

# Mapping Financial Mechanisms for Enhanced Rainfed Agriculture in Africa

## EXECUTIVE SUMMARY

Enhanced rainfed agriculture presents a massive opportunity for Africa to increase food security, reduce vulnerability to climate change and build sustainable livelihoods across the continent. Stockholm International Water Institute (SIWI) and South Pole set out to investigate the potential of different financial mechanisms, sources and approaches for scaling up enhanced rainfed agriculture.

### Background





Green water is rainfall that is available in the soil for plant growth through transpiration. The capture, storage and use of green water through enhanced rainfed agriculture is key to maintaining soil moisture and increasing productivity. It is a proven and cost-effective way to improve and increase food security, reduce vulnerability to climate change and build sustainable livelihoods across the continent.

Enhanced rainfed agriculture is particularly important in Africa, where 95% of agricultural production depends on rainwater and crop yields are amongst the lowest in the world. With limited alternative solutions, enhanced rainfed agriculture is the only viable option and a unique opportunity for both women farmers and for the growing proportion of unemployed young people. Yet, enhanced rainfed agriculture is either unknown or unaccepted and there are only a few examples of good practice in Africa.

The main barrier to accelerating enhanced rainfed agriculture is investment. To date, financing for this sector has predominantly come from public sources and has largely focused on blue water infrastructure.

Significant investment is required yet 80% of farmers in Africa are smallholders and are amongst the poorest in the world. Most smallholders suffer with low levels of infrastructure, poor access to markets and limited access to credit. Investors have limited interest in African agriculture viewing it as high risk due to country, market and climate risks, with poor rates of return. Green water and enhanced rainfed agriculture have remained largely invisible in the discourse around African development with a bias for high tech solutions and large-scale dams.

Contributions will be required from a range of different sources including foundations and private donors, international institutions, development banks, national and regional governments, corporates, impact investors, insurance and /or reinsurance companies and risk management services and of course, the farmers themselves. Six key approaches or mechanisms were identified and include public and philanthropic funding, carbon financing, payment for ecosystem services, corporate grants and sustainable procurement, impact investments and conservation finance and crop and weather insurance. These are outlined in the table overleaf and detailed in the longer version of this report.

MECHANISM	SOURCES OF FINANCE	POTENTIAL SOLUTIONS	CHALLENGES	OPPORTUNITIES	EXAMPLES
<b>Donor and philanthropic funding</b> 	Foundations, private donors International institutions, development banks, governments	Grants, subsidies	Accessibility typically through accredited entities such as NGOs or local governments • Limited scalability • Farmers do not often receive direct funding.	Topic-specific grants or funds could be developed for green water / rainfed agriculture that target NGOs, small-scale and subsistence farmers • Subsidies can focus on the acquisition of input materials for upscaling green water / rainfed agriculture • Farmers are indirect beneficiaries through inputs, training etc.	World Bank Adaptation Fund (Promoting Climate-Smart Agriculture in West Africa) The African Water Facility
		Concessional loans for governments	Lack of technical expertise for attracting funds • High administrative and reporting burden • Green water / rainfed agriculture is not a high priority for local governments or entities that provide the loans.	Green Climate Fund provides loans to governments and institutions but need to advocate for green water / rainfed agriculture.	Green Climate Fund (African Development Bank Programme for Integrated Development and Adaptation to Climate Change in the Niger Basin)
		Technical Assistance (TA) facilities	Smallholders can struggle to create scalable projects that access TA funding • Projects need to demonstrate potential to become bankable, often linked to an investment fund.	Blended finance approaches • Larger businesses struggle less to create bankable projects and to access TA funding.	Land Degradation Neutrality (LDN) Fund
<b>Carbon finance</b> 	International institutions and development banks	Carbon funds	Activities typically need to lead to verified emission reductions • Full implementation of monitoring, reporting and verification (MRV) systems • Lack of technical skills on MRV • Smallholder projects struggle to achieve sufficient scale.	Opportunity to work with organised farmer's groups to advocate carbon finance and green water/ rainfed agriculture • Synergies between carbon sequestration practices and green water / rainfed agriculture.	World Bank Carbon Finance Funds
		National governments	NDCs	Rules are still under development and are constantly changing • Full implementation of MRV systems • Lack of technical skills on MRV.	NDCs are determined by national authorities and contribute to an estimated future emissions reduction • Large scale implementations.
	Corporates	REDD+	Government-to-government agreements • Full implementation of MRV systems • Land tenure rights • Hidden burden of MRV and the struggle to get carbon credits for soil carbon sequestration.	Green water / rainfed agriculture could have a higher profile in national REDD+ strategies and increase the likelihood of funding through government-to-government or multilateral carbon funds.	
		Offsetting	Significant scale needed • Full implementation of MRV systems • Lack of technical skills on MRV • Interventions need to generate carbon credits, which is challenging for agricultural management.	Significant demand for nature-based carbon credits • Access to offsetting as a form of carbon finance is viable, especially for commercial farms • Integration of mitigation applications (solar panels) with green water solutions.	
		Insetting	Full implementation of MRV systems • Interventions need to generate carbon credits, which is challenging for agricultural management.	Significant demand for nature-based carbon credits • Insetting accessible form of funding for farmers and the partners along supply chains • Synergies between carbon sequestration practices and green water / rainfed.	Lake Naivasha Reforestation (Swiss retailer, Coop)
		SBT funding	Monitoring guidelines still under development, funding approaches still unclear • High potential, but questions are open regarding funding streams and eligibility of interventions.	Science Based Targets will generate additional demand, particularly for on-farm emission reductions, including soil carbon.	
		Corporate carbon funds	Similar to insetting/offsetting	Build resilience to climate change through climate-smart credits.	
<b>Payments for ecosystem services (PES)</b> 	National governments/ corporates	Green water credits	To date, limited ability to raise significant funds.	Public subsidies • Blockchain technologies could be used to improve the payment of the services.	Upper Tana-Nairobi Water Fund
		Water funds (PES)	Free rider issues • Generally accessible, but limited availability • Limited experience in Africa.	Collective action funds can engage a number of water users towards a collective common goal.	
		PES through state-owned utilities	Free rider issues • Currently few schemes exist • Difficult to ensure those living in poverty are not excluded from participating.	Blockchain technologies could be used to improve the payment of the services.	Equitable Payments for Watershed Services Programme in Uluguru Mountains, Tanzania
<b>Corporate grants and sustainable procurement</b> 	Corporates	Corporate sustainability grants	Few existing options with a focus on green water / rainfed agriculture.	Corporates tend to prefer giving grants to smaller organisations, rather than larger commercial partners • Localised funds and grants for small holders and subsistence farmers.	Knorr Sustainability Partnership Fund and Danone Ecosystem Fund
		Standards and certification	Certification costs can be an access barrier for smaller players • Green water / rainfed agriculture is not well represented in existing standards and certification schemes.	Certification schemes as entry for stronger green water / rainfed agriculture presence • Synergies to increase smallholder access to certification standards • Localised funds and grants for smallholders and subsistence farmers • Capacity building increases the adoption of practices and lowers the risk of failure (to all farmer segments).	International Water Stewardship Standard Rainforest Alliance certification
<b>Impact investments and conservation finance</b> 	Impact investors (e.g. Deutsche Bank, Credit Suisse, Rabobank, Mirova)	Microfinance	Financial illiteracy • Majority of smallholders are not aggregated for local trade • More suitable tools needed for assessing and managing risks in agricultural finance • Women less likely to access financial services.	Microfinance institutions (MFIs) and local agribusiness as providers of microfinancing and loans to smallholders • Connecting global financial markets via funds and microfinance programmes to improve water management in agriculture • Mobile services for facilitating accessibility and upscale • Potential synergy of a green water programme and carbon financing.	Calvert Impact Capital's microfinance through Oikocredit European Solidarity Financing Fund for Africa (FEFISOL)
		Bank loans	Green water / rainfed agriculture is not a specific topic • Lack of bankable projects particularly related to smallholders • Accessible for large-scale projects only.	Public-private partnerships for improving access and providing technical support.	Deutsche Bank's agricultural investments for more productivity and sustainability
		Investment funds	Does not have a water component • Africa is perceived as high risk & impacts of climate change.	Investment in technology for synergies between water programmes and carbon finance • Combining rainwater harvesting with solar panels.	Deutsche Bank's agricultural investments for more productivity and sustainability
<b>Crop and weather insurance</b> 	Insurance/ reinsurance companies (e.g. Swiss Re, Allianz, Munich Re, ACRE)	Parametric products, microinsurance	Limited number of services on the market • Early stage of development • Inaccessible solution for subsistence farmers.	Increased climate risks and lack of current protection by small-scale farmers provides room for scalability • Blend together with corporate sustainability funding and conservation finance • Municipalities and insurance companies could agree on a relevant threshold for specific watershed conditions and compensate individual farmers • Larger commercial farms can access these services.	Swiss Re's parametric insurance
		Risk management services	Needs more exploration within the African context • Need to build capacity within investor communities and farmer groups.	Services for supply chain actors and specific sourcing sites.	WINNERS project

## Insights

There is no single approach to financing enhanced rainfed agriculture. Specific mechanisms are suited to particular farming segments and contexts. Large-scale, commercial farmers have more potential to access bank loans or crop insurance due to the availability of collateral or ability to manage risk. Issues with financial literacy and access to capital suggests micro finance is better aligned to smallholder farmers.

Payment for Ecosystem Services are more effective when farmers are grouped into a collective whereas corporate certification and standards have impact on those in formal value chains.

However, there are a number of solutions emerging that have a potential for impact at scale. Donor and philanthropic grants reach smallholder farmers but are limited in terms of reach. Grants should therefore be used innovatively and to fund the public good component of enhanced rainfed agriculture, thus making it more attractive to mainstream financial sources.

Corporations are a relatively unexplored source of finance and can incentivise sustainable practices. There are opportunities to scale through certification and standards, funding innovative solutions, and mainstreaming agricultural practices along their value chains. Certification schemes can act as a key enabler to promote a more prominent role for enhanced rainfed agriculture.

Redirecting carbon finance presents a hidden opportunity. There is significant potential in carbon finance, resulting from the dynamic global offset market, insetting projects and Science Based Targets. Carbon finance and sustainability along corporate supply chains should be strongly integrated, as together they can provide a principal source of finance. Finally, crop and weather insurance presents an interesting option although it needs further development. Insurance options could also be blended with corporate sustainability funding.

**There is both a challenge and opportunity to increase investment into enhanced rainfed agriculture. To facilitate this investment at scale, this brief makes five suggestions:**

<b>Increase advocacy for green water and enhanced rainfed agricultural solutions</b>	Green water and enhanced rainfed agriculture are largely invisible in policy and investment decisions. It is difficult to finance concepts that are not well understood, that are used interchangeably and that are not widely used in principles, policies, framework criteria and standards. To increase financing, there must be clarity around the key terms and must be effectively advocated to policy makers, development experts and investment providers.
<b>Develop a credible and compelling business case</b>	Enhanced rainfed agricultural solutions have been around for centuries but are relatively unknown with limited evidence of the benefits. Proof of concept and stronger proof are essential to unlock mainstream funding sources from both the public and private sector. This is particularly true at farm level, but costs and benefits must be also be recognised in terms of climate resilience and rural regeneration.
<b>Recognise the need for knowledge development and capacity building</b>	Capacity building at farmer level is an essential investment both in terms of financial capacity and technical knowledge about techniques and solutions. Significant synergies thus exist with other initiatives, for example, those that increase smallholder access to certification standards or finance for broader purposes.
<b>Use technology to increase investment potential</b>	Innovative technologies can help overcome the negative perceptions of enhanced rainfed agriculture making it more attractive to the farmer, policy maker and the investor. Soil moisture sensors or combining rainwater harvesting systems with solar panels can produce higher yields. Blockchain applications can improve payment management and transparency for smallholders within Payment for Ecosystem Services models.
<b>Blend finance to de-risk more traditional instruments</b>	Clarify the role of public and private investors including blending in concessional finance to de-risk investments and leveraging private funding via supply chains. It is necessary to ensure projects become bankable through public bodies co-funding private activities or other blended solutions to ensure projects attract longer term sustainable funding.