



Combined Project Information Documents / Integrated Safeguards Datasheet (PID/ISDS)

Appraisal Stage | Date Prepared/Updated: 05-Apr-2019 | Report No: PIDISDSA25828



BASIC INFORMATION

A. Basic Project Data

Country Benin	Project ID P167359	Project Name Benin - Stormwater Management and Urban Resilience Project	Parent Project ID (if any)
Region AFRICA	Estimated Appraisal Date 05-Apr-2019	Estimated Board Date 23-May-2019	Practice Area (Lead) Social, Urban, Rural and Resilience Global Practice
Financing Instrument Investment Project Financing	Borrower(s) Government of Benin	Implementing Agency Ministère du Cadre de Vie	

Proposed Development Objective(s)

The proposed Project Development Objective is to reduce flood risks in selected areas of Cotonou and strengthen urban resilience management and capacity at the city level.

Components

Component 1: Stormwater drainage investment and community engagement for flood risk reduction and climate change adaptation

Component 2: Strengthening urban resilience management and capacity

Component 4: Project management, monitoring and evaluation

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Project Cost	100.00
Total Financing	100.00
of which IBRD/IDA	100.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	100.00
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IDA Credit	100.00
Environmental Assessment Category	
A-Full Assessment	
Decision	
The review did authorize the team to appraise and negotiate	

Other Decision (as needed)

B. Introduction and Context

Country Context

1. **Benin is situated in West Africa along the Guinea Coast (latitudes 6-13° N).** Stretching 672 km from north to south and running 124 km along the Gulf of Guinea nestled in the Atlantic Ocean. Burkina Faso and the Republic of Niger border Benin to the North, while the Federal Republic of Nigeria lies to the East, and the Republic of Togo its neighbor to the west. The country of Benin is primarily flat, except for the Atacora Mountains rising along the northwestern border with the Republic of Togo. Two major river basins, the Niger and coastal basin, enrich the country with ample waterways. Of the 10 million people living in Benin, nearly 70 percent of the workforce earns a living through the agriculture sector, accounting for 32 percent of GDP. Cotton is the main export commodity, comprising about 25-40 percent of all exports. Re-export trade with Nigeria is also an important sector to the national economy, making up almost 20 percent of GDP.

2. **Economic growth has been steady but too low to achieve sustainable poverty reduction.** Benin is a low-income economy with a per capita income of US\$829.8 in 2017¹. Real gross domestic product (GDP) grew on average by 4.2 percent annually during 2000–2016. Growth has accelerated slightly over the last five years (2012–2016) to around 4.9 percent and was estimated to reach 5.4 percent in 2017. Given rapid population growth (about 3.2 percent), average annual growth in GDP per capita was just over 1 percent for the period, below the Sub-Saharan African average and far below the best performing economies.

3. **Growth in Benin has been reasonably inclusive, contributing to a marked decline in poverty between 2006 and 2015.** World Bank estimates, using the international poverty line, show a decline in poverty from 61 percent to 50 percent². Despite this decline, the absolute number of poor increased from 5.0 to 5.3 million people, because of a high rate of population growth of 3.2 percent. Inequality is moderate

¹ World Bank national accounts data.

² Official estimates present a different poverty trends with poverty falling from 37.5 percent in 2006 to 35.2 percent in 2010 and then increasing to 40.1 percent in 2015. This official trend is not used as it is based on noncomparable estimates of poverty (see SCD for details).



with a Gini index of 41 in 2015. Additionally, the poor are more exposed than average to the impact of floods which can be exacerbated by the effects of climate change³.

4. **Benin's climate is hot and humid.** Northern Benin has a dry season and a wet season that are controlled by the movement of the Inter-Tropical Convergence Zone (ITCZ). The rainy season lasts from May-November when the ITCZ is in its northern position. The dry season is from December-March when the 'Harmattan' winds blow in from the northeast bringing air from the Sahara Desert. Southern Benin experiences two wet seasons differing in length and coinciding with the northern and southern passages of the ITCZ across the region. The longer rainy season occurs during April-July and the shorter one from September-November.

Sectoral and Institutional Context

5. **Flooding reduces Benin's economic potential.** On September 13, 2010 a catastrophic flooding event of historic proportions affected more than 680,000 people and 55 out of 77 municipalities in Benin.⁴ The disaster caused 46 deaths, destroyed 50,000 homes, and left 100,000 people without shelter. It ruined crops, farmland, and livestock, and erased essential food stocks. The overall damages to infrastructure, agriculture and physical assets and economic losses were estimated at US\$257 million, or to 2 percent of Benin's GDP in 2010⁵

6. **Flooding in Cotonou, the economic capital of Benin, is detrimental to the city's inhabitants, as well as to the local and national economy.** According to the latest population survey (2013), Cotonou's total population is 679,012 inhabitants with a density of 8,595.1 people per km² against the national average of 87.2 people per km². In terms of built-up area, the city grew considerably from 1975 with 90 km² to 2014 with 172.7 km² on both sides of the city. Today more than 87 percent of the city's total land cover is comprised of built-up area characterized by artificial structures and impervious surfaces. The evolution of Cotonou's urbanization has resulted in: (i) the creation of new neighborhoods, mostly without any urban planning and leading to the disproportionate expansion of the city and a complete transformation of its initial appearance; most of these neighborhoods lack adequate basic urban infrastructure and services; (ii) the informal settlement of populations because of the delay in preparing the urban cadaster and/or lack of enforcement of adequate procedures, thus creating serious distortions in the urban framework; (iii) the occupation of the natural outlets and natural waterways hence the aggravation of recurring flood problems; (iv) inadequate and under-designed stormwater drainage infrastructure under increasing rainfall, density of traffic and land use, and (v) a rising groundwater table due to the water infiltration from the sea, Lake Nokoué and liquid waste.

7. **Cotonou's current infrastructure networks lack capacity to mitigate annual flooding.** Most of the city's unpaved roads, 1,050 km, are not properly maintained and have no proper drainage and 50 percent of the primary stormwater collectors and almost all the secondary and tertiary collectors are insufficient in

³ Based on the World Bank publication "Shock Waves: Managing the Impacts of Climate Change on Poverty." <https://openknowledge.worldbank.org/handle/10986/22787>.

⁴ Floods are the most important and recurring disaster in Benin, and they affect the whole country.

⁵ The United Nations Post-Disaster Needs Assessment (PDNA) was prepared in 2011 in the aftermath of the flood disaster by the GOB and a team composed of the World Bank, UN System, and European Commission, with support from the Global Facility for Disaster Reduction and Recovery (GFDRR). The PDNA: (i) assessed the causes, losses and damages of the 2010 flood; (ii) determined its impact at the macroeconomic and poverty levels; (iii) estimated the short and long-term needs by sector; and (iv) suggested a strategy to mitigate future floods.



size and number to mitigate annual flooding in today's context. Despite efforts to rehabilitate the infrastructure networks, vulnerability is increasing because of poorly sanitized new construction spaces built on existing networks. Urbanization and road paving without drainage is contributing to an increase in stormwater runoff. Finally, in the flooded areas where the poor population tends to live, about 54,000 m³ of household waste annually backfill permanently flooded land areas with severe health consequences and contributing to increasing the severity of flood events.

8. **The carrying capacity of existing drainage systems is reduced by natural and man-made obstructions.** The combination of soil sedimentation and solid waste dumped in drainage infrastructure contributes to the clogging of the drainage system and blocking storm water run-off, which is often exacerbated by frequent lack of proper waste management systems and operation. Illegal dumping of household waste is a major challenge. The rate of evacuation, although amounting to more than 750 tons of solid waste per day in urban areas of Benin (Cotonou, Parakou, Porto Novo), remains low. Of a total of 39 percent collected, only 8 percent is transported and processed⁶.

9. **The contamination of surface and groundwater can increase the risks of water-borne diseases.** During past floods, contamination of surface and groundwater resulting from a mix of runoff from rain with latrine and the contents of septic tanks and municipal wastes gave rise to water-borne diseases, notably cholera, putting the entire population affected by the flood as well as downstream populations at risk.

10. **The frequent lack of adequate maintenance of drainage infrastructure by local governments contributes to drainage system obstruction.** Benin's legal framework (Law 079-029) mandates that local government (LGs) assume responsibility for all aspects of drainage provision within their jurisdiction, including: construction and rehabilitation, and operation and maintenance (O&M) of the drainage system. In the case of Cotonou, this includes cleaning of drainage channels twice per year before the semestrial flood season. Canal cleaning is usually outsourced by the LG to non-governmental organizations (NGOs), or is done by canal residents on a voluntary basis. However, in many cases, canals in Cotonou are not cleaned adequately, becoming clogged and contributing to flooding and health issues. For retention ponds, the municipality itself undertakes the maintenance functions twice a year, but performance has been inadequate.

11. **Cotonou's O&M system has proven to be suboptimal mainly because of lack of funding.** According to the law (Law 2009-17), Cotonou, like other LGs in Benin, can receive an earmarked operating grant from central government to cover, in part, the O&M costs it incurs. The O&M operating grant is channeled through the *Fonds d'Appui au Développement des Communes* (FADeC) – the standard intergovernmental fiscal transfer system of funds from the center to the local governments in Benin (see Annex 2 for further O&M funding details). However, in the past five years⁷, Cotonou has received the O&M operating grant only once in 2018 and only as a one-time emergency injection of funds (CFA 1.55 billion / USD 2.6 million equivalent)⁸. As a result, the municipality has been funding its O&M activities from its limited own source revenues (OSRs). The poor resource mobilization and the generally limited

⁶ Report No : 60301-BJ PUGEMU

⁷ Period for which data is available.

⁸ A procedural problem that occurred in 2017 led to contractual issues with service providers and resulted in the Ministry of Cadre de Vie deciding to include a one-off transfer to the LG.



OSRs of the Cotonou municipality, translate into three major challenges as regards O&M of the drainage system: (i) low-level of frequency and limited coverage of sporadic maintenance activities possible with the available budget; (ii) inadequate and/or obsolete equipment available to the municipality for O&M of drainage infrastructure; and (iii) the inability of the municipality to conclude multi-year contracts with O&M service providers due to uncertain funding levels, and legal constraints in the budget system which prevent the municipality from outsourcing O&M on a multi-year basis that would reduce procurement efforts and lower costs.

12. **To date, very little is known about affordability, reliability, or efficiency of O&M services in Cotonou.** So far, there has not been any affordability study associated with the implementation of the stormwater drainage program. Moreover, there exists no asset register or asset management plan at the local level. The municipality estimates that the financial resources needed to ensure adequate maintenance of the drainage system to be 4 times more than what it currently can spend. The GoB recognizes that O&M of the stormwater drainage system will not only require significant and continuous budgets but will also require that the adequate capacities and incentives are in place for the municipality to perform its mandated functions. The challenge remains for the GoB to plan and secure the needed funds, capitalizing on the positive features of the decentralized fiscal systems that it has put in place.

13. **Given that the GoB set tackling the issue of drainage in Cotonou as a national priority, a draft Framework Partnership Agreement (FPA, “Convention Spécifique de Partenariat Etat-Commune”) was recently prepared by the Government, as part of the Cotonou stormwater drainage program,** to regulate the investment implementation arrangements and O&M responsibilities between the municipality of Cotonou and the Ministry of Cadre de Vie. In this draft FPA, provisions are made such that (i) the municipality would be responsible for preparing a multi-year maintenance and investment plan –to be submitted to the Ministry no later than July 30th of each year; (ii) a financing scheme for funding the O&M activities would be proposed, that includes transfers to the Municipality through the FADeC conditional grant window, providing targeted funding for operating costs of the municipality (earmarked for the O&M of drainage) ; and (iii) the progress towards achieving performance indicators would be reported and assessed.

14. **The Government of Benin addresses flooding through its Action Program and flagship interventions.** Benin’s Presidential elections in March 2016 marked a transition to new leadership, and the new Government vowed to establish a right-sized administration based on competence. In October 2016, the Council of Ministers adopted the Government’s Action Program (*Programme d’Action du Gouvernement – PAG*), 2016–2021 worth FCFA 9,039 billion (US\$15.3 billion or 170 percent of GDP) to develop the potential for higher domestic value-added activities, identified as major potential sources of growth. The Government’s Action Program for the period 2016-2021 is a significant investment program, including 45 flagship programs in key economic sectors, many of which are being funded through public-private partnerships. Some of these flagship programs are led by agencies overseen directly by the President’s office⁹. Providing stormwater infrastructure for the city of Cotonou is a priority for the Government of Benin (GoB) as expressed in its Action Program number 39¹⁰, and thus is one of GoB’s flagship programs, called *Programme d’Assainissement Pluvial de la Ville de Cotonou, PAPC*.

⁹ Programme d’Actions du Gouvernement PAG (2016-2021)

¹⁰ PAG secteur Cadre de Vie, numéro 39 : Assainissement Pluvial de Cotonou



15. **The Bank supports GoB in the implementation of its Cotonou Drainage Flagship Program (*Programme d'Assainissement Pluvial de la Ville de Cotonou, PAPC*), in coordination with five other donors.** The January 2018 multi-donor roundtable marked the start of the Cotonou PAPC, which aims to alleviate the recurrent flooding problem in Cotonou by reducing the city's vulnerability to floods by rehabilitating or constructing new drainage infrastructure in 34 basins in the city of Cotonou; constructing socio-economic infrastructure and strengthening the economic and social development of Cotonou. To implement its PAPC, the Government determined, in early 2018, the total project costs as USD 404 million and mobilized financing partners to cover these costs; specifically, six financing partners¹¹ pledged to support the GoB with a total of USD 434 million. With the proposed project, the Bank finances works in 3 of the 34 basins, and supports a systemic, holistic approach to Cotonou's drainage network, both in terms of the drainage system, as well as to the individual basins.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

16. The proposed Project Development Objective is to reduce flood risks in selected areas of Cotonou and strengthen urban resilience management and capacity at the city level.

Key Results

17. The Project's key indicators are:

Reduced flood risks

- i. Cotonou residents in selected areas benefiting from decreased risk of recurring flooding (number)
- ii. Area of flood-prone zones under integrated flood risk management approaches (ha)

Strengthen urban resilience management and capacity

- iii. Designated entity and/or entities have the financial and technical capacities to execute O&M of city-wide drainage infrastructure on a regular basis (Yes/No)
- iv. Constructed and/or rehabilitated drainage infrastructure cleaned semi-annually (%)

D. Project Description

18. The proposed project supports the Government in the implementation of its flagship Drainage Program. Specifically, the Project will implement focused interventions that operationalize the integrated flood risk management approach to contribute to enhanced urban resilience and climate change adaptation at three levels – (i) the community, (ii) the city and (iii) the central government level. The project will blend structural and non-structural interventions in select basins at the community level (components 1) and will combine these with institutional strengthening interventions at the city and central government levels (component 2). The project will also consider the dynamics of Bank investments with those of the

¹¹IsDB, AFD, AfDB, EIB, BOAD, WB. The Islamic Development Bank pledged USD 100 million, the African Development Bank USD 50 million, the West African Development Bank will contribute USD 75 million, the European Investment Bank USD 61 million, the French Development Agency USD 48 million, and the World Bank USD 100 million.



Government and other financing partners, especially the National Solid Waste Program and the National Roads Paving Program.

19. Specifically, the Project takes a spatial and systems approach to contribute to a more effective and sustainable drainage system. The project will: (i) increase the carrying capacity of the drainage system through provision of infrastructure, and community engagement in select basins, while the proposed data-sharing platform will support all stakeholders with drainage information; (ii) enhance the management of flood zones through provision of infrastructure and non-infrastructure investments in concerted efforts by the affected communities, as well as municipal and central government stakeholders, (iii) strengthen urban resilience and climate adaptation management capacity at basin, municipal and central government level to help develop better preventive and risk-mitigation measures against floods, including hydrological modeling, tailored civil works, as well as solid waste interventions that complement the Government's national program. The proposed project will be implemented through three components:

Component 1: Stormwater Drainage Investment and Community Engagement for Flood Risk Reduction and Climate Change Adaptation (USD 93.80 million equivalent)

20. The overall objective of the component is to reduce flood risks in the project-financed basins in selected areas of Cotonou. The component will be implemented through two subcomponents:

21. *Subcomponent 1.1. Construction of Drainage infrastructure and related works in selected basins in Cotonou (USD 93.30 million).* In Cotonou's basin Y (135 ha, southeast of the city, flowing into the Lagoon that links Lake Nokoue with the Atlantic Ocean), basin Pa3 (116 ha, northwest, close to Lake Nokoue), and AAc (680 ha, southwest, close to the Atlantic Ocean), the subcomponent will finance the construction of new and rehabilitation of existing primary drainage infrastructure (such as channels gabions/reno mattresses and retention facilities) and secondary drainage infrastructure in certain watersheds to alleviate flooding—both minor and major drainage systems will convey the excess runoff based on a 10-year storm events.¹² The drainage infrastructure will be designed to be resilient, considering future climate scenarios, such as the change in sea level rise and variations in rainfall patterns. In total, under this component: 28.07 km of drains and storm gutters will be constructed, 7.27 km of gabions/reno mattresses will be constructed, and three retention ponds of a total storage volume of 431,698 m³ will be rehabilitated to reduce impacts of cyclical floods and the occurrence of vector-borne (malaria) and water-borne diseases for over 84,933 residents. The subcomponent will also fund the temporary operation of emergency pumping during civil works; large pumping stations with complex and costly O&M, however, are avoided due to the gravity-based drainage system that promotes the natural evacuation of surface water. During civil works, the subcomponent will also finance a city-wide O&M mechanism that will be sustainable once developed and operational (see sub-component 2.1). Additionally, the subcomponent will finance community equipment for flood prevention, mitigation, and climate change adaptation to contribute to enhanced management of flood prone areas (*zones non-aedificandi*) in select Bank-financed basins. The subcomponent will also

¹² In basin Y, the project will construct (i) a 955 m, 450mm x 160mm storm drain with an outlet to the lagoon, (ii) pave streets No. 4.028 - 4.026, No. 4.020 and 4.012 for a total of 1,595 meters with concrete interlocks, and (iii) construct side gutters that will discharge into the primary storm drain. In basin Pa3, the project will (i) rehabilitate a retention basin (104,771m³) and construct gabions/ reno mattresses of 890m, placed on the upstream part of Pa3 located between 10,224 Street and 10,079 Street. (ii) pave and drain several streets, (iii) construct a 470 m storm drain 2 x 1.25m x 1.50m (starting at north-west fence of Communauté Electrique du Benin along street No. 10.123, and ending on street No. 10.224), and (iv) construct a box culvert 2 x 2.00m x 2.00m at street 10.224 to provide the connection to the Pa3 storm drain.



finance the management of products excavated from the drainage infrastructure of which a fraction could be chemically and biologically contaminated and will thus be subject to specific treatment as per the site-specific ESMPs¹³ and will be in close alignment with the Government's National Solid Waste Management Flagship Program. Furthermore, to densify the Government's existing waste collection scheme near the project-financed drainage infrastructure, the subcomponent will support front-end activities i.e. light pre-collection and collection equipment, such as bins, tricycles, carts and wheeled barrels, that supplement those of the National Solid Waste Management Program. The credit under this subcomponent will finance services, goods, works, and non-consultant services.

22. *Subcomponent 1.2. Strengthening awareness, capacity and engagement of basin residents in flood risk and climate change adaptation in selected basins in Cotonou (USD 0.5 million).* The subcomponent will finance the development and implementation of a social facilitation action plans - that include Information, Education, Communication (IEC) activities - to engage basin residents in the identification, implementation, and maintenance of small, community infrastructure projects to enhance flood zone management. The aim is to enhance basin residents' awareness on flood risk and climate adaptation and to promote their engagement in, and behavioral change towards, occupying flood prone areas and reducing their waste disposal into drainage infrastructure supported by the project. The collaboration with local communities will effectively improve the discussions between climate change practitioners and communities to build resiliency of stormwater drainage systems. The credit under this subcomponent will finance services, goods, and non-consultant services.

Component 2: Strengthening Urban Resilience management and capacity (USD 1.75 million equivalent)

23. The overall objective of the component is to strengthen urban resilience management and capacity at the city and national government levels. The component will be implemented through three subcomponents

24. *Subcomponent 2.1. Support for an effective Operation and Maintenance Mechanism for the Drainage Network (USD 0.2 million).* The subcomponent will finance support for a functioning O&M mechanism that includes financial and institutional arrangements for the Municipality of Cotonou to strengthen its ability to effectively address city-wide O&M management of its stormwater drainage network. The incorporation of the Municipality as the primary provider of O&M for the city's drainage system is essential to ensure the sustainability of the drainage investments, funded by the Bank and the other five financing partners¹⁴. Activities under this subcomponent were informed by a Bank-led diagnostic that gathered basic information on O&M stakeholder roles and responsibilities, national/ local government fiscal systems and budgets, O&M priorities, as well as institutional and financial means to meet priorities. The diagnostic presented several alternative O&M scenarios to the GoB. The approach/ mechanism selected by the GoB represents a pragmatic decision, building on an existing decentralization legal framework that mandates functional assignments (including drainage O&M) to LGs and prescribes municipal and central government institutional systems and fiscal structures that have already been put in place. Arrangements, that are satisfactory to the Bank to ensure appropriate levels of funding necessary for suitable standards of maintenance of the drainage system, will be incorporated into the FPA between the Ministry of Cadre de Vie and the Cotonou Municipality, and these arrangements will be elaborated in the PIM. The selected

¹³ Respective management will require compliance with the World Bank's Operational Safeguards Policy 4.01.

¹⁴ The Bank finances the support for an effective functioning of the Cotonou O&M mechanism applicable across all basins covered by the PAPC.



mechanism proposes a two-pronged approach under the project whereby: (i) ACVDT manages the O&M of the drainage infrastructure under the PAPC and hands over O&M functions to the Municipality of Cotonou on an incremental basis according to the completion of works and an assessment that the performance of Cotonou has demonstrated its ability to fulfill its drainage O&M functions to acceptable standards; and (ii) in parallel, Cotonou Municipality applies sufficient funds (derived from a combination of its OSRs and transfers it receives under FADeC) to manage the O&M requirements of the existing drainage infrastructure in basins that are outside of the PAPC – this will help prepare the municipality for an eventual management of O&M of drainage infrastructure in all of Cotonou’s basins. As part of this incremental transfer of O&M responsibilities for the works under the PAPC, and in order to both, ensure that satisfactory standards of O&M are being achieved, and to protect the investments being undertaken by the GoB, an assessment of the respective performances of Cotonou Municipality and of the ACVDT in achieving agreed O&M targets will be completed by March 31 of each year, starting in 2021 (for the preceding year); these targets will be established no later than December 31, 2019 by a study to be funded under sub-component 2.2. Additionally, commencement of construction of works for the third Bank-financed basin will be bound by the findings of the performance assessment meeting standards satisfactory to the Bank (to be undertaken according to the schedule described above), and in agreement with the Bank. By supporting the effective functioning of a sustainable O&M mechanism, this subcomponent will make the infrastructure more resilient to future climate stressors since properly maintained and cleaned climate resilient drainage networks will be able to evacuate the runoff in a timely manner, hence reducing future damage and destruction. The credit under this subcomponent will finance services, goods, consultant and non-consultant services.

25. *Subcomponent 2.2. Development, operationalization and capacity building of a data sharing platform and of a hydrological flood model (USD 0.55 million).* The subcomponent will finance the development and operationalization of a modular, open-access platform to be housed at the MCVDD to exchange data for rainwater management and urban resilience among the various stakeholders, operating in Cotonou’s drainage sector¹⁵. This data platform will allow stakeholders to monitor the drainage system and identify and address possible blockages as part of regular maintenance or in anticipation of major flood events. The platform will support future climate resilient decisions, since the data collected will serve as inputs to hydrological models and future engineering designs that will lead to better use of existing historical and current data collected by technical institutions (such as meteorology agency, institute of oceanic research, etc.) and exploration of climate change scenarios to plan for future uncertainty. Furthermore, the subcomponent will finance the development of a hydrological model¹⁶ to produce flood hazard maps for Cotonou that will consider potential future climate stressors, such as increase in rainfall events, sea level rise and other climate change effects. This will allow the identification of flood-prone areas with greater accuracy and with static and dynamic scenarios, that represent a range of potential changes in climate events, including climate-change related sea level rise; increased lake water levels due to rainwater accumulation from North of Benin in Lake Nokoue; increased water levels in the lagoon and/or accumulated effects of different scenarios occurring at the same time. This will subsequently allow stakeholders to generate interlinked short- and long-term multi-sectoral strategies to reduce flood impacts on Cotonou residents. The subcomponent will also finance the associated capacity building of stakeholders to operate this model. Finally, a study to established O&M targets will be funded. The credit under this subcomponent will finance services, goods, and non-consultant services.

¹⁵ Stakeholders include central and local government entities, and educational entities, etc. The modular design allows stakeholders to update their data themselves.

¹⁶ A 3D version of the Model is not considered, as it is not practical.



26. *Subcomponent 2.3. Development and implementation of a capacity building plan for integrated flood risk management, urban governance, and O&M of drainage investments (USD 1 million).* The subcomponent will finance the development and roll-out of a capacity strengthening plan for the municipality of Cotonou, the Ministry of Sustainable Development (MCVDD), other key players, as well as the municipalities of "Grand Nokoué"¹⁷. The plan aims to improve the city's and central government's capacity for integrated flood risk management and resilient urban governance at the city level, as well as Cotonou's ability to fulfill its responsibilities to ensure the O&M of stormwater drainage investments. This will provide information for local decision makers to consider the multi-sectoral and multi-stakeholder aspects of stormwater management - including structural and non-structural investments; flood risk identification, mitigation and preventive planning; and climate change effects - in their future local stormwater management planning and stormwater control activities. This will contribute to enhanced urban resilience against current and future flooding. The credit under this subcomponent will finance services, goods, and non-consultant services.

Component 3: Project Management, Monitoring and Evaluation (SDR xx million; USD4.45 million equivalent)

27. The overall objective of the component is to ensure the efficient implementation of the project, such as project management, coordination, monitoring and evaluation, including: financial and procurement management, environmental and social assessments, preparation of project reports, and follow-up; studies, communication, internal and external audits, and operating costs for the PIU.

E. Implementation

Institutional and Implementation Arrangements

28. The Government has established implementation arrangements for PAPC, deemed necessary to reflect the multi-sectorial and multi-stakeholder characteristic of the proposed project:
- i. a Steering Committee to provide policy and strategic guidance and to act as a coordination platform across concerned sectors, that is composed of: (i) the Ministry Sustainable Development (MCVDD), (ii) the Ministry of State in charge of Planning and Development, (iii) the Ministry of Economy and Finance (MEF), (iv) the Office of Analysis and Investigation, and (v) the Ministry of Decentralization and Local Governance. The Board of Directors of the Agency for Sustainable Development and Territorial Development (ACVDT, under the MCVDD) will perform the role of the Steering Committee, by adding this function to its current mission, and by holding separate meetings for the PAPC. To ensure participation of the Municipality of Cotonou, the Board of Directors will be extended to include the Cotonou City Council.
 - ii. a Technical Committee for Monitoring to provide technical support for the project's multi-sectoral implementation. The existing ACVDT will perform this role, and arrange technical validation meetings with the PAPC stakeholders, as needed.
 - iii. the Project Implementation Unit (PIU), that is responsible for the day-to-day implementation of all aspects of the project including managerial, coordination, planning, supervision, review, quality control, evaluation, and dissemination functions. The existing ACVDT will perform this role. To ensure adequate project implementation and quality assurance, the staff of ACVDT will be

¹⁷ The municipalities of 'Grand Nokoué' include: Abomey-Calavi, Cotonou, Ouidah, Porto Novo, and Seme Kpodji.



strengthened by adding to its organigram the functions of a hydrologist, and a social engineer, while the existing financial specialist will support project implementation. To manage workload and ensure full-time dedication to project implementation, the ACVDT will be strengthened by additional consultants, namely a Coordinator with an engineering background, a chief accountant, a procurement specialist, a M&E specialist, an environmental and a social safeguards expert. The ACVDT will sub-contract the execution of civil works related contracts and activities to contract management consultants (*Maitre d'Ouvrage Délégué*, MOD)¹⁸.

- iv. The Municipality of Cotonou, which will, initially, undertake O&M functions for those basins (or parts of basins) not included under the PAPC, but will also incrementally take on O&M responsibilities for the basins as the capital works under the PAPC are completed and based on the demonstrated performance of Cotonou - under the oversight of the PIU

29. The Ministry of Planning and Development through the Directorate General for Financing for Development (DGFD), is in charge of the coordination of the donors, participating in the PAPC implementation.

30. Given the multi-donor character of PAPC, the Government is preparing a Memorandum of Understanding (MOU) with the participating donors to enhance coordination of and coherence among the various, Donor-financed interventions. This MOU aims to define the main principles, including at the technical level, of PAPC implementation that includes cross-cutting aspects of the program such as: i) the institutional coordination between donors and the government, ii) the operating principles of the PIU and contract management consultants to apply to all donor-financed projects, iii) the phasing / sequencing of the works and common criteria for works bidding, iv) the preparation of environmental and social safeguard documents as well as the implementation of Environmental and Social Management Plans, v) the organization of supervision of donor-financed projects and PAPC, and vi) the monitoring and evaluation and reporting methods of donor-finance projects and PAPC activities, including some common indicators across donor-financed projects.

Note to Task Teams: The following sections are system generated and can only be edited online in the Portal.

Please delete this note when finalizing the document.

F. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)

The project's sites are located in Cotonou in the 3 basins of basin Y (135 ha, southeast of the city, flowing into the Lagoon that links Lake Nokoue with the Atlantic Ocean), basin Pa3 (116 ha, northwest, close to Lake Nokoue), and basin AAc (680 ha, southwest, close to the Atlantic Ocean).

¹⁸ ACVDT staff, as Government officials, will not be funded by IDA resources, as Bank rules only allow the IDA funding of consultants – individual and MOD – recruited specifically for project implementation.



G. Environmental and Social Safeguards Specialists on the Team

Abdoulaye Gadiere, Environmental Specialist
Gertrude Marie Mathilda Coulibaly Zombre, Social Specialist

SAFEGUARD POLICIES THAT MIGHT APPLY

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The proposed project will finance the construction of primary infrastructures, rehabilitation of existing networks in selected basins of Cotonou. The project will also support the development of operation and maintenance mechanism for the drainage network. In addition to that, Public and/or semi-public areas such are considered within the operation. As all the retention basins are identified to date (34 basins), a single Environmental and Social Impact Assessment (ESIA) was prepared. However, each basin has a specific Environmental and Social Management Plan (ESMP) prepared. For some investments that the locations are not determined yet, an Environmental and Social Management Framework(ESMF) was developed. The ESIA and the 3 ESMPs prepared for the 03 basins financed by the World Bank were disclosed in Benin and on the Bank’s website on January 22, 2019. The ESMF was disclosed in-country and at the Bank’s website on February 13, 2019.
Performance Standards for Private Sector Activities OP/BP 4.03	No	The project does not trigger this policy.
Natural Habitats OP/BP 4.04	Yes	The retention basins where civil works will be undertaken might host natural habitats. In addition to that, drainage will be released into the lake Nokoue, which is a natural habitat. Therefore, measures for the preservation of natural habitats were included in the ESIA, ESMPs and the ESMF.
Forests OP/BP 4.36	No	It is not anticipated that forests will be impacted by the project.
Pest Management OP 4.09	No	The project does not purchase nor encourage the use of pesticides.
Physical Cultural Resources OP/BP 4.11	Yes	The construction of primary infrastructures, rehabilitation of existing networks in selected basins



		of Cotonou as well as the development of public and/or semi-public areas will unquestionably lead to excavations. In order to anticipate and to be sure that all the precautions have been taken to protect and safeguard physical cultural resources, a section describing how to handle in a proper way Physical Cultural Resources was included in each ESMP as well as the ESMF prepared in line with the OP4.01.
Indigenous Peoples OP/BP 4.10	No	There are no indigenous people as defined by the policy in the project area
Involuntary Resettlement OP/BP 4.12	Yes	The drainage investments will consider existing settlements to minimize resettlement of households who may be residing where drainage channels will be extended. However, construction and rehabilitation of infrastructure ranging from construction of primary infrastructures, and/or semi-public areas and the rehabilitation of existing networks public and possibly other infrastructures may lead to displacement or land acquisition. The 3 RAPs prepared for the 3 basins financed by the Bank were reviewed, consulted upon and disclosed publicly in Benin on March 1st, 2019 and on the Bank's website on March 3 and 4, 2019. The RPF also was disclosed in-country and at the Bank's website on March 8, 2019.
Safety of Dams OP/BP 4.37	No	The project will not finance dams nor rely on dams.
Projects on International Waterways OP/BP 7.50	No	The project is not expected to affect international waterways.
Projects in Disputed Areas OP/BP 7.60	No	The project will not be located in a Disputed Area.

KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

The proposed Project is rated as a Category "A", and it is expected to have large-scale, significant, and/or irreversible impacts. With three environmental policies triggered (OP/BP 4.01: Environmental Assessment, OP/BP4.04: Natural Habitats and OP/BP 4.11: Physical Cultural Resources), the proposed operation aims at financing a wide range of activities, including rehabilitation of existing and construction of new drainage infrastructure. These types of investments are mostly associated with significant environmental adverse impacts, such as risks of accidents, pollutions, dust, noise, solid waste management, etc. As most of the basins are already identified, an Environmental and Social Impact Assessment (ESIA) and 34 Environmental and Social Management Plans (ESMPs, one ESMP per



basin) have been prepared by the Borrower, of which the ESIA and the three ESMPs for the three Bank-financed basins were reviewed by the Bank's safeguards specialists, approved by the Bank and the Beninese Environment Agency (Agence Beninoise de l'Environnement, ABE), consulted upon and disclosed in Country and on the World Bank's website on January 22, 2019. The other basins are not associated with the Bank-financed basins, except for a basin (AAs) financed by the West Africa Development Bank (BOAD). The Bank has reviewed and approved the ESMP for this basin to ensure it complies with Bank requirement; this ESMP is in the process of being published. The Bank will jointly supervise it with ACVDT and BOAD during project implementation. As for the remaining 30 ESMPs, financed by other donors, the Bank is working with ACVDT and the donors to ensure there is a consistent approach to environmental and social management of the project. While each donor will supervise with ACVDT the ESMPs it is financing, the project will include some joint supervision and regular discussions amongst the government and donors about managing environmental and social impacts throughout project implementation. Additionally, for the rest of the activities for which the exact locations are not known to date, an Environmental and Social Management Framework (ESMF) was developed and published, within Benin and on the World Bank Group website, on January 22, 2019.

Furthermore, the project triggers Operational Policy/Bank Procedure 4.12 on Involuntary Resettlement. Some activities, such as construction and rehabilitation of infrastructures, could induce potential adverse social impacts and may lead to land acquisition and/or restrictions on access to resources and sources of income or livelihoods. For the 34 basins already identified, Resettlement Action Plans (RAPs) have been developed, and the three RAPs for the three Bank-financed basins were reviewed by the Bank's safeguards specialists, approved by the Bank and the Beninese Environment Agency (ABE), and disclosure in-country and on the World Bank's website on March 3 and 4, 2019. The other basins are not associated with the Bank-financed basins, except for a basin (AAs) financed by BOAD. The Bank has reviewed and conditionally cleared the RAP for this basin to ensure it complies with Bank requirements and will jointly supervise it with ACVDT and BOAD during project implementation. The supervision of the RAPs and management of environmental and social risks and impacts will be the same as those set out for the ESMPs.

The sites for other infrastructures are not yet identified; therefore, in anticipation of any negative social impacts, a Resettlement Policy Framework (RPF) was prepared by the Borrower, which has been disclosed on March 8, 2019 within Benin and on the World Bank Group website.

Finally, the project triggers OP/BP4.04: Natural Habitats and OP/BP 4.11: Physical Cultural Resources. The ESMF as well as the ESIA prepared, include physical cultural resources management procedure and guidelines in case cultural properties are discovered during the project implementation. These guidelines will also be subsequently included in the enterprise's contracts and Work-ESMP so that contractors implement them on the ground. In addition, the Owners' Engineer, the PIU as well as the Bank's safeguards team will make sure these guidelines are fully implemented on the ground. Among mitigation measures to anticipate any potential adverse impact on natural habitats, a wildlife inventory of Nokoue lake was already made and included in the ESIA. In addition, a chemical analysis of water in existing canals that flows into lake Nokoue was also realized to check the degree of toxicity of water and its potential impacts on natural habitats. Lastly, a specific chapter on safe Natural Habitats management was included in the ESMF and the ESIA. Several mitigation measures were developed in the ESMPs and these measures will thereafter, be reflected in Work-ESMPs that will be developed by the enterprises and their contracts as well.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

The project will finance the construction of primary drainage infrastructures, rehabilitation of existing networks, such as channels and retention facilities, and their dredging as needed, in 3 selected basins of Cotonou, already identified. The project will also finance other infrastructure and equipment for flood prevention, mitigation, and climate change



adaptation. Such civil works are usually associated with major potential environmental adverse impacts (such as risks of accidents, pollutions, dust, noise, solid waste management, etc.) and major potential social risks and impacts, leading to involuntary resettlement issues.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

Nature-based solutions were used to minimize infrastructure impacts. In addition to site-specific ESMPs and RAPs, an ESMF and RPF were prepared. Safeguards documents include guidelines on Occupational, Health and Safety (EHS/OHS) as well as GBV issues, and the project will establish guidance and rules regarding labor influx. Additionally, a GRM was set up to allow stakeholders and interested parties to bring up any concern regarding the project to the PMU with the aim of finding solutions.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

The Recipient has already benefitted from other (past and ongoing) IDA projects which have provided/are providing relatively sufficient capacity to understand and apply safeguards policies. To ensure that the safeguard instruments, prepared in line with policies triggered by the project, are implemented properly, the PIU is in the process of finalizing the hiring of environmental and social safeguards specialists with profiles that include additional experiences in EHS/OHS, and GBV, social inclusion and any labor related risk; the hired staff is fully in charge of all environmental and social safeguards aspects, including regular monitoring of all safeguard requirements. Furthermore, the PIU as well as other stakeholders will ensure that children are not employed in civil works as labor force.

Additionally, the Financing Agreement requires the government to prepare and submit to the Bank, for prior approval and disclosure, any required ESIA and RAPs (if need be) in accordance with the ESMF, for the activities proposed to be carried out under the operation. Prior to commencing any works, the government is committed to take all actions required by the ESIA and RAP and obtain the World Bank’s confirmation that the works may commence.

Finally, the government, through the PIU, will report quarterly to the World Bank on the environmental social safeguard measures taken through (i) a specific Safeguard Monitoring Report and (ii) a summary of this specific report will be included in the periodic project progress reports.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

Key stakeholders are (i) beneficiaries/ basin residents, (ii) Municipality of Cotonou, (iii) Ministry of Cadre de Vie/ Agence de Cadre de Vie/ PIU. Consultations were held with i, ii, iii. Documents were approved by the Bank and the Beninese Environment Agency (Agence Beninoise de l’Environnement, ABE).

B. Disclosure Requirements

Environmental Assessment/Audit/Management Plan/Other

Date of receipt by the Bank	Date of submission for disclosure	For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors
21-Jan-2019	22-Jan-2019	22-Jan-2019

"In country" Disclosure



Benin
22-Jan-2019

Comments

Resettlement Action Plan/Framework/Policy Process

Date of receipt by the Bank
08-Mar-2019

Date of submission for disclosure
08-Mar-2019

"In country" Disclosure

Benin
08-Mar-2019

Comments

C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)

OP/BP/GP 4.01 - Environment Assessment

Does the project require a stand-alone EA (including EMP) report?

Yes

If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?

Yes

Are the cost and the accountabilities for the EMP incorporated in the credit/loan?

Yes

OP/BP 4.04 - Natural Habitats

Would the project result in any significant conversion or degradation of critical natural habitats?

No

If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?

Yes

OP/BP 4.11 - Physical Cultural Resources

Does the EA include adequate measures related to cultural property?

Yes

Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?

Yes



OP/BP 4.12 - Involuntary Resettlement

Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?

Yes

If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?

Yes

The World Bank Policy on Disclosure of Information

Have relevant safeguard policies documents been sent to the World Bank for disclosure?

Yes

Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?

Yes

All Safeguard Policies

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?

Yes

Have costs related to safeguard policy measures been included in the project cost?

Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?

Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?

Yes

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APPROVAL

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