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Empowering Lekki–Ajah Communities: A Hybrid Blueprint for Flood Resilience

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Abstract: *Lagos State's rapid urbanization and climate variability have exacerbated flood hazards, notably in the Lekki-Ajah corridor, where drainage deficits, governance failures, and informal settlement expansion combined to create this recurring crisis. Employing a secondary mixed-methods approach, this policy analysis combines descriptive statistical evaluation of rainfall and flood incidence records with a systematic content review of institutional policies and documented community responses to evaluate contemporary flood governance challenges in the corridor. Six alternative interventions, including structural drainage upgrades, community-based early warning, green infrastructure, regulatory enforcement, institutional coordination, and digital governance, were evaluated using a weighted multi-criteria framework and SWOT analysis. According to the findings, community-based and green infrastructure solutions perform best in terms of equity, feasibility, and sustainability, while digital governance tools enhance transparency and long-term compliance. A recommended hybrid resilience strategy combines targeted drainage upgrades, participatory micro-infrastructure and alert systems, ecosystem restoration, and digital monitoring to maximize each option's capabilities. A pilot implementation in Lekki-Ajah, Oworonshoki, Surulere, Ijora-Badia, and Ajegunle is proposed, with a strong implementation timeframe, financing model (₦20 billion), and monitoring and evaluation framework. This integrated roadmap, drawing on Bardach's Eightfold Path, prioritizes community empowerment, inter-agency collaboration, and adaptive policy-making to provide a scalable paradigm for flood resilience across Lagos' most susceptible corridors.*

Keywords: *Flood Resilience, Community Empowerment, Hybrid Policy Framework*

Introduction

"When 150 mm of rain fell in a single day during July 2024, parts of Lekki-Ajah turned into canals, flooding estates, crippling traffic, and displacing thousands." What happened wasn't just an unforeseen disaster but also a policy failure, highlighting a critical need for inclusive, locally responsive, and tailored flood risk governance. Lagos State is Nigeria's economic powerhouse and principal destination for internal migration, with over 21 million inhabitants as of mid-2023 and contributing about 25% of national GDP (National Bureau of Statistics [NBS], 2023; World Bank, 2021). Rapid urban expansion has outpaced drainage infrastructure investment, increasing flood hazards. This disparity makes the city much more vulnerable to climate-induced flood threats (Lagos State Ministry of Environment and Water Resources [LSMEWR], 2024).

The Lekki-Ajah corridor is a strategic hub for high-value estates, critical infrastructure, and growing informal communities. However, strategic growth has surpassed drainage planning and enforcement, making the area increasingly vulnerable to

flooding. This low-lying peninsula, bounded by the Atlantic Ocean and the Lagos Lagoon, has intricate water flows where inland runoff meets tidal surges. It also suffered from clogged drainage systems caused by construction, waste, and sediment buildup (UN Habitat, 2022).

The July 4 deluge flooded Admiralty Way and Chevron Drive with more than half a meter of water, waist-deep in some places, stranding thousands and shutting the Lekki-Ajah corridor for days. Recovery activities were hampered by weak interagency cooperation and inadequate contingency planning, exposing the state's systemic unpreparedness and delaying restoration in several communities (Lagos State Emergency Management Agency [LASEMA], 2024). An estimated 40% of drainage infrastructure was nonfunctional, and irregular maintenance across Local Government Areas (LGAs) aggravated flood effects (Nigerian Meteorological Agency [NIMET], 2024).

Although previous research has assessed Lagos' flood risk and exposure (UN Habitat, 2022; World Bank, 2021), only a few address governance failures like inadequate inter-agency coordination and planning enforcement and provide actionable, site-specific policies for corridors such as Lekki-Ajah (Anifowose & Rollason, 2024; Danhassan et al., 2023). This study fills the gap by making localized, governance-driven proposals that are consistent with the Lagos State development plan and are informed by community-centered insights documented in prior flood response reports and local forums.

This policy analysis diagnoses the core governance and infrastructure failures causing Lekki-Ajah flooding and proposes four evidence-based interventions: targeted drainage upgrades, participatory micro-infrastructure and alert systems, ecosystem restoration, and digital monitoring to pilot a scalable flood-risk governance model with communities as active partners in resilience-building.

Research Method

This policy analysis uses a secondary mixed-methods approach to analyze flood risk governance in the Lekki-Ajah corridor, combining descriptive statistical evaluation with systematic document review (Johnston, 2017). The analytical approach is based on Bardach's Eightfold Path, which emphasizes structured problem-solving through evidence gathering, criteria selection, outcome projection, and trade-off confrontation (Bardach, 2012).

The quantitative component entails review of secondary data on rainfall, flood frequency, and infrastructure investment. Rainfall data from the Nigerian Meteorological Agency (2024) were assessed for seasonal patterns and intensity, while flood incidence records from LASEMA and NEMA were examined to discover trends in frequency, severity, and geographical distribution. These records were compared to capital budget performance reports (MEPB, 2022) to determine the link between infrastructure spending and flood mitigation results. Preliminary financial modeling predicted drainage upgrades, green infrastructure, and early warning systems based on previous public budget cost benchmarks.

The qualitative component entails structured content analysis of academic publications, urban policy documents, planning regulations, NGO reports, and media

coverage. Documents that reflect community-level perspectives, such as reports from neighborhood associations, civil society groups, and participatory forums, received special attention. This helps ensure grassroots concerns like institutional deficiencies, enforcement challenges, and perceived vulnerability were incorporated (Bowen, 2009).

Synthesizing insights from both quantitative and qualitative components, a multi-criteria evaluation framework (Dunn, 2018) and a SWOT analysis (Bryson, 2018) were used to assess prospective policy alternatives. Alternatives were evaluated based on effectiveness, administrative feasibility, equity, cost, and sustainability, with weightings based on stakeholder priorities. Participatory mapping activities, local flood forums, and community-based monitoring all contributed to contextualizing these criteria from the perspective of affected communities such as Jakande, Oke-Ira Nla, and Ajegunle (Heinrich Böll Foundation, UN-Habitat, BusinessDay, 2023).

This study relies heavily on publicly available data, with no primary data collected and strict adherence to academic citation standards. While this method improves transparency and replicability, it also has limitations, such as inconsistent reporting among agencies and a lack of field validation. Financial projections may not fully represent future cost shifts or developing technology. Privacy and consent protocols were not necessary because there were no human subjects involved.

Result and Discussion

Problem Definition & Contextual Analysis

This secondary analysis employs Bardach's (2012) Eightfold Path and synthesizes documented insights from grassroots flood-management committees, local NGO case studies, and community reports to diagnose the problem, gather evidence, and devise solutions.

Between 2019 and 2024, six major flood events inundated key arteries—Admiralty Way, Chevron Drive, and the Lekki-Epe Expressway—with depths of 0.3-0.6 m, disrupting daily life, stifling economic activity, and imposing high recovery costs (NIMET, 2024). On July 4, 2024, nearly 150 mm of rain fell in 10 hours, flooding culverts and canals, toppling houses, sweeping away automobiles, and displacing people. Amid these trends, informal communities like Jakande and Otodo-Gbame have built grassroots flood-mapping and alert systems, drawing on essential local coping knowledge (Justice & Empowerment Initiatives [JEI], 2021; The Guardian, 2024).

Approximately 40% of Lekki-Ajah's primary and secondary drains are dysfunctional due to sedimentation, garbage obstructions, and lack of maintenance (Heinrich Böll Foundation & Fabulous Urban, 2021; iProject, 2024). Unregulated land use, such as illegal reclamation and informal settlements, has choked natural streams and floodplains, significantly lowering flow capacity (Aderotoye & Akinbobola, 2023; UN Habitat and LUDI, 2018). Poor coordination and uneven enforcement among LASEMA, the Ministry of Environment, Public Works, and local drainage departments has led to delayed responses and reactive canal clearance after severe floods (Anifowose & Rollason, 2024; Danhassan et al., 2023; LASEMA, 2024). Finally, climate variability increases flood danger, with NIMET

(2024) estimating higher rainfall intensity, which will put additional burden on existing drainage systems.

Key Stakeholders & Consequences

Multiple actors influence the causes and potential remedies to floods in Lekki–Ajah. Government bodies like the Lagos State Ministry of Environment and Water Resources, LASEMA, and NEMA are responsible for policy, infrastructure, emergency response, enforcement of zoning regulations, and interagency coordination. Local communities, traditional leaders, and civil society organizations encourage preparedness and advocacy, while private sector developers shape land use patterns and drainage compliance. International partners, including UN Habitat and NGOs, provide technical assistance and capacity building.

Inaction comes with a huge cost. The July 2024 floods displaced 3,000 people and exposed thousands to waterborne diseases (Ndimele et al., 2024), resulting in economic losses of ₦4.2 billion in infrastructure repairs, business interruptions, and lost revenue (BusinessDay, 2023; LSMEWR, 2024). Floodwaters also destroy wetlands, hurt wildlife, and endanger the Lekki Lagoon (Heinrich Böll Foundation and Fabulous Urban, 2021).

Figure 1: "*Displaced residents rummaging through debris in the flood-affected community in Lagos. Repeated floods devastate housing, livelihoods, and public health.*"
Source: *Adapted from Amnesty International, 2017.*

This policy quandary is influenced by both market and governance failings: developers lack incentives to promote flood resilience, while overlapping laws with lax enforcement stymie cooperative action. As Bardach's diagnostic phase implies, addressing these institutional and outcome flaws is critical for developing effective interventions.

Contextual Analysis

Understanding Lagos' fragmented institutional framework is critical to efficient flood governance in Lekki-Ajah, where overlapping mandates (LSMEWR for drainage vs. LASEMA for emergencies) and limited resources impede prompt action. The three-day debris clearance delay in Jakande following the July 2024 floods demonstrates how ambiguous duties and the lack of organized local response groups slow down activity. The 2020 Drainage Master Plan and the 2021 LAGFLOOD project secured ₦44.47 billion for 2022 projects, but by mid-2024, just 34% of scheduled drainage projects were completed, with only 52% of those funds spent (MEPB, 2023). Such red tape and reactive procurement reflect the feasibility restrictions described by Bardach (2012), which prevent both agencies and grassroots groups from engaging in proactive planning.

Lekki-Ajah's vulnerability to flooding is exacerbated by significant social and spatial inequities. Coastal informal communities (Jakande, Otodo-Gbame) have more susceptibility to deteriorating ecosystems, insufficient services, and unregulated development. However, inhabitants maintain informal clearance teams and DIY alert systems that formal planning misses. Meanwhile, luxurious residences exacerbate runoff with extensive paving and inadequate enforcement. According to a GIS study (Isiaka et al., 2023), 12.54 percent of Lagos is located in very high vulnerability zones, emphasizing the importance of evidence-based interventions that are spatially targeted. Bardach (2012) proposes that a resilient strategy involves co-producing solutions in both informal and formal domains while balancing equality and environmental justice.

Evaluation of Alternative Policy Options

Policy Objectives

Based on Bardach's (2012) emphasis on clarity, feasibility, and equity, our objectives for mitigating urban flood risk along the Lekki Ajah axis are organized around three core aims. First, we seek to reduce urban flood risk and vulnerability by targeting high-risk zones (e.g., Jakande and Otodogbame) for renovations, zoning enforcement, and risk-sensitive land-use planning—ultimately cutting population and infrastructure exposure by 40 percent over five years—while simultaneously improving early warning and emergency response through decentralized, community-based flood alerts, trained local reaction teams, and district-level contingency plans by 2027. By 2026, we will also encourage sustainable urban development and drainage infrastructure by ensuring that all new developments in flood-prone areas follow updated regulations and phased green interventions like permeable pavements and bioswales.

To foster social and spatial justice, we will prioritize drainage investments and relocation aid in low-income informal areas while also including indigenous adaptation

practices and wetland recovery to boost local adaptive ability. Closely linked to equity, our plan to co-create community-led adaptation and nature-based solutions involves informal settlement members directly in planning processes, leverages traditional ecological knowledge, and restores green buffers to promote community ownership of resilience methods.

Finally, we will strengthen institutional coordination and accountability by clarifying mandates and eliminating overlaps among LASEMA, the Ministry of Environment, LASPPPA, and local councils—enabling timely, coordinated flood management actions. These objectives are guided by both technical feasibility and a deep understanding of Lagos's complex governance and social landscape, exemplifying Bardach's call for outcome-driven, equitable, and administratively feasible public policy solutions.

Alternative Policy Options

In response to the flood management challenges in the Lekki-Ajah corridor, this section proposes six policy solutions, each with distinct approaches, benefits, and drawbacks. These alternatives are consistent with Bardach's (2012) step 3: Construct the Alternatives.

Table 1: *Alternative Policy Options for Flood Risk Reduction with Distinct Approaches, Pros & Cons*

Option	Description	Lead Actors	Pros	Cons
A. Centralized Drainage Overhaul	Large-scale state-led desilting, new trunk drains, and channel retrofits.	Lagos State Ministry of the Environment & Water Resources; Lagos State Public Works Corporation	High technical efficiency; rapid impact in formal zones.	Costly; time-intensive; limited reach into informal areas.
B. Community-Based Early Warning & Micro-Infrastructure	Local flood monitoring networks, mobile alerts, rain gardens, bioswales. Draws on models proposed by community groups and NGOs, reflecting grassroots knowledge and local stewardship	Community Development Associations; NGOs; LASEMA	Low cost; builds ownership; adaptive to informal settlements. Reflects high community acceptability as observed in documented initiatives such as the Lagos Urban Flooding Resilience Project.	Requires sustained community coordination; variable maintenance.
C. Green Infrastructure & Ecosystem Restoration	Bioswales, permeable pavements, wetland rehabilitation.	Ministry of the Environment; Local Councils; Civil Society Organizations	Eco-friendly; co-benefits (biodiversity, cooling); long-term resilience.	Needs urban planning reform; longer implementation timeline.

D. Strict Regulatory Enforcement	Demolition of illegal structures on floodplains; digital permit monitoring.	Lagos State Physical Planning Permit Authority (LASPPPA); LASEMWR	Reclaims natural waterways; deters future violations.	Politically sensitive; risk of displacement; enforcement capacity needed.
E. Integrated Inter-Agency Task Force	Formalize a joint LASEMA–Ministry of Environment–LASPPPA–LG coordination body.	LASEMA; Ministry of the Environment; LASPPPA; Local Governments	Reduces duplication; speeds response; clarifies mandates.	Requires high-level political buy-in; potential turf battles.
F. Digital Governance & Data-Driven Compliance	Real-time flood dashboards, remote sensing for permit enforcement, data analytics for planning.	LASPPPA; NIWA; Ministry of Science and Technology	Improves transparency; enables early action; supports evidence-based decisions.	Dependent on digital infrastructure; training needs; initial setup costs.

Source: *Author's Design, 2025.*

These approaches provide a spectrum from top-down infrastructure investment to bottom-up community participation and innovative governance reform. The following section will evaluate each option based on effectiveness, political and administrative feasibility, technical feasibility, cost-effectiveness, equity and social acceptance, sustainability, and time to impact.

Multi-Criteria Evaluation Results

This section evaluates six flood policy alternatives using Bardach's (2020) decision-making framework and major criteria. This analysis supports the multi-criteria policy comparison for Lagos' flood-prone areas. We use a 1–5 scale (1=Very Low, 5=Very High) to rate each criterion. The weighted criteria include effectiveness (20%), political & administrative feasibility (15%), technical feasibility (10%), cost-effectiveness (15%), equity & social acceptance (15%), environmental sustainability (15%), and time to impact (10%)—based on their importance to Lagos's governance context (see Table 1).

Table 2: *Weighted Evaluation of Flood Policy Alternatives in Lekki-Ajah, Lagos*

Policy Option	Eff.	Tech Feas.	Pol/Admin Feas.	Cost	Equity	Sustain.	Time	Total	Summary Comment
A. Centralized Drainage Overhaul	1.00	0.30	0.45	0.30	0.30	0.45	0.20	**3.00**	Robust but expensive; slow rollout.
B. Community-Based Early Warning & Micro-Infrastructure	0.60	0.50	0.75	0.75	0.60	0.60	0.50	**4.30**	Quick deployment; highly inclusive and adaptive.

C. Green Infrastructure & Ecosystem Restoration	0.80	0.30	0.45	0.45	0.45	0.75	0.30	**3.50**	Strong long-term value; slower early gains.
D. Strict Regulatory Enforcement	0.60	0.40	0.30	0.60	0.15	0.45	0.20	**2.70**	Low public support; politically sensitive.
E. Inter-Agency Task Force	0.80	0.30	0.60	0.60	0.45	0.45	0.30	**3.50**	Promotes coordination; risks bureaucratic delays.
F. Digital Governance & Monitoring	0.80	0.20	0.60	0.45	0.45	0.60	0.40	**3.50**	Scalable tech; useful for enforcement and foresight.

Source: *Author's Design, 2025.*

Note: *Scores are calculated by multiplying the raw score (1–5) by each criterion weight and summing the results.*

Following Bardach's Eightfold Path (Bardach & Patashnik, 2020), we defined the problem, assembled evidence from state reports and community sources, constructed six policy alternatives, selected our weighted criteria, and projected outcomes to confront trade-offs.

Discussion

Recommended Strategy

Flooding in Lagos presents a unique challenge. Local topography, urban density, and governance capacity vary greatly among neighborhoods. Therefore, a one-size-fits-all approach will be inadequate. Based on the evaluation of alternatives and Bardach's problem-solving paradigm, this section proposes a hybrid strategy that combines structural, community-based, ecological, and digital interventions with focused piloting to achieve equitable and effective results. We propose a hybrid intervention that combines the strengths of four complementary approaches.

Structural Upgrades: This can be achieved with option A (Targeted Drainage Upgrades) through upgrading of trunk drainage and outfalls to combat chronic flooding in densely populated flood-prone areas like Victoria Island and Surulere.

Community Infrastructure: By adopting option B (Community-Based Early Warning & Micro-Infrastructure), thereby collaborating with people in informal neighborhoods like Oworonshoki and Ajegunle to co-construct low-cost risk-mitigation initiatives such as raised walkways and culvert clearance to increase capacity and citizen co-ownership. This aligns with community-identified needs and adaptation practices highlighted in NGO-led

flood adaptation case studies. The high score in this option partly reflects "resident-derived" criteria for equity and feasibility.

Ecological Solutions: Through the integration of Option C (Green Infrastructure & Wetland Restoration), restore wetlands and install rain gardens in peri-urban and low-lying locations like Lekki-Ajah and the Lagos Lagoon corridor to provide climate-adaptive, nature-based flood protection.

Digital Governance: The incorporation of option F (Digital Governance & Monitoring), using GIS-enabled technologies to monitor flood-prone areas, enforce regulations, and disseminate early warnings across all pilot sites, will track compliance, improve risk communication, and allow for data-driven decision-making.

Table 3: *Brief SWOT Analysis of the Hybrid Strategy*

Strengths	Weaknesses
Multi-layered: tackles structural, social, ecological, and governance dimensions together.	High coordination and upfront investment required.
Balances short-term responsiveness (B, F) with long-term infrastructure (A, C).	Dependence on digital literacy and administrative capacity.
Promotes inclusive ownership, transparency, and adaptive learning.	Institutional inertia may slow regulatory and digital uptake.
Opportunities	**Threats**
Potential for donor engagement and innovation pilots in smart urban planning.	Political or funding instability could derail phased implementation.
Builds replicable models for city-wide scaling.	Climate shocks may intensify before full rollout takes hold, especially in high-risk zones.

Source: *Author's Design, 2025.*

This mix of structural reform, community engagement, and nature-based solutions provides both short-term benefit in preparedness and long-term resilience.

Proposed Pilot Areas for Implementation

1. **Lekki-Ajah Axis:** High risk of coastal and pluvial flooding, growing development, and vulnerable wetland zones. This is a great location to test integrated drainage, early warning systems, and green initiatives.
2. **Oworonshoki:** Oworonshoki is densely inhabited, with informal housing, strong local leadership, and limited infrastructure. This makes it ideal for testing community-led models and strengthening neighborhood-level resilience.
3. **Ijora-Badia:** A strategic industrial and residential zone where drainage improvements and data-driven compliance can safeguard critical economic assets.
4. **Surulere:** Surulere is a mixed-density region with regular flash floods and legacy drainage concerns.
5. **Ajegunle:** An informal settlement with strong social networks, appropriate for participatory infrastructure testing.

This pilot selection shows both regional diversity and the ability to test various intervention strategies concurrently. The hybrid strategy addresses both the technical

factors (e.g., clogged drains, floodplain encroachment) and the governance shortcomings (e.g., enforcement failure, ineffective coordination) mentioned in earlier sections. It also fulfills Bardach's appeal to evaluate trade-offs, practicality, and equitable impact while tackling public problems (Bardach & Patashnik, 2020). This plan promotes learning, accountability, and scalability by focusing on varied environments and employing digital platforms to unify execution. The strategy guarantees that community voices inform both problem framing and implementation by drawing on locally documented insights and case data from informal settlements.

"No single silver bullet can fix Lagos' flood risk, but a smart, inclusive, and adaptive combination can bend the curve."

Implementation Strategy & Narrative

Lead Agencies and Stakeholders

Effective flood resilience in Lekki–Ajah hinges on close collaboration between key government bodies, technical partners, and community groups. The primary coordinating agencies are the Lagos State Ministry of Environment and Water Resources (LSMEWR), the Office of Drainage Services, LASEMA, and LASURA. Federal forecasting and disaster-response support come from NIMET and NEMA.

Core stakeholders

- Academic institutions (research & impact evaluation)
- NGOs/CBOs (grassroots engagement & committee training)
- Technology partners & start-ups (digital monitoring & alerts)
- Community Development Associations (on-the-ground liaisons)

Key Partnerships Roles

Securing finance and expertise requires both development-finance partners and strong local networks. The World Bank and Green Climate Fund will underwrite infrastructure and capacity building, while private-sector PPPs drive innovative drainage solutions. Local NGOs, CBOs, academic institutions, and tech startups together ensure participatory planning, real-time monitoring, regulatory compliance, and evidence-based policy refinement.

Short-, Medium-, and Long-Term Actions

The actions are proposed following Bardach's criteria for practicality, equity, and sustainability. In the first two years, pilot the hybrid approach in Lekki–Ajah and Oworonshoki, initiate drain upgrades, deploy community rain gauges, and establish resilience committees. The medium term focuses on scaling green infrastructure across Lagos Island and forging formal coordination structures, while long-term actions embed flood resilience into state policies and create a dedicated Flood Resilience Council. Funding mobilization, capacity building, and digital governance are woven through all phases to ensure sustainability.

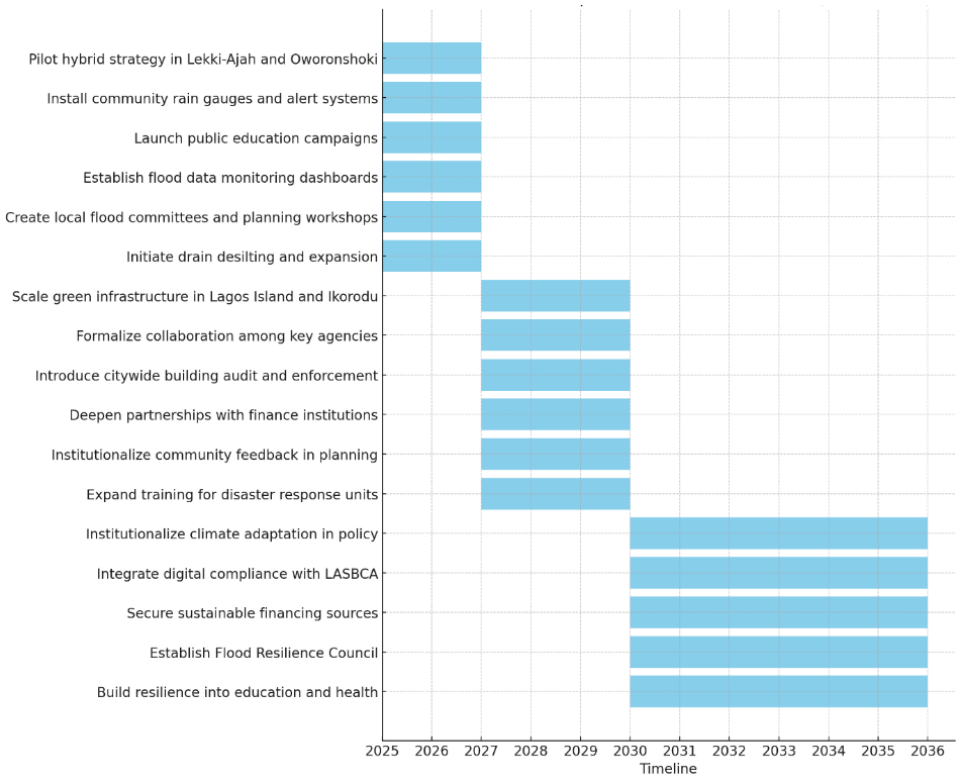

Figure 2: *Flood Resilience Implementation Gant Chart (2025-2035)*
Source: *Author's Design, 2025.*

Note: This sequence of actions is directed by Bardach's evaluative framework, which prioritizes feasibility, equity, sustainability, and administrative capability throughout multiple phases.

Community Engagement Plan

The proposed engagement plans are based on participatory tools and lessons from secondary sources such as NGO reports, citizen interviews, and community forums in Lekki-Ajah and Ikorodu. Effective community engagement is critical for building trust, ensuring initiatives match local objectives, and fostering long-term ownership of flood resilience projects.

- Engage and equip communities via regular town halls, feedback sessions, and local flood-monitoring teams linked to government entities.
- Utilize participative mapping, previously used in Osun and Lagos States by groups like CODE and SPACES for Change. The tool will aid identification and prioritization of intervention zones to ensure that interventions reflect local circumstances and promote collaborative problem-solving in priority regions.
- Provide capacity-building programs to empower local leaders and educators. This will inevitably encourage information sharing and long-term civic leadership on flood resilience practices.

- Encourage co-ownership of green infrastructure through maintenance incentives. This will ensure the promotion of long-term stewardship and decrease vandalism or neglect of installed systems.

Financing Options and Preliminary Cost Estimates (Pilot Phase)

Financing will combine ecological-fund disbursements, PPPs, climate-adaptation subsidies, budget reallocation, and DFI loans. Public-private partnerships will frontload short-term initiatives, while adaptation grants and ecological funds will help secure medium- and long-term measures. All amounts from the preliminary cost estimates are based on Lagos State's capital budget (2022) and current market projections for infrastructure and digital systems (MEPB, 2022).

- Upgrade 30km of drainage canals for ₦11 billion (₦370 million/km as per the 2022 state budget).
- Install green infrastructure with ₦5 billion for 100,000m² of bioswales and rain gardens (₦50,000/m²).
- Deploy digital flood monitoring systems for ₦125 million, including 50 rain gauges at ₦500,000 apiece and software and training at ₦100 million.
- 20% Contingency (₦3.6 billion) to cover unexpected expenses.

Total estimated cost: ₦20 billion

The rounded amounts give transparent benchmarks for the ₦20 billion funding target, adding confidence and clarity for stakeholders. The cost breakdown for the pilot phase is shown below with visuals to help with clarity and decision-making (See Figure 3).

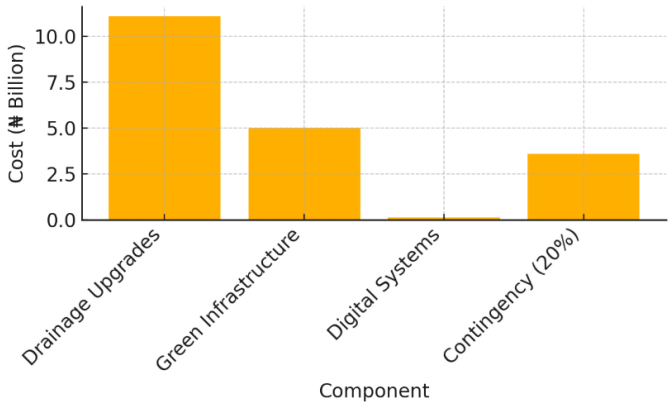

Figure 3: *Bar chart of Preliminary Cost Breakdown for Pilot Phase*
Source: *Author's Design, 2025.*

Risks and Mitigation Measures

We identify key political, social, enforcement, and fiscal risks with corresponding mitigation steps.

Table 4: *Risks and Mitigation Measures*

Risk	Mitigation
Political turnover may impair continuity.	Incorporate policy into the legal framework and seek bipartisan support.

Resistance from informal communities	Encourage participatory planning and provide relocation support.
Poor enforcement of building codes	Deploy real-time compliance tracking tools.
Funding shortfalls	Establish multi-source finance and stagger implementation phases.

Source: *Author's Design, 2025.*

Narrative of Implementation

This strategy translates a complex, multi-actor situation into a staged, achievable action plan. Lagos can achieve measurable results in both the short and long term by combining structural upgrades, community-centered resilience, and digital governance. The implementation timeline strikes a balance between urgent needs and institutional capacity, while collaborating with donors, academia, and the private sector provides technical expertise and financial support. Community involvement is critical; from bioswale construction to early warning alerts, each intervention is designed from the ground up, encouraging local ownership and ensuring sustainability. It strengthens not only program implementation but also long-term resilience by providing communities with the tools and voice they need to transform their environments in a sustainable manner.

This approach is about more than just flood control; it is about creating a better, greener, more inclusive Lagos. The study underscores that only through shared responsibility and sustained public engagement via transparent reporting, participatory oversight, and open communication will resilient flood governance be achieved. This narrative corresponds with Step 8 of Bardach's Eightfold Path, "Tell Your Story", which emphasizes creating a compelling narrative around evidence-based recommendations to gain political and public support (Bardach & Patashnik, 2020).

Monitoring and Evaluation (M&E) Framework

To ensure that the flood mitigation initiatives are effective, transparent, and adaptive over time, a systematic Monitoring and Evaluation (M&E) Framework is required. This framework will assess progress, measure outcomes, and provide guidance for continual development in accordance with the policy's stated objectives.

Success Indicators: We will track five core indicators over a five-year horizon: (1) 40% reduction in flood-related property loss; (2) ≥70% regulatory compliance; (3) active flood committees in 80% of LGAs; (4) 75% of households reporting improved flood preparedness via mobile surveys within 3 years (5) restoration of at least 50 ha of wetlands; and (6) a fully operational real-time digital monitoring system."

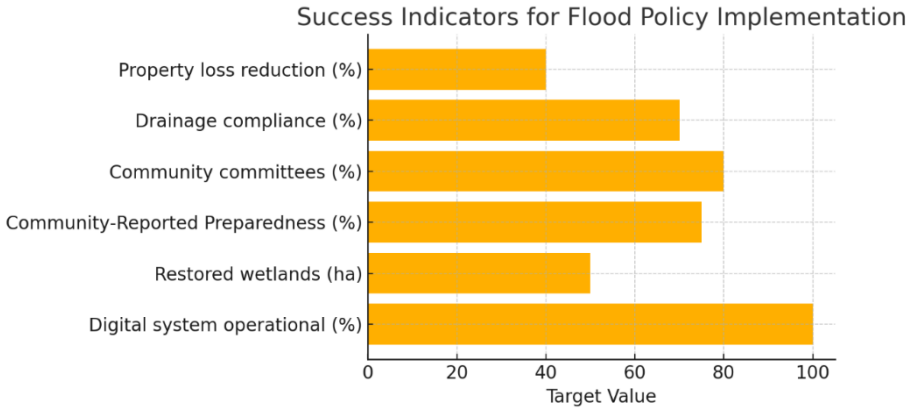

Figure 4: *Bar Chart of Success Indicators for Flood Policy Implementation.*
Source: *Author's Design, 2025.*

a. **Lead M&E Agencies**: The LSMEWR will coordinate with Office of Drainage Services, LASEMA, LASURA, academic institutions, and local CBOs to produce annual public reports, using geographic data, dashboards, surveys, and participatory evaluation.
b. **Data Collection Methods:** Data sources include Remote Sensing/GIS mapping, community surveys and focus groups, administrative records from LASEMA/LASPPPA, and mobile-based citizen feedback (see Appendix A).
c. **Review Timeline:** Quarterly Council reports (Years 1–2), a Midterm Evaluation at Year 2, and a Final Impact Assessment at Year 5 will structure the review process.
d. **Feedback and Adaptive Management**: Every six months, host local public review sessions and update an online LASG dashboard. A formal Policy Adjustment Protocol will guide iterative refinements based on stakeholder inputs.

This M&E framework promotes transparency and accountability while also aligning with Bardach's emphasis on iterative learning and feedback. It enables policymakers to analyze what works, for whom, and under what conditions—and to adapt strategies to evolving risks and priorities.

Conclusion

Urban flooding in Lagos is more than just an engineering challenge; it is also a test of governance, inclusivity, and institutional resilience. It also emphasizes the need of community empowerment in developing localized capacity to predict, adapt, and respond to flood hazards. The hybrid solution suggested in this study combines structural drainage improvements, community-driven adaptation, ecosystem restoration, and digital governance. This multimodal approach addresses both the symptoms and underlying causes of recurring floods in the Lekki-Ajah corridor and beyond. This plan provides a clear blueprint for transforming Lagos into a more resilient, green, and inclusive megacity, focusing on equality, feasibility, and long-term sustainability.

Core Takeaways

The following are the key takeaways that capture the strategic benefits of this hybrid strategy:

1. **Integrated Approach:** Combining physical, social, ecological, and technical solutions guarantees that no single pathway is overwhelmed and that actions complement one another.
2. **Community Ownership:** Ground-level committees, participatory mapping, and capacity building put locals at the center of resilience-building efforts, encouraging local accountability and quick action.
3. **Institutional Learning:** A strong M&E framework based on quantitative and qualitative data would enable adaptive management, allowing Lagos State to modify tactics in real time and replicate achievements.
4. **Strategic Partnership:** Collaboration with development partners, academia, NGOs, and the commercial sector offers the technical skills, funds, and creativity required to achieve these objectives.

Policy Recommendations

Based on this analysis, the study recommends that stakeholders commit to the following:

1. **Immediate Endorsement:** The Lagos State Executive Council should formally embrace this hybrid strategy and award initial financing for trial projects by Q3 2025.
2. **Pilot Intervention Launch:** By the end of 2025, state and local governments, in collaboration with NGOs and communities, must activate pilot interventions in Lekki-Ajah, Oworonshoki, and Ijora-Badia. These pilots should be co-created with local communities to build trust, assure contextual relevance, and institutionalize participatory resilience.
3. **Funding Mobilization:** Mobilize at least ₦20 billion in grants and loans from the World Bank, Green Climate Fund, and private investors for medium- and long-term phases. This is consistent with the Lagos State 2022 capital budget of ₦44.47 billion for drainage services, as well as the expected costs for green infrastructure and digital system rollout (MEPB, 2022).
4. **Institutionalize M&E:** Empower the Lagos State Monitoring and Evaluation Department and partner universities to publish quarterly progress reports and hold annual public review sessions beginning in early 2026.
5. **Scale and Replicate:** By 2028, effective interventions should be expanded to other flood-prone corridors such as Amuwo-Odofin and Apapa.

This analysis underscores the significance of future research conducting on-the-ground inquiry, such as interviews and surveys with community flood management groups, to validate and refine proposed hybrid initiatives, rather than relying on secondary sources. Comparative case studies in different Nigerian cities and coastal locations will evaluate the framework's adaptability. Longitudinal monitoring of pilot sites can reveal the real-world impact of participatory and digital governance approaches on resilience results.

"Together, we empower communities for a resilient future."

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