, the PDO and the results frameworks are concrete and include targets that can be achieved during the project's lifetime.

(b) *Aligning project with government strategies and investments, ensuring local implementation capacity, and simplifying institutional arrangements.* Insufficient capacity of the counterpart and/or complex institutional arrangements significantly affected the performance of earlier operations. To minimize similar implementation challenges: (i) the project has been designed to be fully integrated with PMF's and SEUMA's ongoing programs, leveraging their existing capacity and not creating additional capacity needs; (ii) Component 3 has been designed to provide consistent and constant support to enhance SEUMA's capacity; and (iii) activities have been designed such as to minimize the participation of different executing agencies, thereby consolidating the responsibilities within SEUMA and minimizing the need for project-specific inter-agency coordination arrangements.

(c) Addressing resettlement needs early on. Resettlement has been a challenge for the implementation of urban projects in Brazil, mostly due to the scarcity of land in nearby areas and full reliance on counterpart funds for the construction of hosting housing complexes. Consequently, resettlement has resulted in costly delays. Acknowledging that experience, the proposed interventions have been designed to minimize the need for resettlement and to propose alternative solutions (such as supported self-resettlement, cash compensation according to market value, and the use of other

[58] Projects reviewed include: Santos Municipality (P104995), Ceara Regional Economic Development: Cidades do Ceara (P09369), BR Municipal APL: Teresina Enhancing Municipal Governance and Quality of Life Project (P088966), BR Municipal APL: Sao Luis Enhancing Municipal Governance and Quality of Life Project (P094315), Integrated Water Management in Sao Paulo: Mananciais Horizontal APL Program (P006553), Bahia Poor Urban Areas Integrated Development Project (P081436), Recife Urban Development and Social Inclusion Project (P089013), Recife Urban Upgrading Project (P049265), Rio Grande Do Sul Integrated Municipal Development Program (P094199), Uberaba Água Viva Project (P089011).

technical, legal and fiscal instruments as a means to acquire land)[59]. These solutions would try to overcome challenges imposed by land affordability, location of host communities, accessibility and availability of basic services and infrastructure in host communities, inclusion of affected population in the urban fabric and preservation of social networks, easy adaptation to homes in the formal sector by people used to rely on behaviors and cultural norms that prevail in the everyday life of irregular settlements. In addition, the Project's RPF includes specific measures to assist low-income population, such as the social work assistance that will be provided for affected families before and after relocation. Potential needs have been identified early during Preparation and safeguards instruments have been developed providing for alternative solutions, broad participation of affected people, and extensive social work in post-occupation stages. Moreover, a phased implementation timeline has been defined, prioritizing works that do not involve land acquisition or resettlement and sources of municipal funds have been identified (FUNDEMA and FUNDURB). SEINF and HABITAFOR, which have wide expertise in dealing with resettlement in highly participatory ways as part of other operations financed through international organizations, will support SEUMA in the preparation and implementation of the project ARAPs, respectively.

(d) *Ensuring the readiness of procurement packages at project effectiveness*. To avoid delays in implementation, a proposed package of interventions has been identified to be ready to roll out during the first year of implementation (see section VI. Appraisal Summary).

24. **As resettlement is a critical challenge in Brazil, the Project pays special attention to internalizing lessons on this matter**. First, there is a need to address financial and operational implications of compensation schemes early on. Avoiding cash compensation and offering nearby resettlement options render critical issues related with land affordability and the location of host communities[60]. Second, incidence of crime and violence and the growing trend towards opportunistic encroachment in targeted areas often delay and increase the costs of implementation of resettlement plans. Finally, the emergence of conflicts related with the need to change behavioral patterns/social norms when moving people from irregular settlements to homes in formal areas (and particularly to multistory condo buildings) requires intensive social work in post-occupation stage to ensure sustainability of the resettlement. Acknowledging these concerns, the proposed interventions have been designed to minimize the need for resettlement and to propose adequate and feasible solutions when resettlement is unavoidable, according to the PMF's capacity. The Project has included, *inter alia*, a phased implementation strategy for the interventions in RDQ Park (prioritizing those not requiring displacement) and robust grievance

[59] These instruments, among others, allow for the transferring of building rights (*Transferência do Direito de Construir*), for the regularization of informal settlements (*Usucapião Especial de Imóvel Urbano*), and for land value capture (*Outorga Onerosa do Direito de Construir*). They also incentivize the use of underutilized areas (*IPTU Progressivo no Tempo*), as well as provide opportunities for partnerships between the public and the private sectors for the redevelopment of selected areas (*Operações Urbanas Consorciadas*).

[60] Oftentimes, affected population were pushed towards more peripheral and underserviced areas, leading to concerns about poor accessibility and availability of basic services and infrastructure.

redress mechanisms. Appropriate instruments and sources of financing for acquiring land were also pre-identified (as detailed in Annex 3).

25. **Attractive, accessible and well-functioning public spaces can help revitalize communities and spur economic development.** The importance of public spaces as critical urban amenities has been demonstrated in cities across the world. Quality public spaces can transform cities, by becoming anchors and focal points where communities come together, by promoting social integration and enabling local economic development (e.g. Medellin). Public spaces can have measurable economic benefits, in terms of contributing to land values (e.g. Teresina). Investments in the RDQ Park under Component 1, and the Urban Operation to be structured under Component 2, build on successful urban transformation experiences anchored around a public space, and on the participatory engagement of the community through the process of *placemaking*.

26. **Strengthening municipal capacity for urban planning unlocks own-source revenue streams.** Local governments rarely have the resources to fund infrastructure needs stemming from growing populations in urban areas. Increasing own-source revenues through the use of innovative land-value capture instruments has allowed cities like Bogota, Johannesburg, Washington DC, and São Paulo to invest in infrastructure, to revitalize urban areas and to promote social equity through investments in poor neighborhoods. The use of these instruments requires the existence of an adequate legal framework, an up-to-date cadaster system, and strong technical capacity for urban and financial planning. Lessons learned from successful experiences of Bogotá and São Paulo updating the cadaster and structuring OUCs, respectively, can be readily applicable to the current situation of Fortaleza and have been incorporated in the project design.

27. **Programs that finance household connections to sewage networks are difficult to implement and have mixed results.** Several projects in Brazil were reviewed, including previous experience from CAGECE in Fortaleza, which highlight the following common challenges in reaching agreements with households to allow connections to the network: (i) having to pay for sanitation services; (ii) lack of awareness of the impact of not adequately disposing of sewage; (iii) lack of knowledge of connection program; (iv) lack of enforcement of penalties for not connecting to network; and (v) perception that house will be damaged to install connection and that repairs will not be funded[61]. Building on other experiences in the region, the Project aims to address these challenges by: (i) designing and implementing communication, environmental education strategies and gender informed social work campaigns to be rolled out as connection program begins; (ii) strengthening the PMF's enforcement capacity; and (iii) enabling and financing connections for low-income households through initiatives that test different replicable and scalable approaches.

[61] For further information see Instituto Trata Brasil. 2015. *Ociosidade das Redes de Esgotamento Sanitário no Brasil.*

Annex 3: Implementation Arrangements

BRAZIL: Fortaleza Sustainable Urban Development Project

Project Institutional and Implementation Arrangements

Project administration mechanisms

1. SEUMA will be the Project's implementing agency. A PMU will be created within SEUMA, comprised of a Project Coordinator and dedicated staff for Project Administration and Financial Management, and for Procurement.

2. Technical and M&E functions will be performed by key staff appointed within SEUMA's administrative and organizational structure: Planning (*Laboratório da Cidade*), Licensing (*Coordenadoria de Licenciamento*), Geographic Information Systems (*Célula de Georreferenciamento*), Land Use Control and Enforcement (*Coordenadoria de Fiscalização*), Urban Businesses (*Célula de Negócios Urbanos*), Environmental Sustainability (*Célula de Sustentabilidade Ambiental*), Pollution Control (*Célula de Controle de Efluentes*), Planning and Management of Natural Systems (*Célula de Planejamento e Gestão de Sistemas Naturais*), Enviromental Policies (*Coordenadoria de Política Ambiental*), and Legal Advisory Department (*Assessoria Jurídica, ASSJUR*).

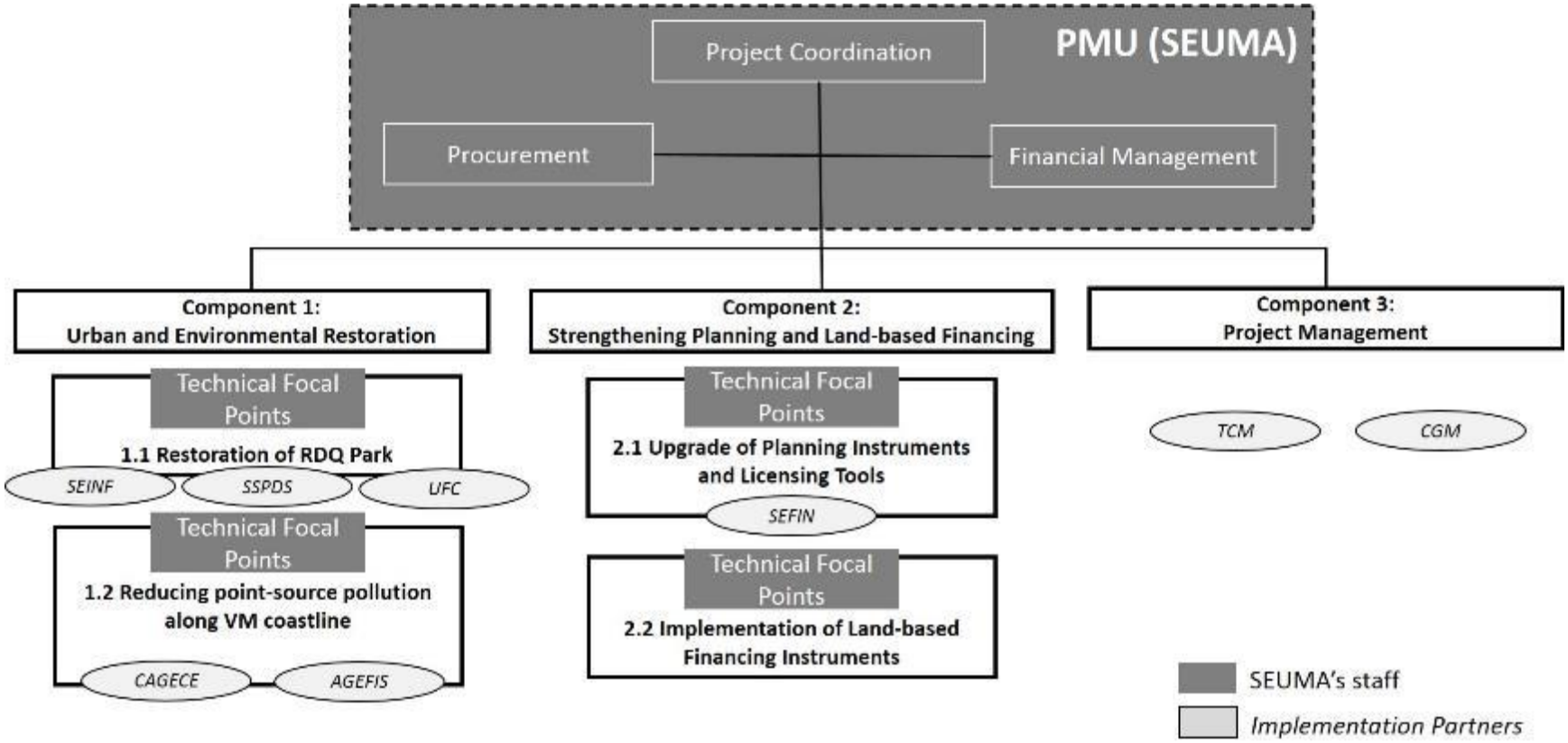
3. SEUMA will be responsible for leading the Project activities, with special support from PMF's internal and external partners involved in sector specific activities. While the Central Procurement Unit (CLFOR) will maintain its centralized procurement role at the municipal level, the procurement focal point from SEUMA's Legal Advisory Department will be formally appointed (by Decree) to take part in CLFOR's Special Procurement Commissions related to the Project. Audit and financial control functions will be performed by the Municipal Audit Office (TCM) and the General Controller of the Municipality (CGM).

4. Other key partners supporting the preparation and implementation of the Project within PMF include: SEFIN, SEINF, and Fortaleza's Inspection Agency (*Agência de Fiscalização de Fortaleza*, AGEFIS). Outside PMF, the agencies playing and/or intended to play a critical role in project preparation and implementation are the *SSPDS*, CAGECE and *UFC*. Their roles are summarized in Table A3-1. Cooperation agreements detailing project-specific roles and responsibilities will be signed between SEUMA and each of these agencies. Details on each entity's role, obligations and the template of the cooperation agreements will be provided in the Project's Operational Manual. Figure A3-1 provides an overview of the institutional arrangements.

Table A3-1: Role of government partners

Subcomponent	Entity	Role
1.1 Restoration of RDQ Park	SEINF	- Provide support to social safeguards management through engaging a social team during Preparation to support SEUMA (i) conduct preliminary analysis; (ii) conduct site surveys; and (iii) prepare, the project's social safeguards instruments (emphasis on the resettlement action plans for the prioritized interventions); - Perform works supervision, supported by a consulting firm hired by SEUMA; - Provide support to SEUMA on the preparation and verification of technical aspects related to infrastructure, including, *inter alia*: (i) Terms of Reference; (ii) technical opinions; (iii) verification of cost estimates and bills of quantities.
	SSPDS and UFC	- Concession of sections 8-10 of the RDQ Park; - Support in the development of the environmental management plan for the RDQ Park.
1.2 Reducing point-source pollution along VM coastline	CAGECE	- Provide support in the preparation of sector related studies, Terms of Reference and technical specifications of bidding documents; - Support works supervision, overlooking the implementation of: (i) the monitoring and enforcement activities; (ii) the household connections; and (iii) the capture and diversion of dry weather flows from the water drains into the sewage system; - If agreed with the municipality, and as needed, perform O&M of the investments in capture and diversion of dry weather flows from the water drains into the sewage system. - Additional support related to the project, as needed.
	AGEFIS	- Take part in the enforcement activities, along with SEUMA.
2.1 Upgrade of planning instruments and licensing tools	SEFIN	- Share with SEUMA the roles related to the preparation, implementation and M&E of the cadaster related activities.

Figure A3-1: Summary of Institutional Arrangements



5. A group of sector specific external individual consultants (in the areas of urban and environmental development, infrastructure financing instruments, and sanitation, among others) will be engaged to provide technical support, as needed, to SEUMA's PMU and technical team. An external firm will be hired to provide works supervision, as needed. Although the PMF has no ongoing project with the Bank, some key staff in SEUMA have previous experience working with Bank financed projects at the State level. Additional technical assistance will be provided throughout project implementation to strengthen SEUMA's project management capacity, including training in the areas of safeguards, procurement and financial management.

Financial Management, Disbursement and Procurement

Financial Management

6. In accordance with OP/BP 10.00, Financial Management Manual for World Bank-Financed Investment Operations (effective March 1, 2010 and Issued (Retrofitted) February 4, 2015), the World Bank performed a FM Assessment for SEUMA, the project implementation unit. The scope of the assessment included: (i) an evaluation of existing FM systems in place to be used for project monitoring, accounting and reporting; (ii) review of staffing requirements; (iii) review of the flow of funds arrangements and disbursement methodology; (iv) review of internal control mechanisms in place; (v) discussion in regard to reporting requirements, including the format and content of IFRs; and (vi) review of internal and external audit arrangements. FM arrangements should place emphasis on governance controls applicable to project components. This approach takes into account current procedures, norms and institutional capacity, and emphasizes simple procedures, with a high degree of transparency and accountability, and decision making and management responsibilities at the direct administration level.

7. Overall, the evaluation found that (i) at the country level, Federal FM laws and regulations applicable to sub-nationals provide a strong FM framework for sub-nationals executing agencies, (ii) at the Municipality level, the fiscal transparency, accounting, reporting, internal controls and external audit are considerate moderately satisfactory, due to some weakness in staffing at SEUMA and internal control institutional capacity. The assessment also identified the following major project or entity related risks and opportunities: (i) SEUMA staff does not have previous experience with World Bank financed projects, (ii) most of municipality staff are hired through outsourced selection process and not public "*concursos*", (iii) SEFIN currently faces some challenges to adjust to the MBCASP, equivalent to IPSAS, and (iv) CGM and TCM need additional institutional strengthening and capacity building activities, to be financed by project's proceeds.

8. The overall conclusion of the FM assessment is that: (i) the FM arrangements for the proposed project are considered adequate; (ii) the funds flow, disbursements, monitoring, auditing and supervision arrangements have been designed in a way to respond to the project's implementation arrangements; and (iii) the residual overall FM risk associated with the project is rated **Substantial**.

<u>Institutional Arrangements and Staffing</u>

9. The primary fiduciary responsibilities for the project would be carried out by SEUMA, which include: (i) preparing and obtaining approval of project FM arrangements; (ii) coordinating

and supervising project implementation; (iii) submitting disbursement requests and documentation of expenditures to the Bank; (iv) preparing and submitting IFRs to the Bank; (v) preparing and providing all financial documentation and project reports requested by external auditors and Bank staff; and (vi) preparing and updating the project operating manual. The latest public contracting selection (*concurso público*), launched on May, 2016 to hire planning analysts, including accounting professionals for all municipality agencies (25 direct and 18 indirect), was not considered sufficient to cover staffing bottlenecks. Despite this, they hold the required / minimum professional background and are considered municipal civil servants, under the respective statutory law. This will be the first World Bank-financed project in the municipality and FM related staff do not have previous experience in executing external financed operations. Proper training and close follow up should be given by the Bank during first years of project implementation.

10. The Financial Management Cell (*Célula de Gestão Financeira*, CEGEF) within SEUMA is responsible for updating GRPFort (the municipality's administrative integrated system) with data on commitment and first approval level. Payments are finalized by SEFIN, responsible to execute the budget law (after proper administrative system update made by the Municipal Secretariat of Planning, Budgeting and Management (*Secretaria de Planejamento, Orçamento e Gestão*, SEPOG).

Accounting Policies and Procedures, FM system, and Internal controls.

11. The municipality of Fortaleza follows: (i) the Brazilian Accounting Rules (*Normas Brasileiras de Contabilidade Aplicadas ao Setor Público*, NBCASP), Law 4320/64 that establishes certain high-level accounting principles; and (ii) the MCASP, issued under Law 10180 of February 6, 2001 and Decree 3589 of September 6, 2001. The Project requires adherence to the NBCASP and the revised MCASP, issued under *Portaria* STN 467 of August 6, 2009. The municipality follows STN schedule to adopt MCASP, but still faces challenges in changing civil servants behavior to the new system and procedures. It is expected that IPSAS will be fully adopted by 2024.

12. The budget cycle includes planning and implementation of all government activities, which are to be reflected in the PPA, LDO and LOA[62]. Project's budgeting and accounting arrangements are part of the overall municipality PFM system and therefore all transactions will run through the municipality administrative system (GRPFort). All payments will be made in accordance with existing procedures for commitment (*empenho*) and payment (*liquidação*). These functions will be undertaken by the SEUMA's Financial Management team. Individual planned Project transactions will be documented in a Work Plan (*Programa de Trabalh*o) within the GRPFort. Although GRPFort does not include a Budgetary Unit specifically designated for a given project, all project transactions will be identified by a specific source of funds, namely 3102 - External Finance Sources.

13. Counterpart funds will be executed under sources of funds 0101 - General Counterpart Funds, 2700 - FUNDEMA and 0102 - FUNDURB. Once incurred, all Project costs will be recorded according to the State Chart of Accounts which will be customized for the project using a customized chart of accounts (*Plano Interno*) for reporting purposes.

[62] PPA (*Plano Plurianual*) refers to the municipality's multi year plan; LDO (*Lei de Diretrizes Orçamentárias*) is the law defining guidelines for public budgeting; and LOA (*Lei Orçamentária Anual*) contains the specific / approved budget to be invested to attain goals stablished under the different programs. They are approved by Congress every 5 years, 18 months, and 12 months, respectively.

Internal Controls

14. The CGM follows law 8.608 and its main objective is to support municipality's administrative direct and indirect agencies on legal procedural compliancy for public expenditures and information access law. It focuses on prevention intervention, through contracts deadline recommendations actions. Fortaleza was ranked (by Brazil SAI) as the 5th most transparent municipality in Brazil, in terms of budget execution. The latest Brazil CMU review of internal control adequacy (internal audit capability model, IA-CM) showed that CGM has a proper institutionalized infrastructure and conformity status, although still under development. The approval and authorization controls are adequate and properly documented and followed with adequate safeguarding of Project assets.

15. Most of the staff are hired through public competitive selections (*concursos públicos*), although there are still some outsourced hired staff. A new hiring process is expected for 2017, however it is not expected that it will fulfill the municipality's need. For Project purposes, CGM will be responsible for internal audit compliance related functions. The internal control environment, especially staff, needs some additional capacity building training. Segregation of functions and level of controls to approve budget transfers/allocations for execution under the procurement plan will be assured throughout SEUMA and SEFIN. Since 2014 the accounting records are maintained electronically. For Project purposes, they will be reconciled with budget and procurement reports on a monthly basis.

16. Given CGM will undertake relevant project internal control activities, through reviewing bidding processes and financial execution of medium risk value contracts, additional institutional training under World Bank procurement rules, IPSAS and International Standards of Supreme Audit Institutions (ISSAIs), in addition to eventual IA-CM related institutional strengthening activities will be financed by loan proceeds.

Reporting and Monitoring

17. SEUMA will prepare the IFRs for the Project monitoring purposes, using information provided by the GRPFort, which has been considered satisfactory. Thus, the Project chart of accounts will be developed and used, taking care of the codification of sources and uses of funds, according to the project description and categories of expenditures defined in the Loan Agreement. The system will track contracts expenditures by Components and Subcomponents, following external finance source of funds.

18. The monitoring system to be used will be the one already reviewed and found acceptable for the Bank, and will run through the module "*Sistema Integrado de Gestão de Operação de Crédito*". The IFRs will be prepared in the currency of the Borrower on a cash accounting basis and expenditures figures will be stated by quarter and accumulated for the year and for the project's life. IFRs will be submitted to the Bank up to 60 days after the closing of each quarter. Year-end IFRs will be used for external auditing purposes, to be carried out by TCM.

19. The following quarterly IFRs will be issued to the Bank for management and reporting purposes, in Reais and in US Dollars.

a) IFR 1: Source and application of funds by category, cumulative (project-to-date, year-to-date);

b) IFR 2: Uses of funds by project components cumulative (project-to-date, year-to-date) and for the period, showing budgeted amounts versus actual expenditures (i.e., documented expenditures), including a variance analysis;
c) IFR 3: Uses of funds by counterpart funds (by contract or program) cumulative (project-to-date, year-to-date) and for the period, showing budgeted amounts versus actual expenditures (i.e., documented expenditures), including a variance analysis.

20. The Project operational manual would document these processes, and serve as an important source for processing steps to be followed during project implementation. It would contain detailed procedures and guidelines for disbursements, payments, approvals, commitments, payments and reporting, and would be submitted to the Bank for review prior to Negotiations.

Disbursement Arrangements

21. Disbursement arrangements for this Project take into consideration the FM and procurement assessments of SEUMA, the Project's flow of funds, the cash flow needs and Borrower's experience with Bank's operations. Overall disbursement arrangements will follow standard disbursement policies and procedures established in the Disbursement Guidelines for Investment Project Financing and in the Disbursement Letter of the Project. Withdrawal Applications and necessary supporting documentation will be submitted to the Bank electronically through the Client Connection web site in such form required to access funds from the loan account.

22. The following disbursement methods will be available: Advance, Reimbursement and Direct Payment. Disbursements will be primary based on advances. The Bank will advance funds into a segregated Designated Account, maintained exclusively for management of loan proceeds, opened in USD at Banco do Brasil, in Fortaleza – CE, in the name of SEFIN. The maximum amount that may be advanced to the Designated Account is USD 10,000,000. The PMU will report on the use of advances and reimbursement requests through simplified Statement of Expenditures - SOEs (run through GPRFort). Eventual Direct Payments will be documented by copy of the invoices.

23. The Bank may finance up to 100 percent of all Project expenditures. The counterpart funds will be managed separately from the Designated Account, and will be disbursed directly from the Municipal Treasury's single account, to contractors and service providers. A specific IFR report will be prepared to monitor counterpart funds execution.

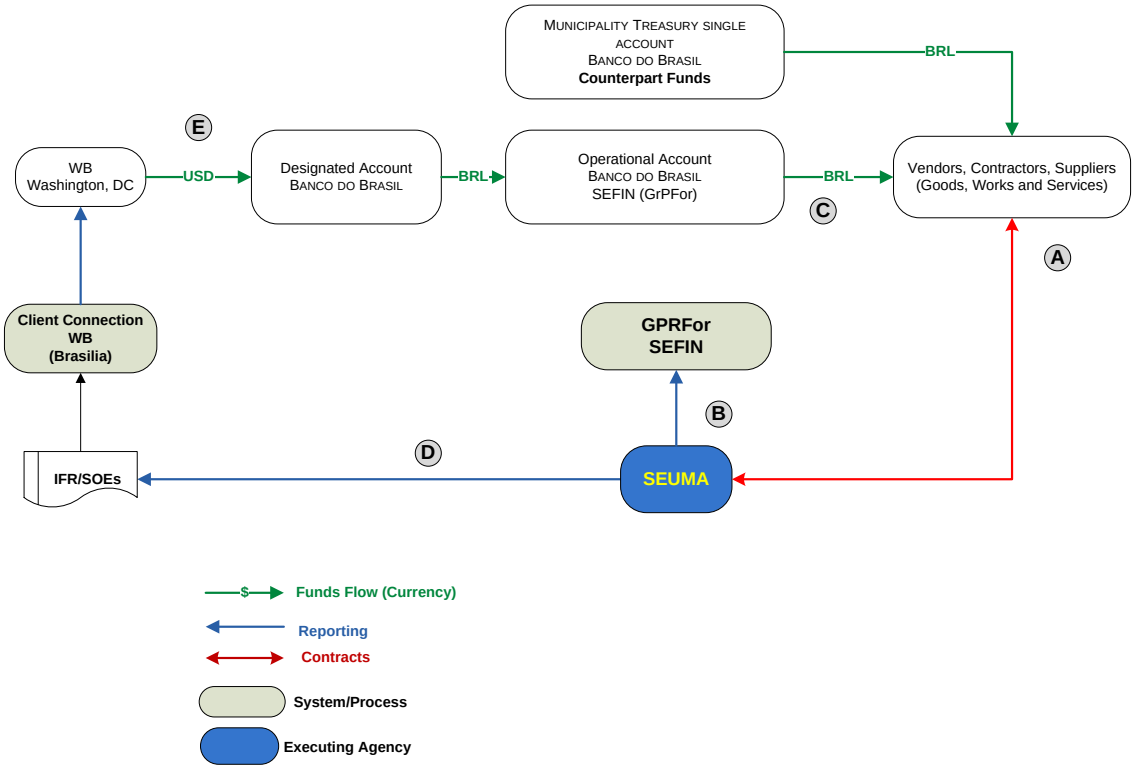
24. Retroactive financing will be allowed to this Project up to an aggregate amount not to exceed 10 percent of the loan amount to be made for payments up to twelve months before the signing date of the loan agreement for eligible expenditures.

Flow of Funds

25. The proposed funds flow and disbursement arrangements were considered satisfactory and will be streamlined within the Project to facilitate execution, avoid unnecessary incremental operational arrangements, and rely as much as possible on Public Financial Management (PFM) country and municipality systems. All payments would be physically made by the Treasury of the Municipality of Fortaleza through GPRFort upon instructions from SEUMA once payment obligations have been incurred and properly documented. Payments will be made directly from the Treasury, through the issuance of an *ordem bancária* to the contractors.

26. SEUMA will be responsible for instructing the Municipality Treasury to make all payments for works, goods and services (through GPRFort). Payments will be made directly from the operational account (through GPRFort) for loan purposes. Such arrangements are considered appropriate. This arrangement has the necessary segregation and level of approvals and can speed up implementation. A fixed ceiling of USD 10 million will be established. A schedule of estimated IBRD disbursements and a loan allocation table is provided below.

Figure A3-2: Disbursement Flow



A: Suppliers provide goods and services, and related invoices

B: SEUMA submit payment requests to SEFIN, Transaction data provided to SEUMA through access to GRPFort

C: SEFIN process payments direct to supplier's bank account and counterpart financed activities

D: SEUMA submits Requests for disbursement to the World Bank

E: Disbursements of funds from the World Bank to the designated account

External Audit

27. External audit will be undertaken by TCM (currently responsible for auditing IDB's financed project). TCM will follow Bank's audit policy, in accordance with International Standards on Auditing (ISAs) issued by the International Federation of Accountants (IFAC). For the project, annual financial statements will be audited in accordance with acceptable auditing standards. The external audit will be conducted according to Terms of Reference acceptable to the Bank. Auditors will be required to issue an opinion on project's IFRs, as per Bank guidelines. Auditors will also have to produce a management letter, where any internal control weaknesses will be identified, contributing to the strengthening of the control environment. The auditor's

report will be submitted to the Bank no later than six months after the closing of the grantee's fiscal year, and the annual audit will be financed out of grant proceeds.

28. Strengthening and institutional capacity will be provided to TCM to assure proper arrangements prior to the due delivery date of the first project audit report. It was agreed that an approximate amount of USD200,000 will be made available under project proceeds to finance some of TCM institutional capacity needs deemed appropriate and to be approved by the Bank.

29. All supporting records will be maintained at the PMU for at least (i) two years after the Closing Date; or (ii) one year after the World Bank has received the Audited Financial Statements covering the period during which the last withdrawal from the Loan Account was made.

Financial Management Supervision during implementation

30. Financial management supervision will follow current supervision arrangements for the Project and will include, among others, the (i) review of the IFRs; (ii) review of the auditors' reports and follow-up of issues raised by auditors in the management letter, as appropriate; (iii) follow up on any financial reporting and disbursement issues; (iv) response to Project team's possible questions, and (v) update of the FM rating in the Implementation Status and Results Report (ISR).

Procurement

31. Procurement for the proposed Project will be carried out in accordance with the World Bank Procurement Regulations for IPF Borrowers dated July 2016 and the provisions stipulated in the Legal Agreement. The various items under different expenditure categories are described in general terms below. For each contract to be financed by the Loan/Credit, the different procurement methods or consultant selection methods, the need for pre-qualification, estimated costs, prior review requirements, and timeframe will be agreed between the Borrower and the Bank in the Procurement Plan.

32. The World Bank's Standard Procurement Documents will govern the procurement of World Bank-financed Open International Competitive Procurement. For procurement involving National Open Competitive Procurement, the Borrower will use Standard Procurement Documents acceptable to the World Bank that will be included in the Operational Manual.

33. **Procurement of works.** Works procured under the Project will include, among others, restoration of public spaces and green areas, and investments in sanitation in selected areas of the city.

34. **Procurement of goods.** Goods procured under the Project will include, among others: software packages, communications services, educational materials, vehicles, IT equipment and other tools required to put in place an integrated client system control. It may be carried out in accordance with the method known as "*Pregão Eletrônico*", as set forth in the Brazilian Law No. 10.520, dated July 17, 2002, provided (i) documents are acceptable to the Bank, (ii) documents include anti-corruption clauses, and (iii) the process is carried out under an e-procurement system previously approved by the Bank.

35. **Procurement of non-consulting services.** Non-consulting services under the Project will include, among others: capacity building support to the implementation and beneficiaries agencies; monitoring, reporting and evaluation-related services; events of various natures, among which

training, workshops and seminars; logistics, such as hotel services, catering and travel services; printing services, videoconferencing materials, brochures, magazines, intranet, and videos; communication and education campaigns and events, etc. It may be carried out in accordance with the method known as "*Pregão Eletrônico*", as set forth in the Brazilian Law No. 10.520, dated July 17, 2002, provided (i) documents are acceptable to the Bank, (ii) documents include anti-corruption clauses, and (iii) the process is carried out under an e-procurement system previously approved by the Bank.

36. **Selection of consultants.** Consulting services under the Project will include technical assistance and advisory services of various natures and purposes, among which: engineering services; urban and environmental studies, projects, diagnostics and impact assessments; software and system development-related services, etc. The following methods will be used for selecting consulting firms depending on the nature and complexity of assignments, attractiveness to foreign firms and need for international expertise, estimated budget of the services: Quality and Cost Based Selection (QCBS), Least Cost Selection (LCS), Selection under a Fixed Budget (SFB), Selection Based on Consultant's Qualification (SBCQ), Single-Source Selection (SSS) both for consulting firms and individual consultants, and Selection of Individual Consultants (IC). Contracts estimated to cost USD 500,000 equivalent and more will be advertised internationally. Shortlists of consultants for services estimated to cost less than USD 1,500,000 equivalent per contract may be composed entirely of national consultants.

37. **Operating costs.** During Project preparation, it was agreed that operating costs will include staff related expenses, supplies, and miscellaneous expenses. The operating costs to be financed by the project will be procured, when applicable, using the implementing agency's administrative procedures.

38. **Others**. The need for special arrangements for scholarships, grants, etc. was not identified during Project preparation. The procurement procedures and standard bidding documents to be used for each procurement method, as well as model contracts for works and goods to be procured, will be presented in the Project's Operations Manual.

39. **Procurement assessment**. The Bank performed a Procurement Assessment on June 2016 to evaluate the capacity of SEUMA to implement procurement actions for the Project. Procurement activities will be carried out by CLFOR (the PMF's central unit for execution, coordination and monitoring of procurement affairs) under SEUMA's overall coordination and monitoring. SEUMA's and CLFOR's responsibilities will include, but will not be limited to: procurement planning, implementation and monitoring, ensuring quality of bidding documents, and participating in bid evaluations. The Bank reviewed the organizational structure for Project implementation and the interaction between the project's staff responsible for technical aspects (within SEUMA) and CLFOR, staff skills, quality and adequacy of supporting and control systems, and suitability of the laws, rules and regulations applicable. The assessment determined that the procurement focal staff designated for the Project should be kept on SEUMA's team with exclusivity to assist project implementation. In addition, a procurement consultant with experience in Bank's guidelines should be hired on an *ad hoc* basis to assist during critical stages of the procurement processes. Based on the information at this moment the procurement risk is Substantial. The following action plan was proposed to address and/or mitigate risks during the project's implementation:

Table A3-2: Procurement Action Plan

Act	Description	Action	Timeframe
1	Lack of SEUMA's experience in projects financed by the World Bank.	Hiring an ad hoc procurement specialist to support SEUMA and CLFOR staff; Strengthening the capacity of SEUMA and CLFOR, through ongoing Bank support and specific acquisition training.	By effectiveness
2	Interest of companies in the tendering procedures	Use (i) national media for works, goods and non-consulting services, (ii) international in the selections of consultancy of higher complexity, and (iii) direct contact with the market.	By implementation
3	Quality of Terms of Reference and Technical Specifications	Expert advice on the definitions of ToR and ET. Technical no objections for technical documents issued by the World Bank.	By implementation
4	Weak and imprecise cost estimative	Look for budgeting based on data that reflects the market and not just on official tables issued by various spheres of government.	By implementation
5	Companies involved in fraud and corruption issues	Maintain a strict control over the companies and individuals that are present in the different control lists in Federal, State, Municipal scope and even in lists of international institutions of financing.	By implementation
6	Contract management	Members of the team with responsibility for the formal control of the execution of contracts, controlling and monitoring the progress of the contracts, also the milestones for their development, such as deadlines, readjustments (when applicable), etc.	By implementation

40. Strengthening and institutional capacity in procurement affairs will be provided to SEUMA, CLFOR and PMF. It was agreed that an approximate amount of USD 250,000 will be made available under Project proceeds to finance some procurement capacity deemed appropriate and previously approved by the Bank.

41. The procurement arrangements for the Project were set up taking into consideration PMF's own systems in place, centralized at CLFOR. The responsibility for elaboration of the Terms of Reference and Technical Specifications is of SEUMA, with inputs from other agencies involved in the project. The agencies will send the technical inputs to SEUMA, who will consolidate the TORs and TEs. SEUMA and CLFOR are responsible to elaborate the bidding documents and Requests for Proposals and to conduct the procurement/selection processes. The Project team will count on a focal point from SEUMA's Legal Advisory Department (ASSJUR), to be responsible for developing the Project's procurement packages. CLFOR, through their special commissions for projects involving external funding, will: (i) consolidate the procurement packages for consulting services and for services, works and acquisition of goods; (ii) issue requests for expressions of interest, requests for proposals and procurement notices; (iii) conduct opening and negotiations sessions, when applicable; (iv) consolidate evaluations and inputs from the technical evaluation committees in SEUMA; and, (vi) award contracts. SEUMA will set up a Special Committee (SC) to be responsible for the procurement processes. This SC will consist of technical staff indicated by the agencies involved and full time available for this task. At least one technical staff of each agency involved must be part of this SC.

42. All bidding documents and respective contracts regardless of the procurement method are required to have the anticorruption (A/C) clause as a condition for eligibility of expenditures.

Procurement Plan

43. The Borrower has developed a Procurement Plan for the first eighteen months of Project implementation, which provides the basis for the procurement processes. This plan has been agreed upon between the Borrower and the Bank Project Team on March 29, 2017. The Procurement Plan will be updated in agreement with the Bank on a biannual basis or as required to reflect the actual Project implementation needs and improvements in institutional capacity.

Frequency of Procurement Supervision

44. In addition to the prior review supervision to be carried out from Bank offices, the capacity assessment of the Implementing Agency has recommended yearly supervision missions to visit the field to carry out post review of procurement actions.

Environmental and Social (including safeguards)

Social

45. **Social analysis**. The Borrower carried out a social impact analysis of project interventions. This assessment emphasizes that Fortaleza is characterized by extreme social inequalities and shows that project targeted areas are mostly occupied by low-income families, are poorly provided of sanitation services, concentrate a great number of substandard housing settlements located in at high-risk areas, and are ridden by large levels of violence. These neighborhoods count for 13.0 percent of the city's population and 12.5 percent of the city's population under extreme poverty. While the percentage of people living under extreme poverty in the city counted for 5.5 percent of the population, 6.5 percent of the dwellers of VM basin and 4.0 percent in the RDQ Park's neighborhood faced this situation. The average *per capita* income of families living in the neighborhoods of VM and in the area of direct influence of the RDQ Park equal just 44.0 and 61.0 percent of the average *per capita* income in Fortaleza, respectively.

46. The social impact analysis also shows that Fortaleza is ridden by gender inequality. While women count for 51.4 percent of the labor force and have reversed the gender gap in education, female average earnings equal just 61.5 percent of male average earnings. Gender gaps in income are particularly perverse for female headed households with children. This type of family organization counts for 55.6 percent of the households in the city, but are overrepresented among the low income families. Female headed households count for 78.0 percent of the families without income, 73.7 percent of the households with *per capita* income lower or equal to ¼ of the minimum wage, and 57.3 percent of the families with *per capita* income ranging from more than ¼ and up to ½ of the minimum wage.

47. The social impact analysis concludes that the activities supported by the project are expected to provide positive outcomes to low-income families – among which prevail the households headed by women with children. These families will have access to better sanitation, health and living conditions as well as to quality public spaces. The project is also expected to

improve the livelihood strategies, working and living conditions of waste pickers and to strengthen waste pickers organizations, among which women with low levels of school achievements also prevail (women are 63 percent of the waste pickers enrolled in cooperatives and associations and up to 92 percent of the waste pickers have not completed the primary school education). Potential adverse impacts are related with land acquisition, involuntary physical resettlement, and gentrification (due to increases on land, housing, and rental values in targeted areas). The project will ensure that possible adverse impacts related with potential gentrification will be minimized and mitigated by, first, ensuring that an assessment of impacts on target neighborhood is carried out; second, that economic and social compensation plans are developed, as required by the OUC regulatory framework. Building on global lessons learned from similar interventions, the project will incorporate mitigating measures that could be considered for Fortaleza, including, for instance, tenure regularization mechanisms that will allow low-income residents to remain in the area; property tax provisions for current residents of surrounding neighborhoods; early community engagement and participatory approaches; land use criteria to maintain low to medium income housing areas, and mixed uses areas with low-income housing requirements; and a tailored resettlement approach to fight gentrification-related risks.

48. **Involuntary Resettlement OP/BP 4.12**. This policy is triggered because activities envisaged under Subcomponents 1.1 *Restoration of the Rachel de Queiroz (RDQ) Park, 2.1 Upgrade of planning instruments and licensing tools* and 2.2 *Implementation of land based financing instruments* are expected to have direct and/or potential adverse resettlement-related impacts.

49. Proposed interventions for the restoration of the RDQ Park will require land acquisition and have direct adverse effects related with involuntary physical displacement. Some activities supported by the project have already been decided and located, but others remain uncertain. The scope and magnitude of adverse impacts related with physical and economic displacement due to land acquisition for implementation of Project activities that have already been defined are limited – 61 families living in areas at risk may be physically displaced and there is a demand for the acquisition of 94 plots of land during the life of the project. To deal with these situations, the Borrower has prepared two complementary instruments:

(a) First, the Borrower prepared a Resettlement Policy Framework (RPF) to set the principles and procedures that the Project as a whole will follow whenever its activities require land acquisition and may lead directly or indirectly to physical and/or economic displacement. The RPF calls for broad and continuous, free and informed participation of all the people adversely affected by involuntary resettlement as well as for the establishment of proper Grievance Redress Mechanisms. The RPF was consulted and publically disclosed before Appraisal. Three public hearings were held on August 30, September 3 and November 7, 2016. The main points raised during these consultations were related with the need of making publicly available the project's communication plan, including mitigating measures to impacts related to air pollution during the works, favoring the relocation of the people adversely affected by physical resettlement in nearby neighborhoods and providing special support to the relocation of commercial activities. In addition, there were many requests related to the improvement of public services and infrastructure in the targeted neighborhoods (street maintenance, sanitation, solid waste collection, education and health services). The RPF and the

ARAPs have incorporated the feedback as applicable, for instance by including the option of self-resettlement as a compensation alternative.

(b) Secondly, the Borrower has prepared two specific ARAPs for the activities that have their location already defined. The first ARAP covers land acquisition required for sections 3, 4B, 5B, 6B and 7 of the RDQ Park, which includes the acquisition of 94 plots of vacant land, the relocation of 4 commercial buildings and temporary impacts during the execution of the works that will affect 164 households and commercial buildings. The second ARAP addresses involuntary resettlement adverse impacts in section 10 of the RDQ Park, affecting 61 families living in at risk areas.

50. There is a plot of land owned by the UFC that may be included in the perimeter of the RDQ Park in the future. This land was included in the Municipal Decree of creation of the Rachel de Queiroz Park (dated March 2016), but there are two issues that are currently impeding its incorporation. First, the land is owned by UFC and an agreement needs to be signed transferring it to the municipality. Second, the land has been recently invaded by encroachers and there is a pending court case. UFC took measures for their legal eviction prior of the issuance of the municipal decree creating the Park and for reasons not related with it (the court order for legal eviction is dated September 2015). Regarding this people, it has been agreed that they will be covered by the RPF. However, given the various uncertainties around the situation, no RAP will be prepared for them at this time. If they are evicted prior to the handover of the land to be incorporated into the park, they shall be treated as a legacy resettlement linked to the project (i.e., there should be a review / resettlement audit of their displacement process to determine whether any retroactive measures are needed to ensure they receive entitlements as indicated in the RPF). If they are evicted after the land is handed over by UFC to the municipality, they shall be treated like any other group (i.e. an ARAP will be prepared, approved and implemented prior to their displacement). Only if the park ends up being redesigned to exclude the area in question, would they no longer be covered by the project RPF.

51. The technical studies and assistance provided by the project for the upgrading of the multipurpose cadaster as part of Subcomponent 2.1 and the drafting of the municipal law of the RDQ OUC that is envisaged as part of Subcomponent 2.2 may lead to downstream indirect impacts on land acquisition and involuntary resettlement for the construction of residential and commercial buildings as well as the densification of the area. Application of Safeguard Policies to these Technical Assistance activities will follow the guiding principles set at the World Bank's "Interim Guidelines on the Application of Safeguard Policies to Technical Assistance (TA) Activities in Bank-Financed Projects and Trust Funds Administered by the Bank" and "Interim Guidance Note on Land Use Planning". The regulatory framework ruling the OUC legal instrument – Law 10257/2001 (*Estatuto das Cidades*, articles 32-34A) requires these operations have social and environmental benefits as pre-requisite, are defined with the participation of local inhabitants, users and investors, and have shared control with civil society participation. The design of the operation also includes the preparation of a preliminary impact assessment on the neighborhood and an economic and social compensation plan for the directly affected population. Abiding to this regulatory framework, the Borrower will rely on a highly participatory approach in the process of the drafting of municipal law of the RDQ OUC. Through these provisions, the Borrower and the Bank will ensure that the draft municipal law will set robust principles and guidelines for

minimizing and mitigating adverse impacts related with land acquisition, involuntary resettlement and potential gentrification of the area.

52. To deal properly with potential adverse impacts related with involuntary resettlement in the regeneration of the RDQ Park, the project adhered to the principle of minimizing involuntary resettlement. The perimeter of the park was redefined without interfering with its linearity, in order to reduce the need for physical displacement and relocation. Relocation will be restricted to households occupying at-risk areas. The project has also adhered to a phased implementation strategy for the RDQ Park: in the first years of project's implementation, investments will be focused in the sections of the park that do not involve physical displacements and/or relocation. This will allow to advance with execution of works while detailed plans for other sections of the park where resettlement may be needed are fully developed and finalized.

53. The regeneration of the RDQ Park will require the acquisition of plots of free land. Most of these plots of land are located in permanent protected areas (APPs) where the regulatory framework restricts development or in areas belonging to state and federal institutions. For the acquisition of the plots of free lands in APPs, the Borrower will preferentially use the instruments of the "transference of the building rights" and "additional building rights". Acquisition of plots of free land belonging to state or federal institutions will require agreements for donation and / or concession of use set on a voluntary basis, because the municipality cannot exercise rights of eminent domain over state and union assets. The required funds for implementation of Resettlement Action Plans are available through the Urban Development Municipal Fund (*Fundo de Desenvolvimento Urbano* – FUNDURB) and the Environmental Protection Municipal Fund (*Fundo de Defesa do Meio Ambiente* – FUNDEMA). Support for self-resettlement in nearby areas and cash compensation have been identified as the most attractive compensation solutions for families removed from at risk areas.

54. SEUMA has no previous experience with involuntary resettlement. The phased implementation strategy for the RDQ Park warrants the time needed for institutional capacity enhancement for adequately dealing with potential resettlement. Through the proposed implementation arrangements set up under the project, SEUMA will rely on the technical advice provided by SEINF (for the preparation of ARAPs) and HABITAFOR (for the implementation of the ARAPs). SEINF and HABITAFOR hold significant experience with involuntary resettlement and low income housing policies in consequence of previous operations with other international organizations[63]. To implement the ARAPs, SEUMA will hire specialized consultancy services, while keeping overall overseeing, monitoring and evaluation responsibilities. A robust grievance redress mechanism will be set relying on local municipal offices (*regionais*) and communication/dissemination channels including social media. The Bank team will provide continuous implementation support and training for the implementation of the ARAPs.

[63] Following participatory methodologies for preparation and implementation of resettlement action plans, HABITAFOR has recently carried out the Resettlement Action Plan of families affected by a partial upgrading of section 1 of the RDQ Park (undertaken by the PMF in 2014) and successfully provided new housing and land titles for 1,434 families. SEINF has managed the IDB's Urban Upgrading and Social Inclusion Project that resettled nearly 1,000 families living in at risk riverine areas.

55. **Indigenous Peoples (OP/BP 4.10).** The Project does not trigger this policy because due to its geographical location, projects activities will not interfere with indigenous peoples and lands.

56. **Citizen Engagement.** SEUMA is deeply committed to increase transparency and accountability. During preparation, the project approached citizen engagement through a public consultation carried out to assess the appropriateness of social and environmental risk assessment and mitigation measures. Citizens and civil society organizations have also been involved in the design of the project for the Rachel de Queiroz Park through 5 public consultations carried out for the diagnostic and elaboration of the basic engineering designs. During implementation, there will be regular public postings near project construction sites to update local communities on project progress and actions taken to address public complaints and respond to suggestions from the public.

57. An adequate grievance redress mechanism will also be broadly disseminated and available. This grievance redress mechanism will rely and strengthen the channels of communication with the population held by SEUMA, which include a number of instruments. SEUMA's corporate website (www.fortaleza.ce.gov.br/SEUMA) provides a very friendly platform of information, services and feedback fields open to the citizen. Citizens can also register complaints online through the link http://dataged.fortaleza.ce.gov.br/dataged/processos/denuncia virtual site.asp. In addition, complaints can be sent to the municipality's ombudsman office. Finally, SEUMA does extensive use of social media to communicate and interact with citizens and two specific sites will be operational for the project through Facebook and WhatsApp. Complaints and compliments received through these different channels will be registered, regularly analyzed and utilized for adaptive planning and management.

Environment

58. **Environmental Assessment**. The project is expected to have net positive environmental benefits, as the proposed set of interventions is primarily focused in urban and environmental restoration, aiming to enhance the quality of the city's urban environment. These interventions are expected to include: optimization of installed sewer infrastructure; reduction and control of pollution sources of water resources; and regeneration of green spaces. The project also includes technical assistance for carrying out studies required to identify and structure potential OUCs in the city, under Subcomponent 2.2 (Implementation of land based financing instruments). These investments are complementary to the proposed interventions for the restoration of the RDQ Park, under Subcomponent 1.1 (Restoration of the RDQ Park).

59. The project has been classified as environmental Category B. In compliance with OP 4.1, the Borrower has prepared an ESMF. The document contains the three essential instruments of environmental assessment: (i) a focused analysis of the social and environmental context, the potential positive and adverse impacts of the project, and the mitigating measures; (ii) the project socio-environmental management framework, including the criteria and screening procedures for the selection of interventions to be financed, which will be applied before the final selection of each investment subproject[64]; and (iii) an evaluation of Fortaleza's institutional capacity for

[64] A first screening process has already been applied to some selected projects, and is included as an Annex of the ESMF.

environmental compliance. Principles of OP 4.01 were applied to the ESMF and with regards to proper consultation. The draft ESMF has been reviewed by the Bank and publicly disclosed before Appraisal. The final version of the document, including inputs from the consultation process, was re-disclosed on January 23, 2017.

60. Two ARAPs were prepared under sub-component 1.1, given that the social assessment identified two specific locations within the area of the RDQ Park where potentially affected population are currently located that will need to be addressed under the project. An EMP for the Park will be needed to address potential impacts resulting from the investments financed under the project. However, the preparation of the Park-wide EMP will depend on the nature of specific interventions that will be carried out in the different areas of the park, which have not yet been defined. A master plan for the whole park has been prepared by the PMF, which proposes possible interventions in the different areas (including for example cycling paths, recreational equipment and community areas). However, the final engineering designs for the different interventions in the park require inputs from activities that will be financed under the project, inter alia, community outreach and participation, geotechnical characterization studies, pedestrian and bicycle traffic flow assessments, which will be carried out during the first two years of project implementation with Bank financing. Similarly, the typology of eligible investments under sub-component 1.2 has been defined, but the specific beneficiaries and the technical designs for the interventions that will be financed for each beneficiary will need to be determined during implementation, on a case-by-case basis, through activities to be financed under the project (e.g. consultation with the communities, technical assessment). Based on these reasons, EMPs for each component cannot be prepared at this stage of project preparation and will be prepared within the first two years of implementation, in accordance with the approved ESMF. The preparation of EMPs under both components has been included as consulting services in the project's procurement plan.

61. The EMPs will be prepared in accordance with the principles of OP/BP 4.04 – Natural Habitats and OP 4.09 – Pest Management. The application of safeguard policies to the technical studies and assistance to be provided by the project for the RDQ OUC will follow the guiding principles set at the World Bank's *Interim Guidelines on the Application of Safeguard Policies to Technical Assistance (TA) Activities in Bank-Financed Projects and Trust Funds Administered by the Bank.*

62. **Natural Habitats OP/BP 4.04.** Some proposed interventions may support investment for the recovery of green spaces and redevelopment of degraded areas. These interventions could be proposed in areas considered by the state to be environmentally sensitive (i.e., in riparian areas – Permanent Preservation Areas, APP). The OP 4.04 is triggered and all planning activities that may affect natural habitats will follow World Bank policies.

63. **Pest Management OP 4.09.** The project is not expected to finance any pesticides or other chemical amendments that would trigger OP 4.09. Nevertheless, some amounts of herbicides could probably be used in the creation and maintenance of green areas and urban parks. In this case, the project would support the development of an Integrated Pest Management (IPM) for these areas. The need to use herbicides will be indicated in each sub-project, as well as the IPM measures to be adopted.

Other Safeguards Policies Triggered

64. **Physical Cultural Resources OP/BP 4.11**. Project implementation is not expected to cause any negative impact on known physical cultural resources (PCR). Proposed interventions with expected direct and negative impact on known archaeological, paleontological, historical or other culturally significant sites will not be eligible. However, they may include historical sites and/or archaeological findings. As such, impacts and procedures for "chance findings" from specific investments under Component 1 (if applicable) will be assessed. The Physical Cultural Resources Framework, included as an annex to the ESMF, contains relevant provisions to mitigate any potentially adverse impact. Such provisions include compliance with the guidelines defined by the National Institute for Historical and Cultural Heritage (IPHAN), or other competent state or local agency, regarding historical sites and/or archaeological findings.

Monitoring & Evaluation

65. Project M&E will be the responsibility of SEUMA's PMU and technical team. While the latter (in coordination with the external partners) will be in charge of the data collection and monitoring, the project Coordinator within PMU, drawing from their inputs, will be in charge of the data consolidation and reporting. It is under SEUMA's mandate to perform land use control and air, sound and water pollution control, in addition to various environmental and urban licensing procedures. However, it is not until very recently that the municipal administration has started paying attention to the need of conducting sound and reliable M&E. Therefore, (i) institutional strengthening to implement such culture must be provided throughout the project; and (ii) M&E arrangements under the project were set up to be simple and accessible.

66. Project indicators are few, simple, attributable to the project inputs, trackable, and achievable in the project timeframe. The necessary data to be collected outside of SEUMA to feed the Results Framework of the project depends on few institutions - namely SEFIN, CAGECE and SEMACE - all of which already perform project related M&E functions prior to actual implementation, either as part of their institutional mandate, or under cooperation arrangements already set up with SEUMA. In addition, appropriate incentives for CAGECE and SEFIN are in place, as both will be directly beneficiaries of project interventions (CAGECE through the investments in wastewater management; and SEFIN through the investments in the multipurpose cadaster).

Annex 4: Implementation Support Plan

BRAZIL: Fortaleza Sustainable Urban Development Project

Strategy and Approach for Implementation Support

1. The Strategy for implementation support was developed based on the nature of the proposed project and its risk profile. This Strategy aims to support the Municipal Government of Fortaleza in achieving the PDO and mitigating the risks identified in SORT. The plan also includes standard World Bank implementation support (technical, institutional capacity, and environmental and social safeguards) and fiduciary aspects.

Implementation Support Plan

2. Given the project's characteristics and complexity, the level of technical support needed for implementation is considered Substantial. The Bank team will conduct on-average two implementation support missions per year (in addition to smaller technical missions, as needed), desk reviews, training, and field visits to follow-up on project implementation. The Bank task team will be supported by technical, financial management, procurement, social and environmental specialists. Detailed inputs from the Bank team are outlined below.

3. **Technical Design of Project.** The World Bank will work closely with SEUMA's PMU and corresponding agencies, to contribute to the technical design and implementation, contribute to capacity building and assist on citizen engagement amongst others. First priority will be to support the completion of packages to be procured during the first year of implementation. The World Bank team may be supplemented with additional technical support if necessary, such as short-term technical experts. The World Bank will review technical inputs and ensure that proper coordination with SEUMA's internal and external partners exists during the first year (e.g. with SEFIN, on the cadaster; and with CAGECE, on the wastewater management activities). Documents to be reviewed include, among others: sector studies, engineering designs, Terms of Reference, technical specifications and bidding documents.

4. **Institutional Capacity for Implementation**. In order to mitigate risks identified during Preparation, and apart from the World Bank's systematic training provided to Clients, the project will provide a comprehensive capacity building program and technical assistance through Component 3 for the PMU and other municipal agencies critical to ensure adequate implementation capacity. Resources have been specifically allocated to support the project's FM and procurement tasks and ensure that (i) SEUMA's PMU is trained to efficiently and effectively conduct their fiduciary roles; and (ii) key partners (such as TCM, CGM and CLFOR) have the appropriate incentives in place to deal with the project's financial control, audit and procurement. The activities to be supported by the project include training, improvement of the entities' systems and controls, and acquisition of infrastructure and equipment. They are part of their strategic planning for institutional strengthening and were identified and agreed during project Preparation.

5. **Safeguards.** Implementation of ESMF, EMPs, RPF and ARAPs will be conducted by the SEUMA technical team, under the coordination of the PMU, and with support from external consultants as needed during project implementation. The World Bank will carry out regular

supervision missions to ensure compliance and that adequate resources are allocated for implementation and monitoring of the safeguard instruments. It is anticipated that training and closer support will be required during the first year of implementation.

6. Fiduciary Management. Fiduciary management will require intense support during the first year, followed by ex post reviews once per year and continuous support from the country office (for additional information, refer to the above paragraph on institutional capacity).

7. Monitoring and evaluation. M&E will require specific support at the beginning of the project to ensure quality of baselines and adequate monitoring capacity. To mitigate implementation risks, external partners' specific responsibilities regarding M&E (from data collection to monitoring and consolidation) are set forth in the project's technical cooperation agreements.

8. The main focus in terms of support to implementation during the first twelve months and thereafter is described in the tables below. Every year at least two specific support missions will be required to assist with the yearly planning, analysis of project progress and implementation quality. The World Bank will review the Implementation Support Plan at least once a year to ensure that it continues to meet the implementation support needs of the Project, and revise it accordingly.

Table A4-1: Focus of Implementation Support

Time	***Focus***	***Skills Needed***	***Resource Estimate***
First twelve months	– M&E training – Baseline design and data collection – Procurement training and implementation support – FM training and implementation support – Safeguards implementation support – Review of technical and procurement documents, including: (i) ToRs and technical specifications for the first package of services form Fortaleza Online; (ii) ToRs and technical specifications for the first activities to be supported under the Cadaster; (iii) engineering designs for the RDQ Park; (iv) bidding documents for the first phases of the works for RDQ Park; (v) technical studies, ToRs, technical specifications and bidding documents for the prioritized activities under the wastewater	– M&E – Project management – Urban development, including planning, cadaster, urban operations – Sanitation – Procurement – Financial Management – Safeguards	7 staff members, 1-2 trips per year

Time	*Focus*	*Skills Needed*	*Resource Estimate*
	Subcomponent (enforcement and connections)		
After the first year	– Project implementation – Technical support – Safeguards implementation – M&E	– Project management – Urban development – Sanitation – Procurement – Financial Management – Safeguards	7 staff members, 1-2 trips per year

Table A4-2: Skills Mix Required

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Task Team Leader	1 staff member: 10 weeks	Two per year	
Urban development Specialist	1 staff member: 10 weeks	Two per year	
Urban financing instrument expert	1 staff member: 4 weeks	Two per year	
Cadaster expert	1 staff member: 4 weeks	Two per year	
Water and Sanitation specialist	1 staff member: 4 weeks	Two per year	
M&E specialist	1 staff member: 4 weeks	One to two per year	
Social safeguards specialist	1 staff member: 4 weeks	One to two per year	
Environmental safeguards specialist	1 staff member: 4 weeks	One to two per year	
Financial management specialist	1 staff member: 4 weeks	One per year	
Procurement specialist	1 staff member: 4 weeks	One per year	

Annex 5: Economic and Financial Analysis

BRAZIL: Fortaleza Sustainable Urban Development Project

1. This annex presents the methodology and results of the economic and financial evaluation of the Fortaleza Sustainable Urban Development Project. The economic evaluation was conducted to determine if the planned investments are economically viable, that is, if expected benefits justify the expected costs.

2. The economic analysis used cost benefit analysis to evaluate all components of the project. The cost benefit analysis was conducted projecting flow of costs and benefits under two scenarios: *with* and *without* project. The net benefit equals the difference between incremental benefits and incremental costs for both scenarios. The *without* project situation was projected assuming that current service would remain unchanged. The *with* project scenario was projected including the proposed investment program and its associated targets. Additional to the economic evaluation, the project was evaluated from a financial perspective for the interventions that generate revenues, such as sewerage connections, improvement of the Cadaster and implementation of *Fortaleza Online*. Costs and benefits were expressed at 2016 prices. Lifetime of the project is expected to be 30 years for Component 1 and 10 years for component 2. A discount rate of 6% was used and exchange rate of 3.26 BRL = 1 USD (August 1, 2016).

3. The approach selected to measure economic benefits varied according to the intervention, as follows: (i) benefits from *Subcomponent 1.1 Restoration of RDQ Park* were measured using potential properties' appreciation; (ii) benefits from *Subcomponent 1.2 Reducing point-source pollution along VM coastline* were measured using current sewerage tariffs as an approximation of willingness to pay; and potential health benefits resulting from improvements in bathing water quality; and (iii) benefits from *Subcomponent 2.2 Upgrade of planning instruments and licensing tools* were measured through increase of the city's own-source revenues.

4. Additional / expected economic benefits that cannot be measured – such as the impact of cleaning water in selected sections of the coastline on local businesses and tourism activity; health improvement when using green space provided by the park; or improved safety in the park area – were mentioned throughout the analysis.

5. For the financial evaluation, net benefits were estimated as revenue increase minus cost of the proposed activities. This analysis helped setting measures required to achieve the needed targets.

Costs

6. Investment and operating costs were included in the evaluation. The financial assessment included costs expressed at market prices as they would be paid or received by the entities in charge of implementing and operating the works. The economic cost on the other hand excluded market distortions such as taxes and subsidies. Total expected cost of the project is USD 146.6 million, 44% of which goes to the urban and environmental restoration; 52% to strengthening municipal management, and 4% to project management.

7. Operation and maintenance were estimated for the RDQ Park as 2% of total investment, which is close to USD 1M per year. For sewerage interventions, incremental operating cost was estimated as 2% of the investment[65]. For component 2, 1% of investment was estimated as operation and maintenance costs.

Evaluation of Subcomponent 1.1 Restoration of RDQ Park

8. There is a specific investment program for each of sections 1-10 of the RDQ Park, but overall the planned interventions in all of them include drainage, access roads, lighting, paving, bicycle lanes, landscaping, signage, outdoor furnishings, and sporting and community amenities. Direct beneficiaries of the project were estimated as the population of the 8 neighborhoods adjacent to the proposed interventions (around 159,000).

9. The expected benefits of upgrading the Park will have an impact not only in improving accessibility of residents in the surrounding area who will have immediate access to quality public spaces; but also people who visit the amenities and institutional facilities inside the Park area. In addition to improving the physical and aesthetic quality of the neighborhoods and providing residents with places of recreation, visual assets and places to gather, the upgrade of RDQ Park will contribute to improve public safety and connectivity. Benefits will be obtained also for those who live in further neighborhoods, who may or may not use the Park. There will be indirect benefits as well, such as those related to public health, community building, and youth development. Finally, it is predictable that the restoration of the Park (in combination with the planned OUC) will help boosting the economic development in the area as anchor for urban redevelopment and additional opportunities for private sector involvement.

10. Parks' value to neighborhood quality is often measured through properties' appreciation. It is found in the literature a significant link between property values and proximity to green space[66]. In other words, parks have a positive impact on nearby residential property values. In most of the cases, other things being equal, most people are willing to pay more for a house close to an attractive park. At the same time, less attractive or poorly maintained parks or parks with safety issues may reduce nearby property values.

11. Hedonic price approach measures the relationship between the property value and its attributes, being the park one of them. The price is affected by the distance from the park and the quality of the park. While proximate value ("nearby-ness") can be measured up to 2,000 feet (about

[65] In 2015, the average operating cost of providing water and sewerage was R$ 19/user-month. It is estimated that the incremental cost generated by the expected sewerage connections will be very low, given that the sewerage network is already in operation.

[66] See: a) Correll, Mark R., Jane H. Lillydahl, and Larry D. Singell.1978. "The Effects of Greenbelts on Residential Property Values: Some Findings on the Political Economy of Open Space." Land Economics 54(2): 207–17; b) Hammer, Thomas R., Robert E. Coughlin, and Edward T. Horn IV. 1974. "The Effect of a Large Urban Park on Real Estate Value." American Institute of Planning Journal July: 274–77; c) Kitchen, James W., and William S. Hendon. 1967. "Land Values Adjacent to an Urban Neighborhood Park." Land Economics (46):357–60; d) Phillips, Patrick. 2000. "Real Estate Impacts of Urban Parks." Issue paper. Washington, DC: Economics Research Associates; and e) Weicher, John C., and Robert H. Zerbst. 1973. "The Externalities of Neighborhood Parks: An Empirical Investigation." Land Economics 49:99–105.

600m) from a large park, most of the value is within the first 500 feet[67] (about 150m).

12. For this evaluation no hedonic price study was conducted; instead, the benefits of the RDQ Park were measured through comparison with other zones of the city that went through similar transformation. Properties' appreciation in these areas during the period since the transformation occurred were examined, and the increase of properties' prices was adjusted to real terms taking out the effect of the boom of the real estate market during the period.

13. The main sources of information were SEUMA and SEFIN, who drew the sectors of the RDQ Park to evaluate; selected the comparative zone; provided information of properties' market values from records of the Municipality in the last five years; and worked closely with the World Bank team to evaluate the results.

14. The area surrounding the RDQ Park is diverse. Some sections are highly dense and consist of low-income population, with informal settlements characterized by poor solid waste collection and public safety issues. Other sections are consolidated mixed-use urban areas with access to public transportation and recreation facilities, and where mostly middle-income population resides. Finally, other sections are populated by mix of low and middle-income residents.

15. Following the description of nearby-ness of the Park defined at about 600m, the properties located at that distance of the planned interventions of the Park were identified. They account for 18,862 properties and a population of 46,000 or 29% of the total population in the 8 neighborhoods adjacent to the Park (159,000). About 50% reside at a distance of 200m or less to the Park, and the remaining 50% between 200m and 600m.

Table A5-1. Population in the sectors adjacent to the RDQ Park

Neighborhood	Population			
	Area A (up to 200m from the park)	**Area B (200m-600m from the park)**	**Total**	**Neighborhood Total**
Monte Castelo*	5,852	5,938	11,790	13,300
Alagadiço/São Gerardo	6,587	3,977	10,564	14,200
Presidente Kennedy	7,103	7,035	14,138	23,004
Parquelandia	-	2,872	2,872	14,432
Antonio Bezerra	775	178	953	25,846
Dom Lustosa	-	689	689	13,147
Padre Andrade	508	710	1,218	12,936
Pici	2,287	1,255	3,542	42,494
Total	**23,112**	**22,654**	**45,766**	**159,359**

* It includes a section of Villa Ellery.

16. 85% of the properties located up to 600m from the Park are residential, and the remaining 15% comprises non-residential dwellings.

[67] Harnik, Peter and Ben Welle 2009. Measuring the Economic Value of a City Park System. The Graham Foundation for Advanced Studies in the Fine Arts, Chicago.

Table A5-2. Number of properties located up to 600m from the RDQ Park

	Residential	Non-residential	Total
Area A (up to 200m)	7,643	1,591	9,234
Area B (200m to 600m)	8,429	1,199	9,628
Total	**16,072**	**2,790**	**18,862**

17. The market price of all the properties was obtained from the records of the municipality. Current average price per unit is about BRL 200,000 per residential unit and BRL 611,000 per non-residential unit.

Table A5-3. Average price per property located close to the RDQ Park (BRL/unit)

	Residential	Non-residential	Total
Area A (up to 200m)	196,206	847,070	308,349
Area B (200m to 600m)	206,261	299,878	217,920
Total	**201,480**	**611,915**	**262,190**

18. When the project is implemented and the park upgraded, a positive impact is expected in the neighboring areas and likely the market price of the properties will increase, yet the magnitude of the appreciation is uncertain.

Increase of market prices of properties in the comparative zone

19. To estimate the magnitude of the impact, some areas in Fortaleza where similar transformation occurred were reviewed. The area that showed more similarities to the area where the upgrading of the RDQ Park is planned, and where the interventions implemented are related to the ones planned in the RDQ area, is Vila do Mar.

20. Vila do Mar, a seafront area, was upgraded in 2011. The works were completed along the Northwestern coastline and included green areas, recreation facilities, bike paths, sport facilities, and art center. The area is populated by low-income families with similar characteristics of some areas surrounding the RDQ Park. The number of properties in the Vila do Mar are 10,586, 29% of which are located closer to the park (up to 200m).

Table A5-4. Number of properties examined in Vila do Mar (comparative zone)

	Residential Properties	Non-residential properties	Total
Vila do Mar			
Sector A (up to 200m of the park)	2,974	83	3,057
Sector B (200m to 600m)	7,075	454	7,529
Total	**10,049**	**537**	**10,586**

21. The market prices of all the properties in Vila do Mar area were analyzed from 2010 to 2015. During the period, the residential properties located closer to the park increased by 95%, and those further increased by 90%. For the non-residential sector, the increase was 81% and 73%, respectively.

Table A5-5. Nominal Increase of properties' market price in in Vila do Mar (2010-2015) (comparative zone)

Nominal Increase Period 2010-2015%	Residential	Non Residential	Average
Vila do Mar			
Sector A (up to 200m of park)	95%	81%	94%
Sector B (200m to 600m)	90%	73%	87%

22. Even though the price increase is partially explained by the improvement of the area, great part of the increase is the result of the boom seen in the real estate market during the same period in Brazil. The Brazilian property market showed staggering growth over a seven years' period; 2007-2014 mostly supported by a booming economy that reached its peak in 2014. Demand of real estate properties grew at the same time as the economic sectors flourished, especially the energy sector; the mortgage market developed and the interest rate declined; there was also legal reforms that streamlined the foreclosure process. All of these factors made properties' prices increase at a pace higher than inflation.

23. To measure the impact of the boom of the real estate market in Fortaleza, the Brazil's composite FIPEZAP index was used[68]. This index shows that in Fortaleza, the increase of properties' prices was above inflation rate. It reports that even though the average price growth in Fortaleza has been slowing down from 2010-2015, the price of real estate properties increased by 78% in the same period, which was twice as much the inflation rate (35%) in that period. The index reports the following increases: 2011 (15.8%); 2012 (16%), 2013 (10.6%), 2014 (13.3%) and 2015 (5.62%). 2015 increase was the lowest one in the period and the only one registering a level below the inflation rate (about half of it).

24. The increase of 78% reported by FIPEZAP during the period 2010-2015 was discounted to the nominal price increase of properties in Vila do Mar to estimate the real appreciation of properties caused by factors other than the boom of the real estate market. Results show that during the period 2010-2015, real increase of properties' price closer to the park (up to 200m) was 10% and 2% for residential and non-residential properties respectively; while for properties further (200m to 600m), real increase was 7% for residential, while nonresidential decreased by 3%. The weighted average price increase for the whole area was 6%.

Table A5-6. Real Properties' appreciation in Vila do Mar (2010-2015) (comparative zone)

Real properties' appreciation %	Apartment & houses	Non Residential	Average
Vila do Mar			
Sector A (up to 200m)	10%	2%	9%
Sector B (from 200m to 600m)	7%	-3%	5%
Weighted average real increase	**8%**	**-2%**	**6%**

[68] This index measures the changes in price of real estate properties in twenty cities across Brazil, among them, Fortaleza. The indicator is calculated by FIPE (*Fundação Instituto de Pesquisas Econômicas*) based on real estate offers posted online in webpages like ZAP and others, and using a database of about 500,000 offers per month

25. Results of this analysis show that the residential properties in Vila do Mar appreciation was higher than the increase caused by the boom of the real estate market. The additional increase may have been generated by the park if no other transformation occurred in the area, which seems to be the case in Vila do Mar. Being this the case, the impact of the park to the market prices was higher for residential properties than for non-residential properties. For residential properties closer to the park, the maximum increase attributable to the intervention was 10%; and 2% for non-residential properties.

26. It is difficult to draw conclusion about the future of the real estate market and the impact of the properties around the RDQ Park. The country is facing high inflation and weak growth, compounded by depreciation of its currency (the *Real*), all of which contribute to decrease the growth of properties' price and bring them gradually to a price correction. Yet, despite the sluggish economy and weak sales, the housing market has managed to decline gradually rather than via a sharp and sudden drop in prices. Analysts expect that Brazilian property market remains resilient; some of Brazil's largest property networks (Imoconnect) are optimistic, showing that there was a marked improvement in sales during November and December of 2015 and hope the trend continues.

Applying results obtained in Vila Mar to properties located close to the RDQ Park

27. It is expected that upgrading the RDQ Park will affect positively the properties around it. Even if the real estate market keeps declining, it is likely that price of the properties around the park will increase.

28. Assuming that properties adjacent to RDQ Park increase in a 5-years period at same pace than properties in Vila Mar, the investment would yield 27% return and net benefit of USD 19M would be obtained. If only residential properties increase their market price, the return would be 22% and net benefit of USD 13M.

Table A5-7. Results of the economic evaluation under two scenarios

Areas of RDQ Park	**Preset Value of Cash-flows (Million USD)**			
	Costs	**Benefits**	**Net Benefits**	**IRR**
If all Properties appreciate at same pace as Vila Mar's properties	51.8	70.7	18.9	27%
If only residential properties appreciate	51.8	64.8	13.0	22%

Note: Costs include investment costs and maintenance costs expressed at economic prices.

29. If the real estate market does not behave in the same way as it did in Vila Mar, the benefits would be different and return of investment would change. If properties appreciate at higher price the return would be better, and the contrary will happen for lower appreciation.

30. The sensitivity analysis shows that the real increase of residential properties over a 5-year period has to be at least 5.9% in average to make the project viable. This increase seems reasonable

and on the lower band of hedonic price studies conducted in different countries for this type of interventions[69].

31. Results from the economic evaluation are assuring given that only benefits from properties' appreciation were included. Additional expected benefits were not measured, such as: health improvement due to access to green spaces and sport and recreation activities; safety improvement due to better maintained public spaces, public lighting, and social gathering along the park; easier access to employment centers; and new opportunities for businesses that are likely to come along the transformation of the area, etc.

32. The PMF will get additional benefits from higher property tax (IPTU) that will result from properties' appreciation. Currently, the rate charged as property tax varies according to the taxable value of the property. Rates go from 0.6% when the property is valued at R$ 67,000 or lower, to 2% when the value of the property is higher than R$ 248,000. The property tax that will result from properties' appreciation was estimated applying 0.8%, which is the average rate charged to properties around the park. The estimation was adjusted by current IPTU collection revenue rate (69%). Results show revenues from property tax will increase in USD 2.2 million in total over a 10 years- period.

33. From an economic point of view, the benefit for the Municipality is at the same time an economic cost for households and therefore the net effect will be zero. From a financial point of view, this is a financial benefit for the municipality. The evaluation of Subcomponent 2.1, which addresses the efforts to enhance Municipality's own revenue, was complemented including this benefit.

[69] (i) Figures from the Commission of Architecture & the Built Environment (CABE) show that property values increase near green spaces, with houses close to parks averaging 8% higher prices than similar properties further away. CABE (2005) Does Money Grows on Tress?; (ii) In the study conducted by Neil Dunse 2007 Urban Parks, Open Space, and Residential Property Values. Figures show that that nearby green spaces can enhance property values according to type of property; for local park the appreciation ranges from 9.44% in non-detached houses to 9.62% in detached houses; (iii) A 1998 study of property values along the Mountain Bay Trail in Brown County, Wisconsin, shows that lots adjacent to the trail sold faster and for an average of 9% more than similar property not located next to the trail. *Recreation trails, Crime, and Property Values: Brown County's Mountain-Bay Trail and the Proposed Fox River Trail*, Brown County Planning Commission, Green Bay, July 6, 1998; (iv) One study found that the value of properties near Pennypack Park in Philadelphiainc raised from about $1,000 per acre at 2,500 feet from the park to $11,500 per acre at 40 feet from the park (Hammer, Thomas R., Robert E. Coughlin, and Edward T. Horn IV. 1974. "The Effect of a Large Urban Park on Real Estate Value." American Institute of Planning Journal July: 274–77); (v) Another found that the price of residential property—based on data from three neighborhoods in Boulder, Colorado— decreased by $4.20 for every foot farther away from the greenbelt (Correll, Mark R., Jane H. Lillydahl, and Larry D. Singell. 1978. "The Effects of Greenbelts on Residential Property Values: Some Findings on the Political Economy of Open Space." Land Economics 54(2): 207–17.); (vi) Other studies have revealed that excellent parks tend to add 15 percent to the value of a proximate dwelling; on the other hand, problematic parks can subtract 5 percent of home value (Hen Welle 2009. Measuring the Economic Value of a City Park System. The Trust for Public Land. Graham Foumdation and the Marpat Fundation.

Evaluation of Subcomponent 1.2 Reducing point-source pollution along VM coastline

Details of the proposed interventions

34. *Connection of households to the sewerage network.* This intervention focuses on activities that make households effectively connect to the sewerage network. The project will finance subsidies for some low-income households who do not have capacity to pay for the necessary adjustments inside the house to make the connection feasible. It will also finance a program that will expand education campaigns and increase enforcement of connections to the network. Not all of those that are not connected are low-income households, and in fact a relatively high number of illegal connections correspond to medium to high income households. An elite enforcement team financed under the project will seek to ensure that households with illegal connections are fined and that they ultimately connect to the primary network.

35. Around the city of Fortaleza, SEUMA and CAGECE have worked closely to enforce households to connect to the network when available. The actions implemented during the 2008-2015 period showed 44% of positive responses and effective connection.

36. Out of the 13,200 households not connected at present, 8,000 are expected to connect as result of the activities planned under this Subcomponent. Special attention will be paid to the Western of the VM, where low-income households reside. 1,700 households were identified as beneficiaries of subsidy directed to fund the costs of in-house adjustments needed to make the connection viable. The remaining 6,300 households are expected to connect through enforcement actions and education campaigns. Some of them will need adjustment inside their houses and are expected to pay for them

Table A5-8. Expected sewerage connections

	VM (except Western area)	Western area of VM	Total
1. Households not connected	8,849	4,352	13,201
2. Households expected to connect:			
Through enforcement and education	6,049	251	6,300
Through subsidy of in house connection		1,700	1,700
Total expected to connect	6,049	1,951	8,000
% expected to connect			**61%**

37. *Pilots for capturing and diverting dry-weather flows currently discharging along the coast in low-income area.* Interventions will include the capture and diversion of effluent illegally discharged into storm water drains, which has been identified as one of the highest pollution sources along the coastline. During the dry season, effluent from selected storm water drains (carrying over 95 percent sewage) will be captured and diverted into the existing primary sewage network for treatment, avoiding discharge into the ocean. Pilots will aim to demonstrate the viability and the effectiveness of capturing dry-season discharges at selected discharge points on the western end of the VM coastline, and the resulting impacts on bathing water quality of the receiving beaches. In the long-term, after all households in the VM have been connected to the sewage network and illegal discharges to storm water drains have been eliminated, dry-weather flow capture will no longer be needed. In the short to medium term and while points-source

pollution is acute, dry-weather flow capture offers a temporary solution to improve bathing water quality in the beaches of the VM.

38. The water quality at beaches is monitored by SEMACE on weekly basis at specific sampling points along VM coastline. Bathing water quality is rated as appropriate (*Própria)* or non-suitable (*Imprópria)* depending on results of the samples and conditions of the beach. The quality is classified as *Própria* when the level of coliforms is lower than 1,000 per 100ml in at least 80% of the samples taken during five consecutive weeks. Weekly records in the period 2010-2015 shows that on average 37% of the times the water is unsuitable for swimming. In the western part of the VM, where low-income households reside, the situation is more critical, as in 57% of the times the water is not appropriate for swimming.

39. Despite the warning signs saying that the water is non-suitable for swimming, many residents go bathing. There is a health risk associated with exposure to sewage-polluted bathing-water or beach sand, as a number of bacterial, viral and other diseases can be contracted. Epidemiological studies attempting to correlate microbiological water quality with health effects have produced different results leading to a wide variation in recreational water quality criteria and standards applied. A number of microbiological/epidemiological studies have been carried out since 1953 in an attempt to define the levels of risk following exposure to different bacteria in bathing waters. Practically all studies showed higher morbidity among bathers as compared to non-bathers, but correlation between specific symptoms and bacterial indicators concentrations varies considerably. On the basis of the 1092-1078 Cabelli Environmental Protection Agency (EPA) study in the US, later developed by EPA into a recommendation health-effect criterion for marine recreational waters, it is expected that exposure to seawater containing 100 enterococci per 100 ml may be responsible for about 25-40 gastrointestinal cases per 1,000 persons.[70]

40. Applying these findings to calculate health costs associated with gastrointestinal diseases contracted by swimming in polluted seawater, results show that if 10% of population along the Northwestern end of VM are regular swimmers, the annual health cost is about 65 thousand, for a total cost of USD 0.9M during the lifetime of the intervention. The cost varies proportionally to the number of swimmers. This calculation was made assuming an average treatment cost of USD 124/case[71] . More information would be needed to get more accurate figures.

[70] Saliba L, Helmer R. *Health risks associated with pollution of coastal bathing water*. World Health Stat Q. 1990 ;43(3):177-87

[71] The treatment cost was taken from a study conducted in Colombia: Alvis-Guzmana, J. Orozco-Africanoa, A. Paternina-Caicedoa,∗, W. Coronell-Rodrígueza,L. Alvis-Estradaa, D. Jervis-Jálabea, F. De la Hoz-Restrepo *Treatment costs of diarrheal disease and all-cause pneumonia among childrenunder-5 years of age in Colombia.* Health Economics Research Group. University of Cartagena-Colombia. Epidemiology and Public Health Evaluation Group. Universidad Nacional de Colombia. Bogota-Colombia. Article in Press. Elsevier/Vaccine.. 2013

Table A5-9. Potential scenarios of economic cost of health for bathing along the coastline of the Northwestern end of the VM basin

	% of population of the Northwestern end of VM basin who baths along the coastline	
	10%	**20%**
Population at the VM basin	160,195	160,195
Number of bathers	16,020	32,039
Incidence of gastrointestinal diseases	521	1,041
Treatment cost per case (USD/case)	124	124
Treatment cost per year (000 USD)	65	129
PV in a 30-year period (000 USD)	889	1,777

Costs of interventions

41. The economic evaluation included the costs of the intervention. i.e: (i) investment costs of USD 13.1[72] minus tax (to transform financial prices to economic prices); (ii) operating and maintenance costs generated by the interventions; and (iii) costs for adjusting the in-house connections for all the households that require them. Some of the households will receive subsidy as part of the project; others will pay for it. In all cases, these costs are included in this evaluation. The in-house connection costs were estimated as BRL 2,500 per household based on previous experience from CAGECE.

42. *Operating and maintenance cost*. The incremental costs of the new connections are expected to be low, given that CAGECE is already maintaining and operating the existing sewerage network. There will be however other costs associated with the operation and maintenance of on-site treatment stations and the interceptor for capturing and diverting dry-weather flows that are important, which were estimated at 2% of the investment cost.

Benefits

43. The benefits of this intervention were examined for each of the activities planned: (i) the connection of individual houses to the existing sewerage networks in the area, leveraging the existing infrastructure and the significant investments made by CAGECE; (ii) savings of costs of treating gastrointestinal diseases; and (iii) improving water quality along the beach through the capture and diversion of dry-weather flows and on-site treatment of selected streams discharging along the coast in low-income areas.

44. Two groups of population will benefit directly from these activities: (i) households that switch from existing on-site sewage disposal systems to sewerage connection; and (ii) swimmers along the beach, some of them already bathing in the water even though it is not suitable for it, mostly low-income population; and some others will start enjoying it once it is suitable. Long term benefits for the local economy related to tourism industry are expected once the water conditions

[72] The total cost of the Subcomponent 1.2 is USD 18.5M, yet USD 5.4M correspond to the development of the Drainage Master Plan and complementary solid waste management activities not related with the specific interventions evaluated.

along the beach improve. Tourism is the economic driver of the city and beach improvement is critical for the industry.

45. Two approaches were used to measure the impact of this Subcomponent: (i) for the sewerage component, current tariffs were used as approximation of the willingness to pay of having sewerage connection; and (ii) for improvement of water quality along the beach, sensitivity analysis was carried out for different level of potential savings of health costs. Additional benefits such as the impact on the tourism activity along the area and the effect on local economy, which is expected to be significant, were not measured due to lack of information.

46. *Benefits from sewerage connections*. Current sewerage tariffs charged by CAGECE to residential customers vary according to socioeconomic level and volume of water consumed. In the project area the customers are classified in the three categories. 40% of the households to connect to the sewerage network correspond to low-income, and about 60% correspond to medium to high-income households, including some customers classified as non-residential. Currently the average monthly bill per connection along the VM is BRL 65. The bill ranges from BRL 17 to 371 depending on the area, and the category under which the customer is classified. 24% of new connections are low-income households residing in the Western area of VM, where the average sewerage bill is BRL 17 per month; the remaining 76% pay the average bill of VM, which is BRL 65. The weighted average bill to be paid will be BRL 55 per month (about USD 16).

Table A5-10. Monthly sewerage bill per month (BRL/con/month)

All sectors	**Monthly sewerage bill (BRL/con/month)**
West area of VM	17
Center area of VM	235
East Area	371
Average VM	*65*
Average Fortaleza	40.8

Source: CAGECE. Sewerage bill is calculated with 80% of water consumption

47. For the economic evaluation the monthly bill of BRL 55 was used as an approximation of the willingness to pay when having sewerage connection. For the financial evaluation the monthly bill was used as well, given that CAGECE will increase its revenue per connection in this amount.

48. *Benefits from improvement of water quality along the beach* were estimated using the economic costs of health for different number of bathers along the beach (Table A5.9).

49. Health benefits were estimated as the incremental economic cost between two scenarios: without and with project. The without project scenario assumes that current situation remains, and so the water is not suitable for swimming 57% of the time in the Western part of the VM coastline. The *with* project scenario includes the expected improvement, where water quality will be suitable for swimming 80% of the time during dry season in the Western end of the coastline. Economic cost for each scenario is estimated applying these percentages. Results show that savings on health will range from USD 0.3M to USD 0.7M depending on the number of swimmers (10% to 20%).

Table A5-11. Potential health benefits from improvement of water quality along the coastline of the VM basin

	% of population of the VM basin who swim in the polluted seawater along the coastline	
	10%	20%
PV in a 30-year period (000 USD)	329	658

50. Another very important benefit is the potential impact on the tourism activity and its effect boosting the local economy. The service sector is the most important driver of the local economy of Fortaleza, generating on average 68 percent of the city's annual GDP during the last decade (IBGE, 2014). Tourism is the largest sector within the service economy, and it has been steadily rising during the last decade. Beaches are the most important attractive for tourists (domestic and international) and keeping them safe for recreation activities is a priority. The impact on the tourism industry was not measured but it is expected to be important.

Results of the economic evaluation

51. Results of the economic evaluation show expected returns of 8.6% when only benefits from sewerage connections are included, and 8.8% when health benefits from 10% of bathers swimming in polluted water are included. Expected net benefits for both situations are USD 3.4M and 3.7M respectively.

Table 5-12. Results of the Economic Evaluation of Reducing pollution along the VM

	Preset Value of Cash-flows (000 USD)			
	Costs	**Benefits**	**Net Benefits**	**IRR**
Including only sewerage connections' benefits	14,542	17,964	3,422	8.6%
Adding health benefits assuming 10% bathers		329		
Including sewerage connections &health benefits	14,542	18,293	3,751	8.8%

52. Sensitivity analysis shows that in order to yield positive returns and achieve economic benefits, (i) effective sewerage connection rate has to be higher than 80% of the target; and (ii) investment cost overrun needs to be lower than 30% and project less than 2 years.

Financial analysis of sewerage intervention

53. This evaluation was complemented with a financial analysis of the sewerage component as the only one that generates revenue. Costs and benefits were included as they will be received or paid by the entity in charge of maintaining the works, in this case, CAGECE. As such, benefits were expressed in terms of fees charged to new customers; and operation and maintenance costs in terms of impact when new customers are connected to the system. Different from the economic evaluation, the financial evaluation did not include the cost of in-house connection for those customers who will not receive subsidy.

54. The costs comprise the costs of the intervention USD 13.1M, including tax, plus O&M caused by the intervention, which was estimated as 2% of the cost of the intervention as explained

above. The benefits correspond to the revenues to be collected by CAGECE from new customers which corresponds to the bills paid (about USD16 per connection per month).

55. Results show that expected financial benefits will be USD 1.9 M and internal rate of return generated will be 8%.

Evaluation of Subcomponent 2.1 Upgrade of planning instruments and licensing tools

56. This component aims to improve municipal capacity for planning and land-based financing. The Municipality will be better prepared to drive urban planning in the city and perform land use and environmental control. In addition to provide faster and better quality services thorough the *Fortaleza Online* activities, an increase of own-source revenues is expected when the Cadaster system improves and *Fortaleza Online* is in place. This evaluation measured the impact on the Municipality's finances when own-source revenues increase. Special attention was paid to the activities planned for developing an integrated multipurpose cadaster system. This system is expected to be used not only for tax collection, but also as a planning tool for the city, improving access to land-related information and providing a more accurate evaluation of property value.

57. The own-source revenues are expected to increase through: (i) increase in collection of fees charged for the services that will be provided in a faster and more efficient way through *Fortaleza Online* platform; (ii) improving the cadaster database, updating the properties' information and land use; and (iii) updating the properties' value closer to actual market value. All these actions will be measured and projected based on knowledge and expertise at SEFIN. The expected targets are to increase cadaster revenue by 20% and *Fortaleza online* revenues to increase twofold after 6 years.

58. *Current Composition of Revenues.* The Municipality of Fortaleza is highly dependent on transfers from the federal and state governments. During the 2010-2015 period the participation of tax revenues to total current revenues was 23% in average, while transfers from the State and Federal Governments were about 60%. The rest comes from social contribution and other.

Table 5-13. Revenues of the municipality of Fortaleza (nominal prices)

R$ million	**2,010**	**2,011**	**2,012**	**2,013**	**2,014**	**2,015**	**Growth rate (2010-2015)**
Current Revenues	*3,039*	*3,511*	*4,580*	*4,310*	*4,942*	*5,651*	86%
Tax Revenues	686	810	954	1,052	1,261	1,350	97%
IPTU-Property Tax	160	172	191	211	309	339	113%
ISS-Taxes on Services	364	427	496	524	607	642	76%
ITBI-Taxes Transfer goods	67	88	110	139	140	137	104%
Other tax revenues	95	122	157	178	205	233	144%
Social Contribution	228	240	581	619	716	776	240%
Transfers	1,972	2,269	2,863	2,527	2,805	2,967	50%
Current Transfers							
FPM	443	556	575	493	545	578	30%
ICMS	457	491	571	646	698	702	53%
Other current transfers	1,072	1,221	1,717	1,388	1,562	1,687	57%

Other current revenues	153	193	182	112	161	558	265%
Capital Revenues	*51*	*89*	*89*	*63*	*133*	*32*	-37%
Total Revenues	**3,090**	**3,600**	**4,669**	**4,373**	**5,076**	**5,683**	**84%**

Source: PMF

59. The growth rate among categories varied widely. While tax revenues increased twofold and social contribution three folded, transfers from the State and Federal Governments increased at a slower pace and by 2015 were 50% higher than the 2010 level. As a consequence, the share of transfer in the current revenues decreased from 65% in 2010 to 52% by 2015. Social contributions[73] on the other hand increased from 13% of current revenue to 24% in 2015, same as tax revenue.

Table 5-14. Composition of current revenues

Share on Current Revenues (%)	2,010	2,011	2,012	2,013	2,014	2,015	Average
Tax Revenues	23%	23%	21%	24%	26%	24%	23%
Social contribution and others	13%	12%	17%	17%	18%	24%	17%
Transfers	65%	65%	63%	59%	57%	52%	59%
Total current revenues	100%	100%	100%	100%	100%	100%	100%

60. The composition of tax revenues show that all components have not changed much their participation in the last five years. The most important revenue come from taxes on services –ISS – with a participation of about 50% of total tax revenues. Property taxes is about half the ISS with 24% of participation. Nominal property tax increased two fold in the period, while ISS increased by 76%.

Table 5-15. Composition of tax revenues

	2,010	2,011	2,012	2,013	2,014	2,015
Tax Revenues						
IPTU-Property Tax	23%	21%	20%	20%	24%	25%
ISS-Taxes on Services	53%	53%	52%	50%	48%	48%
ITBI-Taxes on Transfers goods	10%	11%	12%	13%	11%	10%
Other tax revenues	14%	15%	16%	17%	16%	17%
Total Tax Revenues	100%	100%	100%	100%	100%	100%

61. *Details of this subcomponent.* The interventions will aim at: (i) increasing revenues from property taxes due the improvements and update of the Cadaster; and (ii) increasing revenues due to the expansion of services provided through *Fortaleza Online*, the virtual platform being used by the municipality to process more efficiently multiple administrative tasks, such as: permitting, regularization, titling, payment of fees, etc.

[73] Social contributions are levies created to pay for activities not related to the Government (such as social security). The main social contributions are: social contribution on net income (CSLL), tax and social security financing (COFINS), employees' profit participation program (PIS), public service employee savings program (PASEP), National institute of social security, and government severance indemnity fund for employees (FGTS), among others.

62. Revenues from property taxes have ample room for improvement through upgrading the database of the cadaster, improving the revenue collection efficiency, and updating the market price of the properties. Figures from 2013-2015 show that only 66% of the billed revenue is actually collected. Even though the revenue collection rate has improved from 62% in 2013 to 69% in 2015, the current level is still low. The properties registered at the cadaster do not correspond to all that the city actually have, and some of them are not properly classified. The price assigned to the properties to charge the tax is outdated. In 2015, the average tax billed per property was about BRL 900 and average collected about BRL 600 per unit. The property tax billed per unit increased by 34% in the 2013-2015 period, which was lower than the price increase of 45% in the real estate market in Fortaleza reported by FIPEZAP in the same period.

Table 5-16. IPTU billed and collected and number of properties registered

	IPTU (million BRL)		Revenue collection rate	Number of properties billed
	Billed	Collected		
2013	343	211	62%	517,301
2014	467	309	66%	544,786
2015	495	339	69%	557,286

63. *Benefits.* The expected targets are the following: (i) to increase cadaster revenue by 20% through mainly improvement of collection rate, and updating the cadaster, and (ii) to double the revenues from the *Fortaleza Online*, whose platform expects increasing the efficiency on the services provided by the municipality.

64. *Services provided through Fortaleza Online.* These services are basically related with licenses (sanitation, environmental, construction), permitting, regularization, titling, payment of fees, etc. Some of these services are provided free of charge, others have fee. According to the municipality, the revenues obtained from these services are about BRL 1M per year. With the intervention, it is expected these revenues to double.

65. The expected benefits are projected for a 10-year period, assumed as the lifetime of the intervention. They will increase gradually reaching its highest point at year 6 and then it will remain constant. The expected increase of revenues from property taxes is 5% in the fourth year 10% in year 5 and 20% in year 6. Increase of revenues from services provided through Fortaleza Online are expected to double in the sixth year of implementation period.

Table 5-17. Expected Revenue Increase

(000 USD)	Years 1,2 and 3	Year 4	Year 5	Year 6
Increase of current IPTU revenues	-	5,206	10,412	20,825
Increase of Revenues from services through Fortaleza online	-	153	215	307
Total Increase of Own Revenues	-	5,360	10,627	21,132

Costs of the intervention

66. The cost of the subcomponent 2.1 is USD 18.3M. The activities to implement under this Subcomponent will target the increase of revenues mentioned in the previous paragraphs. The evaluation of this intervention includes the specific costs of this subcomponent and the expected increase of revenues. Operating costs were estimated as 5% of the investment costs, as special attention and dedicated staff to guarantee sustainability of achievements are required.

67. Subcomponent 2.2 - Implementation of land-based financing instruments, with a cost of USD 57, will complement the strengthening planning and land-based financing instruments in the municipality, yet the activities to implement will not be responsible for the expected increase of revenues, as benefits cannot be currently estimated. Total cost of the component 2 is USD 76M (consisting of Subcomponent 2.1 and Subcomponent 2.2).

Results of the evaluation

68. This evaluation was conducted with the associated costs and benefits of Subcomponent 2.1. As an addition, the cost of Subcomponent 2.2 was added and compared to expected benefits from Subcomponent 2.1.

69. Results show that investment under subcomponent 2.1 is highly profitable with returns as high as 49% and benefits four times as much the costs. Present value of expected net benefits of this intervention will be USD 63 million during a 10-years period.

70. Expected benefits will be enough to pay for costs of Subcomponent 2,2 and still will generate a net profit of USD 7 million and 8% return.

Table 5-18. Results of the economic evaluation of Component 2

	Preset Value of Cash-flows (000 USD)			
	Costs	**Benefits**	**Net Benefits**	**IRR**
Including only investment cost of Subcomponent 2.1	20,381	83,425	63,045	49%
Including all cost of component 2	76,059	83,425	7,366	8%

71. Sensitivity analysis shows that if expected increase of revenues were only 40% of the target, the intervention would still show positive returns, and yield an internal rate of return of 27%. Investment cost can increase three fold and results would still be positive.

72. If all investment cost of component 2 were to be covered by the benefits of Subcomponent 2.1, increase of revenues had to be at least 90% of the target and investment costs could not be higher than 12%.

73. Additional benefits will result from the increase of property taxes, when properties appreciate by interventions on the park. These benefits were estimated at USD 2.2 million (see para.32 of this annex). When these benefits are added to subcomponent 2.1, the net benefit will increase to USD 65 million and return to 56%. If the whole cost of component 2 is added, the return increases from 8% to 11%.

Summary

74. Results show that planned intervention will be a worthwhile investment as it will impact positively the development of the Municipality of Fortaleza. All components are economically viable with returns higher than 9%. The overall project yields a 32% return and net benefits of about USD 85M. Total benefits surpassed costs by twice as much, which allows ample room for uncertainties along the lifetime of the interventions.

Table 5-19. Results of the economic evaluation of all components evaluated

Components	Preset Value of Cash-flows (000 USD)			
	Costs	Benefits	Net Benefits	IRR
1. Upgrading of the RDQ Park	51,827	70,734	18,907	27%
2. Sewerage and reduction pollution along the VM basin	14,542	18,293	3,751	9%
3. upgrade of planning instruments and licensing tools	20,381	83,425	63,045	49%
Total Project	**86,749**	**172,452**	**85,703**	**32%**

75. Under component 2, only the subcomponent 2.1 was evaluated as the benefits were quantifiable, its returns are enough to pay for the whole component, yielding returns of 8% when all investment cost is included. Under this scenario the overall return of the project is 12%, which is well higher than the 6% used as discount rate.

Table 5-20. Results of the economic evaluation of all project (including all investment costs of Component 2)

Components	Preset Value of Cash-flows (000 USD)			
	Costs	Benefits	Net Benefits	IRR
1. Upgrading of the RDQ Park	51,827	70,734	18,907	27%
2. Sewerage and reduction pollution along the VM basin	14,542	18,293	3,751	9%
3. Strengthening municipal planning and land-based financing	76,059	83,425	7,366	8%
Total Project	**142,428**	**172,452**	**30,024**	**12%**

Annex 6: Project Costs

BRAZIL: Fortaleza Sustainable Urban Development Project

1. The proposed investment project financing operation will be partly financed by an IBRD loan in the amount of USD 73.3 million. As per national legislation that mandates a minimum of 50 percent of municipal counterpart share, the PMF will finance USD 73.3 million.

2. *Component 1*. IBRD will finance over 80 percent of the costs of Component 1. For Subcomponent 1.1 the PMF will provide finance committed under the existing program *Redes de Sistemas Naturais* for a number of activities including: (i) detailed engineering designs for the RDQ Park and execution of public works in some areas of the park; (ii) activities related to environmental preservation and education, through resources collected under FUNDEMA; and (i) solid waste management to ensure the sustainability of investments in the park. For Subcomponent 1.2 the PMF will also provide resources under their *Aguas da Cidade* program to develop solid waste management activities in the areas of intervention in the VM basin and develop the city's Drainage Master Plan.

3. *Component 2***.** IBRD will finance 20 percent of the costs of Component 2. Under Subcomponent 2.1, IBRD resources will finance over 70 percent of the costs for the development of the multi-purpose cadaster and spatial information platform, and the expansion of *Fortaleza Online*. Resources provided by the PMF for this subcomponent include ongoing investments for: (i) update of the cadaster; (ii) expansion of *Fortaleza Online*; (iii) update of urban planning legislation (PDP and LUOS); and (iv) activities to improve SEUMA's environmental planning and monitoring capacity. Under Subcomponent 2.2, IBRD resources will finance critical technical assistance for the implementation of urban instruments, including the design of the RDQ OUC. PMF resources included as counterpart finance correspond to revenues raised through the application of urban instruments (collected under FUNDURB) and that will be subsequently invested on the implementation of Fortaleza's Environmental Policy in activities linked to Component 1 under the *Aguas da Cidade* and *Redes de Sistemas Naturais* programs.

4. *Component 3.* IBRD will finance 100 percent of the costs of Component 3, exclusive of PMF's resources used to cover staffing of key PMU and project-related technical positions.

Table A6-1. Project Cost and Financing

Project Components	Project cost (USD million)	IBRD Financing (USD million)	% Financing
1. Urban and Environmental Restoration	**64.4**	**52.1**	**81%**
1.1 Restoration of Rachel de Queiroz (RDQ) Park	45.9	37.5	82%
1.2 Reducing point-source pollution along Vertente Marítima (VM) coastline	18.5	14.6	79%
2. Strengthening Planning and Land-based Financing	**76.0**	**15.0**	**20%**
2.1 Upgrade of planning instruments and licensing tools	18.3	10.0	55%
2.2 Implementation of land-based financing instruments	57.7	5.0	9%
3. Project Management	**6.0**	**6.0**	**100%**
Total Costs			
Total Project Costs	146.4	73.1	50%
Front-End Fees	0.183	0.183	100%
Total Financing Required	146.6	73.3	50%

Annex 7: Map of Project's Areas of Intervention