



Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 05-May-2019 | Report No: PIDC26860

**BASIC INFORMATION****A. Basic Project Data**

Country Cote d'Ivoire	Project ID P168308	Parent Project ID (if any)	Project Name Urban Resilience and Solid Waste Management Project (P168308)
Region AFRICA	Estimated Appraisal Date Nov 04, 2019	Estimated Board Date Mar 26, 2020	Practice Area (Lead) Social, Urban, Rural and Resilience Global Practice
Financing Instrument Investment Project Financing	Borrower(s) Republic of Cote d'Ivoire	Implementing Agency Ministry of Sanitation	

Proposed Development Objective(s)

The development objective of the project is to improve (i) resilience to flood risk and (ii) solid waste management services in vulnerable neighborhoods of the District of Abidjan and targeted secondary cities.

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	315.00
Total Financing	315.00
of which IBRD/IDA	315.00
Financing Gap	0.00

DETAILS**World Bank Group Financing**

International Development Association (IDA)	315.00
IDA Credit	315.00



Environmental and Social Risk Classification

High

Concept Review Decision

Track II-The review did authorize the preparation to continue

Other Decision (as needed)

B. Introduction and Context

Country Context

Economic growth remains strong, driven by buoyant demand. Côte d'Ivoire has experienced fast economic growth since the end of 2011 post-election conflict, supported by a surge in both private and public investment and robust domestic demand. The average real GDP growth reached 8.7 percent from 2012-2017. Growth was fueled by a catch-up effect after the post-electoral crisis. In 2018, the GDP growth rate is expected to remain strong but a slight decrease from 7.7 percent in 2017 to 7.4 percent in 2018 (4.8 percent in per capita terms), driven by public and private investments and private consumption. Although this rate is lower than those observed during the last few years, the expansion of the Ivorian economy remains among the strongest of the Sub-Saharan African region (the regional growth rate is projected at 2.4 percent for 2018). Low food prices kept inflation moderate at 0.4 percent well below the WAEMU regional target of 3 percent in 2018. The banking sector remains broadly sound, despite remaining weaknesses in a few small banks. Credit to economy expanded at 13.4 percent in 2018 reflecting strong private sector demand and commercial banks towards small and medium enterprises.

Growth has been accompanied by a modest decline in poverty. The poverty rate fell to about 46 percent in 2015 from over 51 percent in 2011. Poverty continues to be overwhelmingly concentrated in rural areas, which are home to 70 percent of poor households. Even though poverty has decreased historically, the rural poverty rate remains almost twice as high as in urban areas. The gap between the prevalence of rural and urban poverty is still the primary reason for urban population growth.

The economic outlook remains favorable in the short and medium term. The Ivorian economy is expected to remain strong while gradually slowing down. The real GDP growth is projected at 7.4 percent in 2019 (with per capita growth at 4.7 percent) and above 7 percent over the period 2020-21 driven by strong private consumption and investment as the result of stronger Government's effort to improve the business climate and pass further structural reforms in the banking, transport, economy as a result of innovation and the urbanization process. The industrial sector will continue to grow, owing to the expansion of agricultural processing industries and the steady growth of construction activities, as new industrial zones are developed both in Abidjan and in the secondary cities. All of these sectors should both benefit and contribute from the country's rapid urbanization and economic progress. The performance of the agriculture sector is also expected to remain strong, boosted by several programs aimed at improving farming techniques and commercializing and diversifying the agricultural output. Inflation is expected to remain below the 3 percent regional target.

While prospects remain positive for Côte d'Ivoire in the short to medium term, the country is exposed to significant external and domestic risks. The country vulnerability to external shocks remains one of the main challenges to achieving sustainable growth. A sharp decline of cocoa prices can adversely impact fiscal revenues and economic growth. Adverse



weather conditions may negatively affect agricultural output and exports, increase subsidy needs, and reduce the population's living standards. In addition, a tightening of monetary policy in international and regional markets would increase the cost of borrowing. Continued attention is needed to limiting debt accumulation and improving domestic revenue mobilization. Finally, public enterprises and PPPs present budgetary risks that should be closely monitored and addressed where needed. As for domestic risks, greater political uncertainty in the run-up to the 2020 Presidential election, as well as security tensions, may not only discourage private investment and slow economic growth, but also negatively affect the planned fiscal consolidation. A resurgence of socio-political tension could lead to an increase in expenditures, further worsening the deficit and stock of public debt, which could in turn negatively affect confidence in the country's macroeconomic framework.

Sectoral and Institutional Context

Disaster risk profile and climate change

Côte d'Ivoire is prone to natural disaster risks and flooding, exacerbated by the effects of rapid urbanization and climate change. The country is located in the transition zone between a humid equatorial climate in the south and the drier tropical climate in the north. In the north, the rainy season is from June to October, while in the southern region May to June brings heavy rains, averaging 2000mm annually along the coast, and shorter rains occur during August and September.

Floods repeatedly hit Côte d'Ivoire, especially in the southern part of the country where the highest amount of rainfall occurs. The city of Abidjan is extremely prone to flood risk, due partly to its topography characterized by shelves areas cut by numerous lagoon arms and talwegs surrounded by steep slopes, partly by poor drainage and sanitation systems within urban areas, such as sewers and drains clogged by sedimentation, solid waste and construction, and partly by unplanned urbanization in flood prone areas and upstream catchments.

Climate trends in the country are characterized by increasing temperatures, an analysis of climate data from 1970 to 2015 showing an average rise of a little more than 1°C. Nonetheless, future change in precipitation is not easily predictable and the different scenarios developed thru climate models present a large variability in the very long term. However, it is estimated by 2050 that the country might face a 9% decrease of precipitation in May coupled with an increase of 9% in October and 30 cm of sea level rise. These will likely increase the risk of flooding due to increased extreme precipitation and lack of capacity to discharge stormwater by the existing drainage systems due to sea level rise. In the absence of a comprehensive study on the impact of climate change on the Ivorian economy, estimates can be made based on extrapolations of data from African continent-wide studies. According to the Intergovernmental Panel on Climate Change (IPCC), climate change could reduce Africa's GDP by 2 to 4 percent by 2040 and between 10 and 25 percent. in 2100. For Côte d'Ivoire, this would correspond to an equivalent loss of 380 to 770 billion FCFA. More concerning is the possibility that climate change could push 2% to 6% of additional households into extreme poverty by 2030. For Côte d'Ivoire, this would correspond to nearly 1 million additional people in a situation of extreme poverty (people living on less than \$ 1.90 a day) in addition to the existing 6 million.

Rapid and Uncontrolled urbanization

The urban sector in Côte d'Ivoire is characterized by unprecedented population growth. More than 54% of the Ivorian population lives in cities, with an urbanization rate of around 5% per year. The district of Abidjan includes the highest human and economic concentration in the country: a population estimated today between 5 and 6 million inhabitants or 20% of the total population and nearly 45% of urban dwellers. The district of Abidjan alone accounts for more than 60% of the country's economic activities. In 2025, one Ivorian out of four will live in the Abidjan metropolitan area. Eleven other cities with more than 100,000 inhabitants are considered as secondary cities; the largest five are Bouaké, Daloa, Korhogo, San Pedro, and Yamoussoukro. Between 1998 and 2014, the population grew by 53 percent in Abidjan, 43 percent in San Pedro, and 17 percent in Bouake, which was severely affected by the civil war.

Rapid and uncontrolled urbanization has put a higher concentration of people and economic assets at risk of natural disasters, such as flooding and landslides. These risks lead to loss of life and material damage, the displacement of people and the destruction of socio-economic infrastructure. The country's economic development, coupled with rapid



and insufficiently controlled urbanization, can therefore increase the vulnerability of the population to climate risks and disaster risks, and in particular flooding. Major factors exacerbating this vulnerability are the following:

- rapid urbanization whose pace is not proportional to the necessary volume of investment for the development of urban land;
- a lack of respect for urban planning rules and standards characterized by the occupation of non-aedificandi areas, the construction of dwellings in risk areas such as storm basins, insufficient awareness of the risks involved and the lack of follow-up by the authorities;
- a deficit in alternative housing due to poverty exacerbated by a growing exodus of rural populations to urban areas;
- a lack of funding and investment in the implementation of master plans for sanitation and drainage;
- the country's economic development, coupled with rapid and insufficiently controlled urbanization, could increase the vulnerability of the population to climate risks and disaster risks. Climate change will further worsen the occurrence and intensity of this type of disaster in the future.
- Coordination of the response at the operational level is still insufficient and government preparedness, disaster risk reduction and crisis management mechanisms are not fully operational;
- Insufficient involvement of grassroots communities in development actions;
- An inadequate solid waste management system, causing unsanitary conditions and disease spreading.

As the largest urban center in Côte d'Ivoire, the district of Abidjan is particularly prone to these risks. According to the available statistics, more than 26% of the district's area is in areas at risk of floods and landslides (see figure 1 below). Over the past decade, Abidjan has experienced recurrent floods resulting in significant human and economic losses. The immediate causes include: (i) deficit in drainage infrastructure; (ii) operating deficit of networks and sanitation and drainage; (iii) human occupation of the right of way of the networks and sanitation and drainage and sites unsuitable for construction; (iv) dumping of household and other waste into sewerage and drainage networks; (v) uncontrolled extraction of land, deforestation, and disordered land clearing; (vi) obstruction of gutters and drains. It has been estimated that an average of 60 000 people are affected by floods every year and that nearly 0.7% of the country's GDP is lost every year.

Abidjan's flooding in June 2018 - Post Disaster Need Assessment

Following the floods suffered by several municipalities in the District of Abidjan in June 2018, the Ivorian government requested to the World Bank assistance for an assessment of damages, losses and needs (Post Disaster Need Assessment – PDNA). This evaluation was led by the Government and supported by the World Bank, the United Nations Development Program and the European Union. The floods that occurred on 18 and 19 June 2018 in the city of Abidjan resulted in the death of 18 people and caused damage to the economic and social infrastructure in at least five urban communes in Abidjan. Results of the assessment include:

- Losses and damages were estimated at nearly 17 billion FCFA, of which 22% pertaining to the social sector (health and housing) and 64% to infrastructure, notably drainage systems.
- Needs for recovery and flood risk reduction were estimated at FCFA 205 billion, of which infrastructure accounts for the largest share (52%) and the social sectors 39%.

The needs identified during this assessment represent a much larger amount than the total effects caused by the June 2018 flooding and specific measures to reduce disaster risk and rebuild along the lines of “build back better” principles do not explain this difference alone. Indeed, the recurrent nature of floods and landslides in the city of Abidjan is characterized by frequent but often ad hoc and limited events in particularly exposed areas.

Large-scale actions must be put in place to put an end to this type of recurrent disaster, which is too often a daily occurrence for the most vulnerable populations. This includes better stormwater management through drainage infrastructure and associated roadworks, as well as solid waste management which has proved to be one of the most aggravating factors contributing to recurrent flooding. Moreover “soft” measures need to be put in place, such as flood early warning systems, the reinforcement of contingency and emergency planning and the use of digital technologies for urban resilience. Finally, in order to mitigate the negative effects of uncontrolled urbanization and to rehabilitate unhealthy and flood-prone housing areas, relocation programs need to be put in place in targeted areas to reduce both exposure and



driving factors of risk (occupation of water retention areas, constrains in drainage capacity, etc.). All of these needs are essential activities to reduce the impacts of extreme precipitation events and cope with the effects of climate change in the long term, and have been identified as key areas of intervention in the project.

Storm water management

In the city of Abidjan, the poor conditions of the storm drainage network contribute to increasing flood risk. The recent post flood assessment proved it was one of the most aggravating factors contributing to recurrent flooding. Except for a few investments, such as the Abidjan East-West Watershed (IDA funded under PRICI project), and the Mahou neighborhood discharge system, the rainwater drainage system in the District of Abidjan has received little investment since the 1990s. In some neighborhoods, such as Abobo in the north, only an estimated 11 percent of the land mass is serviced with rainwater drainage. In addition to damage to public and private assets, this has a knock-on effect on urban mobility, as unchecked rainwater increases the speed with which road networks deteriorate.

In Cote D'Ivoire, sanitary and storm water systems are overseen by the National Office of Sanitation and Drainage (Office National de l'Assainissement et du Drainage - ONAD), which serves as the management entity for projects within this sector. Two ministries are mainly responsible for the sector, the Ministry of Sanitation (Ministère de l'Assainissement et de la Salubrité - MINASS) and the Ministry of Public Works, Housing, and Urbanization (Ministère de la Construction, du Logement, et de l'Urbanisme - MCLAU). The District Autonome d'Abidjan (DAA) has also assumed an important role in the same sector, albeit limited to the greater Abidjan area. The 13 communes that make up the District of Abidjan also play a role on the local "neighborhood" level. Within the Ministry, the office of Urban Sanitation, (Direction de l'Assainissement Urbain et du Drainage- (DAUD), is tasked with oversight.

To tackle flood risk and poor sanitation in Abidjan, the government of the Côte d'Ivoire commissioned the preparation of a Sanitation and Drainage Master Plan which was finalized in 2018 (*Schema Directeur d'Assainissement et de Drainage du District d'Abidjan - SDAD*). The Plan, financed by AFD, provided an estimate of the financial needs for drainage and sanitation for Abidjan by 2030, and a vision for the sanitary sewer infrastructure development in Abidjan through the 2030 horizon. The Master Plan was setup following a series of eight phases, broken down into two main components, one being for sanitary water management, and the other for handling of rainwater. The Plan is foreseen to be implemented in 8 phases, with 1,250 billion FCFA for sanitation infrastructures and 300 billion FCFA for storm water infrastructures. The cost of the first phase is around 165,550 million FCFA for storm water infrastructures, with the first tranche of the first phase being around 131,000 million FCFA.

In addition to the District of Abidjan, secondary cities within Côte d'Ivoire are also in dire need of investment in drainage infrastructure. Some of these cities have already undertaken drainage improvement projects, and others are in the initial feasibility and planning. These include: Soubré, Séguéla, San Pedro, Daloa, Man, Grand-Bassam, Bouaké, Dimbokro, Abengourou, Yamoussoukro, Gagnoa, and Korhogo. The total estimated investment for studies and design of drainage infrastructure in secondary cities is estimated as 1,975 Million FCFA, and the construction cost for the infrastructure in these cities is estimated at 184,498 Million FCFA.

Solid waste management

Solid waste management in Ivorian cities needs to urgently tackle overflowing collection centers and proliferating open dump sites. Along with storm water management issues, the Abidjan's post flood assessment undertaken in September 2018 clearly identified solid waste as one of the most aggravating factors contributing to recurrent flooding and therefore a key sector to be deeply reinforced for addressing urban floods and related issues. During the past decade cities did increase their daily solid waste production while the collection rates didn't follow the production trend, worsening public health and safety hazards. In Abidjan the collection rate is estimated at only 48 per cent.

To deal with the unhealthy situation in the District of Abidjan, the Government of Côte d'Ivoire engaged in a series of efforts to modernize the sector, with the support of the private sector. In 2018 the Ministry of Sanitation (*Ministère de l'Assainissement et de la Salubrité MINASS*) launched a process of international call for tenders to contract private international operators for provision of solid waste management services in 13 communes of the District of Abidjan. The effort is aimed at structuring and modernizing the operational chain of collection and transfer of solid waste, with a longer-



term view toward valorization and treatment of waste in the future, and at the same time incentivizing clean technologies and good environmental practices.

Currently, two international operators are in charge of collecting and transporting solid waste to landfill of three lots covering (geographically) most of the urban agglomeration of Abidjan with a 7 years contract; all financing is provided by the private sector against a monthly fee per ton of waste collected and transported to the final discharge. A third concession was assigned with a 7 years contract to a private operator for the construction and operation of a new landfill in Kossihouen (north west of Abidjan) for the treatment of 1,250,000 ton/year. The entire investment for this contract is provided by the private sector through the repayment of a fixed portion relating to the investment and a remuneration per ton received at the landfill and recovery center.

The reimbursement of the portion related to the work of the landfill and recovery center is covered by the state budget in the form of a monthly fixed payment. The operating costs for collecting, transporting and operating the consolidation points and the transfer centers, as well as cleaning costs, are covered by the national budget through a tax on garbage (TOM) recovered through the electricity bill. It is estimated that the recovery tax covers two months of operation while the remainder has to be covered by the general budget. Current concessions include a three-month renewable guarantee on operating costs and guarantees the investment of the landfill and recovery center.

At present, no valorization activities are in place. Under the contractual agreement, following a six-month period (around May 2019), a waste recovery proposal will be presented by the landfill concessionaire to Ministry of Sanitation for evaluation and potential additional investment.

At the institutional level, solid waste management in Côte d'Ivoire is overseen by the National Waste Management Agency (ANAGED) which is a public industrial and commercial establishment (EPIC) created on October 25, 2017. ANAGED oversees the management of all types of solid waste, including disposal of hazardous waste and medical waste. ANAGED is placed under is managed under two guardianships: the technical and administrative supervision of the Ministry of Sanitation (MINASS) and the financial supervision of the Ministry of the Economy and Finance.

Institutional capacity and digital technologies

Although the deficits in drainage and solid waste management infrastructure are a main cause of flooding, it is largely worsened by the fact that even current infrastructure are not performing at the expected level with issues of poor maintenance, purposeful clogging with waste and occupation of rights of way, and natural factors (landslide, silting). Simply adding more infrastructure will not resolve the flood issue alone, it also requires regular maintenance of current infrastructure, enforcement of zoning, and development of future infrastructure, all using an evidence-based approach, coordinated across all relevant institutions.

Currently the lack of use of information systems, and institutional coordination for planning and operations is preventing an effective and efficient use of resources. This is particularly important for an environment as complex as Abidjan where multiple interactions between sectors, people, and the urban space are complex and interlinked.

Looking at the current situation according to the following four pillars i) institutional arrangements ii) capacity iii) data iv) systems:

- a major weakness is that the institutional framework for foundational and sectoral data management is not implemented. There is no regulation of mandates or responsibilities, making data access, data sharing, and usage difficult for governmental agencies or other stakeholders. This weakens planning, operation and maintenance;
- technical technology structures have good capacity for traditional geographic data collection and use methods, as well as an increasing use of innovative methods such as satellite imagery, drones, participatory mapping; however, this is not the case for operational structures where data is not exploited.
- there is a good information base available with several key studies (drainage masterplan, urban masterplan, mobility plan) that include topographic maps, road and drainage infrastructure, flood prone zones for 10-year return period and a detailed elevation map (Lidar).
- several systems are being developed or planned with applications for drainage, solid waste management, urban planning, and early warning systems. However, none of the systems are operational or embedded in institutional processes. These will need to be implemented while incorporating the technological and institutional mechanisms to ensure data can be exchanged smoothly and dynamically.



In this context and with several other examples in parallel such as the “Eco-quartier” (Eco-neighborhood), a large District led land valorization initiative, and the support to local innovators by the Ministry of ICT demonstrate that Abidjan and Côte d’Ivoire are in a position to leverage digital development opportunities to increase the impact of urban development interventions overall.

Addressing flood risk by enhancing urban resilience – climate adaptation and mitigation

The proposed project aims to address current and future flood risk in the city of Abidjan and selected secondary cities, by: (i) improving storm water management capacity through construction/rehabilitation of primary and secondary drainage systems; (ii) improving the collection, transfer, disposal and valorization of solid waste management, which is a direct cause of flooding; (iii) enhancing digital technologies and building institutional capacity for improved urban services and planning, including early warning systems. These actions will enhance urban resilience to climate change and disaster risk, by providing better planning, reducing impacts of extreme events and facilitating faster recovery from these events. The Project will provide significant climate adaptation (to increased weather and climate variability and sea level rise) and mitigation co-benefits (better management of waste – which is often burned - and reduced traffic congestions due to reduced high frequency flood events and road upgrading).

Relationship to CPF

The proposed project is aligned with the World Bank FY16–FY19 Country Partnership Framework (CPF) for Côte d’Ivoire. To achieve its ten objectives, the CPF comprises three pillars of intervention: (i) accelerating sustainable private sector-led growth; (ii) building human capital for economic development and social cohesion, and (iii) strengthening public financial management and accountability; as well as two cross-cutting themes: (i) governance and (ii) spatial inequality. The proposed project is linked to the first pillar by directly contributing to two of its four objectives, namely Objective 2: to strengthen economic infrastructure and objective 4: formalize and access to land for business and agriculture. Through reducing the risk of floods, the project will limit losses and damage suffered by economic actors, increase the mobility of goods and people through better quality, all-season roads, and protect land from flooding allowing better use for economic activities. Lastly, through enhancing the capacity of institutions in urban resilience planning and zoning, and developing community engagement for urban flood risk reduction and adaptation to climate change, the project will help create an urban environment more conducive to private sector development.

The project will contribute to the WB’s twin goals of eliminating extreme poverty and boosting shared prosperity. By improving infrastructure services in participating cities, the proposed interventions will directly improve living conditions, especially residents in extremely poor households, through better access to services and economic opportunities. By improving drainage and solid waste management services, the project will help reduce the high health and flood risks currently faced by poor urban households, thus protecting them from losses of family assets caused by flooding/illness. While investing in urban infrastructure, the proposed investments will create jobs for the poor, especially the youth, thus improving the livelihoods of those households both in the short run (due to increased income from temporary jobs) and in the long run (due to gained job skills and increased employment opportunities).

The project will contribute to the implementation of the new strategy for Africa, by: i) **unlocking MFD** opportunities in the solid waste sector, where significant private investments are expected to be leveraged by the proposed project through the setting up of PPPs for solid waste collection, transfer, disposal and valorization; ii) contributing to the **digital moonshot** agenda with the creation of digital platforms (early warning systems, common municipal database repository), the support to local innovation ecosystem and entrepreneurs on local digital solutions for urban management, the promotion of digital skills through capacity building, with a focus on geospatial technologies; iii) contributing to the development of the **human capital**, by reducing the vulnerability of communities at risk of climate and disaster shocks, which could undermine the hardly gained improvements in poverty reduction; iv) improve **resilience** to climate and disaster risk by reducing potential impacts of extreme events (fiscal impacts) and promoting a preparedness approach, which will provide significant economic and social co-benefits, including community engagement and awareness.

The project will work as a financial and technical platform for multi-development partner engagements. The project is part of a larger effort undertaken by the Government and several development partners to strengthen urban resilience in Cote d’Ivoire. In particular, the World Bank is supporting the Government with the organization and carry out of a round



table to coordinate different contributions for the implementation of the Sanitation and Drainage Master Plan in Abidjan. The round table will likely take place in May 2019. Several development partners have already committed or are discussing financial supports, such as US\$150 from the African Development Bank, the French Development Agency and the European Union. The project is also discussing co-financing activities with the Spanish Agency for International Development Cooperation (AECID) and the European Union, through the EU External Investment Plan (EIP) – RECIDE for a Guarantee on the PPP for the solid waste management sector.

The project will contribute directly to the achievement of Sustainable Development Objectives for Goal 11: Sustainable Cities and Communities, including access to services and sanitation of poor neighborhoods, inclusive urbanization and participatory planning addressing environmental issues related to municipal waste management.

The project will also contribute to the Ivorian National Development Plan (2015-2020) particularly for: (i) Pillar II: accelerating the development of human capital and promoting well-being; Pillar IV: development of infrastructures harmoniously distributed over the national territory and preservation of the environment. The project by reducing the risks of flooding will allow a better preservation of the health and school infrastructures, a better urban mobility, a good social integration of the populations living in the deprived districts, thus contributing to increase the productivity of the people, ultimate goal of the development of human capital. By improving the quality of waste management, the project will also contribute to improving the health of populations and the preservation of the environment.

C. Proposed Development Objective(s)

The development objective of the project is to improve (i) resilience to flood risk and (ii) solid waste management services in vulnerable neighborhoods of the District of Abidjan and targeted secondary cities.

Key Results (From PCN)

The project is expected to contribute to the following two key results:

- Reduce flood risk in vulnerable neighborhood of Abidjan and targeted secondary cities
- Strengthen capacity for solid waste management in Abidjan and targeted secondary cities, with significant participation of the private sector.

The progress towards achieving the PDO would be assessed by the following proposed results indicators:

Indicators addressing access:

- Number of residents protected against recurring flooding
- Additional people provided with access to improved solid waste services (number, gender disaggregated)

Indicators addressing quality:

- Improved capacity for urban resilience planning and integrated flood risk management
- Beneficiaries that feel project investments reflected their needs (gender-disaggregated)
- Increase the capacity and use of digital technologies for urban service delivery

The final selection of indicators and targets for the proposed Project would be refined during project preparation. A monitoring and evaluation assessment will be conducted to determine institutional arrangements and data verification protocols to improve quality and timely use of data for course correction and decision making.

D. Concept Description

Component 1: Flood risk mitigation (US\$150 million)

This component will focus on mitigating the negative impacts of recurrent floods through a multi-sectoral approach that combines structural and non-structural (e.g. revegetation, planning) measures, including urban drainage and associated



roadworks, and nature-based solutions for erosion control.

Sub-component 1.1 - urban drainage and associated roadworks

Activities of this subcomponent will comprise: (i) construction/rehabilitation of primary and secondary drainage; (ii) construction/rehabilitation of water retention areas to reduce peak flood discharge to drainage and to reduce the size of downstream structures; (iii) construction/rehabilitation of associated roadworks to (i); (iv) realization of Sanitation and Storm Water Master Plans for selected secondary cities. In the District of Abidjan, priority infrastructure to reduce flood vulnerability will be identified from Phase 1 of the recently completed District of Abidjan Sanitation and Storm Water Master Plan (*Schema Directeur d'Assainissement et de Drainage du District d'Abidjan*). Other secondary cities of interest are Grand Bassam and Bouaké; (v) establishment of O&M mechanism for drainage

Sub-component 1.2 - nature-based solutions for erosion and landslide control and coastal protection

Activities of this subcomponent will comprise: (i) erosion control works for thalwegs prone to landslides and erosion, and develop and finance revegetation or reforestation plans; (ii) revegetation and valorization of canal banks; (iii) revegetation and double use of water retention areas with green spaces and leisure areas; (iv) construction/rehabilitation of micro water retention areas following nature-based solutions in available areas such as parks, parking lots, sidewalks, and playing fields. These activities will be implemented in the District of Abidjan and other targeted secondary cities to be identified in the course of project preparation.

Component 2: Improvement of the system of collection and disposal of solid waste (US\$120 million)

[Partially with results-based financing using Disbursement Linked Indicators (DLIs) and partially with traditional IPF instrument]

Garbage accumulating along waterways prevents the flow of rainwater and is a major cause of flooding. As long as garbage collection remains spotty, flooding will continue and will affect people living in poor neighborhoods the most. This component supports the Governments on-going efforts in modernizing the sector, with strong involvement of the private sector through the creation of Public-Private-Partnerships, based on the lessons learned from the three concessions already in place. Since this component will contribute to the reduction of solid waste that ends up in the lagoon (around which Abidjan is built) and finally in the ocean, it also contributes to the reduction of marine litter.

The component will introduce a performance-based financing (PBF) mechanism through Disbursement Linked Indicators (DLIs) oriented to results.

Sub-component 2.1 - strengthening the city's solid waste collection and treatment/valorization and disposal capacities in the District of Abidjan and selected inter-communal groups of secondary cities.

Activities of this subcomponent will comprise: (i) construction of new solid waste treatment/valorization and disposal facilities, including fixed and mobile equipment and associated roadworks in the District of Abidjan and targeted inter-communal groups of secondary cities; (ii) construction of consolidation points and transfer centers, including civil works, fixed equipment and mobile transport and transfer equipment, in the District of Abidjan to complete the existing system and targeted inter-communal groups of secondary cities; (iii) studies of inter-communal plans and identification of waste management infrastructure and equipment needs for selected secondary cities; (iv) detailed study on the financial sustainability of the sector and potential fiscal reforms to guarantee the financial and technical sustainability of the investment. All equipment and consolidation points will be financed by the private sector within the PPPs (in total 2-4 expected, for two solid waste treatment/valorization and disposal facilities and concession for collection and transfer waste), while the infrastructure will be provided by the Government through the IDA financing. It is not expected that the new PPPs will merge with the existing ones but provide services in areas that are not included in the current concessions.

Sub-component 2.2 - sensitization of communities and capacity building of different stakeholders in waste management

Activities of this subcomponent will comprise: (i) a major outreach program to sensitize and improve public behavior on solid waste and improved litter management. Reduction of solid waste in the drainage system and improvement in solid waste management will bring climate adaptation and mitigation benefits; (ii) capacity building activities for contract management of PPP engagements in the waste sector including recycling activities.

Sub-component 2.3 - support the reform of the regulatory and institutional framework and the solid waste financing mechanism to enhance the sustainability improve the environment for successful public private partnerships in the solid



waste sector

Activities of this subcomponent will comprise: (i) design and support to the creation of a PPP in the waste management sector for the District of Abidjan and in selected secondary cities; (ii) design and support regularity and institutional framework, including fiscal reforms to guarantee the sustainability of solid waste management activities.

This sub-component will introduce performance-based financing (PBF) mechanism through Disbursement Linked Indicators (DLIs) oriented to results.

Component 3: Capacity building and digital technologies for urban resilience (US\$30 million)

This component will fund management and digital technologies capacity building activities of the institutions involved in the project, and will include the following activities:

Sub-component 3.1 - project management support.

Activities of this subcomponent will comprise: (i) technical assistance, equipment, training and operating costs for the Project Coordination Unit (PCU) and Specialized Implementation Agencies (SIAs) (MOD), including establishing and implementing a comprehensive monitoring and evaluation (M&E) system, training of the implementing agencies in environmental and social management, grievance redressal, procurement and financial management.

Sub-component 3.2 - capacity building, job creation, public awareness in the solid waste management, including valorization and recycling.

Activities of this subcomponent will comprise: (i) professional trainings on solid waste management and valorization of 3-4 recycling value chains, such as pneumatics, green waste, plastic, carton, engravings and construction waste, in collaboration with regional organizations and foreign academic institutions; (ii) job creation program in solid waste management through the development of a recycling branch economy, support to the creation of local micro-firms in sorting and recycling, and integration with youth unemployment services; (iii) Awareness campaign for households and children at school on waste management and recycling..

Sub-component 3.2 - capacity building and job creation in the digital, urban resilience and solid waste management sectors.

Activities of this subcomponent will comprise: creation of local academic and professional degrees, research programs on flood risks, urban planning, solid waste management in collaboration with regional organizations and foreign academic institutions to train high-level professional as well as bridge the gap between decision-makers and academics (ii) large scale digital skills training and internships on coding and digital cartography for undergrad and non-degree holders (iii) job creation program in solid waste management through the development of a recycling branch economy, support to the creation of local micro-firms in sorting and recycling, and integration with youth unemployment services (iv) Support to the local innovation eco-system and entrepreneurs to generate and support innovative local digital solutions for urban management.

Sub-component 3.3 – capacity building and tools for urban resilience planning.

Activities of this subcomponent will comprise: (i) preparatory studies and community engagement for preventive resettlement, slum upgrading for communities at risk, through consultations and social preparation activities; (ii) detailed urban development plans in 5 municipalities of the District of Abidjan; (iii) technical and feasibility studies for the project eco-quartier of Marcory; (iv) capacity building on urban resilience, with a focus on digital tools for disaster risk reduction (e.g. community surveying and mapping) and vulnerable groups (e.g. woman associations).

Sub-component 3.4 –digital platform for urban resilience planning and management.

Activities of this subcomponent will comprise: (i) Legal and institutional framework to enable institutions to share and use data for cross-sectoral and resilient urban planning and management; (ii) Consolidation of existing key data set, creation and updating of missing information through citizen participation, use of disruptive technologies to build a common municipal data repository available in a digital platform (iii) Supporting the local innovation ecosystem and entrepreneurs to generate and support innovative local digital solutions for urban management by supporting existing programs of the District of Abidjan and the Ministry of the Digital Economy; (iii) Development of sector specific applications: a) Flood risk early warning system (EWS) with reception and treatment of hydro-meteorological information, alarm processing, and real-time intervention management. Its operationalization will be accompanied by the planning of emergency measures (e.g. contingency plans at municipal level), strengthening the response (e.g. equipment for civil protection) and community awareness campaigns; b) Use of urban data for resilient urban planning, and integration of risks in the digital management



of the cadastre to avoid the encroachment of non-constructible areas and the public domain of the state; c) Design and installation of a GIS system for solid waste management in the district of Abidjan and some secondary cities; d) Geographic Information System (GIS) for Water Management and Sanitation to visualize the status of water and sanitation networks and manage maintenance operations on the network.

Component 4 Contingent Emergency Response Component (CERC) (US\$0)

This Contingent Emergency Response Component (CERC) is included under the project in accordance with Bank Policy Investment Project Financing, paragraphs 12 and 13, for situations of urgent need of assistance, as a project-specific CERC. Given the increasing climate risks in Côte d'Ivoire, particularly the risks of flooding and drought, the Government may request the World Bank to reallocate project funds to support mitigation, response, recovery, and reconstruction. Therefore, it is advisable to have a contingent component to prepare for quick responses to emergencies. This will allow for rapid reallocation of project funds in the event of a natural or artificial crisis during the implementation of the project.. This component will have no funding allocation initially and will draw resources from the category with uncommitted expenditure in the case of activation.

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

Summary of Screening of Environmental and Social Risks and Impacts

Potential environmental and social risks associated with the project could be pollution with the unsafe management of solid that could be contaminated with heavy metals(lead, mercury, etc.) and impacts on biodiversity due to the discharge of rain water into rivers and Aghien and Ebrie Lagoons. Additionally, as civils works will take place in inhabited areas, risks of accident can occur as well as Gender Based Violence.

Note To view the Environmental and Social Risks and Impacts, please refer to the Concept Stage ESRS Document.

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