IMPACT EVALUATION FOR THE IBADAN URBAN FLOOD MANAGEMENT PROJECT (IUFMP)

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IUFMP

Ibadan Urban Flood Management Project

FINAL REPORT

Impact Evaluation for the Ibadan Urban Flood Management Project (IUFMP)

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EXECUTIVE SUMMARY

ES 1 Background

The World Bank is supporting the Government of Nigeria (GoN) and the Oyo State Government through an Investment Project Financing (IPF) of 200 million USD, to implement the Ibadan Urban Flood Management Project (IUFMP) which aims to develop short and long-term flood resilience in the city by collaboratively identifying and implementing robust and sustainable solutions to mitigate flood risk, and improve flood preparedness, response and recovery. The Project Development Objective (PDO) is to: "improve the capacity of Oyo State to effectively manage flood risk in the city of Ibadan". Essentially, the project has been designed to keep a good balance between urgent post disaster needs (dredging, reconstruction of bridges, roads, etc.) and medium-to-long term needs (institutional support, upgrading existing and building new infrastructure to upgrade services and mitigate future flood risks). Approximately, a decade (2014 – 2024) has passed since the inception of the IUFMP, in which several intended results according to the project's Results Framework (RF) have been achieved. Additionally, the project has seen to the successful implementation of its three (3) Components which include: Component 1: Flood Risk Identification, Planning, and Preparedness; Component 2: Flood Risk Mitigation Measures and Component 3: Project Implementation Support. The World Bank will officially close the IUFMP on June 28, 2024. Consequently, as part of the project closure procedures, an Impact Evaluation (IE) of the IUFMP was approved to be prepared by the PIU, in order to evaluate the impact of the project's overall implementation.

ES 2 Rationale for the Impact Evaluation

Every development project/program such as the IUFMP seeks to generate a positive impact on the lives of beneficiaries. However, in reality, there is no assurance that a given program is reaching its goals. An important question to be asked after a project or program has been implemented is whether the underlying Theory of Change or the RF as in the case of the IUFMP, has achieved the project's intended outcomes or results e.g., Improved Institutional coordination on flood risk management in Ibadan. The IE measures the causal effects of the IUFMP and if changes or outcomes are attributed to the project activities or if project activities have contributed to outcomes which have occurred through other non-project related interventions or policy reforms. Additionally, the IE produces information that is relevant from an accountability perspective; by disclosing knowledge about the socio-economic effects of the IUFMP activities from the perspective of stakeholders such as project beneficiaries and other interested parties by linking the financial resources (investments received from both the World Bank and the Oyo state Government) used for achieving intended outcomes. Essentially, the outcomes of the IE shall create a platform for learning among Ministries, Departments and Agencies (MDAs) in Oyo state specifically, and the country at large. The findings of the IE will also Inform decision makers such as the Project Steering Committee (PSC) and the World Bank (WB) on whether to scale – up or modify the project; or replicate it in other states of Nigeria.

ES 3 Objective of the Impact Evaluation

The main objective of the IE is to provide qualitative and quantitative evidence gathered from state institutions and beneficiary level feedback, on the changes and effects resulting from the implementation of the IUFMP in Ibadan city. This evidence shall be useful for the purpose of decision making and learning, and for measuring and establishing the performance of IUFMP activities and interventions as to achieving the PDO. In scope, the IE covers the entire project duration, from inception in 2014 to proposed closure in June 2024.

ES 4 PDO Level Results Indicators

The PDO-level indicators designed at project appraisal and used to measure progress in achieving the IUFMP PDO by the Project Implementation Unit a) Direct project beneficiaries (number), of which female (percentage); b) Effective use of flood control assets management plan; c) Land area protected from a 25-year return period flood event; d) Improved institutional coordination on flood risk management in Ibadan. These were also evaluated checked in the IE.

ES 5 Evaluation Methodology

A Mixed-Methods approach (quantitative and qualitative analysis) was used. Consequently, the methodology involved random sampling and purposive sampling. Additionally, the following data collection tools were applied: a) document review; site inspection and observation; b) Key Informant Interviews (KIIs) or in-depth interviews; and c) Focus Group Discussions (FGDs) and d) Beneficiaries survey. A robust Data Collection Plan was developed (See Annex 2) that practically shows how core evaluation questions (See Chapter 3, Table 5) were addressed through data collection methods. The data collection plan adopted in the methodology also shows the different stakeholder groups identified for the IE and how core evaluation questions apply to each stakeholder. This methodology ensured a systematic and comprehensive evaluation of the IUFMP's performance, providing valuable insights into the project's achievements; mainly: structural and nonstructural works; indicators performance; intended outcomes; stakeholder coordination and management; design quality of project components; quality of implementation, functionality, and sustainability of the Interventions; financial and economic analysis; challenges; recommendations; best practices and lessons learned.

ES 6 Sampling and Data Collection

Purposive sampling was used in identifying respondents such as PIU officials, Independent Advisory Group (IAG) members, government MDAs and Local Government Authority (LGA) officials, community leaders and Community Development Association (CDA) leadership, Project Affected Persons (PAPs), CSOs, non-structural deliverables consultants and Contractors that implemented structural works. Random sampling was used for communities/ project beneficiaries. The estimated and actual number of respondents per stakeholder category for the IE, is presented below. The expected total number of stakeholders to be reached as part of the data collection was 3,559 respondents (87 for KIIs and FGDs, and 3,472 for surveys). However, the actual number of respondents arrived at was 3,287 (65 for interviews and FGDs, and 3,222 for surveys). The Krejcie and Morgan (1970) Sampling Advisory[1] was applied for the purpose of determining the sampling populations captured in this IE. See Chapter 3.

ES 7 Summary of Some Findings and Results

1. Results Framework (RF) Performance Assessment: The IUFMP was designed for a total of 16 targets to be achieved on the RF. The assessment of the performance of the RF indicators shows that the target was achieved across 6 indicators; exceeded for 5 indicators, and partly achieved for 5 indicators. See summary below

SN	Indicator	End Target (28 June, 2024)	Evaluation findings	Conclusion
	PDO-Level Indicators			
1	Direct project beneficiaries	385,000	At the time of this IE, it is challenging to determine the exact number of direct project beneficiaries because few structural works are still in progress, and the number of beneficiaries is continually rising. However, according to the M&E factsheets, as of June 28th, the number of direct project beneficiaries was 2,231,288 persons.	Target exceeded
2	Female Beneficiaries	190,000 (50%)	The total number of female beneficiaries as at 28th of June, 2024 is 1,115,644	Target exceeded
3	Land area protected from a 25-year return period flood event (Hectare)	30,000	According to the M&E factsheets, 31,317 Ha has been protected. Refer to Annex 10.	Target exceeded

[1] **Krejcie and Morgan Sampling Size:** is a commonly used approach in estimating the appropriate sample size for research studies. It is used when researchers do not have access to the entire statistical population of interest and need to make decisions based on a representative sample. The Krejcie and Morgan method helps in determining the sample size needed to make accurate inferences about the population.

SN	Indicator	End Target (28 June, 2024)	Evaluation findings	Conclusion
4	Improved institutional coordination on flood risk management in Ibadan	Yes	There is significant improvement in the institutional coordination for flood risk management in Ibadan. MDAs have received training both locally and oversee to increase their technical, programmatic and social accountability capacities. Additionally, the installation of the Flood Early Warning System (FEWS) gives Oyo state a leadership advantage in institutional and community level coordination for flood risk management. Communities have also established disaster management committees to support community level coordination activities for flood risk management. Nonetheless, several master plans have been prepared to assist in institutional coordination but are yet to validated by the State House of Assembly. 90% is proposed.	Target achieved
5	Effective use of Flood Control Assets Management Plan	Yes	The plan has been developed and is in the process of validation. See subsection 5.5.1.4 of this report.	Target partly achieved
	Intermediate Results by Components			
6	Adoption of Flood Control Assets Management Plan for Ibadan	Yes	The Flood Control Assets Management Plan has been developed and adopted. Refer to subsection 5.5.1.4 of this report.	Target achieved
7	Ibadan's long term Flood Resilience Strategy developed and validated	Yes	The strategy has been developed. See subsection 5.5.1.7 of this report. However, it has not been validated. According to the PIU, it will be validated by the 28th of June.	Target achieved
8	Improved capacity for flood forecasting and warning	Yes	The Flood Early Warning System (FEWS) installations were completed at the end of May 2024. It's currently being tested. There are 5 weather stations across the city, 11 river level gauges and one reservoir at Eleyele dam. The river level gauge and reservoir produce an alarm when water level is rising and there are sirens erected across all the river gauge stations that send signals to the situation room to know when communities should be alerted of pending floods.	Target achieved
9	Number of beneficiaries benefiting from capacity development activities	200	The project has built the capacity of more than 200 beneficiaries.	Target achieved
10	Population protected by restoring the safety of the Eleyele dam	8,000	9,134 people have been protected by restoring the safety of Eleyele Dam	Target exceeded
11	Flood risk management infrastructure completed to improve resilience in Ibadan	51	A total of 50 flood risk management infrastructure has been completed. Through site inspections, the impact evaluation team was able to verify this	Target partly achieved (98%)
12	Flood risk management capital investment programme adopted for targeted sites	Yes	The capital investment plan, was prepared in March 2024 and has been adopted.	Target achieved
13	Number of community members benefiting from	3,300	Estimated 3,929 community members have been engaged as part of the project through community meetings, school	Target exceeded

SN	Indicator	End Target (28 June, 2024)	Evaluation findings	Conclusion
	community engagement activities		visitations and sensitization on flood preparedness and disaster response.	
14	Length of dredged river/drainage channel (Kilometers,)	500	431km of rivers have been dredged as of 3 June 2024.	Target partly achieved (86.2%)
15	Length of approach roads constructed to link flood risk management infrastructure (Kilometers)	35	33.58km of approach roads have been constructed.	Target partly achieved (96%)
16	Length of channelization of river channel (Kilometers)	35	28.06km of river channelization has been achieved. Through site inspection, this was confirmed	Target partly achieved (80.2%)

2. Impacts of design quality of IUFMP Components in achieving the PDO:

Component 1: Flood Risk Identification, Prevention and Preparedness Measures

- **Relevance:** Stakeholder responses, specifically from the PSC, PTC, MDAs (Ministries of Finance and Budget, Environment, Water Resources, Works, etc.) following the outcomes of KIIs, cumulatively informed that the design of Component 1, aimed at assessing flood s in the city of Ibadan, and planning risk reduction measures, was extremely relevant in that it successfully financed the preparation of critical non-structural deliverables such as the Ibadan city Physical Master Plan (completed), Integrated Flood Risk Management and Drainage Management Plan (completed), Solid Waste Management Plan (completed), and other master plans (through the Flood Risk Management Investment Program) requisite for establishing the risk factors in the city which make it susceptible to flooding and the frameworks required to proffer suitable and sustainable control measures.

Component 2: Flood Risk Reduction

- **Relevance:** Stakeholders' responses show that priority infrastructure investments may not have been achieved under the project if Component 2 was not designed to provide a framework for achieving the construction and rehabilitation of structurally resilient civil infrastructure, necessary to achieve flood risk reduction in the city.
- **Effectiveness:** Stakeholders are certain that Component 2 has been effective in achieving implementation of prioritized structural works (4 and 13 priority sites, including first and second pool of works) to about 85-90%. According to the PIU, this however does not neglect the fact that there may be other locations which may require interventions post IUFMP; nonetheless, interventions have been carried out in locations deemed highly relevant for addressing the cities vulnerability to flooding. Furthermore, the current structures have significantly reduced flooding especially in areas that were devasted by the 2011 flood event.
- **Efficiency:** Furthermore, respondents noted that the structural works have been efficient in connecting previously disconnected communities or social amenities, especially where bridges and culverts have been installed. One important concern however is in the area of weed overgrowth due to areas of siltation especially in rehabilitated river channels. This invasive river weed infestation may pose a threat to the efficiency of structural works, particularly culverts and channelized rivers, in ensuring efficient surface and stormwater flow especially if clogged.

Component 3: Project Administration and Management Support

- **Relevance:** Specifically, the PIU expressed that Component 3 was relevant as it was the financing engine enabling Project Administration and Management Support. Through this component, the PIU was able to cater for operational costs related to procurement of goods and commodities, equipment, travels etc.
- **Effectiveness:** According to the PIU, Component 3 has been effective such that it has been the source of finance for majority of the PIU's internal operations
- **Efficiency:** Although the Component was expected to finance Project Management Consultancy support, the PMC was never in existence.

3. Perception, Feedback and Remarks on Quality of Structural Works

- **Expert and Technical Remarks on the Structural Works from Site Inspection -** The expert and technical remarks on the IUFMP reflect a generally positive assessment across various types of infrastructure. For bridges, the quality of work is highly praised, with construction ongoing and proper technical supervision noted. Channelization of rivers is also progressing well, with professional execution and adequate reinforcement. Culverts were praised for meeting global construction standards, though some issues like silting and potential blockages are highlighted. The drainage infrastructure is completed and of good quality. Overall, the project is effectively serving its purpose with high-quality construction and proper supervision.

- **Community Feedback on Quality of Structural Works -** 42.55% (1371) of respondents rated the quality of structural works as very good, and 36.16% (1165) rated them as good. This indicates that a significant majority, 78.71% (2536), of the sampled communities' membership believe the structural works are of expected quality and standards. Additionally, 10.43% (336) of sampled community members rated quality of structural works as average, while 1.80% (58) rated structural quality as poor and 0.68% (22) as very poor. The 8.38% (270) of community members who responded as saying *"I do not know"* suggests some beneficiaries might not have sufficient information to judge the quality.

4. Measures of Flow of Benefits

The measures of flow of benefits are detailed according to the specific type of structural works constructed/rehabilitated by IUFMP namely – Bridges, Culverts and Drainages, Eleyele Dam and River Channelization based on responses from the project beneficiaries.

Bridges

The extent of utilization and measures of flow of benefits of the constructed bridges under the project were evaluated based on three key areas: a) improved access to neighbouring locations, b) enhanced flow of surface water, and c) improved accessibility for pedestrians, motorcycles, and vehicles. The data reflects significant positive outcomes in all these areas.

a) **Improved Access to Neighbouring Locations through Linkages –** 90.67% (690) of respondents noted that the construction of bridges has significantly helped in linking two locations/communities, with 9.33% (71) seeing no change (See Figure 26 below). Among those who acknowledged the linkage, 35.36% (244) felt the improvement was complete, 51.59% (356) found it satisfactory, and 11.74% (81) saw it as substantial. A small percentage, 1.30% (9), reported negligible impacts

b) **Improved Flow of Water Along the River Route**, 92.53% (707) agreed that the constructed bridges have improved the flow of water along the rivers, with 7.47% (57) opposing to that (See Figure 26 below). Of those who observed an improvement, 35.37% (249) deemed the flow improvement complete, 52.84% (372) satisfactory, and 9.51% (67) substantial. A negligible impact was cited by 2.27% (16).

c) **Enhancement of Accessibility for Pedestrians, Motorcycles, and Vehicles:** 93.19% (711) of respondents affirmed that the constructed bridges have improved accessibility by pedestrians, motorcycles and vehicles, with 6.81% (52) stating that there has been no improvement (See Figure 26 below). Those recognizing better accessibility rated it as complete (35.59%, 252), satisfactory (51.13%, 362), substantial (10.31%, 73), and negligible (2.97%, 21).

ES 8 Good Practices, Challenges and Lessons Learnt

Good Practices

- **Social Equity**: The project ensured all 11 LGAs in Ibadan benefitted from interventions targeted at flood risk management, therefore, promoting equitable distribution of the project's structural works across the city of Ibadan. Additionally, the rehabilitation works carried out at the Eleyele dam, and the subsequent first and second pool of works have been deemed to be socially beneficial from majority of the beneficiaries, such that the flood protection works are producing expected results. E.g., 9,134 people have been protected by restoring the safety of Eleyele Dam and a total of 42 flood risk management infrastructure has been completed.

- **Advanced Technology**: The project utilized drones for effective project monitoring, facilitating real-time data collection and improved oversight including the use of GIS devices and methodologies for topographical surveys and determination of land area protected from a 25-year flood. This technological approach enabled easier estimation of land size prior to and after completion of intervention works so as to establish results that address certain indicators captured in the RF.

Challenges

- **Contracting Capacity:** The project encountered difficulties with local contractors, particularly regarding technical expertise, financial capacity, performance and keeping up with contract timelines.
- **Price Inflation:** In addition to delays attributed to the procurement process, rising costs of construction material and the recurrent devaluation of the Naira significantly impacted contractors' budgets and led to delays
- **Weather Conditions:** Unforeseen early rainfall disrupted construction schedules, especially for river channelization and dredging.
- **Change in Government:** Shifts in government leadership (elections and re-elections, bill passing processes, etc.) led to uncertainties and actual delays.
- **Resettlement and Compensation Issues:** Misrepresentation of PAPs and challenges with asset devaluation necessitated additional measures for fair compensation.

Lessons Learnt

- **Vulnerability Targeting:** The project effectively addressed areas most prone to flooding, demonstrating a targeted approach to protect high-risk communities.
- **Social Equity:** The inclusion of all 11 LGAs ensured a broader social impact and addressed flooding issues across a wider population.
- **Community Engagement:** Stakeholder involvement throughout the project fostered a sense of ownership and increased the effectiveness of public awareness campaigns. However, there needs to be more engagement with LGAs as they are closer to project communities.
- **Continuous Reorientation:** The need for ongoing community education and capacity building was highlighted to ensure long-term project sustainability.

- **Balancing Flood Risk and Sustainability:** The IUFMP highlighted the importance of integrating environmental considerations into flood management strategies.
- **Environmental and Social Management:** Proper environmental and social assessments before construction and stricter enforcement of regulations are crucial for long-term environmental sustainability. Importantly, taking the suggestions and opinions of beneficiaries in the selection of priority sites and design of intervention works is critical, such that proposed interventions meet the needs of the communities and address the specific issues faced by those communities.
- **Robust Safeguards:** Implementation and monitoring of ESMPs to minimize environmental and social risks associated with project interventions should be a continuous process especially now that most structural works are operational. Likewise, periodic E&S audits should be conducted to ascertain E&S performance of sub-projects.
- **Strengthening M&E Capacity:** Building a more robust M&E team with advanced data analysis skills is essential for improved project monitoring and evaluation. This should be extended to the proposed Oyo State Flood Management Agency.
- **Adequate Funding:** Sufficient and independent funding streams are critical for focused and efficient project implementation.
- **Effective Resource Management:** External funding mechanisms such as donor funds provided to the IUFMP by the WB can promote better resource management compared to traditional government budgetary processes.
- **Institutional Coordination:** Strong collaboration between the state government (specifically the PSC and the PTC), and the World Bank, ensured effective financial management.

ES 9 Recommendations for Long-Term Sustainability

- **Capacity Building:** The State MDA structures should seek ways to provide training programs for local communities on proper operation and maintenance of drainage systems and infrastructure. The current complaints from communities is that more responsibility has been given to the state institutions to manage the river channels for example, such that waste management responsibilities which should be undertaken by health workers at LGA level have been usurped by the state MDAs for Environment, thus eliminating opportunity or participation from the community apparatus for waste management. Capacity building should capture all cadre of the state government likewise other groups which may be essential to achieving sustainability of assets provided under the IUFMP.
- **Investment in Behavioural Change Campaigns**: The Oyo state government should develop and implement intentional community level/grassroot campaigns, targeting communities, on the need for changes in behaviours especially with waste disposal, open defecation, illegal sand mining and maintenance of structures.
- **Funding Mechanisms:** The state government through requisite MDAs may need to establish sustainable funding mechanisms to support maintenance of IUFMP assets, potentially through public-private partnerships or user fees.
- **Quality Assurance:** Where the PSC, PTC and other structures set up to achieve quality assurance have succeeded, more efforts are still required for quality control to assure infrastructure integrity and sustainability.

In conclusion, the Ibadan Urban Flood Management Project (IUFMP) has yielded valuable lessons for future urban flood management initiatives. By prioritizing a holistic approach that addresses infrastructural needs, economic considerations, and long-term sustainability, future programs can be more effective in achieving their goals and creating lasting positive impacts for communities.