POLICY PAPER

# Financing green water: Mobilizing different sources of finance for Water-smart Forest and Landscape Restoration (W-FLR)



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Image 1. Diversified income through agroforestry on restored land in Kenya. Source: SIWI

# Executive summary

## Key messages

- **Financing is a key barrier**. Restoration pledges are far ahead of restoration finance, as countries commit to restore degraded landscapes to strengthen climate resilience, biodiversity and livelihoods. Pledges under the Bonn Challenge and AFR100 are large, but implementation lags well behind. Long-term, diversified funding, not ambition, is what holds back the full implementation of restoration initiatives from pilot to scale.
- **Integrating water makes the investment case stronger**. Water-smart Forest and Landscape Restoration (W-FLR) ensures that hydrological processes are sufficiently integrated in FLR interventions, reducing risks to hamper the impact and long-term viability of restoration initiatives. W-FLR also broadens restoration finance beyond carbon and biodiversity to include water security, climate adaptation, agricultural productivity and livelihoods, which brings in more investors and revenue streams. As an investable proposition, W-FLR speaks at once to climate, biodiversity, watershed, and local-development finance agendas.
- **No single financing instrument is enough**. Different finance streams need to be combined and sequenced across the restoration lifecycle. Public and sovereign finance underpins the whole initiative. Development finance reduces early-stage risk and prepares for scaling. Blended and impact finance takes restoration enterprises from pilot to scale. Market revenues and results-based payments, including wood and non-timber forest products (NTFP) value chains, water funds and payments for ecosystem services (PES), keep restoration going over the long term.
- **Credible hydroclimatic data is the common requirement of investments in W-FLR**. Each category of finance addressed in this paper depends on reliable evidence of impact to safeguard the integrity of investments through data quality assurance and quality control (QA/QC) protocols and monitoring, reporting and verification (MRV) standards. Yet water outcomes such as soil moisture, groundwater recharge and streamflow are rarely included in reporting systems, which is a major barrier to investment.
- **Financing is a governance function, not only a technical exercise**. SIWI's Water Governance Framework identifies access to finance as one of eight core governance functions (Jiménez et al., 2020). Mobilizing finance for W-FLR depends on policy anchoring, cross-sector coordination, secure tenure and benefit-sharing, and stakeholder capacity to ensure projects in water-smart landscape restoration are "bankable" and ready for implementation.

## Recommendations for action

- **Governments should anchor W-FLR in national planning and build investment-ready pipelines**. Water resources and hydrological processes should be integrated into national restoration strategies, NDCs, NAPs and budget cycles. By using W-FLR Roadmaps key stakeholders can co-develop prioritized project pipelines that are ready to present to climate funds and investors.
- **Donors and development finance institutions should fund hydrological baselines and agree MRV standards from the start**. Grant and concessional finance should be directed towards establishing hydrological baselines and MRV systems early in a W-FLR project. All partners should agree on shared MRV standards and data quality protocols (QA/QC), including hydrological indicators, before investment begins.
- **Development finance institutions, philanthropic funders and governments should build risk-sharing into every financing instrument**. First-loss capital, guarantees and political risk insurance should be used to attract private investment and to reduce the debt risk carried by national budgets. Blended vehicles should combine grants, loans and equity so that capital matches each project's level of risk and maturity.
- **Implementing organizations and investors should link restoration finance to water-smart markets,** ensuring long-term viability and impact by developing sustainable wood and NTFP value chains in parallel with other complementary financing. They should also link upstream restoration to downstream beneficiaries through water funds and PES, supported by secure land tenure and fair benefit-sharing.
- **Pair capital with capacity development and inclusive governance**. Every financing package should include technical assistance so that national and local actors can prepare proposals, negotiate PES contracts and maintain MRV systems over time. Finance should reach women, youth, smallholder farmers and marginalized land users, not only larger implementers. Projects should be designed to benefit communities, stakeholders and vulnerable groups from the start.



Image 2. Visiting the restoration site of a LoCoFoRest participant in Nepal. Source: SIWI

# 1. Introduction

Restoring degraded landscapes and forests can increase ecosystem productivity and broader ecosystem services to achieve the "triple wins" improving rural livelihoods, water resilience, and climate resilience in the face of increasing drought or other climate related disasters. The Water-smart FLR (W-FLR) Tool gives countries a practical way to target the water benefits of restoration, making them visible, measurable and attractive to investors (SIWI, 2025). Building on the standard FLR concept of regaining ecological health and boosting human well-being across deforested or degraded lands, by addressing biodiversity, local livelihoods, and multi-use landscapes through participatory governance (Guariguata et al. 2021), the W-FLR methodology ensures that hydrological considerations are being integrated throughout FLR initiatives.

The FAO SOFO 2026 report stresses that the cost of inaction exceeds the cost of restoration, and that, if done right, FLR can generate returns of up to USD$30 per USD$1 invested, while it is necessary to consider that the results of a restoration intervention are case and site specific (FAO, 2026). W-FLR sits within a global restoration agenda with considerable political ambition. The Bonn Challenge, launched by Germany and IUCN in 2011, aims to bring 350 million hectares of degraded and deforested land into restoration by 2030, and over 210 million hectares have been pledged by more than 60 countries, subnational governments and private partners. AFR100, the African Forest Landscape Restoration Initiative, is Africa's regional contribution to this goal. Launched in 2015 and endorsed by the African Union, it aims to bring 100 million hectares into restoration by 2030. Implementation, however, lags well behind these pledges. The gap between hectares pledged and finance disbursed on the ground is where W-FLR can add value. By making the water benefits of restoration visible, measurable and attractive to investors, W-FLR can help turn existing pledges into financed, implemented and monitored restoration.

In this paper, we will present different finance instruments, and how they can be combined and sequenced across the lifecycle of a restoration initiative. We will address sovereign and public debt instruments, development finance (grants and concessional multilateral and bilateral funds), blended and impact finance for restoration enterprises, and market-based revenue and results-based payments. All in all, strengthened funding-mobilization capacity is a governance function essential to design, implement and evaluate water-smart investments in forest and landscape restoration, aligned with SIWI's Water Governance Framework (Jiménez et al., 2020), not just a technical or financial exercise.

## Why is water-smart FLR a strong investment case?

- **Integrating water lowers investment risk.** Restoration that ignores hydrology risks reducing

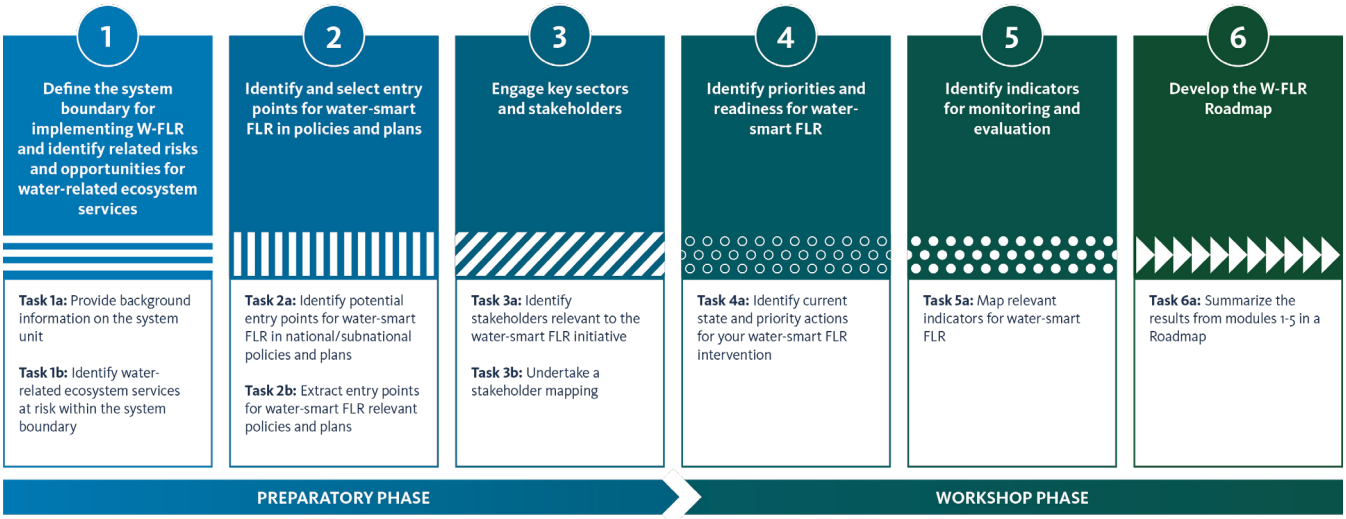



Figure 1. W-FLR Tool Implementation Steps to Action. Source: SIWI

local water availability and landscape resilience, with costs for downstream users and for the long-term survival of the restored landscape.

- **Integrating water widens the scope of restoration finance** beyond carbon sequestration and biodiversity, reaching a multitude of investors, finance instruments and revenue opportunities available to support different stages of a restoration operation.
- **Credible data is key when turning W-FLR into an investment case.** Donors, climate funds and investors increasingly need solid evidence of hydrological and socio-economic impact before they commit funds, and gaps in ecosystem monitoring are among the main barriers to investment.



Image 3. Monitoring restoration operation using agroforestry methods. Source: SIWI

# 2. Categories of finance for different stages of a W-FLR initiative

The gap between restoration ambition and restoration finance is large and well documented, but it is even greater when accounting for water-smart restoration finance, or finance that restores landscapes and ecosystems to ensure that water systems and the hydrological cycle are also restored.

Restoration finance needs to quadruple from 2022 levels of US$64 billion to US$296 billion by 2030 to reach global restoration targets while contributing to climate and biodiversity goals (UNEP, 2024).

Ensuring water is a part of restoration finance has different risk profiles, time horizons and capital needs:

- **Preparation and piloting** need grant-based, risk-tolerant capital to generate evidence.
- **Scaling** needs public climate finance and blended structures that absorb risk.
- **Long-term operation** needs recurring revenue from those who benefit from restored hydrological services and regulation of extreme events.

The categories below follow this sequence according to investment and project lifecycles. For each, the brief sets out the main instruments, why they fit W-FLR, and the access barriers that governance and capacity development must address. While public finance provides most of the finance for this area, there are additional opportunities for private finance through biodiversity, green water, and carbon credits, regenerative agriculture, and impact investing (UNEP, 2024; Kauffman, et al., 2014).

Across the identified categories, credible hydrological data is the common requirement. It can turn a restoration pilot into a bankable proposition. Credible hydrological data and broader data quality assurance and quality control of that collected data is ensured through MRV systems developed as an essential component of investment projects.

In Africa, forest restoration financing applies general green or climate finance through specific financing vehicles and projects. Financing for water-smart FLR in Africa is presented in this paper in an evidence-based format, listing financing instrument types with practical cases to showcase these active financing vehicles.

**It is important to note that governments, development banks or projects can deploy multiple financing instruments at once**. For example, the Central African Forest Initiative (CAFI) finances forest preservation and climate resilience in Central Africa through a US$100 million Private Sector Investment Facility and blended finance initiatives (e.g. Canopy Trust and Pro-Congo), with concessional loans, first-loss capital, and performance-based grants and even programmes on payment for ecosystem services to engage local communities. To advance water-smart FLR, blue finance is also an emerging field that can leverage similar models.

Four categories of finance are covered in this paper, distinguished by capital sources (public, private), risk bearing receipt, and lifecycle stages of projects (See Table 1).

## 2.1 Sovereign and public debt instruments - Underpinning the entire lifecycle

Governments provide almost three-quarters of finance for restoration with sovereign and public debt instruments, as well as from domestic revenue mobilization. In public finance, domestic revenue mobilization through taxes does not increase national debt and can be targeted to specific programmes that achieve multiple poverty reduction and climate vulnerability targets such as payment for ecosystem service schemes.

### Sovereign green bonds

A key model applied in Africa today is **Sovereign green bonds** which raise conventional debt earmarked for eligible green projects, which can include afforestation and restoration.

Nigeria's second sovereign green bond, issued in June 2019, attracted demand of more than twice the amount offered. The ₦15 billion (US$49.02 million)[1] raised was to finance afforestation, reforestation and ecological restoration projects alongside off-grid solar and wind.[2] However, this case also highlights the risk with green-

Table 1. Categories of landscape restoration finance – proven across Africa

| CATEGORY | MAIN INSTRUMENTS | LEADING INSTITUTION(S) | CASES FROM AFRICA FEATURED | LIFECYCLE STAGE |
|---|---|---|---|---|
| **1. Sovereign and public debt instruments** | Green bonds, debt-for-nature swaps | National governments | Nigeria, Gabon | Underpinning the entire lifecycle |
| **2. Development finance (Grants and concessional multilateral and bilateral funds)** | GEF, GCF, bilateral programmes, small grants | Governments, NGOs, communities | GEF-8 ERIP, FAO–BMZ AFR100 | De-risking investments |
| **3. Blended and impact finance for restoration enterprises** | Grants, loans and equity to enterprises; first-loss funds | Local non-profits and restoration enterprises | TerraFund for AFR100 | Scaling |
| **4. Market-based revenues and results-based payments** | Wood and NTFP value chains, Water funds, PES, jurisdictional carbon payments | Upstream land users, jurisdictions | Upper Tana–Nairobi, Lunyangwa, Oromia | Long-term operation |

1 2019 exchange rate

2 Green Bonds in Africa: Investing for a Sustainable Future - Green Central Banking

bond-financed afforestation projects. As green bonds are debt instruments, governments must service them regardless of whether the financed projects deliver their intended climate benefits. The model highlights the importance of planning for risks and foresight from a project's initial design, investing in local implementation to ensure results and continuous data reporting with rigorous MRV systems that should be agreed from the start.

### Debt-for-nature swaps

For countries with high debt-to-GDP ratios, debt-for-nature swaps offer a debt restructuring option. Under these instruments, a government refinances or buys back part of its sovereign debt on more favourable terms and commits the resulting savings to nature conservation or restoration initiatives.

In August 2023, Gabon became the second country in Africa after Seychelles to successfully conclude a debt-for-nature swap, refinancing US$500 million of sovereign debt with the Gabon Blue Bond model. The Government repurchased outstanding bonds representing nearly 4 percent of its total public debt and replaced them with a blue bond maturing in 2038. The US International Development Finance Corporation (DFC) lowered the cost of the new borrowing and provided risk insurance. The debt-for-nature swap is expected to channel US$163 million to conservation over 15 years, combining an annual allocation of US$5 million with an endowment intended to sustain funding beyond the bond's maturity.[3] In turn, the Government is ensuring key reforms to i) introduce marine spatial planning, ii) placing 30 percent of its waters under biodiversity protection,[4] and iii) improving fisheries management. Although the bond focuses on marine conservation, it is also transferable to landscape and watershed restoration and serves as a regional model, pairing debt relief with enforceable policy commitments, credit enhancement and a long-term endowment for Gabon.

Debt instruments can mobilize large volumes of capital but come with key political risks and wider risks for national governments that can be shared with risk-sharing design from the start. The success of these instruments depends on project pipelines and rigorous data collection for quality assurance and quality control of data to report on the integrity of progress. With rigorous MRV frameworks that can show results, including hydrological ones, sovereign and public debt instruments can serve as a model for projects across Africa.

## 2.2 Development Finance (Grants and concessional multilateral and bilateral funds) – De-risking investments

In the early phases of project lifecycles, water-smart FLR needs funds providing below-market capital to ensure proof of concept and scalable results. FLR rarely attracts commercial capital in early stages as returns can take years and benefits are not standardized into return-on-investment models. Ecosystem services, such as soil protection and flood mitigation, are public goods that markets do not price, and investors perceive high risk. Development finance fills this gap with instruments such as grants and concessional capital from multilateral funds, bilateral partners and traditional development finance institutions to absorb early-stage risk. This also allows projects to build baseline data collection, MRV systems, community-based consultations, participatory governance models, and enabling policies and local capacity. In doing so, they allow restoration initiatives to demonstrate proof of concept and generate the evidence needed to attract larger public and private investment at scale and ensure the long-term success of investment vehicles.

### Multilateral climate and environment funds

Under GEF-8, the Ecosystem Restoration Integrated Program (GEF-ERIP) targets 20 countries, including Madagascar, Mozambique, Rwanda and South Africa. The Green Climate Fund's activities on forest and ecosystem restoration combine grants, concessional debt, guarantees and equity to attract private investment.[5] However, the GCF notes that ecosystem investment is held back by knowledge gaps and limited capacity

3 The Gabon blue bond represents a shared risk model focused on marine biodiversity, with co-benefits to climate mitigation, adaptation, and resilience efforts. DFC is sharing 50 percent of the risk with a group of eight private insurers. See DFC Political Risk Insurance to Support a Blue Bond Providing $500 Million for Ocean Conservation in Gabon | DFC

4 Linked to Target 3 of the Kunming-Montreal Global Biodiversity Framework (adopted by nearly 200 countries in December 2022), to effectively conserve and manage at least 30 percent of global land, freshwater, and ocean areas by 2030.

5 UN Forum on Forests. https://forests.desa.un.org/fr/node/1778

to monitor and assess the state of ecosystems.[6] Robust hydrological baselines therefore improve access directly, but highlight the importance of data collection and building in MRV systems from the start of this type of project design too. For example, using remote sensing for hydrological baselines and monitoring is essential, as it is very challenging to collect good field data from the areas in question. SIWI's experience with citizen science in the Zambezi basin highlights challenges in ensuring consistent data quality and comparability across sites. This marks a key challenge to address in project development early on.

## Bilateral programmes

A four-year FAO-led programme (2024–2027), funded by BMZ with EUR 40 million, supports local communities in the Democratic Republic of Congo, Kenya, Madagascar, Malawi, Togo and the United Republic of Tanzania. The programme advances the AFR100 goal of restoring at least 100 million hectares by 2030[7]. It provides direct financial and technical assistance to smallholder forest and farm producer organizations and Indigenous Peoples, improving their capacity to monitor and communicate restoration results.

## Small grants

The GEF Small Grants Programme (SGP) funds grants of up to US$50,000, with strategic projects of up to US$150,000 for scaling across a landscape. The SGP funds pilots and demonstration projects, using integrated approaches that combine a broad range of environmental and ecosystem benefits with direct benefits to local communities.

Therefore, grant windows from international organizations and development finance institutions are the natural place to finance the baselines for restoration design to develop the proof of concept to attract investors. However, they require buy-in from key donors and partners alongside governments, local community and civil society to provide a foundation for larger investments.



Image 4. Workshop from the Transforming Investments in African Rainfed Agriculture (TIARA) programme. Source: SIWI

6 GCF: https://www.greenclimate.fund/results/ecosystems-ecosystem-services
7 African Forest Landscape Restoration Initiative Programme

## 2.3 Blended and impact finance for restoration enterprises – Scaling

By combining grants, concessional loans and equity, and positioning public or philanthropic capital to absorb first-loss risk, blended mechanisms unlock financing for locally led small and medium restoration organizations that are too early-stage for commercial finance but have demonstrated restoration potential. Where conventional capital markets fail to reach restoration enterprises, blended finance offers a structured alternative.[8]

### TerraFund for AFR100: Enterprise finance for restoration at landscape scale

TerraFund for AFR100 illustrates how blended enterprise finance can be deployed at scale across highly degraded but water-critical landscapes in Africa. Managed by a consortium comprising the World Resources Institute, One Tree Planted, Realize Impact and Barka Fund, the initiative has deployed US$33 million in grants, loans and equity investment to 192 landscape restoration projects across 27 African countries. Individual awards range from US$50,000 to US$500,000 with technical assistance and monitoring support for enterprises. TerraFund for AFR100 Landscapes deliberately targets areas selected for their significance to regional food and water security such as the Lake Kivu and Rusizi River Basin or the Ghana Cocoa Belt.[9] [10] Field-collected data is combined with satellite imagery to also assess progress on environmental impact reported through the platform to ensure a robust MRV system.

Experience from blended and impact finance vehicles for landscape restoration points to several transferable lessons.

- First, flexibility is essential in project design to combine grants, loans and equity modalities into a single fund or project. TerraFund allows capital to be matched to the risk profile and maturity of each enterprise rather than applying a single financing modality to all recipients.
- Second, technical assistance must accompany capital to ensure local and national capacity is developed for long-term governance of investment programmes and continued MRV. Enterprise-level disbursements without capacity support rarely generate the monitoring data that investors and donors require to justify continued or scaled funding. Similarly, governments at national and regional or local levels must be engaged in this technical assistance to ensure continued engagement and continuity of restoration outcomes.
- Third, the availability of first-loss capital is a structural precondition for attracting institutional and private investment in contexts where restoration projects are perceived as high-risk and returns are long-dated. In a first-loss structure, a public agency, development finance institution or philanthropic actor agrees to absorb an initial tranche of losses before other investors are affected, thereby improving the risk-return profile of the investment for commercial co-investors and enabling capital mobilization at a scale that concessional or grant finance alone cannot reach.
- Fourth, MRV systems that combine field data with satellite imagery, such as the TerraMatch platform, are not simply a reporting requirement but an investment tool to ensure the integrity of investments. Satellite data can ensure independent verification of progress with credible impact data to reduce perceived risk and lower the cost of future finance. For W-FLR specifically, water outcomes, including soil moisture, groundwater recharge and streamflow, are rarely included in restoration MRV frameworks. Building hydrological indicators into impact measurement from the outset of projects is both a governance requirement and a financing strategy. This can make water-smart restoration more attractive to climate adaptation funds, watershed-service buyers and blended finance vehicles.

8 This type of finance includes the impact orientation, distinguishing these instruments from conventional commercial finance. Similarly, the enterprise-level disbursement distinguishes these from sovereign instruments such as green bonds or debt-for-nature swaps in the preceding sections.

9 TerraMatch: https://www.africa.terramatch.org/

10 World Resources Institute: Landscape Restoration Champions Across Africa Receive USD 17.8 Million in Financing from TerraFund for AFR100 | World Resources Institute

## 2.4 Market-based revenues and results-based payments – Long-term operation

Market-based revenues and results-based payments are the most durable source of long-term finance for W-FLR. They generate recurring income from the landscape itself instead of depending on donor cycles or public budgets. This income comes from two complementary streams. The first is the sale of products from restored landscapes, such as sustainably managed wood and non-timber forest products (NTFPs), which makes restoration a viable land use for those who manage the land. The second is conditional payments from those who benefit from restored ecosystem services, through water funds, payments for ecosystem services (PES) and results-based carbon payments. These payments are disbursed only upon verified delivery of a defined environmental service. This places a premium on robust MRV systems and on the prior establishment of a credible baseline — conditions that align directly with the data requirements of water-smart FLR. Precisely because payment follows verification, these instruments create a pre-financing gap that grants, concessional loans or blended vehicles must bridge during the restoration phase.

### Sustainable and scalable wood and NTFP value chains

Restoration is only scalable and lasting if restored forests and trees become a more attractive land use for local communities than the alternatives. The LoCoFoRest (Locally Controlled Forest Restoration) programme[11] was built on this premise. Between 2021 and 2025, it was led by the Swedish Forest Agency with SIWI and the Eco-Innovation Foundation and funded by Sida. The programme built the capacity of about 250 public, private and civil society actors in Burkina Faso, the Democratic Republic of Congo, Ethiopia, Senegal, Togo, Lao PDR, Nepal, Thailand and Vietnam. Together, the programme's participants delivered 130 Change Projects targeting the establishment of local sustainable wood and non-timber forest products (NTFP) value chains and related enabling environments (Figure 2). The main aim of the Change Projects was to ensure that restored forests improve the social and economic situation of the people who depend on the land, as well as reach restoration targets for biodiversity, carbon and water.

Several lessons from LoCoFoRest apply directly to financing W-FLR:

- **Value chains can turn restoration into a business case.** Integrated value chains, running from restorative forest management to new products and markets and on to the end customer, give smallholders and local entrepreneurs a reason to invest their own labour and capital in restoration. Growing urban demand for wood products, together with affordable small-scale processing technology, can link rural restoration to national bio-based economies.

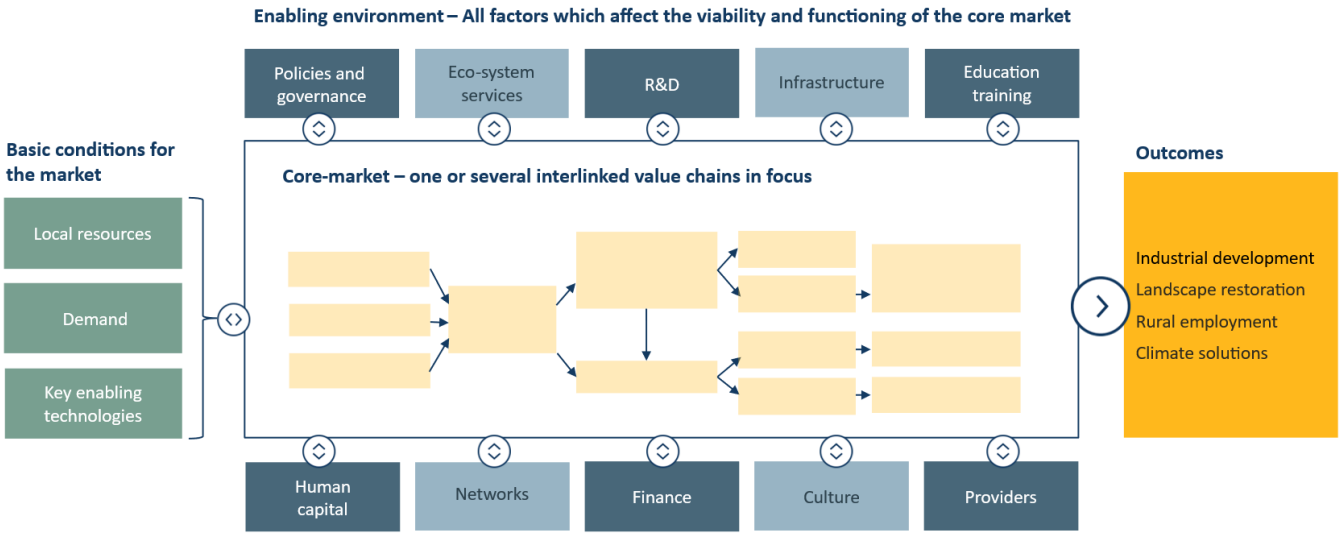



Figure 2. LoCoFoRest methodology for mapping an FLR market system and its enabling environment. Source: SIWI

11 LoCoFoRest - Skogsstyrelsen

- **Diversified systems bridge long forestry cycles.** In developing economies, farmers often prefer diversified agroforestry systems to monoculture plantations. Intercropping with NTFPs and high-value crops provides income while timber matures, which eases the cash-flow problem of long rotations. Diversified systems also improve soil fertility and reliable access to water resources and support the hydrological cycle, all of which links income generation directly to hydrological outcomes.
- **Value chains should be water-smart, so that product revenue does not come at the expense of local water availability.** Product markets reward volume, not hydrological function. Without a water lens, value chains can favour fast-growing, water-intensive species that reduce local water availability. Choosing species and management practices with water in mind, such as native multipurpose species like the shea and néré promoted in Benin's W-FLR Roadmap[12], helps ensure that product revenue and water security reinforce rather than undermine each other.
- **Good governance determines whether value chains last.** Secure land tenure, transparent value chains, stakeholder participation, gender equity and fair sharing of value along the chain are preconditions for scaling.

## Water funds

Water funds offer the most established model for translating upstream landscape restoration into sustained downstream investment. By pooling contributions from municipal water utilities, hydropower companies, agribusiness, local government and other downstream water users, they create a transparent governance and financing mechanism for watershed conservation and restoration. They also allow a focus on watershed management and catchment areas to ensure a focus on restoring water resources in any landscape and forest ecosystem initiatives.

The Upper Tana–Nairobi Water Fund (UTNWF), established in 2015, was the first water fund in Africa.[13] The UTNWF engages tens of thousands of smallholder farmers in the Upper Tana catchment and in 2021 transitioned to an independent Kenyan-registered public charitable trust, establishing a governance precedent for locally managed watershed finance.[14] Smallholder



Image 5. Maize storage in agroforestry farm in Kenya. Source: SIWI

12 Benin W-FLR Roadmap 2024

13 Green Finance Institute, Upper Tana–Nairobi Water Fund case study: https://www.greenfinanceinstitute.com/hive/revenues-for-nature/case-studies/upper-tana-nairobi-water-fund/

14 Natural Capital Project, Valuing Water Investments, Upper Tana Watershed: https://naturalcapitalproject.stanford.edu/research/projects/valuing-water-investments-upper-tana-watershed-kenya

farmers were provided technical assistance to adopt improved land and water management practices, as well as vegetable crops for the Nairobi market. This led to improved livelihoods and increased incomes, which promoted broad adoption and uptake, making the approach (called source water protection) sustainable.

### Payments for ecosystem services

Payments for ecosystem services (PES) schemes formalize the upstream–downstream relationship through conditional financial transfers from ecosystem-service beneficiaries to land managers. Land managers or community stakeholders receiving payments are tasked with protecting or restoring crucial ecosystem services, with a results-based model ensuring continued payment disbursement. As such, Wunder (2015) defines PES through the principle of conditionality: payments are linked to the verified provision of a specified offsite externality, such as water regulation or sediment reduction. This underscores the importance of robust MRV systems in this type of financing instrument as well, where payment is tied to continued monitoring and verification of results.

In Malawi's Lunyangwa watershed in the Zambezi River Basin, SIWI's TIARA programme is piloting a PES programme that has received funding from the Global Innovation Fund (GIF).[15] The scheme draws on a scientifically grounded metrics framework encompassing soil health indicators such as organic carbon content and soil loss rates, water availability parameters including soil moisture and green water stress. The framework, verified through remote sensing and hydrological modelling, is designed to generate the investor-grade evidence needed to attract further financing.

### Results-based carbon payments

In 2026, Ethiopia became the first country to have emission reductions verified and issued under the ISFL Standard: 14.9 million verified emission reductions representing tons of carbon dioxide equivalent, of which 12.4 million are available for carbon market transactions. At a larger jurisdictional scale, results-based carbon payments offer a complementary revenue stream for landscapes where forest conservation and sustainable land management generate verified greenhouse gas emission reductions. Ethiopia's Oromia Forested Landscape Programme (OFLP), supported by the World Bank's BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL), is expected to generate results-based payments of up to US$40 million for verified emission reductions by 2030 and focuses on deforestation hotspots with participatory forest management.[16]

The OFLP model in Ethiopia illustrates both the potential and the structural limitation of results-based financing instruments. While they may have high integrity, this is conditional on independent third-party verification. Restoration interventions, governance capacity and MRV systems must all be financed and operational before any payment is received. Revenue from sustainable wood and NTFP value chains can partly offset this delay by giving land managers income during the restoration phase. Overall, this sequencing strengthens the case for coordinating market-based and results-based instruments with the grant and blended finance categories described in earlier sections.

## 2.5 Sequencing the financial instruments across project lifecycles

No single instrument can finance W-FLR from preparation and piloting, to scaling and then ensure long-term operation. Each of the categories presented above fits a particular stage of project maturity and risk profile, and they are most effective when sequenced and used together. Public and sovereign finance (2.1) underpins the entire lifecycle: governments provide most restoration funding and set the policy and budgetary frameworks on which other sources of capital depend. In the early phases, grants and concessional development finance (2.2) absorb risks that commercial investors are unwilling to bear. They fund the establishment of hydrological and biophysical baselines, monitoring systems, participatory governance arrangements and proof of concept. Once restoration enterprises and landscapes show measurable results, blended and impact finance (2.3) can mobilize private capital, with public or philanthropic resources covering first-loss risk. Over the longer term, market-based and results-based payments (2.4) offer the most durable revenue stream, since the

15 Restoring landscapes and strengthening green water flows through innovative finance: https://siwi.org/latest/restoring-landscapes-and-strengthening-green-water-flows-through-innovative-finance/

16 ISFL, Oromia Forested Landscape Program: https://www.biocarbonfund-isfl.org/programs/oromia-forested-landscape-program

sustainable value chains and beneficiaries of restored ecosystem services pay for their continued provision. These instruments, however, depend on the verified results and pre-financing built up in earlier stages. Robust MRV systems are the common thread across all four stages, and they should include water outcomes such as soil moisture, groundwater recharge and streamflow. Data collected from the start of a project makes it eligible for each successive source of finance. Trees take years to mature, and payments come only after results are verified, therefore grants, concessional loans or blended vehicles can act as bridges over the restoration lifecycle. Together, the four categories form a pipeline:

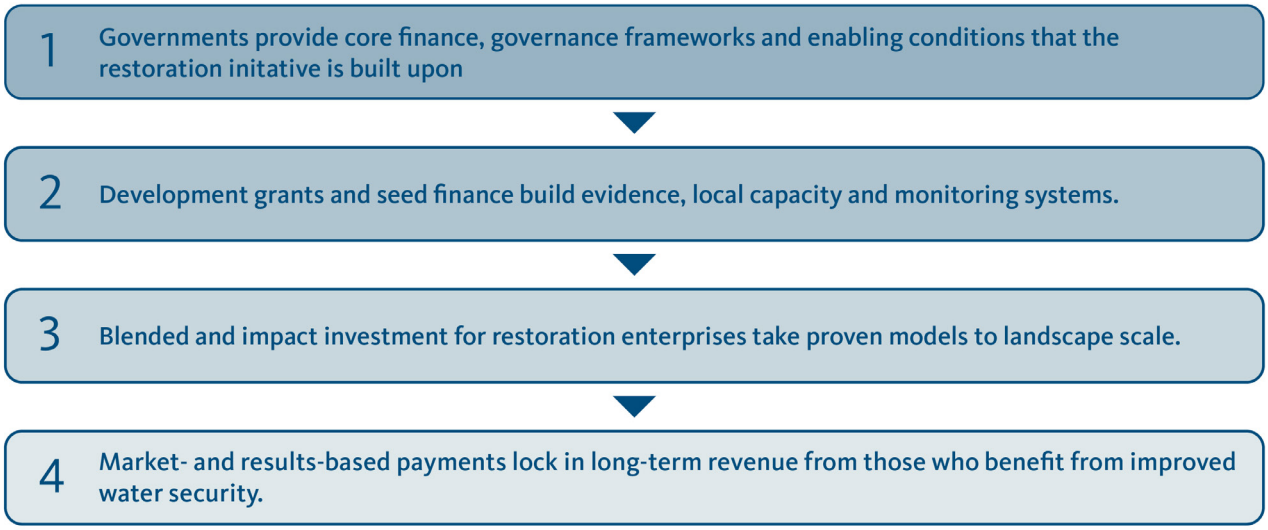



Figure 3. The sequencing of financial instruments across the lifecycle of a W-FLR initiative. Source: SIWI

In addition to the categories above, Outcome-based instruments, including Development Impact Bonds in which private investors provide upfront restoration capital and are repaid by outcomes funders upon verified delivery of agreed environmental results, represent an emerging complementary category. To date their application to landscape and forest restoration in Africa remains limited, but their structure addresses the pre-financing gap directly and warrants further piloting, particularly where measurable hydrological outcomes can support future scaling.



Image 6. Intercropping within agroforestry plantations as part of the TIARA programme. Source: SIWI

# 3. Strengthening water governance functions and enabling conditions for financeable W-FLR

Scaling up of water-smart FLR requires more than finance. An enabling environment needs to be established that embeds W-FLR in policy and strategy. Effective W-FLR also requires collaboration and coordination between the water and forestry sectors, as well as with agriculture, energy and other relevant sectors. This can be facilitated by development of cross-sectoral roadmaps for W-FLR, and robust hydrological monitoring systems. Establishment of sustainable financing schemes also requires clear regulations on ownership and access rights to enable establishment of contracts and agreements for benefit sharing. Finally, to scale W-FLR capacity and skills of stakeholders to engage in negotiations and resource mobilization are required. Strengthening financing capacity in isolation will thus not scale W-FLR — it must be paired with these relevant governance functions to be effective and sustained.

SIWI's Water Governance Framework (Jiménez et al., 2020) identifies **Access to Financing** as one of eight core governance functions that need to be strengthened to scale W-FLR:

**Access to Financing** (core function): Capacity to raise funds from multiple sources across the restoration lifecycle, forecast costs under different scenarios and budget within defined time horizons.

- **Policy and strategy:** Embedding W-FLR financing needs into national restoration strategies, NDCs/NAPs, and investment plans so funding requests have a clear policy anchor.
- **Coordination:** Multi-level, multi-sector platforms (ministries, development banks, utilities, communities) needed to align and blend finance sources — echoing LoCoFoRest's lesson that finance flows when local governance and incentives align with restoration objectives.
- **Planning and preparedness:** Costed, time-bound investment roadmaps and pipelines that make W-FLR proposals "shovel-ready" for climate funds and investors.
- **Monitoring, evaluation and learning:** Credible hydrological and impact data as the currency of trust for donors, PES buyers, and impact investors.
- **Regulation:** Contract, tenure, and benefit-sharing frameworks that make PES and investment agreements enforceable and equitable.
- **Capacity development:** Mobilising finance for W-FLR depends on building the capacity of practitioners and country teams to translate Roadmaps into bankable proposals, negotiate PES and results-based agreements, and maintain the hydrological MRV systems that investors require.

In addition, strengthening of core governance functions needs to be supported by a number of attributes important for creating enabling conditions that support funding streams to on-the-ground projects:

- **Bankable pipelines**: Targeting investment-ready, well-costed restoration projects.
- **Data and monitoring**: Credible hydroclimatic data and reliable MRV standards are required by funders to safeguard their investments.
- **Coordination**: Institutional readiness across agencies (forest, water, agriculture, finance).
- **Risk perception** and blended-finance structuring to de-risk early-stage restoration.
- **Equity**: Ensuring instruments reach women, youth, smallholders, and marginalized land users, not only larger implementers.
- **Plan to avoid long-term vs. short-term horizon mismatch** between ecosystem benefits and typical project finance cycles.

## Conclusion

The financial instruments needed for Water-smart FLR already exist. The challenge is to connect them. When public and concessional finance builds the evidence, enterprises and institutions that private and market-based investors need, each investment makes the case for the next one stronger. Water is what links these sources of finance. It gives ministries, investors and the communities who depend on healthy landscapes a concrete outcome they all value. With the 2030 restoration targets approaching, the W-FLR Tool and Handbook offer a practical way to make sure restoration lasts and benefits both people and water. By integrating water from the outset, restoration initiatives can enhance — rather than compromise — water security, ecosystem services and social equity.

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