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Evaluation of Public Policies for Flood Management in the City of Kinshasa: The Case of the Abattoir and Valé Neighborhoods in the Masina Commune

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Abstract: The city of Kinshasa experiences recurrent flooding due to uncontrolled urbanization, inadequate drainage infrastructure, and poor stormwater management. Communities living along the Ndjili River, particularly in the Abattoir neighborhood of Masina municipality, frequently suffer material losses and health risks. This study evaluates the effectiveness of public policies for flood management in this vulnerable area. It is based on the hypothesis that the observed ineffectiveness results from insufficient state intervention, poor planning, and lack of follow-up actions.A mixed-method approach was used with 50 residents selected through convenience sampling. Data were analyzed using descriptive statistics and nonparametric tests (Chi-square, Fisher's exact test, and Spearman/Kendall correlations). Results show that 100% of respondents have experienced flooding, with 76% affected several times per year. Property loss affects all households, while displacement (64%) and disease (58%) are common. No official flood control program is recognized by residents, and 80% reported observing no government action; 84% consider public policies ineffective. The main obstacles identified are lack of follow-up (84%) and poor planning (66%). Findings should be interpreted cautiously due to the small, non-probabilistic sample. Despite these limitations, the study reveals chronic vulnerability and highlights the need for integrated and participatory urban governance.

Keywords*: Floods, Public Policies, Kinshasa, Urban Governance, Resilience.*

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I. INTRODUCTION

The city of Kinshasa, capital of the DRC, regularly faces devastating floods, particularly along the N'djili River. These floods cause loss of life, material damage, and major social disruptions. Despite the existence of public policies aimed at preventing these disasters, their effectiveness remains questionable. This topic is therefore relevant as it allows us to assess the relevance, implementation, and actual impact of these policies on riverside communities.

Flooding linked to the N'djili River persists despite existing public policies. This raises a central question: To what extent are the public policies implemented in Kinshasa effective in managing flooding around the N'djili River and protecting riverside communities?

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Objectives: to evaluate the effectiveness of public policies for flood management around the N'djili River in Kinshasa, to identify existing flood management policies, to assess their application and impact on the ground, to analyze the perception of affected populations, and to propose avenues for improvement.

We make the following assumptions: current public policies are poorly implemented around the N'djili river, riverside populations do not perceive the concrete effects of prevention policies and the lack of institutional coordination hinders effective flood management.

Traditionally, flood management relied primarily on hydraulic infrastructure designed to control or contain floods. However, several recent studies highlight the limitations of these strategies in the face of increasingly frequent extreme events, rapid urbanization, and the effects of climate change (Smith et al., 2024). These authors indicate that purely structural solutions can, in the long term, increase vulnerability by giving a false sense of security to exposed populations. In this context, Zhang et al. (2025) propose an integrated approach to flood risk assessment and management, based on the interaction between hazard, exposure, vulnerability, and resilience. This systemic view considers flooding not only as a natural phenomenon to be controlled, but as a socio-environmental risk requiring multidimensional responses. Furthermore, the methodological debate surrounding flood damage assessment remains central. Khan et al. (2025) criticize the uniform application of complex quantitative models in data-poor regions, highlighting their limited relevance in developing country contexts. These authors advocate for more contextualized approaches that integrate qualitative data and local knowledge. Conversely, Li et al. (2024) believe that technological advances, particularly remote sensing and geographic information systems, offer opportunities to improve the accuracy of analyses, even in data-limited settings. Recent literature also emphasizes the role of urban planning in sustainable flood management. Brown et al. (2025) advocate for the adoption of Water-Sensitive Urban Design, based on nature-based solutions, to strengthen cities' capacity to absorb and manage stormwater. However, Garcia et al. (2025) stress that the effectiveness of these solutions depends heavily on urban governance, institutional capacities, and local socioeconomic realities. Finally, the concept of resilience is playing an increasingly important role in scientific debates. Muller et al. (2025) argue that urban resilience allows us to move beyond the illusion of total prevention by emphasizing the capacity of territories to adapt and recover after floods. However, this approach has raised concerns, with some authors fearing that it could lead to a normalization of risk exposure, particularly for the most vulnerable populations (Smith et al., 2024). Overall, this research shows that contemporary flood management is moving towards hybrid approaches, combining infrastructure, nature-based solutions, participatory governance, and adaptation to climate change.This development appears essential to address the increasing complexity of flood risks, particularly in urban contexts and developing countries. Kyalwahi, D., & Bola, G. (2024) report the testimonies of residents affected by the Ndjili River floods between November 2023 and February 2024. They highlight the economic losses suffered by households, such as the destruction of property and the loss of livelihoods. The article attributes these floods to factors such as climate change, poor waste management, and unregulated urbanization, while Kilalo Press (2025) describes the economic impact of the floods on local activities, particularly market gardening, resulting in significant financial losses. It also mentions disruptions to the drinking water supply, affecting a large portion of Kinshasa's population. Architectural solutions, such as the construction of dikes and pumping systems, are proposed to mitigate the effects of the floods.

II. MATERIALS AND METHODS

➢ *Nature and Approach to Research*

This study focuses on the evaluation of public policies for flood management in the city of Kinshasa, with a focus on the Ndjili river in the Abattoir district, Masina commune.

This research adopts a mixed approach combining: a quantitative approach, aimed at describing the socio-economic characteristics of populations and measuring their perception of the effectiveness of public policies; a qualitative approach, allowing for the analysis of lived experiences, adaptation strategies and the appreciation of public interventions.

The study is descriptive, evaluative and exploratory in nature, as it seeks to assess the effectiveness of public policies while exploring the realities experienced by populations exposed to flooding.

➢ *Study Environment*

The study was conducted in the Abattoir neighborhood, located in the municipality of Masina, a riverside area along the Ndjili River. This area was chosen because of: its high exposure to flooding; the socio-economic vulnerability of its inhabitants; and the public interventions implemented for risk management.

➢ *Target Population.*

The target population includes: households living near flood-prone areas; local authorities; community stakeholders involved in risk management; and public services involved in disaster prevention and management.

➢ *Sampling Method*

A non-probability convenience sampling method was used due to: site accessibility constraints; population mobility; and respondent availability. This method is suitable for exploratory studies aimed at understanding local realities.

- *Sample Size*

The sample consists of: 50 riverside households interviewed by questionnaire; targeted interviews with key stakeholders (local authorities, community leaders, technical agents). The results are interpreted as local trends and are not intended for statistical generalization.

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- *Data Collection Techniques And Instruments*

✓ *Structured Questionnaire*

The questionnaire administered to households included: sociodemographic characteristics; frequency and impacts of flooding; perception of the effectiveness of public policies; and adaptation strategies adopted. Likert-type scales were used to measure perceptions.

✓ *Semi-Structured Interviews*

The interviews allowed for a deeper exploration of: the public interventions carried out; the challenges of implementation; institutional coordination; and the solutions proposed.

✓ *Direct Observation*

Field observation made it possible to identify: the state of drainage infrastructure; the occupation of flood zones; local adaptation practices; visible signs of flood impacts.

✓ *Document Analysis*

The following documents were consulted: legal and regulatory texts; risk management plans; administrative reports; previous studies on flooding in Kinshasa.

➢ *Study Variables*

Table 1 Study Variables

Variables	Key elements
Independent Variables	Public interventions, drainage infrastructure, prevention policies, community awareness
Dependent variables	Frequency of perceived flooding, level of vulnerability, socio-economic impacts, population satisfaction
Control variables	Age, sex, education level, profession

➢ *Data Analysis Methods*

Quantitative analysis: Quantitative data were analyzed using frequencies and percentages, as well as descriptive tables. Given the ordinal nature of the data and the small sample size, non-parametric methods were used: Spearman or Kendall correlation, chi-square test, and Fisher's exact test when sample sizes were small. The results are interpreted as exploratory associations.

- *Qualitative Analysis*

The data from the interviews were analyzed using thematic analysis: interview transcription; coding of units of meaning; grouping into themes; and interpretation. Verbatim transcripts were used to illustrate the results.

Example of thematic coding: "Water enters our homes every rainy season."

"The gutters are blocked and nobody comes to clean them.", "We are never warned before the heavy rains.", "We raised the floor of the house to avoid the water."

"The government makes promises, but we don't see any lasting solutions."

The following quotes illustrate the residents' perceptions: "Every rain is a worry for us; the water can come in at any moment.", "If the gutters were maintained, we wouldn't have so many floods.", "We manage on our own to protect our homes.", "The authorities only come after the damage is done."

These verbatim quotes highlight: the recurrence of floods; the inadequacies of infrastructure; the lack of institutional prevention; local adaptation strategies; the critical perception of public action.

- *Construction of Analytical Themes*

From the coding, five major themes emerged: structural vulnerability and exposure to risk, inadequate drainage infrastructure, weak prevention and early warning mechanisms, community adaptation strategies, and critical perceptions of the effectiveness of public policies. These themes served as the basis for integrating and interpreting the results from a public policy evaluation perspective.

- *Reliability and Validity of the Qualitative Analysis*

To ensure scientific rigor: the data were analyzed systematically; verbatim transcripts were selected to accurately illustrate perceptions; themes were validated by cross-referencing discourse; and the interpretation was linked to the theoretical framework and research objectives.

➢ *Processing, Coding and Analysis of Qualitative Data*

The data from the semi-structured interviews were analyzed using a thematic approach to identify the perceptions of the residents and to assess the effectiveness of public policies for flood management in the Abattoir district (Masina commune), located on the banks of the Ndjili River in Kinshasa.

- *Data Processing Steps*

The qualitative analysis was carried out according to the following steps: full transcription of the interviews conducted in the field; free-reading to familiarize oneself with the data; identification of units of meaning (significant phrases or segments); thematic coding of the collected statements; grouping of the codes into analytical categories; interpretation of the results in relation to the objectives of the study.

The analysis continued until information saturation was reached, that is, the point at which no new elements emerged from the interviews.

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- *Coding Procedure*

The coding process combined two approaches: inductive coding, which allowed themes to emerge from participants' comments; and deductive coding, guided by the objectives of evaluating public policies. The unit of analysis used was the sentence or segment of discourse containing meaning.

- *Criteria For Evaluating Public Policies*

The evaluation is based on: the effectiveness of interventions; the relevance of policies; the sustainability of actions; the satisfaction of populations; the reduction of vulnerability.

➢ *Ethical Considerations*

Participation was voluntary. Respondents were informed of the study's objectives. Anonymity and confidentiality were guaranteed.

Limitations of the study: non-probability sampling; limited sample size; constraints in accessing the field; potential subjectivity of perceptions; difficulty in generalizing results from a small sample. Despite these limitations, the study provides essential information for improving flood management.

III. RESULTS

Our survey gathered the perceptions, experiences, and expectations of populations directly affected by flooding, as well as their assessment of public actions taken in this area. These results therefore reflect the reality on the ground, as perceived by citizens, and constitute an empirical basis for evaluating the effectiveness of existing public policies, their coherence, their implementation, and their actual impacts on the lives of residents. The data presented below highlight the social, economic, and institutional dynamics related to flooding.

➢ *Sex*

Table 2 Distribution of Respondents by Gender

No.	Sex	Frequency	Percentage
1	Male	28	56
2	Female	22	44
Total		50	100

Source: Field Data from April 25 to June 8, 2025

Of the 50 people surveyed, 28 were male (56%) and 22 were female (44%). This indicates a slight male predominance in the sample. However, the distribution remains relatively balanced, allowing for a gendered interpretation of the data without significant distortion. $\chi^2 = 0.52$; $p > 0.05$. The chi-square test revealed no significant association between sex and the perceived severity of the floods. Men and women appear to perceive the risk similarly.

➢ *Age:*

Table 3 distribution of respondents by age

No.	Age	Frequency	Percentage
1	Under 18	2	4
2	18-35 years old	10	20
3	36-50 years old	24	48
4	Over 50 years	14	28
Total		50	100

Source: Field Data from April 25 to June 8, 2025

The majority of participants (76%) were over 35 years old. This indicates a predominantly adult and mature sample, potentially with some experience or involvement in local dynamics, useful for topics such as public policy. The chi-square test applied to the intersection between the age and sex of respondents revealed no statistically significant association ($\chi^2 \approx 0.18$; $p > 0.05$). This homogeneity suggests that perceptions related to flooding are not influenced by the demographic structure according to sex and age.

➢ *Education Level:*

Table 4 Distribution of Respondents According to Education Level

No.	Level of education	Frequency	Percentage
1	Uneducated	0	0
2	Primary	0	0
3	Secondary	32	64
4	Higher Education/University	18	36
Total		50	100

Source: Field Data from April 25 to June 8, 2025

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This shows that the sample is composed exclusively of educated people, mostly with a secondary level of 64%. This is an asset for understanding the questions asked and the reliability of the answers in our survey.

➢ *Occupation:*

Table 5 Distribution of Respondents According to Profession

No.	Occupation	Frequency	Percentage
1	Unemployed	17	34
2	Civil Servants	12	24
3	Liberal profession	9	18
4	Informal	12	24
Total		50	100

Source: Field Data from April 25 to June 8, 2025

This shows a population largely without stable employment (unemployed + informal sector equals 58%), which indicates great socio-economic vulnerability, aggravated by the risks of flooding.

- *Chi-Square Test*

✓ Hypotheses: H_0: occupation is independent of sex, H_1: occupation is linked to sex

Approximate calculation: $\chi^2 \approx 0.44$df = (4-1)×(2-1) = 3p > 0.05

No statistically significant association was observed between the respondents' sex and occupation. Men and women were represented in all occupational categories in a relatively balanced manner.

➢ *Residential Area*

Table 6 Distribution of Respondents by Neighborhood

No.	Neighborhood	Frequency	Percentage
1	Slaughterhouse	32	64
2	Valé	18	36
Total		50	100

Source: Field Data from April 25 to June 8, 2025

This shows a higher representation of the Abattoir district in our sample. This distribution reflects not only the severity or frequency of flooding in this area, justifying particular interest, but also the risk we faced in crossing the river each time to collect data.

- *Chi-Square Test*

✓ H_0: sex is independent of neighborhood
✓ H_1: gender depends on the neighborhood

Approximate calculation: $\chi^2 \approx 0.02$df = (2-1)×(2-1) = 1p > 0.05

The gender of respondents is independent of the district, indicating a homogeneous distribution of men and women in Abattoir and Valé.

➢ *Have You Ever BEEN A Victim OF Flooding Caused BY THE Ndjili River?*

Table 7 Distribution of Respondents by Gender

No.	Victim	Frequency	Percentage
1	Yes	50	100
2	No	0	0
Total		50	100

Source: Field Data from April 25 to June 8, 2025

This result shows the universality of the phenomenon in the targeted area: flooding is a reality experienced by all respondents, which gives weight to our study and underlines the urgency of effective public policies.

- Intersection: Occupation × Flood Exposure

Here, all respondents were victims of the floods (yes = 50). Chi-square test not applicable because there is no variation in the dependent variable.

Analytical reading: all professional groups are exposed, which confirms the universal vulnerability of local residents.

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➢ *How Often Do Floods Occur in Your Neighborhood??*

Table 8 Distribution of Respondents According to the Frequency of Flooding in their Neighborhood

No.	Flood frequency	Frequency	Percentage
1	rarely	0	0
2	Sometimes	2	4
3	Every year	10	20
4	Several times a year	38	76
Total		50	100

Source: Field Data from April 25 to June 8, 2025

This table reveals an alarming situation: 76% of our respondents experience repeated flooding, several times each year. This indicates a very high recurrence of flooding in the area studied, reflecting significant environmental vulnerability and weaknesses in structural risk management.

The complete absence of responses stating that the occurrence is "rare" reinforces the idea that the phenomenon is chronic. This observation argues for urgent, structured, and sustained public action.

- *Chi-Square (X^2) Test*

observed $\chi^2 \approx 74.4$df = 3

Critical threshold (5%) = 7.81

observed $\chi^2 >$ critical χ^2

The frequency of flooding is significantly high. The vast majority of residents experience flooding several times a year, revealing a high level of exposure to risk.

➢ *What are the Major Consequences You have Suffered? (Multiple Answers at Once.)*

Table 9 Distribution of Respondents According to the Consequences Suffered

No.	Consequences	Frequency
1	Loss of property	50
2	Disease	29
3	Shift	32
4	Loss of human lives	0
Total		

Source: Field Data from April 25 to June 8, 2025

All respondents suffered material losses, demonstrating the extent of the damage caused by the floods to homes and household goods. Displacement and illness highlight the impact on social stability and public health. The absence of reported deaths is reassuring, but this does not diminish the severity of the other consequences. The impact is therefore primarily economic, health-related, and social. The chi-square test is not the most appropriate here as multiple answers are possible. The floods primarily cause: widespread material losses, population displacement, and significant health risks.

➢ *Are You Aware of Any Government Plan or Program to Combat Flooding?*

Table 10 Distribution of Respondents According to the Flood Control Program

No.	Does a Government Plan or Program Exist to Combat Flooding?	Frequency	Percentage
1	Yes	0	0
2	No	50	100
Total		50	100

Source: Field Data from April 25 to June 8, 2025

None of the respondents were aware of the existence of a government plan or program to combat flooding. This reflects either a genuine absence of visible public policy or a failure of communication and awareness-raising. This finding reinforces the idea of deficient governance, where populations are neither informed nor involved in risk prevention or management measures. Fisher's exact test is necessary here because the sample size was zero in one category. All respondents reported the absence of a structured flood control program, indicating an institutional deficiency.

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➢ *Have You Observed Any Actions in Your Neighborhood to Prevent Flooding?*

Table 11 Distribution of Respondents According to Prevention Policy

No.	Have You Observed Any Actions by the State in Your Neighborhood to Prevent Flooding?	Frequency	Percentage
1	Yes	10	20
2	No	40	80
Total		50	100

Source: Field Data from April 25 to June 8, 2025

80% of respondents stated they had never observed any government action in their neighborhood regarding flood prevention, while 20% stated they had observed government action in their neighborhood, providing photographic evidence. This result highlights a complete absence of visible government intervention, reinforcing the idea of a lack of political will or a deficit in local governance in the face of natural disasters.

Chi-square test: $\chi^2 \approx 18.0$; df=1; critical threshold = 3.84, the difference is significant.

The majority of the population claims not to see any action from the State to prevent flooding.

➢ *If So, Which Ones by What Structure?*

Table 12 Distribution of Respondents According to Actions Carried Out by the Government

No.	The Shares	Frequencies	Percentage		
		State	NGO	State	NGO
1	Gutter cleaning	0	14	0	28
2	Construction of dikes	0	2	0	4
3	Awareness	0	0	0	0
4	None	0	34	0	68
Total		0	50	0	100

Source: Field Data from April 25 to June 8, 2025

All the observed initiatives came from NGOs, primarily the cleaning of drainage ditches. The state was completely absent from all the actions mentioned. However, the majority of respondents (68%) observed no action whatsoever, even from NGOs. This reflects a weak presence of institutional and associative actors in prevention efforts, exacerbating the vulnerability of local populations. Chi-square test: $\chi^2 \approx 41.3$; df=3; critical value = 7.81, the difference is significant. Intervention is very limited and dominated by NGOs. The lack of structured public action is evident.

➢ *In Your Opinion, Are the Policies Implemented Effective?*

Table 13 distribution of respondents according to their opinions on the implementation of public policy

No.	The policies implemented	Frequency	Percentage
1	Very effective	0	0
2	Moderately effective	0	0
3	Ineffective	8	16
4	Ineffective	42	84
Total		50	100

Source: Field Data from April 25 to June 8, 2025

This table shows that 42 respondents (84%) consider the implemented policies ineffective, and 8 respondents (16%) consider them only slightly effective. This indicates poor public policy regarding flood management, especially since these actions are carried out by non-governmental organizations and community-based arrangements, meaning the Congolese state is almost entirely absent. Chi-square test: $\chi^2 \approx 55.4$; df=3; critical value=7.81. The difference is significant. Public policies are widely perceived as ineffective by the population.

➢ *What Do You Think Are the Obstacles to Effective Flood Management? (Multiple Answers)*

Table 14 Distribution of Respondents According to Obstacles to Good Flood Management.

No.	What Do You Think Are the Obstacles to Good Flood Management?	Frequency
1	Corruption	0
2	Lack of resources	12
3	Poor planning	33
4	Lack of follow-up	42
5	Others	10

Source: Field Data from April 25 to June 8, 2025

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This table presents respondents' perceptions of the main obstacles to effective flood management. Multiple answers were possible.

- *Lack of Follow-Up:*

42 respondents mentioned it, which shows that the lack of follow-up on actions or policies already undertaken is the major obstacle felt.

- *Poor Planning:*

33 people cite this as a major obstacle, reflecting a lack of anticipation or clear action plan on the part of the authorities.

- *Lack of Resources:*

12 respondents reported insufficient human, technical or financial resources, a real factor but considered less critical than organization and monitoring.

- *Other Reasons:*

10 respondents mentioned additional unspecified obstacles (probably related to local or socio-political realities).

- *Corruption:*

None of the respondents mentioned it here, which may be surprising but suggests a prioritization of other more visible or concrete factors.

The most frequently cited obstacles are structural and organizational (monitoring, planning), rather than financial or corruption-related, highlighting an urgent need for reforms in flood governance and technical management. Descriptive analysis shows that multiple responses indicate no priority χ^2.

➢ *Qualitative Analysis*

It aims to understand public perceptions of flood frequency, impacts, public action, and obstacles to risk management. It is based on observed quantitative trends and the testimonies of those surveyed.

- *A High Frequency of Flooding and Permanent Vulnerability*

Quantitative results indicate that 76% of respondents report experiencing flooding several times a year, while 20% experience it annually. This high recurrence is confirmed by the testimonies gathered: "Water floods our homes several times a year, especially during heavy rains." "We live with flooding as if it were normal." These statements reflect a normalization of the risk and a persistent vulnerability of the riverside communities.

- *Significant Socio-Economic and Health Consequences*

Floods have multiple impacts: 100% report material losses; 64% mention temporary displacement; 58% report illnesses. "We lose our belongings every time water enters the house." "After the floods, children often get sick." These accounts confirm that floods are a major factor in socio-economic hardship and a significant health risk.

- *A Feeling of Institutional Abandonment and Low Visibility of Public Action*

The data reveals that: 100% of respondents state that there is no official flood control program; 80% have observed no action from the state. "The state is doing nothing to protect us." "We are left to fend for ourselves against the floods." These perceptions reflect a lack of institutional presence and fuel a feeling of exclusion.

- *Limited Role of Ngos and Community Solidarity*

The observed interventions come mainly from non-state actors: 28% mention NGO actions (dredging, dikes); 68% report that no action was taken. "It's the NGOs that sometimes come to clean the gutters." "Neighbors help each other clean up after the flood." These comments highlight community resilience and a dependence on external aid.

- *Perception of Ineffectiveness of Public Policies*

An overwhelming majority of respondents consider public policies ineffective: 84% believe they are ineffective; 16% consider them only slightly effective. "The policies may exist on paper, but not here." "Nothing changes despite the promises." This perception reflects a loss of confidence in public action.

- *Obstacles to Effective Flood Management*

The main obstacles identified are: lack of follow-up on actions (84%); poor planning (66%); lack of resources (24%). "Work begins but is never followed up." "The proposed solutions do not last." These elements reveal structural deficiencies in governance and planning.

➢ *Partial Conclusion*

In conclusion, the cross-analysis of quantitative and qualitative data shows that the populations of the Abattoir neighborhood live in a situation of chronic vulnerability linked to flooding from the Ndjili River. It highlights: a high frequency of flooding; serious socio-economic and health impacts; a feeling of abandonment by public authorities; limited intervention by NGOs; a perceived ineffectiveness of public policies; and obstacles related to governance and monitoring of actions.

Thus, flood management appears as a major issue requiring an integrated approach combining urban planning, effective governance and community participation.

IV. DISCUSSIONS

This study offers a unique perspective on flood management in an African urban context, combining quantitative data with qualitative perceptions of residents living along the Ndjili River in the Abattoir neighborhood of the Masina commune. Few local studies have simultaneously assessed flood frequency, socio-economic and health consequences, perceptions of public action, and obstacles to risk management. This integrated approach is the research's main strength.

The results of the study are directly related to several SDGs:

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➢ *SDG 11 – Sustainable Cities and Communities:*

Chronic exposure of populations to flooding reveals shortcomings in urban planning and drainage infrastructure. SDG 3 – Health and Well-being: The frequency of diseases linked to stagnant water highlights a major health issue.

➢ *SDG 6 – Clean water and sanitation:*

The lack of dredging and maintenance of gutters confirms deficiencies in water management.

The use of chi-square, Fisher's exact, and Spearman/Kendall correlation tests allows us to assess the associations between categorical and ordinal variables. The results show: a significantly high frequency of flooding (χ^2 > critical χ^2); a strong perception of the ineffectiveness of public policies; and an overrepresentation of the Abattoir neighborhood in the sample. These tests confirm the internal consistency of the data. However, the limited size and non-probabilistic nature of the sample necessitate caution in generalizing the results to all residents of Kinshasa.

➢ *Expected results:*

The high frequency of flooding and its material and health impacts were predictable given the urban context and the literature on the vulnerability of riverside neighborhoods. The perception of the ineffectiveness of public policies is consistent with studies showing institutional deficiencies in urban Africa.

➢ *Unexpected results:*

The near-total absence of visible interventions from NGOs illustrates a near-total lack of state action, sometimes exceeding initial assumptions. The absence of reported human losses, despite frequent flooding, may indicate social adaptation or underreporting, requiring further investigation.

Comparing these results with those of the work of Fumunzana Muketa (2008), Nzuzi Lelo (2008), and Kassay Ngur-ikone (2009) reveals a consensus on the weakness of urban governance in environmental matters in Kinshasa. These previous studies, as well as the present one, argue for a profound reform of urban policies, integrating citizen participation, sustainable planning, and the integration of climate risks.

➢ *Limitations of the study include:*

Convenience sampling does not allow for generalization to the whole of Kinshasa, but it does provide a representative overview of the neighborhood studied. The small sample size (n=50) limits statistical power and the detection of weak correlations. Self-reported qualitative data may be influenced by participants' perceptions and recall. These limitations do not invalidate the study; they simply highlight the need for caution in interpreting and generalizing the results.

The results confirm that the vulnerability of riverside populations stems from both environmental and institutional factors. The heavy reliance on NGOs and the perceived ineffectiveness of public policies highlight the urgent need for integrated urban governance, including: rigorous monitoring of public actions, appropriate urban planning, and active participation of local communities.

Thus, this research makes a useful contribution to scientific and political thinking on how to make African cities more resilient to growing environmental challenges.

V. CONCLUSION

The study aimed to assess the effectiveness of public policies for flood management around the N'djili River in Kinshasa, identify existing flood management policies, evaluate their application and impact on the ground, analyze the perception of affected populations, and propose avenues for improvement.

Indeed, the results obtained indicate that existing policies are often poorly implemented or ill-suited to the realities on the ground, that there is weak coordination between the institutions involved (ministries, urban authorities, NGOs), and that there has been a lack of investment in sanitation and drainage infrastructure. Furthermore, local communities have little awareness and are not very involved in local risk management. The absence of up-to-date mapping of risk zones means that people build everywhere, even on riverbeds, without recognizing the danger they face.

Therefore, we ask researchers to soon undertake a more in-depth comparative analysis between different affected municipalities, to study the long-term socio-economic impact of flooding on riverside households, to assess the contribution of NGOs and community actors in risk reduction, and to integrate climate data into future urban planning.

Scientifically, this study highlights the link between public governance, urban planning and environmental vulnerability, it contributes to enriching the literature on urban policies in an African context and demonstrates the value of the structural-functional approach to analyze the failures of institutional structures in the face of natural risks.

The key takeaway is that without deep reforms in urban governance and citizen participation, flood management policies will remain ineffective in Kinshasa.

➢ *Thanks*

We wish to express our deep gratitude to all the residents of the Abattoir and Valé neighborhood in the Masina commune for their availability and cooperation throughout this research. We also thank the field assistants for their logistical support and rigorous commitment to data collection.

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➢ *Conflict of Interest*

No conflict of interest regarding this publication.

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➢ *Ethical Considerations*

This study is not part of an experimental protocol involving risks to participants or medical procedures. Nevertheless, we have ensured the integrity of the individuals interviewed by strictly guaranteeing their anonymity. Informed consent and the use of collected information are strictly enforced.

➢ *Author Contributions*

PO conceived the topic, wrote the manuscript, collected data, and analyzed the statistics.

MM collected data, analyzed statistics

AL proofread, corrected the content, and validated the final version.

All authors have read and approved the final version of the manuscript.

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