Technical Report

Operationalizing the Enabling Environment Technical Assistance Facility

A rapid diagnostic and action framework for scaling water, soil, solar irrigation and mechanization solutions in Malawi and Zambia, with comparative insights from Ethiopia and Kenya.

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Acronyms

AoW	Area of Work (CGIAR Scaling for Impact Program)
ASEco	Adaptive Scaling Ecosystem classification
ATCC	Agricultural Technology Clearing Committee (Malawi)
ATI	Agricultural Transformation Institute (Ethiopia)
BII	British International Investment
BoP	Balance of Payments
CAADP	Comprehensive African Agriculture Development Program
CATSP	Comprehensive Agriculture Transformation Support Programme (Zambia)
CGAP	Consultative Group to Assist the Poor
CGIAR	Global Agricultural Research Partnership (formerly the Consultative Group on International Agricultural Research)
COMESA	Common Market for Eastern and Southern Africa
CPF	Country Partnership Framework (World Bank)
DFI	Development Finance Institution
ECS	Emerging Cooking Solutions (Zambia)
EETAF	Enabling Environment Technical Assistance Facility
ERB	Energy Regulation Board (Zambia)
FAO	Food and Agriculture Organization
FISP	Farm Input Subsidy Programme (Malawi); Farmer Input Support Programme (Zambia)
FRA	Food Reserve Agency (Zambia)
FX	Foreign exchange
FXD	Foreign Exchange Directive (Ethiopia)
GBA	Greenbelt Authority (Malawi)
GEACC	Green Economy and Climate Change Act (Zambia)
GESI	Gender Equality and Social Inclusion
GOGLA	Global Off-Grid Lighting Association
IFAD	International Fund for Agricultural Development
IMPIF	Irrigation Master Plan and Investment Framework (Malawi)
IWMI	International Water Management Institute
KYC	Know your customer
MEM	Malawi Economic Monitor (World Bank)
MFI	Microfinance institution
MWK	Malawi Kwacha
MoA	Ministry of Agriculture
MoF / MoFNP	Ministry of Finance / Ministry of Finance and National Planning
MoTI	Ministry of Trade and Industry
MRA	Malawi Revenue Authority
MSME	Micro, Small and Medium Enterprise
NAFIR	National Agricultural Finance Implementation Roadmap (Ethiopia)
NAIP	National Agricultural Investment Plan
NAMS	National Agricultural Mechanisation Strategy (Zambia)
NBE	National Bank of Ethiopia
PAYGO	Pay-as-you-go
PoD	Package of Deliverables
PPP	Public–private partnership
PV	Photovoltaic
QDS	Quality declared seed
RBM	Reserve Bank of Malawi
S4I	Scaling for Impact Program (CGIAR)
SADC	Southern African Development Community
SAFF	Sustainable Agriculture Financing Facility (Zambia)
SFFRFM	Smallholder Farmers Fertiliser Revolving Fund of Malawi
SIAZ	Solar Industry Association of Zambia
SME	Small and medium enterprise
SPIS	Solar-powered irrigation systems
SPS	Sanitary and phytosanitary
ToR	Terms of Reference
VAT	Value added tax
WASA	Water and Soil Accelerator
WDI	World Development Indicators (World Bank)
ZABS	Zambia Bureau of Standards
ZESCO	Zambia Electricity Supply Corporation
ZRA	Zambia Revenue Authority

Executive summary

What holds back the scaling of water, soil, solar irrigation and mechanization innovations, and where a focused facility can act.

At a glance

3
diagnostic countries: Ethiopia, Malawi and Zambia, with Kenya as the reference market

24
barriers in three country registers, each with a responsible actor and a confidence rating

9
priority bottlenecks and nine actions in the Enabling Environment Technical Assistance Facility (EETAF) action plan for Malawi and Zambia

The EETAF is designed to identify and address a focused set of high-priority policy, market and finance bottlenecks linked to scaling water and soil management solutions, private sector-led solar irrigation and inclusive mechanization, rather than to pursue broad regulatory reform.
The diagnostic draws on S4I flagship innovations: Scaling Private-Sector-Led Solar-Powered Irrigation Systems (SPIS) in Ethiopia, Scaling Inclusive Mechanization through Rural Entrepreneurship and Financial Innovation in Zambia, and the Water and Soil Accelerator (WASA) innovations in Malawi and Zambia. Kenya, where the ecosystem is most advanced, provides lessons.

> *"Binding constraints differ by country, but in all three the barrier that matters most is the cost and predictability of getting equipment into farmers' hands, not the absence of supportive policy."*

Each country has agricultural transformation policies that recognize irrigation, soil health and private-sector participation, but implementation remains uneven and the enabling conditions for commercial scaling are not yet in place.

Four constraints recur across countries

Foreign-exchange access
Cost and delay of obtaining Foreign Exchange (FX) to import pumps, panels and machinery.

Tax and customs
Uncertain duty, Value added Tax (VAT) and customs treatment of equipment.

Slow certification
Lengthy conformity assessment for proven equipment.

Mismatched finance
Repayment schedules not aligned with production cycles and seasonal cash flows.

Which farmers
The instruments can reach commercially oriented smallholders and emerging farmers first: those with access to water and some market linkage, who can service a lease, an instalment plan or a Sustainable Agriculture Financing Facility (SAFF) loan. The poorest households face more basic constraints in inputs, prices and markets (Section 6.2).

Institutions and political economy
Many barriers have institutional roots: how standards bodies, revenue authorities, subsidy programs, extension services and local government work in practice. For each priority barrier, the EETAF asks why it persists, and responds with institutional strengthening where capacity or coordination binds.

Context that shapes every country

Inflationary shocks

The Middle East conflict from February 2026 pushed up oil, fertilizer and food prices. Inflation reached **15.1%** in Ethiopia (August 2026) and **20.0%** in Malawi (August 2026).

Import dependence

Most irrigation and mechanization equipment is imported, so scaling is exposed to FX and trade shocks. Local assembly, fabrication, spare parts and repair are part of the enabling environment.

Energy

Unreliable or absent grid supply strengthens the case for solar irrigation but raises upfront costs.

Where input supply, farm-gate prices and market access are themselves unreliable, the report proposes, as a program design principle rather than an empirical finding, a **stepwise approach** that strengthens these fundamentals before scaling equipment-based innovations.

What the policy dialogues added

Lilongwe, Malawi - Youth Agribusiness Dialogue

Young agripreneurs ranked **access to finance** first: unrealistic collateral, high interest, slow loan and grant processes and limited financial literacy. They confirmed Malawi Bureau of Standards certification as a barrier and added three issues: unreliable, politically influenced farm-gate prices; weak market and import-regulation information; and digital registration and licensing systems that do not work well.

Lusaka, Zambia - Mechanization and Inclusive Finance dialogue (28 September 2026)

Three interdependent constraints: too few skilled operators and mechanics, finance blocked by collateral, and uneven access to machinery and services. Local manufacturers, service providers, banks, leasing firms and SAFF are the lead actors. Participants also raised compliance costs, expectations that services should be free, and barriers facing women.

From diagnosis to action

9

priority bottlenecks, scored on materiality, additionality, commercial and partnership potential

The highest-scoring bottlenecks are **customs and tax treatment of equipment**, **finance aligned to seasonal cash flows** and **FX and trade-finance access**. With the dialogue priorities, they form the basis of the **EETAF action plan** (Section 7.2): nine actions, each with lead actors, the EETAF's role, an outcome to track and a time horizon.

The report concentrates on the Malawi and Zambia dialogue outcomes, in line with the Package of Deliverables' focus on Malawi, Nigeria and Zambia. Ethiopia and Kenya are retained as comparative insights from solar irrigation work led by the International Water Management Institute (IWMI); Ethiopia's findings on FX and customs (E1, E2) are offered to the IWMI-led SPIS work. Nigeria is deferred pending program decisions, as related activities are still under development (Section 2.1).

Priority bottlenecks by country

Table 1 summarizes the top priority bottlenecks and the recommended EETAF response for each country.

Table 1: *Priority bottlenecks and recommended EETAF responses by country*

Country	Ethiopia SPIS: solar-powered irrigation systems (comparative case)	Malawi WASA: Water and Soil Accelerator	Zambia WASA: Water and Soil Accelerator innovations (mechanization, irrigation)
Top priority bottlenecks	**1.** Foreign-exchange access for imported solar pumps and components remains constrained in practice despite the 2024 float. **2.** Unclear duty/VAT and customs treatment of solar irrigation components. **3.** Farmers lack the collateral, ID and land documentation banks require.	**1.** Acute FX, fuel and fertilizer shortages and high borrowing costs. **2.** Lengthy hardware certification and restrictive import rules. **3.** Thin off-taker market; input subsidy design leaves little room for private soil-health and irrigation markets.	**1.** Shifting tax treatment undermines asset-finance and Pay-as-you-go (PAYGO) models. **2.** High interest rates and tenor mismatch for equipment finance. **3.** Low venture density; capital concentrated in a few firms.
Recommended EETAF response	Tariff-line and customs review for SPIS equipment; convene banks and SPIS suppliers on trade-finance and FX lines; co-design agent-led credit profiling with lenders, anchored in the National Agricultural Finance Implementation Roadmap - Ethiopia (NAFIR).	Map certification and import procedures (time and cost); position private delivery of soil-health and irrigation services within the reintroduced Farm Input Subsidy Programme (FISP); structure off-take as credit enhancement for the WASA Small and Medium enterprises (SMEs).	Extend the customs-guidance approach used for solar photovoltaic (PV) to irrigation and mechanization equipment; link WASA and mechanization SMEs to the SAFF credit window and leasing providers; build pipeline through the WASA incubator.

Ethiopia is shown as a comparative case; actions for Malawi and Zambia appear in the action plan (Table 12).

Further points for decision-makers

- **Public capital is contracting in Malawi.** The FISP allocation was cut by about 54% for 2026/27 and Greenbelt Authority capital grants by about 88% (Section 4.1). This is a design constraint: public co-investment cannot be assumed in any instrument design.
- **The lead priority needs validating first.** Customs and tax treatment scores highest but rests on Low-confidence evidence (E2, Z1). Before any investment, the EETAF will confirm current duty and VAT treatment with the Zambia Revenue Authority (ZRA) and the Malawi Revenue Authority (MRA). This is the first stage-gate in the action plan (Table 13).
- **The EETAF works on rules, the Catalyst on enterprises.** Actions are framed around standards, accreditation, customs and tax treatment and eligibility rules. Training delivery, deal structuring and supplier agreements are led by the WASA Agribusiness Catalyst (Section 7.2).
- **Who gains and who loses.** Section 6.4 sets out, for each top bottleneck, who benefits from the status quo, who bears the cost and which reform champions could move it. This also feeds Deliverable 2.
- **Outcomes, not outputs.** Each action now has an outcome, a baseline, a 12-month target and a contribution pathway to the package targets of 300 SMEs and USD 2 million mobilized (Table 13).

1 Scope and method

A rapid diagnostic of policy, regulatory and finance ecosystem barriers in Ethiopia, Malawi and Zambia, with linkage to Kenya findings.

1.1 Purpose

The Accelerating Agribusiness for Impact package aims to unlock inclusive, market-driven scaling for **300 agrifood SMEs** and catalyze **USD 2 million** through blended finance instruments, revolving facilities, monetary valued technical assistance and related investment pathways by 2030. Table 13 shows how each EETAF action is expected to contribute to these targets. This report responds to the first objective of the consultancy and feeds the subsequent deliverables: stakeholder mapping of scaling champions and the co-design of enabling instruments.

Following recent program decisions, the Package of Deliverables will focus primarily on Malawi and Zambia. Ethiopia and Kenya remain as comparative insights (Section 5; Annexes A and B). Nigeria is deferred due to budgetary constraints. It would be prioritised for a separate scoped rapid diagnostic to unpack same barrier register and scoring method in 2027.

1.2 Barrier domains covered

The diagnostic covers three barrier domains (Figure 1): policy and regulatory (agricultural, irrigation and input-subsidy policies; standards and certification; SPS; data and digital rules); trade and fiscal (duty and VAT treatment of equipment; customs classification; FX and import procedures); and the finance ecosystem (cost and structure of finance; collateral and KYC; guarantees and blended finance; investor presence). An institutional and governance lens is read into the root cause of every barrier. Market and infrastructure constraints are included only where they directly affect finance or regulation. Broad macroeconomic reform, land policy reform and infrastructure investment are treated as contextual.

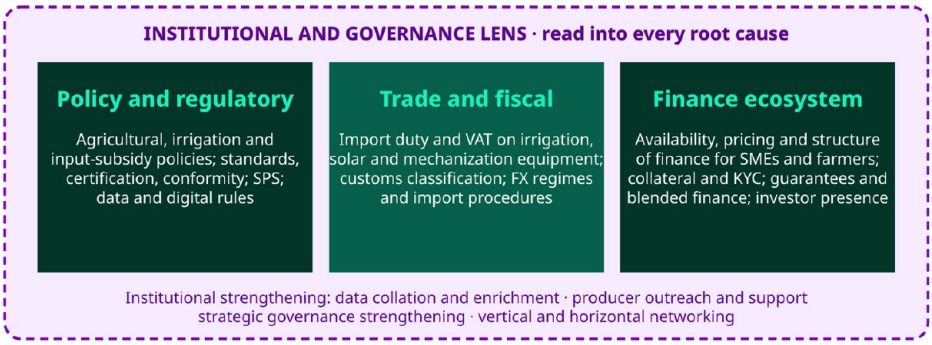


Figure 1: Barrier domains covered by the diagnostic, with the institutional and governance lens applied to every root cause. Source: Authors

1.3 Innovations and country focus

Table 2 sets out the solution tracks, the countries where each is diagnosed and its scaling ambition.

Table 2: *Priority innovations, diagnostic countries and scaling ambitions*

Innovations	Diagnostic countries	Scaling ambition and relevance
Water and Soil Accelerator (WASA)	Malawi (Central and Southern Regions); Zambia (Eastern, Central and Southern Provinces)	A three-year initiative (2024–2027) led by IWMI, scaling proven soil and water management interventions in Malawi and Zambia, where 85–90% of the rural population depends on rainfed agriculture. Five consortia (Catholic Relief Services (CRS), the Conservation Farming Unit (CFU), Total Land Care (TLC), Solidaridad and One Acre Fund) aim to reach one million farmers across one million hectares, across eight thematic areas including an enabling environment with appropriate financing.
Private-Sector-Led Solar-Powered Irrigation Systems (SPIS)	Ethiopia (diagnostic); Kenya (linkage).	Scaling SPIS through Public-Private Partnerships (PPPs) delivery models with PAYGO/Pay-As-You-Own financing, credit guarantees, blended finance and digital advisory.

Scaling Inclusive Mechanization through Rural Entrepreneurship and Financial Innovation	Zambia (primary)	Investment mobilization for mechanization, including facilitating pipeline deals and loans for mechanization in Zambia.

1.4 What WASA's innovations require from the enabling environment

WASA is a bilateral project with a broad portfolio rather than a single innovation. Table 3 maps its main interventions to what each need from the policy, trade and finance environment, and to the barrier domain where that constraint appears.

Table 3: *Enabling environment requirements and associated barrier domains for priority WASA interventions*

Intervention	What it requires from the enabling environment	Barrier domain
Irrigation and water-harvesting infrastructure (check dams, rainwater harvesting, community water storage, solar pumping where applied)	Affordable imported equipment; capital finance with tenors matched to asset life; water-use permitting; product standards and certification	Trade and fiscal; finance
Conservation and regenerative agriculture (minimum tillage, mulching, intercropping, rotational grazing, composting, soil amendments)	Functioning input supply and agro-dealer networks; extension capacity; secure land tenure for multi-season investment	Policy and regulatory; finance for input SMEs
Drought-tolerant seed systems and local seed production	Variety release and seed certification procedures; seed trade and movement rules; quality assurance for locally produced seed	Policy and regulatory; trade
Mechanization services and equipment	Duty and VAT treatment of machinery; asset finance and leasing; service-provider and hire models	Trade and fiscal; finance
Climate information and advisory services	Data-sharing rules between public and private actors; connectivity; mobile and USSD channels for low-connectivity areas	Policy and regulatory
Inclusive insurance, seed loan facilities and agroforestry-carbon packages	Agricultural insurance regulation; credit regulation for in-kind lending; carbon market rules, including Article 6 approval processes	Policy and regulatory; finance

Positioning the EETAF

WASA's cross-cutting outcome already commits to aligning policy, strengthening institutions and addressing credit, land rights and extension gaps, with women, youth and marginalized groups in at least 40% of activities. The WASA Agribusiness Catalyst, launched in 2026, offers technical assistance, performance-based grants and blended finance. The EETAF should be the **policy and finance counterpart** to the catalyst, working on the system-level barriers its SMEs and farmers encounter, not a parallel enterprise-support channel.

How this diagnostic treats the main WASA innovations

Irrigation technologies. Most exposed to FX, duty and certification barriers (M1, M2, Z2, Z6). In Malawi, cuts to Greenbelt Authority capital grants mean private and blended finance must carry expansion.

Seed systems. Depend on variety release and certification procedures that lag the Seed Act in Malawi (M7); Common Market for Eastern and Southern Africa (COMESA) and Southern African Development Community (SADC) harmonized rules may offer a faster route, though critics argue they favor commercial seed (African Centre for Biodiversity, 2017; Hunga et al., 2023).

Regenerative and climate-smart agriculture. Depend on subsidy design, secure tenure and extension. Malawi's FISP Mbeya organic fertilizer rule and Zambia's Comprehensive Agriculture Transformation Support Programme (CATSP) soil mapping and liming are the clearest entry points (Z7).

Climate information and advisory. Depend on public–private data-sharing rules and low-connectivity channels; Malawi youth asked for SMS, voice and Chichewa content.

Mechanization. Depends on operator and technician skills, spare parts, compliance and seasonal finance, the areas the Zambia dialogue prioritized (Z3, Z8–Z11).

1.5 Methods and evidence

A desk-based rapid review drawing on three sources of evidence.

Program documents

Terms of Reference (ToR); Package of Deliverables (PoD) concept note (March 2026); Summary of Activities for Deliverable 1; cross-country ecosystem assessment with Briter (2026), including Briter and AgBase deal data.

Published evidence

World Bank and Food and Agriculture Organization (FAO) data and reports, national statistics offices, central banks, government policy documents, research and industry sources; a few recent figures from news reports are flagged.

Stakeholder evidence

Key-informant interviews and case studies in the Briter assessment; the Malawi youth agribusiness dialogue (Day 1 and Session 2) and the Lusaka dialogue of 28 September 2026.

Currency. Monetary figures are reported in US dollars, with local-currency amounts in brackets, so that amounts can be compared across countries. Conversions use the exchange rates of 13 October 2026: MWK1,743.63 and ZMW19.90 to the US dollar (Exchange-rates.org, 2026). Malawi conversions use the official rate, which is well below the parallel-market rate (Table 4). All Malawi figures use this rate; at parallel rates, landed equipment costs are considerably higher, and FX-related recommendations take this gap into account. Conversions of amounts from earlier years are indicative only.

1.6 Analytical approach

Each country chapter follows the same structure and ends with a barrier register that applies one analytical chain (Figure 2): barrier → root cause → evidence → responsible actor → proposed EETAF response → time horizon → confidence rating.



Figure 2: Analytical chain applied in each country barrier register

Confidence ratings

High at least two independent sources, one of them official data, a legal or policy text, or a dialogue finding. **Medium** a single credible published source, or consistent stakeholder evidence without documentary confirmation. **Low** a single case study, a news report or an unverified claim.

Scoring the shortlist (1–3 on each criterion)

Materiality: how far the barrier constrains scaling, for the users it excludes. **Additionality**: support not already available. **Commercial potential**: removing it unlocks investable business. **Partnership potential**: a willing, capable counterpart exists.

Innovations are placed on the Adaptive Scaling Ecosystem (ASEco) stages (Niche, Reach, Accelerate, Transform), developed by IWMI (Thai and Schmitter, 2025). Scores are preliminary judgments to structure discussion with the program team and partners; a high score resting on low-confidence evidence is a candidate for validation, not immediate action.

1.7 Limitations

The review was conducted without field travel; findings must be validated through key-informant interviews and review with Malawi and Zambia partners. Briter and AgBase deal data (2015–2025) reflect disclosed commercial deals and likely understate grant-funded and public investment, particularly in Malawi and Ethiopia where disclosure is low.

- Dialogue participants were invited rather than sampled. The Malawi dialogue focused on young agripreneurs; the Zambia findings are drawn from a summary of the dialogue's main outcomes, so they capture agreed priorities but not the full range of views. Dialogue findings show which barriers stakeholders prioritize, not how widespread they are.
- The macro-policy environment is moving quickly: Ethiopia's FX reforms continue, Malawi has had a new administration since September 2025, and Zambia held elections on 13 August 2026. Findings reflect the position as of September 2026.
- Inflationary shocks are squeezing household incomes: global food prices rose about 5% in the two months after the Middle East conflict began (Mekonnen and Temaj, 2026). Inflation was 15.1% in Ethiopia (August), 20.0% in Malawi (August), 6.1% in Zambia (September) and 6.8% in Kenya (September), as in Table 4.

2 Cross-country snapshots

Consistent indicators from the program ecosystem assessment and current data, with Kenya as the reference market.

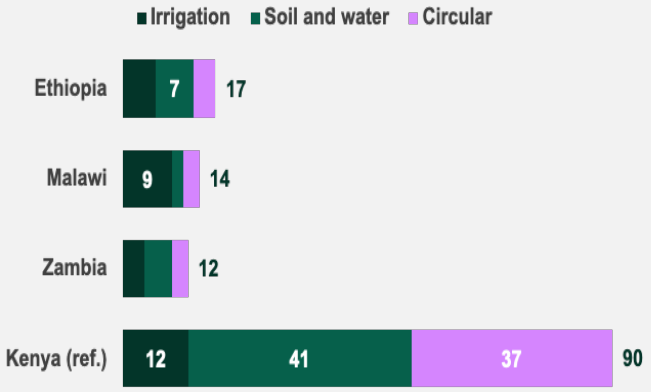


Figure 3: Mapped companies by solution bundle (Briter, 2026)

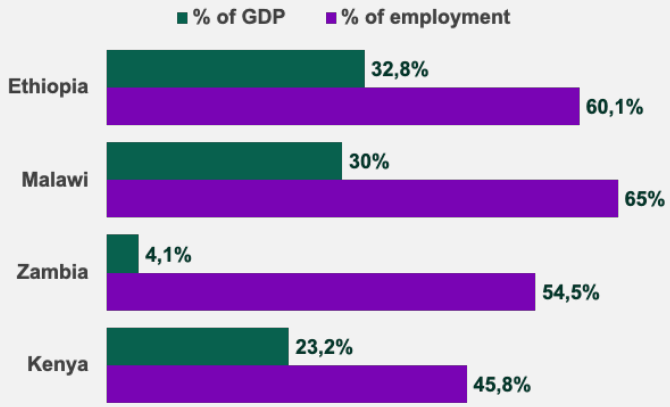


Figure 4: Agriculture's weight in the economy, 2025 (WDI)

≤1%

of agricultural land is irrigated in Ethiopia, Malawi and Kenya (no WDI figure for Zambia)

USD 269M

disclosed funding in Kenya across 129 deals, against c. USD 31M in Zambia

USD 78K

median irrigation deal in Malawi, against USD 1.6M in Zambia and USD 2M in Kenya

USD 8M

median debt ticket in irrigation, against USD 750,000 for equity deals

Three patterns stand out

Irrigation demand needs different interventions. WASA's infrastructure depends on community water governance and public co-investment; SPIS depends on equipment import costs and farmer-level credit.

Technologies need different capital. Irrigation is asset-heavy and attracts debt; soil and water solutions rely more on grants and equity. Finance instruments should be tailored to each track.

Imports and energy shape scaling. Most equipment is imported, exposing scaling to FX and trade shocks; regional design has grown faster than manufacturing. Unreliable grids favor solar pumping but raise upfront costs.

Figure 3 shows the number of mapped companies in each solution bundle, and Figure 4 shows agriculture's share of GDP and employment. Table 4 presents consistent indicators from the program ecosystem assessment, updated with current data, with Kenya as the reference market.

Table 4: *Cross-country comparison of agricultural context, innovation, ecosystem maturity and investment indicators*

Indicator	Ethiopia	Malawi	Zambia	Kenya (ref.)
Agriculture, % of GDP (WDI, 2025) a	32.8%	30.0%	4.1%	23.2%
Employment in agriculture, % of total (WDI/ILO, 2025)	60.1%	65.0%	54.5%	45.8%
Irrigated land, % of agricultural land (WDI/FAO, latest year)	0.5% (2020)	0.6% (2004) e	Not available	1.0% (2023)
Fertilizer use, kg/ha of arable land (WDI/FAO, 2023) b	45.3	45.4	77.3	50.0
Mobile subscriptions per 100 people (WDI/ITU, 2024)	65	69	109	126
ASEco stage: irrigation / soil and water / circular (Briter, 2026)	Niche / Niche / Niche	Niche / Niche / Niche	Reach / Reach / Niche	Accelerate / Accelerate / Reach
Mapped companies: irrigation / soil and water / circular (Briter, 2026)	6 / 7 / 4	9 / 2 / 3	4 / 5 / 3	12 / 41 / 37
Median ticket, irrigation deals (disclosed deals, 2015–2025) c	Undisclosed	USD 78K	USD 1.6M	USD 2M
Disclosed funding, three bundles (2015–2025) c	Very small; few disclosed deals	Very small; irrigation only	c. USD 31M	USD 269M (129 deals)
Headline / food inflation, latest 2026 (national statistics offices)	15.1% / 14.9% (Aug)	20.0% / 13.4% (Aug)	6.1% / 5.8% (Sep)	6.8% / 9.5% (Sep)
Central bank policy rate, 2026 (central banks)	16% (Jul)	24% (Aug)	10.75% (Sep)	8.75% (Oct)
Exchange rate against the US dollar, 12 months to 13 Oct 2026 (Trading Economics)	Birr weaker: USD/ETB up 10.8%	Official rate unchanged (MWK 1,743.63 on 13 Oct); parallel rate nearly double (Malawi24, 2026a)	Kwacha stronger: USD/ZMW down 12.8%	Stable: USD/KES up 0.4% (about KSh 130)
Commercial bank lending rate, latest	Up to about 22–23% at major banks (early 2025)	37.1% (2024)	21.9% corporate; 28.0% retail (Jan 2026)	14.3% (Aug 2026)
Time to start a business, days (2019) (World Bank Doing Business 2020)	32	37	8.5	23

Source: World Bank WDI (World Bank, 2026c; accessed October 2026; FAO, ILO and ITU data); Briter (2026); national statistics offices (Ethiopian Statistical Service, 2026; National Statistical Office of Malawi et al., 2026) and central banks (Central banks, 2026; Malawi24, 2026b; Rio Times, 2026b); Trading Economics (13 October 2026); World Bank Doing Business 2020. **Notes:** indicators come from different sources and years (2019 to 2026), so the table compares orders of magnitude. (a) Zambia's share was 2.8% in 2024 and recovered to 4.1% in 2025 after the 2023/24 drought, in an economy dominated by mining and services. (b) Malawi's figure is corrected from 87.4 kg/ha in the earlier extract. (c) Disclosed deals only, 2015–2025. (d) Kenya: Central Bank of Kenya (August 2026); Zambia: Bank of Zambia bulletin (January 2026), via Canary Compass (2026); Malawi: 2024 WDI average; Ethiopia: indicative only (The Reporter Ethiopia, 2025). (e) Malawi's irrigated-land figure dates from 2004 and no more recent national figure is available in WDI; the Irrigation Act and National Irrigation Policy 2024 targets (6,000 ha a year; 220,000 ha by 2035) are used as the planning benchmark.

Import dependence and domestic manufacturing

Pumps, panels, controllers, pipes and tractors are mostly imported; domestic capacity is concentrated in simpler implements and repair, as Zambia's local manufacturers such as AKAJO in Monze show. Regional manufacturing is nascent (a Fort Portal, Uganda enterprise builds solar pumps from recycled material; Uganda National Council for Science and Technology, n.d.). The EETAF should treat local assembly, fabrication, spare parts and repair as part of the enabling environment.

Energy and irrigation

Zambia's hydropower exposure shows the risk most sharply (Section 4.2). Malawi draws nearly 90% of its electricity from hydropower, and Cyclone Ana flooding in 2022 put the Kapichira station out of action (The Nation, n.d.). In Ethiopia, electricity coverage reached 54% of the population (Ministry of Water and Energy, 2025), and irrigators rely heavily on diesel pumps: the opening for SPIS.

3 Country diagnostics: Malawi and Zambia

This section presents the diagnostics for the two focus countries of the Package of Deliverables that this report covers. Section 4.1 covers Malawi (WASA) and Section 4.2 covers Zambia (WASA and inclusive mechanization). Each follows the same structure: scaling context; policy and regulatory environment; trade, tax and standards; finance ecosystem; policy dialogue findings; and a barrier register (Tables 5 and 6). Ethiopia, a comparative case, is in Annex A; lessons from Ethiopia and Kenya are summarized in Section 5.

3.1 Malawi: WASA project innovations

Two consortia (Catholic Relief Services (CRS) led and Total LandCare (TLC) led); a very thin innovation ecosystem with 14 mapped companies, all at Niche.

Policy and regulatory environment

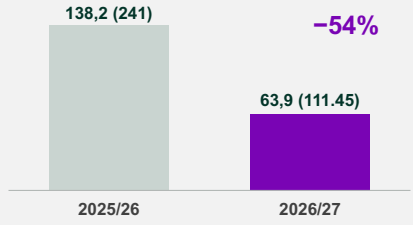


Figure 5: FISP allocation, USD million (MWK billion)

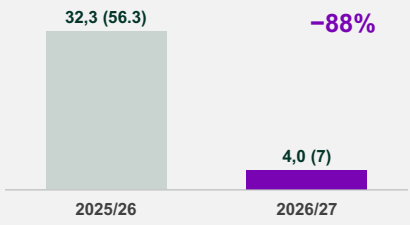


Figure 6: Greenbelt Authority capital grants, USD million (MWK billion)

The return of FISP. The new administration reintroduced FISP. It targeted 1.1 million households in 2025/26 (The Nation, 2025); for 2026/27 the allocation was cut by about 54% (Figure 5) within an agriculture budget of USD 534.0 million (MWK931.1 billion), about 8.5% of the national budget and below the 10% Comprehensive African Agriculture Development Programme (CAADP) benchmark (The Nation, 2026; Malawi Government, 2026). It reverted to paper coupons, procurement is dominated by Smallholder Farmers Fertilizer Revolving Fund of Malawi (SFFRFM), and only 35% of beneficiaries had collected inputs by late December 2025 (Nyasa Times, 2025; 2026a).

Three features of FISP bear directly on WASA

It sets market terms

Private agro-dealers and input SMEs compete with subsidized supply and a state procurement channel.

A public entry point

The 2026/27 guidelines require Mbeya organic fertilizer to access subsidized fertilizer, opening space for composting and soil health.

Fewer households reached

The cut and rising fertilizer prices raise the value of lower-cost soil fertility but leave farmers less cash for other inputs.

A favorable irrigation framework

The Irrigation Act and National Irrigation Policy 2024 promote PPPs, standards and technology adoption, with targets of 6,000 hectares a year and 220,000 hectares by 2035. This gives the EETAF a legitimate hook: private and market-based delivery within public frameworks, with the equity checks set out in Section 6.2.

But public capital is contracting

Greenbelt Authority (GBA) capital grants fell from USD 32.3 million (MWK56.3 billion) to USD 4.0 million (MWK 7 billion) (Figure 6; Nyasa Times, 2026b). The gap between policy ambition and public capital strengthens the case for private and blended finance. Design constraint: public co-investment cannot be assumed in any instrument design.

Macro and trade. The World Bank's February 2026 Malawi Economic Monitor describes macroeconomic instability and restrictive trade policy reinforcing each other and calls for resolving FX shortages and helping firms meet international standards (World Bank, 2026b).

Trade, tax and standards

Imports are governed by the MBS (Imports Quality Monitoring) Regulations 2016. Clearance comes as a batch certificate per consignment or an Annual Import Quality Certificate; batch certification adds cost and delay to every shipment. MBS cannot test against some international standards, and some goods go to South Africa for certification.

Solar equipment and imported goods for water supply are VAT-exempt. Still open: certification fees and turnaround times, and whether non-solar irrigation equipment falls within the exemption.

Finance ecosystem

Four distinct constraints

Tickets too small. Median irrigation deal USD 78,000; Mechro has raised USD 157,000 in total.

The wrong type of capital. Grants and in-kind aid fund activity but build no balance sheet or repayment record.

No commercial bridge. International Fund for Agricultural Development (IFAD) and World Bank schemes are not structured as commercial hubs.

Borrowers priced out. Inflation was 28.2% in late 2025 and 20.0% by August 2026.

Findings from the Youth Agribusiness Policy Dialogue held in Lilongwe, Malawi

Finance ranked first. Unrealistic collateral, high interest, slow applications and shifting grant conditions; participants asked for youth-responsive finance with insurance.

Lenders and borrowers see risk differently. A lender rejected the view that applicants need bank connections and raised loan diversion; lenders lack district-level structures.

Certification restricts market entry. MBS requirements are hard to meet, corroborating barrier M2.

Land, water and irrigation. Costly land and wells; equipment needs capital, know-how and clearer import rules.

Markets and prices. Minimum farm-gate prices are late, weakly enforced and seen as politically influenced.

Information and digital services. Licensing platforms often fail; participants want Chichewa, SMS and voice services.

Implications for the EETAF. The dialogue strengthens the evidence for M2, M4, M5 and M6 and supports linking EETAF work to the WASA Agribusiness Catalyst rather than separate youth programs. Two new items fall within the EETAF's remit: clearer public information on import rules for irrigation equipment, and functional digital registration and licensing. Table 5 sets out the Malawi barrier register.

Table 5: *Barrier register for Malawi*

#	Barrier	Root cause	Evidence	Responsible actor	Proposed EETAF response	Horizon / confidence
M1	FX scarcity raises cost and delays import of irrigation equipment and inputs	Structural Balance of Payments (BoP) deficit; FX allocation and restrictive trade policy	World Bank Malawi Economic Monitor, February 2026 (World Bank, 2026b); government statements on FX shortages	Reserve Bank of Malawi (RBM); MoF; Ministry of Trade	Quantify effect on WASA SMEs; explore pooled procurement and trade-finance lines	Short–medium **High**
M2	Lengthy certification of imported hardware	Process and capacity at standards body; no fast-track for proven equipment	Mechro case study (single case); Malawi youth dialogue (2026)	MBS; Department of Irrigation	Map certification steps, time and cost; propose recognition of regional or international certification	Short **High**
M3	Public programs shape the input market but public capital for delivery is shrinking	Subsidy procurement runs through a state channel and competes with private distribution; at the same time, the FISP allocation fell 54% for 2026/27 and Greenbelt Authority capital grants fell about 88%, so public co-investment cannot be relied on	2026/27 Budget Policy Statement (Malawi Government, 2026); FISP 2026/27 guidelines; Greenbelt Authority draft estimates; Briter annex	Ministry of Agriculture; Ministry of Finance; Greenbelt Authority	Evidence brief on private delivery of soil-health services and irrigation within a shrinking public envelope, using the Mbeya organic fertilizer requirement as an entry point	Medium **High**

M4	Offtake is unreliable, so SMEs are not bankable	Thin commercial off-taker base; prices crash when production rises	Briter (2026), Malawi annex; Malawi youth dialogue (farm-gate prices, buyer coordination)	Ministry of Trade and Industry (MoTI); off-takers; contract-farming structures	Use the National Contract Farming Strategy to structure offtake as credit enhancement for WASA SMEs	Medium **High**
M5	Finance is expensive and unsuited to equipment	High policy rates and inflation; no asset-finance market	World Bank MEM (World Bank, 2026b); Briter; Malawi youth dialogue (collateral, interest, processing times)	Banks; MFIs; DFIs	Blended or guaranteed facility design with one or two lenders	Medium **High**
M6	Youth and women face additional access barriers (land, collateral, services)	Tenure and documentation; limited targeted products	Malawi youth dialogue findings (2026)	Ministries of Youth, Gender, Lands; lenders	Gender-disaggregated pipeline; GESI indicators (Section 6.2)	Medium **Medium**
M7	Seed certification and variety release rules constrain local seed production and bundling	Seed Act 2022 provides for a national seed regulatory authority, but the Seed Regulations predate it and procedural guidance on certification, variety release and registration has lagged; regulator capacity is stretched	Seed Act (Act 21 of 2022); Seed Regulations 2018 and National Seed Policy 2018; SeedSAT Malawi assessment (AGRA, 2022); WASA local seed collection activity	Ministry of Agriculture; Seed Services Unit; Agricultural Technology Clearing Committee (ATCC)	Document the certification and quality-declared-seed (QDS) pathway for seed produced locally at WASA sites; identify where COMESA and SADC harmonized seed regulations offer a faster route	Medium **High**

3.2 Zambia: WASA and mechanization innovations

Four WASA consortia and the widest spread of interventions: mechanization, inclusive insurance and carbon packages.

Scaling context

Reach
ASEco stage for irrigation and soil and water

4 – 5
ventures per bundle, with concentrated investment

Finance is not simply absent; there are **too few investable ventures** to absorb what is available. Reasons include project-led rather than firm-led delivery and thin incubation; the dialogue added skills and servicing gaps (Z8, Z9).

Emerging Cooking Solutions (ECS) benefited from a VAT exemption on stoves and Article 6.2 clarity but was hit by shifting tax policy. Sistema. bio found that differing national Article 6 rules slowed expansion across nine countries.

Policy and regulatory environment



Figure 7: Carbon-market clarity, built early

Regulatory clarity, rather than the generosity of any incentive, is what makes climate-linked revenue bankable. Zambia is the one diagnostic country where that clarity now exists (Figure 7).

CATSP 2024–2033: implementation support, not advocacy

The Comprehensive Agriculture Transformation Support Programme is Zambia's second-generation investment plan (Government of the Republic of Zambia, 2024). It commits to shift spending from non-smart subsidies toward measures that leverage private investment, limits the Food Reserve Agency to strategic reserves, and depends explicitly on private investment.

Soil mapping
Region-specific blends, liming and mobile soil testing create public demand for WASA's soil-health practices.

A mechanization counterpart
The National Agricultural Mechanisation Strategy (NAMS) (2024) gives the mechanization track a named partner.

Finance inside a commitment
SAFF operationalizes CATSP's pledge to broaden private-sector access to finance.

Finance ecosystem

SAFF: A channel that already exists

USD 29.1M
(ZMW 580 million) disbursed to 7 730 farmers by February 2025.

USD 10.5M
(ZMW 209 million) of banks own funds mobilized.

3 → 9
participating institutions; funding raised to USD 60.3M (ZMW1.2 billion)

SAFF offers loans of USD 2,500 to USD 25,100 (ZMW50,000 to ZMW500,000) over 36 months; eligible uses now include irrigation systems and machinery. Disbursement is concentrated: NATSAVE alone had lent USD 22.5 million (ZMW447 million) to 4,671 of the 7,730 borrowers, and Indo-Zambia Bank USD 7.4 million (ZMW147.5 million) to 1,753 (Ministry of Agriculture, Zambia, 2025; Zambia Monitor, 2024). NATSAVE therefore accounts for about 60% of borrowers and 77% of value. This is a pipeline and distribution question, not a capital-availability one: the EETAF question is why uptake is concentrated and whether WASA and mechanization SMEs can access SAFF, and on what terms.

Grain marketing reform legislated

The Food Reserve Act (FRA), 2026 limits the FRA to the strategic reserve, alongside the Agricultural Credits and Warehouse Receipts Act and the Agricultural Marketing Act (Government of the Republic of Zambia, 2026). A working warehouse receipt system would let stored commodities serve as collateral

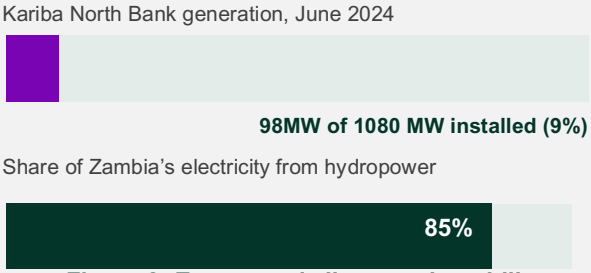


Figure 8: Energy and climate vulnerability

The 2023/24 drought cut Kariba generation (Figure 8; ZESCO, via Zambian Digest, 2024b), triggered load shedding of up to 21 hours (ACAPS, 2025) and destroyed about half the maize crop. Grid irrigation fails exactly when needed; diesel adds cost and risk; and farmers who lose a crop cannot repay, which argues for bundling equipment with **insurance**. Agricultural growth is projected at about 15.1% a year over 2025–2027 (Zambian Digest, 2024a).

Trade, tax and standards

Solar and irrigation systems arrive as components that may fall under different tariff lines. The 2024 Customs Handbook for Solar PV Products, agreed between government and Solar Industry Association of Zambia (SIAZ) with Global Off-Grid Lighting Association (GOGLA) support, shows a workable remedy needing no new law. Replicating it for irrigation and mechanization equipment is low-cost and highly feasible.

Findings from the Zambia Policy Dialogue (Lusaka, 28 September 2026)

Government, research and training institutions, development organizations, financial institutions, equipment suppliers and mechanization service providers prioritized barriers, named delivery partners and clarified where coordinated action is needed.

1
Capacity strengthening

Too few skilled operators; little capacity to adapt equipment to local systems. Training, certification, applied research and local design.

2
Finance and collateral

Ranked the central barrier. Leasing, asset finance, blended finance and guarantees aligned with seasonal cash flows.

3
Access to machinery and services

Distribution, maintenance, spare parts and extension; local manufacturers such as AKAJO cut delivery distances

Operating costs

Transport, mechanics' accommodation, repairs; scarce spare parts raise downtime.

Information and norms

Little information on providers and rules; expectations of free services; stereotypes.

Women's participation

Finance and skills gaps, few women operators, services that do not reach women.

Regulatory compliance

Business and tractor registration, Zambia Bureau of Standards (ZABS) standards and feared Zambia Revenue Authority (ZRA) penalties deter formalization.

Coordination

Clearer roles and a government-maintained equipment register.

Implication

Capacity, finance and access are mutually dependent; insurance belongs in the same package.

The dialogue corroborates Z3, with finance ranked top, and adds four barriers (Z8 to Z11) on skills, maintenance and spare parts, compliance and women's participation. The barrier register in Table 6 reflects these findings; corresponding actions appear in the action plan (Section 7.2).

Table 6: *Barrier register for Zambia*

#	Barrier	Root cause	Evidence	Responsible actor	Proposed EETAF response	Horizon / confidence
Z1	Shifting tax treatment undermines asset-finance and PAYGO models	Frequent changes to VAT and duty exemptions	Emerging Cooking Solutions case study; single source, second source needed before A8 proceeds (Table 13 stage-gate)	Ministry of Finance and National Planning (MoFNP); ZRA	Track tax treatment of priority equipment; make the case for multi-year predictability with MoFNP and ZRA	Medium **Low**
Z2	Customs classification ambiguity for irrigation and mechanization equipment	Exemptions defined by product lists; inconsistent border interpretation	Solar PV customs handbook exists for solar only	ZRA; ZABS; industry associations	Extend the handbook approach to irrigation and mechanization equipment	Short **Medium**
Z3	Equipment finance is expensive and tenors too short	High interest rates; limited leasing market	Briter; SAFF design; Zambia policy dialogue (finance ranked top bottleneck)	Banks; leasing firms; MoA (SAFF)	Link WASA and mechanization SMEs to SAFF and leasing providers; test guarantee options	Short–medium **High**
Z4	Too few investable ventures to absorb capital	Project-driven scaling; thin incubation	Briter ASEco analysis	Incubators; WASA; investors	Pipeline building through the WASA incubator, linked to Deliverable 2	Medium **Medium**
Z5	Maize-centered public marketing distorts crop and market choices	FRA purchases; subsidy focus on maize	Briter (2026), Zambia annex; Food Reserve Act, 2026 (Act No. 6 of 2026)	MoA; FRA	Monitor only; outside direct EETAF scope	Long **High**
Z6	Energy insecurity undermines grid-powered irrigation	Hydropower dependence; drought	Briter (2026); ACAPS (2025); Zambia Electricity Supply Cooperation (ZESCO) generation data (Zambian Digest, 2024b)	Ministry of Energy; Energy Regulation Board (ERB)	Position solar irrigation and productive-use finance as the response	Medium **High**
Z7	Authorization and verification requirements raise transaction costs for smallholder carbon and insurance products	Carbon market architecture is new and still bedding in: trading requires authorization, verifiers must be registered, and projects proceed via a concept note and evaluation process. Index-based agricultural insurance needs product approval by PIA (PIA, 2026); the route for index products needs confirmation	Green Economy and Climate Change Act (GEACC) No. 18 of 2024; Carbon Market Regulations in force January 2026; national carbon registry launched August 2026; WASA agroforestry-carbon packages and inclusive insurance components	Ministry of Green Economy and Environment; Department of Green Economy and Climate Change; Pensions and Insurance Authority (PIA) for index-insurance product approval	Map the authorization pathway, timeline and cost for aggregated smallholder agroforestry-carbon projects; clarify the product-approval route for index insurance; convene developers, verifiers and the department	Medium **High (carbon)** **Low (insurance)**

Table 6 (continued)

#	Barrier	Root cause	Evidence	Responsible actor	Proposed EETAF response	Horizon / confidence
Z8	Shortage of skilled operators and technicians, and limited capacity to design locally appropriate machinery	Few training and certification pathways for operators and mechanics; limited applied research on equipment for smallholder systems	Zambia policy dialogue 2026 (ranked among top three bottlenecks)	Ministry of Agriculture; CIMMYT; CFU; ZARI; ZRDC; ICU; private sector	Support national certification standards for operators and mechanics and accreditation of training providers; training delivery is led by the WASA Agribusiness Catalyst and training partners	Medium **Medium**
Z9	Weak maintenance systems and scarce spare parts raise downtime and service costs	Thin dealer and repair networks; parts imported and held centrally; long distances to service sites	Zambia policy dialogue 2026	CAMCO; local manufacturers (e.g. AKAJO, Monze); mechanization service providers	Include spare parts in the customs guidance under Z2 and review standards for parts; supplier and repair agreements are led by the Catalyst and private sector	Medium **Medium**
Z10	Compliance requirements discourage formalization of mechanization service providers	Business and tractor registration, ZABS standards and ZRA tax obligations poorly communicated; penalties perceived as high. The dialogue evidence does not show whether the barrier is informational (poor communication) or structural (disproportionate cost or penalties)	Zambia policy dialogue 2026	ZRA; ZABS; registration authorities; Ministry of Agriculture	First establish which: compare statutory registration costs and penalties with what providers report. If informational, a plain-language guide channeled through extension officers; if structural, a proposal to ZRA and registration authorities for proportionate compliance (for example simplified registration or graduated penalties for small providers)	Short **Medium**
Z11	Women face additional barriers as users, operators and owners of mechanization services	Limited finance and skills; recruitment barriers; social norms; services that do not reach women	Zambia policy dialogue 2026	Lenders; Ministry of Agriculture; CIMMYT; service providers	Gender provisions in SAFF and leasing eligibility and reporting rules; sex-disaggregated tracking of uptake; evidence on social norms. Recruitment and training delivery are led by the Catalyst and service providers	Medium **Medium**

Note on Z1 and Z10. Z1 rests on a single case study (Low confidence), so the customs and tax action for Zambia (A8) is gated: it proceeds only once current duty, and VAT treatment has been confirmed with ZRA (Table 13). For Z10, the response depends on whether compliance costs are mainly informational or structural, which the key-informant interviews for a subsequent deliverable would capture.

4 Comparative lessons from Ethiopia and Kenya

What the two comparative cases teach Malawi and Zambia. Country detail is in Annex A (Ethiopia) and Annex B (Kenya).

4.1 Lessons from Ethiopia and Kenya

USD 269M

across 129 deals: more than 70% of disclosed funding in the program ecosystem assessment dataset (Briter, 2026)

USD 120M

raised by SunCulture and Azuri combined, with debt more than half of their deals

Ethiopia (Annex A): single-constraint fixes will not move adoption; the binding constraint sits with the farmer and last-mile enterprise; agent-led credit profiling can bridge documentation gaps. FX and customs findings (E1, E2) go to the Alliance-led SPIS work.

Kenya (Annex B): low irrigation adoption is an affordability problem, not a technology one (CGAP); no single instrument produced SunCulture's results; and repeatedly contested tax exemptions are a cost in themselves. Table 7 sets out transfer conditions.

4.2 Transferable lessons

Table 7: *Transferability of Kenya's agricultural innovation scaling mechanisms to Ethiopia, Malawi and Zambia*

Mechanism or lesson	Kenya experience	Transfer conditions	Relevance
PAYGO and asset finance for solar irrigation	Leading irrigation firms scaled on debt, using equipment as collateral	Requires mobile money, stable tax treatment and lender appetite	Zambia: high. Ethiopia: medium (mobile money developing). Malawi: low–medium (connectivity)
Fiscal predictability	VAT exemptions on solar equipment were withdrawn in 2020 and 2021, after which the off-grid solar market contracted by 20%, according to GOGLA (Capital FM, 10 June 2025). The Finance Bill 2025 proposed deleting the VAT exemption on specialized equipment for solar and wind generation, prompting objections during public participation. The Finance Act 2025, assented on 26 June 2025, removed exemptions in several sectors but not this one: the Kenya Revenue Authority's (KRA) current VAT schedule continues to list solar and wind energy equipment, biogas digesters, clean cooking technologies and water-harvesting equipment as exempt. The pattern across both episodes is that the exemption itself has been durable while remaining repeatedly contested, which creates planning uncertainty for companies pricing multi-year instalment products.	Applies wherever PAYGO or leasing models are used	All three countries. Supports the case in Deliverable 4 for multi-year predictability commitments rather than one-off exemptions, since recurring annual review is itself a cost to business.
Seasonal repayment products	CGAP: banks do not offer irrigation-specific loans, so farmers use monthly products that do not match harvest cycles	Lender product-design capacity	All three
Digital subsidy and farmer registries	E-voucher subsidies and open government registries via the One Million Farmer Platform	Digital ID and registry coverage	Zambia: high (e-voucher rollout). Ethiopia: medium. Malawi: medium
Devolution and coordination	National–county misalignment fragments implementation	Relevant where subnational bodies deliver services	Ethiopia regional states; Malawi districts

5 Synthesis, prioritization and inclusion

How severely each barrier constrains scaling, who it excludes, and which bottlenecks the facility should act on first.

5.1 Severity of barriers by country

Table 8 rates how severely each barrier theme constrains scaling, rather than whether it is present. Barriers rated high everywhere, such as finance mismatched to seasonal cash flows, are structural and most likely to transfer lessons; barriers that diverge, such as FX (very high in Malawi, medium in Zambia), need country-specific design. Equipment-based innovations are most exposed to the trade, tax and finance rows; practice-based ones to the institutional and market rows.

Table 8: *Comparative severity of enabling environment barriers across Ethiopia, Malawi, Zambia and Kenya*

Barrier theme	Ethiopia	Malawi	Zambia	Kenya (ref.)
FX access and cost for imported equipment	High	Very high	Medium	Low
Customs and tax treatment of equipment	High (unverified)	Medium (unverified)	High	High (volatility)
Standards and certification delays	Unknown	High (case study and dialogue)	Unknown	Medium
Finance products mismatched to seasonal cash flows	High	High	High	High
Collateral, KYC and documentation	Very high	High	Medium	Medium
Thin pipeline of investable firms	High	Very high	High	Low
Unreliable offtake	Medium	Very high	Medium	Low
Public programs crowding out private delivery	High	High	Medium	Low
Regulatory approval costs on bundled financial and carbon products	Low	Low	High	Medium (2024 carbon rules)
Operator skills, maintenance and spare parts	Unknown	Unknown	High (dialogue)	Not assessed

How ratings were reached: each rating is a judgment of how far the barrier limits scaling, based on the country register. Very high: binding for most firms or farmers and corroborated by at least two sources. High: binding for many users, supported by at least one credible source. Medium: material but partial or offset. Low: present but not significant. Unknown: insufficient evidence; these cells are evidence gaps flagged for validation in subsequent deliverable. In Ethiopia, smallholders rely first on regional government provision, so the public-programs row is about complementarity rather than displacement. Kenya's carbon rating reflects its 2024 Carbon Markets Regulations (Oraro & Company, 2024).

5.2 Inclusion as a scaling condition

The package targets at least **40% participation of women and youth**. The evidence suggests these targets are better understood as scaling conditions than equity obligations. Recent GESI analysis for the program finds that barriers to enterprise development in Ethiopia are interconnected and mutually reinforcing, and these interactions matter most for women and youth. A program can expand reach while reproducing unequal access: **reach is not evidence of inclusion**.

Many constraints are rooted in entrenched political economy, including gender-unequal land arrangements. Women's lack of land titles and collateral remains the main reason they are less attractive to formal lenders, and multi-constraint interventions work better than single-focus ones (FAO, 2023; Fletschner and Kenney, 2014). The account-ownership gender gap is widest in sub-Saharan Africa, at 12 percentage points (Klapper et al., 2025).

The delivery-system usability test

Adapted from the program's recent GESI analysis: can differently positioned users realistically:

access understand afford trust act on sustain

A duty exemption does nothing for a farmer who cannot meet collateral rules; a credit line may leave decisions about the asset with someone else.

Where inclusion constraints apply

Collateral and formalization

Land and asset rules exclude many women and young people (E3, M6); pair compliance with support or formalization reproduces exclusion.

Finance that reaches but does not enable

Test whether instruments enable acquisition, maintenance and resilience, not nominal access.

Market coordination

Buyers, transport and bargaining power link inclusion to off-take (M4).

Institutional support

Business development services show the strongest effects for women-owned Micro, Small and Medium Enterprises (MSMEs): link to the WASA Agribusiness Catalyst.

Land, water and infrastructure

Costly land and wells, and unclear import rules, fall hardest on young people without assets.

Women in mechanization

Distinct barriers as users, operators and owners (Z11).

What this means for prioritization

Assess materiality for the users a barrier excludes, not the market in aggregate. Treat the three solution tracks as design-testing areas: test with a few lenders, suppliers and enterprises, observe who gains and who bears the cost, then widen. Where inputs, prices and markets are unreliable, strengthen these fundamentals first.

Proposed GESI indicators

Share of women- and youth-led SMEs in the pipeline

Share receiving finance or linkage support

Loan volumes by gender and age of borrower

Policy commitments with youth or gender provisions

Users sustaining use beyond initial participation

5.3 Prioritized bottlenecks for EETAF action

Table 9 shortlists the bottlenecks that score highest across the three registers against the four criteria in Section 2.6. Ethiopia's entries center on import costs and the collateral constraints that stop farmers financing equipment; Zambia's on access to channels that already exist (SAFF and customs guidance); Malawi's on certification, off-take and the cost of finance. Customs and tax treatment heads the list because it is common to SPIS and to WASA irrigation and mechanization equipment. Figure 9 shows how each shortlisted bottleneck scores on the four criteria.

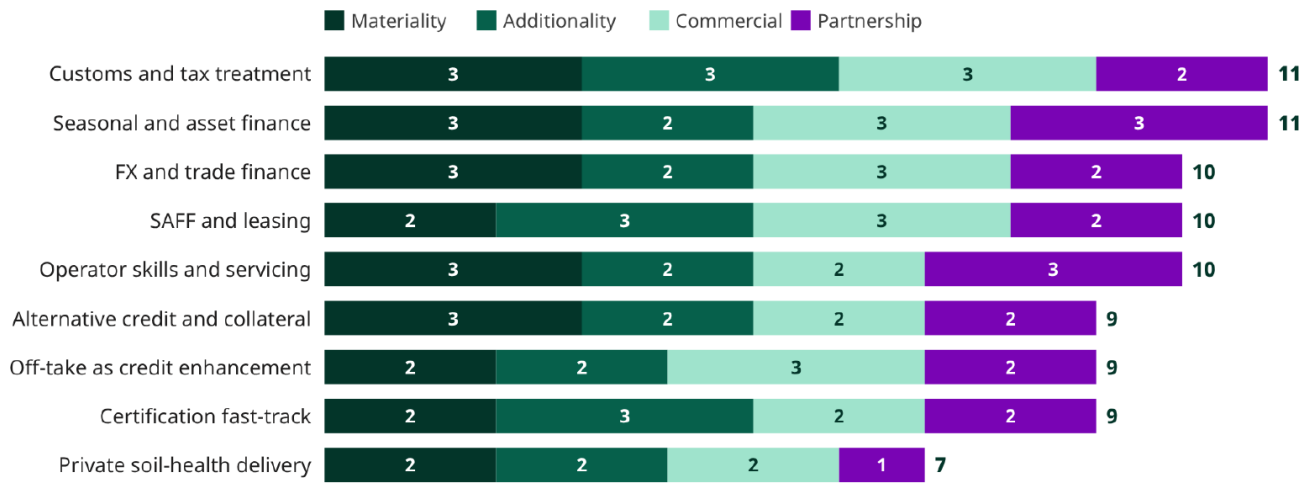


Figure 9: Scores by criterion (maximum 12)

Table 9: *Prioritization of shortlisted enabling environment bottlenecks for EETAF action*

Bottleneck	Countries	Mat.	Add.	Com.	Part.	Total /12	Register codes and action (Section 7.2)
Customs and tax treatment of irrigation, solar and mechanization equipment	ET, ZM, MW	3	3	3	2	11	E2, Z1, Z2; Malawi trade and tax findings (Section 4.1). Actions: A8 (Zambia), A3 (Malawi). No Ethiopian action; both behind a validation stage-gate (Table 13)
Seasonal and asset-finance products for irrigation	All	3	2	3	3	11	E4, M5, Z3. Actions: A1, A6
FX and trade-finance access for equipment importers	ET, MW	3	2	3	2	10	E1, M1. No action yet (see below)
Linking SMEs to SAFF and leasing providers	ZM	2	3	3	2	10	Z3. Action: A6
Operator skills, maintenance and service networks for mechanization	ZM	3	2	2	3	10	Z8, Z9. Actions: A5, A7
Alternative credit profiling and collateral for farmers	ET, MW	3	2	2	2	9	E3, M6. Action: A1
Offtake structured as credit enhancement	MW, ZM	2	2	3	2	9	M4. Action: A4
Certification fast-tracking for proven equipment	MW	2	3	2	2	9	M2. Action: A2
Private delivery of soil-health services within input programs	MW, ZM	2	2	2	1	7	M3. No action (monitor)

Mat. = materiality; Add. = additionality; Com. = commercial potential; Part. = partnership potential. Rows sorted by total score. Additionality for customs and tax is provisional: if the World Bank or other DFIs already support customs reform in Malawi or Zambia, the score falls to 2 (total 10). High-scoring items without an action: FX and trade-finance access (E1, M1), because exchange-rate policy sits with central banks; soil-health delivery (M3) is monitored only.

Linking bottlenecks to actions

Customs and tax treatment has actions in Zambia (A8) and Malawi (A3, extended to confirm the VAT treatment of non-solar irrigation equipment) but none in Ethiopia, whose findings are offered to the Alliance-led SPIS work. FX and trade-finance access (E1, M1) has no action, because exchange-rate policy sits with central banks; brokering trade-finance lines for Malawian importers should be tested with lenders first. Soil-health delivery (M3) scores lowest and is left for monitoring.

Validate before acting

Lead priority. Customs and tax treatment scores 11/12 but rests on Low-confidence entries (E2, Z1). Before investing in A3 or A8, the EETAF will confirm current duty and VAT treatment with MRA and ZRA. If treatment is already clear and consistently applied, the action narrows to publishing it; if not, it proceeds (Table 13).

Unknown ratings. Standards and certification in Ethiopia and Zambia, and operator skills in Ethiopia and Malawi, are rated Unknown in Table 8. They are priorities for validation in the Deliverable 3 key-informant interviews, and any action in these areas' rests on thin evidence until then.

GESI baseline and measurement plan

Who collects. The EETAF monitoring focal point, with the WASA Agribusiness Catalyst for pipeline data and participating lenders (including SAFF institutions) for loan data.

When. Baseline during the Deliverable 3 key-informant interviews; pipeline and loan data quarterly; sustained-use and policy indicators annually.

Reporting cycle. Quarterly into the AoW3 progress reports and annually into S4I annual reporting. All indicators are disaggregated by sex and age, and results for the poorest and non-participating households are reported separately, so the equity boundary in Section 1 is monitored rather than assumed.

5.4 Political economy of the priority bottlenecks

Section 2.2 notes that many barriers persist because someone benefits from the status quo. Table 10 sets out, for each priority bottleneck, who gains, who bears the cost and who could champion reform. These are working hypotheses drawn from the desk evidence and the two dialogues, to be tested in the key-informant interviews. The champions column feeds directly into Deliverable 2 (stakeholder mapping of scaling champions).

Table 10: Who gains, who bears the cost and potential reform champions for the priority bottlenecks

Bottleneck (register codes)	Who gains from the status quo	Who bears the cost	Potential reform champions and coalitions	To test in interviews
Customs and tax treatment of equipment (E2, Z1, Z2; Malawi trade and tax findings)	Revenue authorities and finance ministries working to revenue targets, for whom exemptions are lost revenue and annual budgets a chance to revisit them; established importers able to absorb classification ambiguity	Smaller importers; PAYGO and leasing firms pricing multi-year contracts; farmers through higher landed costs	SIAZ and GOGLA (solar PV handbook precedent); ZRA and MRA technical units; Ministries of Agriculture (NAMS, irrigation policy); equipment dealers	Whether recent changes were revenue-driven; ZRA and MRA appetite for published guidance
Seasonal and asset finance (E4, M5, Z3)	Lenders that earn high, low-risk returns from short-tenor lending and government securities when policy rates are high	Smallholders and youth- and women-led SMEs that need longer tenors and seasonal repayment	SAFF participating banks; leasing firms; DFIs offering guarantees; MoA SAFF unit	Lender incentives and appetite for risk-sharing
FX and trade-finance access (E1, M1)	Firms with established or state links that receive FX allocations first (E1); parallel-market intermediaries	Small importers of pumps, panels and machinery	Importers' associations; DFIs with trade-finance lines; central banks under IMF-supported programs	How FX allocation works in practice for equipment importers
Concentrated SAFF uptake (Z3)	The two institutions holding most of the portfolio and their existing clients	Other participating institutions; SMEs outside these lenders' networks	Newer participating institutions; MoA; MoFNP	Why other institutions lend less; whether eligibility rules favor incumbents
Public input programs and FISP procurement (M3)	Agencies and suppliers inside the state procurement channel (SFFRFM); political actors who gain from visible subsidy distribution; press reports raise corruption concerns about the return to coupons (Nyasa Times, 2026a)	Private agro-dealers; soil-health and irrigation service SMEs	Agro-dealer associations; WASA consortia; reform-minded MoA units; development partners co-financing inputs	Whether the Mbeya organic fertilizer rule opens space for private delivery
Certification of imported hardware (M2)	Standards-body revenue from per-consignment batch certification; importers with established clearance routines	New and smaller importers, including youth-led SMEs	Department of Irrigation; importers; COMESA and SADC harmonization processes	MBS fee structure and willingness to recognize regional certification

Mechanization skills, compliance and women's participation (Z8–Z11)	Established service providers facing less competition when entry costs are high; norms that cast men as operators and owners	New and informal providers; women as operators and owners	MoA; TEVETA; women operators and women-led service enterprises; the WASA Agribusiness Catalyst	Whether compliance costs are informational or structural (Z10); norm-related barriers for women

6. Implications and action plan

From priority bottlenecks to owned, time-bound actions, with the EETAF as catalyst and the lead actor owning the change.

6.1 How this diagnostic feeds the next deliverables

Table 11 shows what this diagnostic provides for each subsequent deliverable and what is still needed.

Table 11: *How these diagnostic feeds the next deliverables*

Deliverable	What this diagnostic provides	Still needed
Deliverable 2: Stakeholder mapping of scaling champions	Responsible-actor column in each register identifies the public and financial actors to map; Zambia and Malawi pipeline constraints define SME champion criteria	Selection criteria and incentive structure for champions; contact lists from WASA, SPIS and dialogues
Deliverable 3: Policy and investment roundtables	Barrier registers (Tables 5, 6 and A1) and the prioritized bottlenecks (Table 9) give the agenda; the action plan (Table 12) names lead actors to invite	Confirmation of participants and country priorities with partners; roundtable dates and format
Deliverable 4: Co-design of enabling instruments	Baseline on tax, customs and certification barriers; country registers (Tables 5, 6 and A1)	SPS and climate-smart sourcing rules for export chains that irrigation enables (not binding for equipment; Annex A), only where an instrument targets them; validation of tax treatment

6.2 EETAF action plan

Each action names the actors who lead the change, the role the EETAF plays, the outcome that will show progress and a time horizon. In every case the EETAF provides evidence briefs, guidance notes, product co-design and convening, while the lead actor owns and implements the change. Outcomes should be tracked by gender and age, so that reach is not mistaken for inclusion. Table 12 sets out the actions; Table 13 adds outcomes, baselines, 12-month targets, stage-gates and contributions to the package targets.

Show effective demand

Record each partner's request and commitment; defer actions with no committed lead.

Add stage-gates

Proceed, adapt or stop at set points, linked to Scaling Readiness (Table 13).

Plan for institutionalization

Name the guideline, budget line or product that shows ownership, and when the EETAF steps back.

Set baselines and targets

A baseline and a 12-month target for each outcome (Table 13).

Show value for money

EETAF effort against duty saved or loan volume enabled (Table 13).

Apply responsible-scaling checks

State who could be left out or harmed and how this is monitored.

Table 12: *EETAF action plan*

#	Priority action	Country	Lead actors	EETAF role	Outcome to track	Horizon
A1	Co-design youth-responsive finance with simpler applications, alternative collateral, longer tenors and insurance options	Malawi	Banks; MFIs; DFIs; Ministry of Youth	Product co-design and guarantee structuring with one or two lenders	Product adopted into the lender's standard portfolio; loans to youth- and women-led SMEs (number, value)	Medium
A2	Map and shorten certification for proven irrigation equipment	Malawi	Malawi Bureau of Standards (MBS); Department of Irrigation	Certification mapping (steps, time, cost); case for annual certificates or regional recognition	Fast-track or annual-certificate procedure adopted by MBS; median clearance time per consignment	Short
A3	Publish clear information on import rules and on the duty and VAT treatment of irrigation equipment, including non-solar equipment, and support digital registration and licensing	Malawi	MoTI; MBS; Malawi Revenue Authority (MRA)	Plain-language guide; technical input to digital service design; confirm VAT treatment of non-solar irrigation equipment with MRA; stage-gate: confirm current treatment before further investment	MRA confirms duty and VAT treatment in writing and applies it consistently; share of registrations completed online	Short–medium
A4	Clarify the rules that let off-take contracts serve as security for WASA SMEs (registration and enforceability under the National Contract Farming Strategy)	Malawi	MoTI; off-takers; contract-farming structures	Legal and regulatory review; proposals to MoTI. Deal structuring is led by the WASA Agribusiness Catalyst	Rules or guidance adopted that let lenders accept registered off-take contracts as security; number of lenders accepting them	Medium
A5	Set national certification standards for mechanization operators and mechanics, and accreditation of training providers	Zambia	Ministry of Agriculture; Technical Education, Vocational and Entrepreneurship Training Authority (TEVETA); ZABS (to be confirmed). CIMMYT, CFU, ZARI as technical partners	Draft standard and accreditation criteria with partners. Training delivery is led by the Catalyst and training partners	Certification standard adopted; accredited training providers; certified operators and mechanics (share of women)	Medium
A6	Diagnose and address concentrated SAFF uptake, and adapt SAFF, leasing and guarantee rules to mechanization and seasonal cash flows	Zambia	Ministry of Agriculture (SAFF); MoFNP; banks; leasing firms; CIMMYT; IWMI	Diagnose why about 60% of SAFF borrowers sit with one lender; propose eligibility, distribution and product changes; test guarantee options	Mechanization loans and leases across more participating institutions (number, value, borrower gender and age)	Short–medium
A7	Set standards and customs treatment for spare parts	Zambia	ZRA; ZABS; industry associations	Include spare parts in the customs guidance (A8); review parts standards. Supplier and repair agreements are led by the Catalyst and private sector	Spare parts classified consistently at the border; parts availability and machinery downtime in focal districts	Medium
A8	Clarify compliance and customs treatment for mechanization and irrigation equipment	Zambia	ZRA; ZABS; registration authorities; industry associations	Stage-gate: confirm current duty and VAT treatment with ZRA first (Z1 is Low confidence). Then extend the solar PV customs-handbook approach; compliance guidance per Z10	Guidance adopted by ZRA and applied consistently at the border	Short
A9	Embed gender provisions in SAFF and leasing eligibility and reporting rules	Zambia	Ministry of Agriculture (SAFF); lenders; leasing firms	Propose gender provisions and sex-disaggregated reporting; commission or draw on social-norms evidence. Recruitment and training are led by the Catalyst, service providers and CIMMYT (to be confirmed)	Gender provisions adopted; loan uptake by women; women operators and women-led service enterprises	Medium

Actions A1 to A4 draw on the Malawi register (M2, M4, M5, M6), the trade and tax findings in Section 4.1 and the youth dialogue; A5 to A9 draw on the Zambia register (Z2, Z3, Z8 to Z11) and the mechanization dialogue. Lead actors and indicators should be confirmed with partners in each country before implementation. CIMMYT's role in A5 as a committed lead is only a suggestion as has not been confirmed. These actions proceed only once a lead commits.

Where the Catalyst leads and where the EETAF leads

WASA Agribusiness Catalyst: enterprise-level support, including training delivery, deal structuring, supplier and repair agreements, operator recruitment, technical assistance and grants to SMEs.

EETAF: the rules and institutions those activities depend on, including standards and accreditation, customs and tax treatment, eligibility and reporting rules for public finance facilities, and the evidence and convening needed to change them. Where an action touches both, the EETAF hands over once the rule or guidance is adopted.

Social norms (A9). The finance and training components will draw on, or where needed commission, evidence on the social norms that limit women's roles as operators and owners (Z11), so that product and recruitment design responds to them.

Outcomes, baselines, targets and stage-gates. Table 13 turns the design principles in Section 7.2 into measurable terms for each action. Outcomes describe the change the lead actor adopts, not the EETAF output. Baselines will be collected in the Deliverable 3 key-informant interviews, and targets are proposals to agree with lead actors. Contributions map to the AoW3 key performance indicators on SMEs supported and finance mobilized; exact KPI codes are to be confirmed with the S4I monitoring, evaluation and learning team.

Table 13: Outcomes, baselines, 12-month targets, stage-gates and contribution to package targets

#	Outcome (adopted change)	Baseline (source)	12-month target	Stage-gate (proceed, adapt or stop)	Value-for-money proxy	Contribution to package targets
A1	Lender adopts youth-responsive product into its standard portfolio	Loans to youth- and women-led agri-SMEs at partner lenders (number, value; lender data)	One lender approves product terms and starts pilot lending	Proceed only if a lender commits staff time or capital at design. Public co-investment cannot be assumed in any instrument design	Loan value enabled per USD of EETAF effort	Direct: SMEs financed (300 SMEs); loan value (USD 2M)
A2	MBS adopts a fast-track or annual-certificate procedure for proven irrigation equipment	Median days and cost to clear one consignment (importers, MBS; KIIs)	Mapping validated with MBS; MBS formally reviews the proposal	Proceed to a fast-track proposal only if MBS agrees to review it; otherwise publish the mapping and stop	Days and fees saved per consignment per USD of EETAF effort	Enabling: lower import time and cost for WASA SMEs counted under A1 and A4
A3	MRA confirms duty and VAT treatment of non-solar irrigation equipment in writing and applies it consistently	Current treatment and clearance practice (MRA, importers): to be confirmed	Written confirmation from MRA; guidance issued with MoTI	Stage-gate 0: confirm current treatment with MRA. If already clear and applied, publish and close	Duty and VAT saved per irrigation unit	Enabling: lower landed cost for SMEs (300 SMEs)
A4	Rules or guidance allow registered off-take contracts to serve as loan security	Lenders accepting off-take contracts as security (lender survey)	Legal review completed; MoTI agrees to consider guidance; one lender pilots	Proceed only if MoTI and at least one lender commit. Public co-investment cannot be assumed in any instrument design	Loan value secured against offtake per USD of EETAF effort	Direct: SMEs financed via the Catalyst (300 SMEs); loans (USD 2M)
A5	National certification standard for operators and mechanics adopted; training providers accredited	Existing standards and accredited providers (MoA, TEVETA): to be mapped	Draft standard agreed with MoA and TEVETA	Proceed only once a lead institution commits (TEVETA and CIMMYT roles to be confirmed). Public co-investment cannot be assumed in any instrument design	Certified operators per USD of EETAF effort (training costs carried by the Catalyst and partners)	Enabling: stronger service-provider pipeline (300 SMEs)
A6	SAFF rules or distribution changed so more participating institutions lend for mechanization	SAFF loans by institution, purpose, borrower sex and age (MoA SAFF data)	Diagnostic completed; MoA reviews proposed changes; mechanization lending recorded by more institutions	Proceed to product changes only if the MoA SAFF unit shares disbursement data	SAFF and leasing value to mechanization per USD of EETAF effort	Direct: mechanization SMEs financed (300 SMEs); loan value (USD 2M)
A7	Spare parts classified consistently at the border	Machinery downtime and parts availability in focal districts (provider survey)	Spare parts included in the ZRA guidance under A8	Follows the A8 stage-gate	Downtime days avoided per USD of EETAF effort	Enabling: service-provider viability (300 SMEs)

A8	Guidance adopted by ZRA and applied consistently at the border	Current duty and VAT treatment and border practice (ZRA, importers): to be confirmed	ZRA confirms treatment; guidance agreed with ZRA and industry associations	Stage-gate 0: confirm treatment with ZRA and find a second source for Z1 before investing. If treatment is stable and clear, narrow to publication	Duty and VAT saved per unit, times units imported	Enabling: lower landed cost (300 SMEs; USD 2M)
A9	Gender provisions and sex-disaggregated reporting adopted in SAFF and leasing rules	Share of SAFF and leasing borrowers who are women (MoA, lenders)	Provisions reviewed by MoA; sex-disaggregated reporting in place	Proceed only once a lead commits (CIMMYT role to be confirmed)	Additional women borrowers per USD of EETAF effort	Direct: women-led SMEs (300 SMEs; 40% women and youth target)

Note: Direct contributions count toward the package targets (300 agrifood SMEs; USD 2 million mobilized); enabling contributions lower costs or risks for SMEs counted under other actions and are not double-counted. All outcomes are tracked by sex and age (Section 6.3).

Annex A - Ethiopia: SPIS innovation (comparative case)

Comparative case. The largest agricultural economy of the three, at the Niche stage across all three bundles.

Scaling context

320,000+
farmers reached by Lersha through 3,600+ agents (Briter, 2026)

15M+
farming households (estimate), so reach must be read against scale

30→36%
share of farmers under 35, 2004/05 to 2016/17 (IFPRI ESSP, 2023)

54%
national electricity coverage (Ministry of Water and Energy, 2025)

Lersha bundles advisory, finance and market access and shows what works in a low-connectivity market (MIT Solve, n.d.). Its reported constraints (long Know Your Customer (KYC) and loan processing, farmers without land certificates or ID) point to regulatory barriers the EETAF could address. Ethiopia's population exceeds that of Malawi, Zambia and Kenya combined.

Policy and regulatory environment

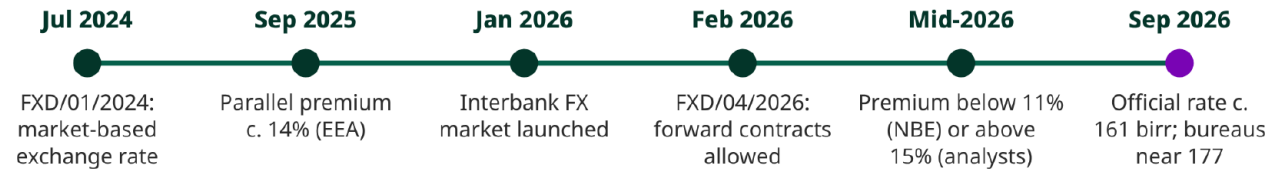


Figure 10: Foreign-exchange regime: improving but fragmented

The parallel premium has narrowed from more than 100% before the float, but estimates differ because official, bank, bureau and street rates are fragmented (Figure 10). Under the International Monetary Fund (IMF) supported program the National Bank tracks the premium, interbank volumes and unmet FX demand (Capital, 2026). For SPIS importers, the constraint is now **cost and predictability** rather than outright unavailability.

- **Agricultural finance policy:** NAFIR signals commitment but lacks operational partnerships and first-loss guarantees.
- **Digital agriculture:** The Digital Agriculture Roadmap 2032 and telecom opening expand the base for digital advisory and credit scoring; state control of market and data infrastructure is reported to crowd out private participation.
- **Coordination:** Agricultural Transformation Institute (ATI) aligns donors centrally, but implementation runs through regional Bureaus of Agriculture and woreda and kebele structures, where extension quality is uneven (Leta et al., 2017). How well these channels inform farmers outside the cities about SPIS has not been studied.
- **Development partners:** The World Bank Country Partnership Framework (FY27–FY36) places agribusiness among the job-rich sectors it will support (World Bank, 2026a).

Trade, tax and standards

In May 2019 the Ministry of Finance granted duty exemptions on imported mechanization, irrigation and feed-processing equipment. Whether the exemption remains in force, whether separately imported PV panels and controllers qualify, and how consistently customs apply it are not established. These questions determine SPIS unit costs; no published evidence was found of local manufacture or assembly of SPIS components. Until its current application is confirmed with the Ministry of Finance and the Ethiopian Customs Commission, this exemption is treated as unverified (Low confidence) throughout this report, including in Tables 1 and 8.

Pumps face mandatory pre-shipment conformity assessment, with test reports from accredited bodies and no used pumps. Solar components fall under a parallel regime administered by the Ethiopian Standards Agency, with pre-export verification since September 2018.

One process or two?
The architecture exists; what matters is certification time and cost, and whether a pump kit faces two regimes.

Entry costs
Accreditation rules and the used equipment ban protect quality but raise entry costs for smaller suppliers.

Sanitary and Phytosanitary (SPS) is not the binding constraint
Pumps and panels are not SPS goods; SPS matters for the value chains irrigation enables.

Finance ecosystem

Country Partnership Framework (CPF) consultations reported scarce long-term finance, prohibitive collateral and limited de-risking instruments (World Bank, 2026a). Soil and water deals are 44% grants (median USD 113,000). Inclusive benefit from SPIS depends on access to finance, suppliers, after-sales services, advisory support and irrigation opportunities (Figure 11), and the regulation–finance interaction is the most consequential.



Figure 11: A chain of conditions for inclusive benefit from SPIS. Source: Authors

1. Single-constraint fixes will not move adoption; the bottlenecks must be tackled as a set.

2. The binding constraint sits with the farmer and last-mile enterprise: make a solar pump financeable for a smallholder.

3. Treat SPIS as a design-testing area (E4,E5): test seasonal and guarantee-backed products with few lenders and suppliers first, through the Alliance-led SPIS work.

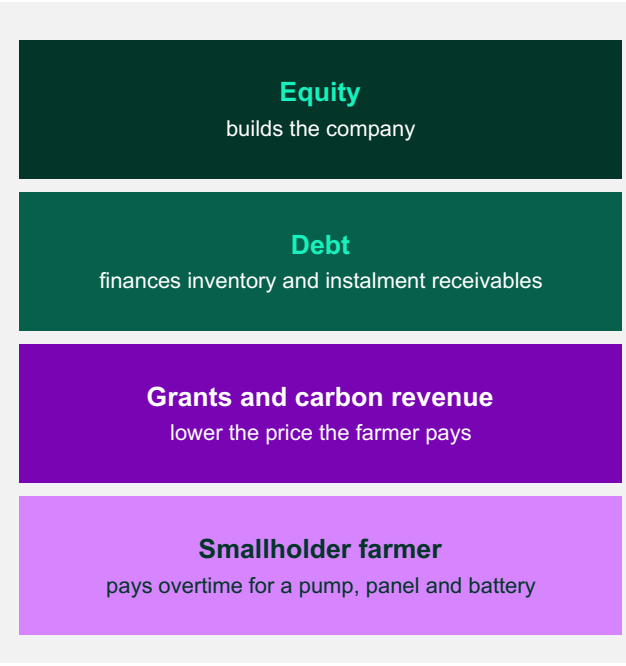
Table A1 sets out the Ethiopia barrier register, applying the analytical chain in Section 2.6.

Table A1: *Barrier register for Ethiopia*

#	Barrier	Root cause	Evidence	Responsible actor	Proposed EETAF response	Horizon / confidence
E1	High cost and delay in obtaining FX to import SPIS equipment	FX market still thin after float; bank allocation practices favor established or state-linked firms	Parallel-rate estimates (Capital, 2025 and 2026; Rio Times, 2026a); Briter (2026), Ethiopia constraint list	National bank of Ethiopia (NBE); commercial banks	Document FX cost pass-through for SPIS suppliers; broker trade-finance or FX lines with banks and Development Finance Institutions (DFIs)	**Medium**
E2	Uncertain duty and VAT treatment of solar irrigation components	Exemptions defined by equipment category; separately imported PV components may be classified differently	2019 duty exemption; no confirmation of current application	Ministry of Finance (MoF); Ethiopian Customs Commission	Tariff-line review and customs guidance note for SPIS kits (model: Zambia solar PV handbook)	**Low**
E3	Farmers cannot meet bank KYC and collateral requirements	Missing land certificates and ID; no credit histories. informal land markets and weakened woreda and kebele institutions, including in insecure areas	Lersha case study; Country Partnership Framework (World Bank) CPF consultations (single case study; downgraded under Section 2.6)	NBE; banks; ID and land authorities	Co-design agent-led credit profiling and alternative collateral with lenders	**Low–Medium**

E4	Loan products do not match seasonal cash flows	Standard monthly repayment products; no irrigation-specific lending	Consultative Group to Assist the Poor (CGAP) interview (Kenya, generalizable); CPF consultations	Banks; Microfinance Institutions (MFIs)	Product co-design for seasonal and PAYGO repayment	Medium
E5	NAFIR not yet translated into lending for SPIS	Missing operational partnerships and first-loss cover	Briter (2026), Ethiopia findings on NAFIR	Ministry of Agriculture (MoA); NBE; DFIs	Identify NAFIR entry points; structure guarantee options with DFIs	Medium
E6	Private participation crowded out in market and data services	State control of market and data infrastructure	Briter (2026), Ethiopia annex	Government; Agricultural Transformation Institute (ATI) (Ethiopia)	Raise through ATI coordination; not a priority for direct EETAF action. Rationale: the constraint stems from state ownership of market and data infrastructure, a national policy choice outside the EETAF's facilitative remit; ATI is the body that coordinates donors and government on this agenda, and Ethiopia is a comparative case	Long **Medium**

Annex B. Kenya desk findings



Founded in 2012, SunCulture sells solar irrigation kits sized for smallholders on instalment (Figure 12). A USD 27.5 million Series B in April 2024 brought total capital raised to about USD 65 million; the company aims to raise USD 219 million from equity, debt, grants and carbon finance to install 274,000 systems in Kenya (Citizen Digital, 2024).

British International Investment added USD 4 million in February 2025 for a carbon financing scheme reaching 16,000 more farmers, after USD 1.7 million in 2023 (Launch Base Africa, 2025). WaterEquity invested USD 5 million in September 2025 (NextBillion, 2025).

SunCulture operates in Kenya, Uganda and Côte d'Ivoire and has distribution agreements in Ethiopia and Zambia.

Figure 12: SunCulture: What an Accelerate-stage financing structure looks like

Three lessons for the diagnostic countries

No single instrument

An EETAF intervention addressing only import duty or only a guarantee will not reproduce the result.

Carbon as a price subsidy

Carbon revenue cuts the farmer-facing price, giving Zambia's carbon architecture commercial weight.

A proven supplier is present

With distribution in Ethiopia and Zambia, the question is what conditions would make the model viable there.

Fiscal predictability

When VAT exemptions on solar equipment were withdrawn in 2020 and 2021, the off-grid solar market contracted by 20% (GOGLA, via Capital FM, 2025). The Finance Act 2025 kept the exemption, but repeated contests create planning uncertainty for multi-year instalment products, supporting the case for multi-year predictability commitments rather than one-off exemptions.

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Appendices

Appendix A – Authorship Decision Log

Date	Contributors	Credit Roles	Proposed Author order	Note/Agreements
25 May 2026	Ojongetakah Enokenwa Baa	Conceptualization – original outline, Methodology, Writing – review & editing, Supervision	AnnRita Njiru, Ojongetakah Enokenwa Baa, Mahlatse Nkosi, Alan Nicol	The authors declare that they have no known competing interests or personal relationships that could have appeared to influence the work reported in this paper
16 June 2026	Alan Nicol	Conceptualization, methodology, and review		
3 September 2026	AnnRita Njiru	Investigation, Methodology, Writing – original draft, Writing – review & editing		
7 October 2026	Mahlatse Nkosi	Writing – review & editing		

Appendix B - Credit Contributorship Statement

Conceptualization: Ojongetakah Enokenwa Baa, Alan Nicol; **Methodology:** Ojongetakah Enokenwa Baa, Alan Nicol, AnnRita Njiru; **Investigation:** AnnRita Njiru, Ojongetakah Enokenwa Baa; Writing – **original draft:** AnnRita Njiru, Ojongetakah Enokenwa Baa; **Writing – review & editing:** AnnRita Njiru, Ojongetakah Enokenwa Baa, Mahlatse Nkosi, Alan Nicol; **Supervision:** Ojongetakah Enokenwa Baa

Declaration of competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Scaling for Impact

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Scaling for Impact (S4I) is a CGIAR Program (2025–2030) that tests, refines, and scales innovations in food, land, and water systems. It works to align those innovations with stakeholder needs to achieve transformative impact.
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