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From pilots to systems: scaling integrated water resources management in Ethiopia

Policy paper

IRC WASH

This policy paper is based on the "Assessment of National Integrated Water Resource Management Implementation in Ethiopia: Policies, Practices, Sustainability and Opportunities for Scaling-Up" (March 2026), conducted by IRC WASH in collaboration with the Water Resources Management Sub-Working Group of the Water and Energy Sector Working Group, with financial support from the Ministry of Foreign Affairs of the Netherlands (DGIS). The assessment drew an extensive desk review, key informant interviews, and in-depth case studies of the Upper Awash and Upper Abbay basins.

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Executive summary

Ethiopia has established a strong policy foundation for Integrated Water Resources Management (IWRM) over the past two decades, with comprehensive national policies, basin-level institutions, and a wealth of innovative pilot projects. However, implementation remains fragmented, underfunded, and uneven across regions and basins, causing critical sustainability challenges that require urgent attention. This policy paper highlights priority recommendations emerging from a recent national assessment, including lessons drawn from experiences in the Upper Awash Basin and Upper Abbay Basin, with the aim of identifying practical pathways to strengthen implementation and scale up successful approaches.

Key Findings:

- Strong foundations exist: Ethiopia's Water Resources Management Policy, legal frameworks, and institutional architecture (basin administration offices, Basin High Council, National IWRM Programme (NIWRMP)) are largely aligned with international IWRM principles.
- Implementation gap persists: Scoring based on IWRM Global Water Partnership shows a steady decline from policy (moderate/strong) to financing (very weak), confirming that Ethiopia's IWRM challenge is operational and institutional (translating policy into practices)
- Pilots proliferate but could not scale: Despite numerous successful pilots, only few transitioned to sustainable and basin-wide practices due to slow uptake, institutionalisation, and lack of sustainable financing
- Systemic barriers dominate chronic donor dependency, unclear institutional mandates, weak policy enforcement capacity, fragmented data systems, and lack of coordination.
- Two basins shared systemic constraints: While the upper Abbay Basin, largely rural and affected by high sediment loads and the upper Awash Basin, more urbanised and challenged by pollution pressures, face distinct environmental conditions, both experience similar institutional and governance bottlenecks. This suggests that many of the challenges are systemic and national in nature, requiring coordinated solutions at the national level.

Priority Recommendations:

- Strengthen basin governance: Legally empower basin offices with clear mandates for regulation and enforcement; make basin plans binding for sector investments.
- Establish sustainable financing (IWRM Financing Strategy): Create domestic budget lines for basin operation & maintenance, introduce basin service charges, payment for ecosystem services (PES), innovative financing mechanisms, and transition from donor-dependent projects to programmatic funding.
- Build integrated data systems: Mandate a national basin information management platform with interoperability across all donor and government systems.

- Institutionalise sustainability and scale-up pathways: Require all projects to include binding sustainability and scale-up plans co-signed by implementing and government entities.
- Empower local watershed management by building the institutional capacity of kebeles and woredas through targeted knowledge transfer, and by formalising their role within cross-sectoral coordination platforms to ensure inclusive stakeholder participation in all planning and implementation processes.
- Ethiopia must shift from demonstrating IWRM in isolated pilots to operationalising it at scale through the NIWRMP, ensuring basin institutions have the mandate, and capacity (finance, staffing and tools) to manage water resources sustainably and equitably.

Introduction and context

The imperative for integrated water resources management

Ethiopia faces mounting water challenges: rapid population growth, urbanisation, agricultural expansion, industrial development, pollution, and climate variability are intensifying competition for finite water resources. The Awash Basin, Ethiopia's most economically vital resource, is already severely stressed with critical water quality deterioration and groundwater depletion. The upper Abbay Basin faces land degradation, and erosion has resulted in rapid sedimentation, threatening hydropower reservoirs and irrigation infrastructure in the basin. These pressures demand a fundamental shift from fragmented, sectoral development approaches to integrated basin-based management.

Ethiopia's IWRM journey

Since adopting the National Water Resources Management Policy in 1999/2000, Ethiopia has made notable progress:

- Policy and legal frameworks: Water resources management proclamation (197/2000), national Water Sector Strategy (2001), and recently endorsed Basin High Council Proclamation (1375/2025).
- Institutional architecture: Establishment of basin development offices/authorities in major basins.
- Strategic planning: Development of strategic basin plans for seven major basins and launch of the NIWRMP in 2024.
- Implementation experience: A wealth of donor-funded and government-led pilot projects demonstrating innovative approaches to catchment protection, water allocation, groundwater governance, and digital decision-support.

The persistent challenge

Despite these achievements, implementation remains fragmented, underfunded, and uneven. Sustainability of interventions is not guaranteed, and a stronger enabling environment (sustainable financing, implementation capacity, weak data and information system, capacity constraints and policy practice gap) lack for scaling up successful models. This policy paper

addresses the critical question: How can Ethiopia transition from a landscape of isolated IWRM pilots to a coherent, nationally scaled, and sustainable IWRM system?

Key findings: The implementation gap

Strong policy foundation, weak operational reality

The assessment of Water Policy and Regulatory Framework Performance using the Global Water Partnership (GWP) IWRM framework reveals a clear pattern:

Table 1: Ethiopia's Water Policy and Regulatory Framework Overall Performance

Pillar	Rating	Snapshot
Enabling environment	Moderate	Good policies and laws, but weak enforcement and practical implementation
Institutional arrangement	Weak/Moderate	Constrained by capacity limitations and unclear mandates, weak coordination, decentralisation, and basin governance
Management Instruments	Weak/Moderate	Limited monitoring, water allocation enforcement, and basin plan implementation
Financing	Very weak	WRM is underfunded, no proper balance between public and external financing. Government budgets focus mainly on development, leaving management under-resourced

The policy and regulatory framework performance decline steadily from policy to implementation instruments and financing, confirming that Ethiopia's IWRM challenge is not foundational, but operational and institutional.

Beyond the pilot phase: Mainstreaming IWRM for nationwide impact

Ethiopia hosts numerous successful IWRM pilots, demonstrating a range of innovative approaches across different contexts. These include market-based catchment protection mechanisms that link upstream communities with downstream water utilities in urban areas, as well as integrated landscape management initiatives that combine watershed restoration with livelihoods and water, sanitation, and hygiene (WASH) interventions. Other examples feature water quality monitoring and pollution control frameworks paired with institutional strengthening efforts, alongside digital observatories, decision-support tools, and water accounting systems. Systematic aquifer assessment and monitoring networks further illustrate the technical depth of these efforts.

The paradox is that while these pilots demonstrate technical success, they remain project-bound and have rarely transitioned into sustainable basin-wide systems. When donor funding

ends, technical capacity, data systems, and coordination functions deteriorate, leaving promising innovations unable to achieve lasting impact at scale.

Current status of IWRM

An assessment of the current IWRM implementation reveals a landscape where the foundational pillars are present in structure but are weak in function. Regarding the enabling environment, while policies exist on paper, the reality is characterized by a lack of financial commitment; domestic financing is constrained, and the sector remains reliant on unsustainable, donor-funded pilots with little sustained budget lines for core operations. When examining institutional arrangements, the framework suffers from a profound mandate ambiguity, with overlapping/ambiguous responsibilities among ministries and regional bodies leading to confusion. Although coordination platforms like basin high councils exist, they are largely non-functional and lack the authority to enforce integration. Finally, concerning management instruments, the status is one of fragmentation. Data systems remain siloed and non-interoperable, developed in parallel by various projects, which prevents the emergence of a unified, evidence-based approach to water management and cripples the ability to monitor and allocate resources effectively.

Key challenges

The path to sustainable IWRM is obstructed by critical challenges that directly undermine each of the three pillars. These constraints are not isolated to specific contexts but represent systemic, national-level failures, as evidenced by their identical manifestation in the contrasting upper Abbay and upper Awash Basins.

Within the enabling environment, the most immediate challenge is the absence of predictable financing. Without sustained budget lines or effective cost-recovery mechanisms like water-use fees, the entire system is rendered unsustainable from the outset. This financial fragility is a national constraint, crippling both the rural, agriculturally dominated upper Abbay and the urbanised, industrialised upper Awash, where innovative mechanisms like PES pilots remain limited without a reliable financial foundation.

This financial weakness is compounded by a severe capacity deficit in the institutional arrangements pillar. Basin offices lack regulatory autonomy, and the constant restructuring of institutions leads to a loss of institutional memory and stability. The case studies confirm this as a universal issue; both basins suffer from fragmented institutional mandates, where overlapping responsibilities prevent coherent action, whether in managing community watersheds in the upper Abbay or addressing complex urban-rural linkages in the upper Awash.

Furthermore, the challenge of weak enforcement, stemming from a lack of staff, infrastructure, logistics, and digital tools, means that even when regulations exist under the management instruments pillar, they are rarely applied. This results in a culture where illegal abstractions and pollution go unpunished, rendering the legal framework ineffective. This dynamic is explicitly highlighted in the case studies, which cite weak enforcement of permits and regulations as a primary constraint across both basins. This enforcement gap is further exacerbated by data gaps that limit adaptive management, hindering the ability to respond to the upper Abbay's sedimentation challenges or the upper Awash's growing pollution crisis with the same effectiveness.

Together, these elements highlight a critical failure in the implementation chain from policy design to on-the-ground impact, confirming that Ethiopia's IWRM challenges are national, not basin-specific, and therefore require national solutions.

Opportunities for strengthening IWRM

Despite these systemic barriers, the diagnostic itself points to clear and actionable opportunities for strengthening IWRM by directly addressing the identified weaknesses. To secure the enabling environment, a primary opportunity lies in shifting from donor dependence to institutionalised financing by advocating for dedicated national budget lines and operationalising cost-recovery mechanisms, such as pollution charges and abstraction fees, to create a self-sustaining financial loop. In terms of institutional arrangements, there is a significant opportunity to move beyond nominal coordination by legally mandating the functionality of bodies like basin high councils and resolving mandate ambiguities through a clear, legally enforced demarcation of responsibilities between federal ministries, regional bureaus, and basin authorities. Finally, to revolutionise the management instruments pillar, the current fragmented data systems present an opportunity to leapfrog into a digital era. By adopting a national data-sharing protocol and investing in interoperable, low-cost digital permitting and monitoring platforms, the sector can build a robust evidence base that shifts water management from a culture of personal networks and parallel systems to one of systematic, transparent, and data-driven decision-making.

Policy recommendations

Strengthen basin-level governance and authority

Basin offices exist but operate without legally binding mandates, adequate staffing, predictable financing, or sufficient authority over sectoral actors. They function more as planning entities than regulatory authorities and a coordination entity.

Recommendations:

- Establish basin organisations for all basins. Clarify and empower basin organisation mandates through targeted legal amendments, specifying decision rights for permitting, compliance enforcement, and conflict resolution.
- Make basin plans legally binding through the Basin High Council for all sector investments (irrigation, hydropower, urban development) across federal and regional levels.
- Operationalise the Basin High Council as an effective national coordination body with regular meetings, clear terms of reference, and binding decision-making authority.
- Strengthening coordination mechanisms between basin organisations and regional governments for effective implementation
- Establish basin compacts: Sign formal agreements between regional states sharing river basins as official instruments to govern shared water resources across jurisdictions.
- Create multi-level governance boards (through the basin high council) with binding decision-making powers, bringing together federal, basin, regional, and local actors.

Establish sustainable financing mechanisms

IWRM remains heavily donor-dependent with no sustainable domestic funding for basin operations, monitoring, or watershed rehabilitation. Without predictable finance, even the best institutions cannot function.

Recommendations:

- Develop and implement an IWRM financing strategy
- Create predictable domestic budget lines for core basin office functions (staff, O&M, monitoring) at both federal and regional levels.
- Introduce basin service charges; reasonable fees for water abstraction, wastewater discharge, and permit processing with revenues ring-fenced for basin management.
- Pilot and scale PES mechanisms to channel urban and private funds to upstream catchment protection.
- Establish transition funds to shift successful donor-supported initiatives to domestic financing, with donors co-financing the transition rather than just standalone projects.
- Explore blended finance and Public Private Partnership (PPP) models leveraging private sector investment and climate finance for watershed management and water infrastructure.

Build integrated water information systems

Data systems are fragmented across projects, donors, and institutions, limiting evidence-based decision-making. Information exists but is not interoperable, accessible, or routinely used.

Recommendations:

- Mandate a national basin information management platform with legally required interoperability standards for all donors and government systems.
- Institutionalise successful observatories into government workflows, embedding them within basin office structures and budgets.
- Develop basin dashboards providing real-time data on hydrology, water quality, groundwater levels, and permit compliance to support allocation and enforcement decisions.
- Prioritise surface and groundwater data through sustained investment in monitoring networks, aquifer mapping, and data management systems.
- Establish a national data-sharing protocol clarifying data ownership, access rights, and interoperability requirements across all water-related institutions.

Shift from project-based to programmatic IWRM implementation

Successful pilots rarely transition to permanent systems due to lack of institutional absorption, sustainable financing, and formal handover mechanisms.

Recommendations:

- Require all donor-funded projects to include binding handover and scale-up plans, co-signed by implementing and government entities before project approval.
- Embed scaling strategies from project inception, identifying pathways to institutionalisation within government structures and budgets.
- Consolidate fragmented projects into long-term basin programmes under the NIWRMP framework, with clear IWRM outcomes and aligned donor investments. Make the NIWRMP as a nationally ratified financing model for sustainable water resources management.
- Establish a national IWRM scaling mechanism within NIWRMP to programmatically expand proven interventions (sediment control, incentive-based protection, groundwater governance packages , etc.).

Institutionalise capacity development pipelines

High staff turnover, limited technical expertise, and weak institutional memory undermine long-term capacity. Training is often project-based rather than systematic.

Recommendations:

- Create formal university-basin office partnerships for secondments, MSc programs, and short-course training tied to basin-level placements.
- Establish structured career pathways and internships for water professionals with incentives for retention and performance.
- Develop a national IWRM learning system to capture, share, and apply lessons across basins, preventing "reinvention of wheels."
- Fund embedded technical advisors for 3-5 years to transfer skills and strengthen institutional memory.

Deepen stakeholder participation and equity

Participation is often consultative rather than influential. Communities, women, youth, and private users are underutilised partners in IWRM.

Recommendations:

- Move from consultation to co-decision mechanisms, especially at sub-basin level, with formal roles for water user associations, watershed committees, and community representatives.
- Strengthen recognition of customary institutions and indigenous knowledge in formal basin governance.
- Introduce transparent upstream-downstream benefit-sharing mechanisms to address equity and incentivise catchment protection.

- Establish inclusive stakeholder platforms at national, basin and sub-basin levels with clear terms of reference, regular meetings, and documented influence on decisions.

Strengthen climate resilience integration

Climate risk is acknowledged but not systematically embedded in allocation rules, infrastructure design, or adaptive management.

Recommendations:

- Mainstream climate scenarios into water allocation rules, basin plans, and infrastructure investment decisions.
- Embed drought and flood protocols in basin planning, with trigger mechanisms for adaptive management.
- Promote nature-based solutions (watershed rehabilitation, managed aquifer recharge, wetland restoration) as cost-effective climate adaptation measures.
- Strengthen early warning systems and link them to operational allocation and emergency response decisions.

Conclusion and call to action

Ethiopia has built a strong IWRM foundation and demonstrated considerable innovation through diverse pilots and partnerships. The critical next step is systemic reform to address sustainability and scale.

The challenge is not innovation; it is institutionalisation.

The upper Abbay and upper Awash case studies make this clear: technical successes consistently fail to achieve systemic change due to the absence of sustainable financing, weak institutional mandates, fragmented data systems, and lack of formal handover mechanisms.

The way forward requires:

- Political will to empower basin offices with real regulatory authority.
- Financial commitment to shift from donor dependence to sustainable domestic financing.
- Systemic thinking to replace fragmented projects with programmatic, scaled approaches.
- Partnership alignment behind the NIWRMP as the national framework.

The time for isolated pilots is over. Ethiopia must now move from demonstrating IWRM to operationalising it at scale, ensuring basin institutions have the mandate, finance, and tools to manage water resources sustainably and equitably for generations to come.

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