Sustain Africa: De-risking Fertilizer Financing

SUSTAIN AFRICA

USAID
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Dalberg

FINAL REPORT

JULY 2024

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Source: Dalberg analysis, 2024

I. Executive Summary

Objectives | The project aimed to map the fertilizer supply chain's constraints and develop pragmatic solutions to de-risk and unlock financing

On the backdrop of the fertilizer price hike of 2021-2022, **Sustain Africa and its partners, who focus on market linkages and de-risking instruments (e.g., credit guarantees), worked with Dalberg to explore opportunities to sustainably improve fertilizer financing in Africa.** More specifically, the project's objectives were threefold:

Objective 1

- Map the fertilizer supply chain and identify **financing gaps/bottlenecks that are impeding optimum supply and uptake by farmers**

Objective 2

- Develop pragmatic recommendations on **existing and new instruments** to improve financing across the continent

Objective 3

- Identify the right owners (multi-laterals, foundations, private sector actors or governments) to **drive forward the initiatives**

Sources: Sustain Africa, Request for proposals: Improving access to finance across the fertilizer value chain in SSA, 2024; Dalberg, Consultations, 2024

Target audience | The main target audience comprises agriculture ecosystem stakeholders, existing and/or emerging mechanisms, and government entities

Audience

1. **Agriculture ecosystem stakeholders** seeking industry insights about the current landscape and opportunities in fertilizer financing

2. **Existing and/or emerging mechanisms (e.g., AFFM, AFAP, Aceli)** seeking insights to enhance, scale, or design their models

3. **Government entities** seeking to develop sustainable financing solutions for fertilizer

Sources: Dalberg analysis, 2024;

Overview | The efficient and sustainable use of fertilizer in Africa can help to close the current yield gap and strengthen food security

The demand for food in Africa outstrips available supply. A key reason for the mismatch is an underlying yield gap of staple foods. For example, the average yield per ha of maize is 3-4X lower than leading global producers. Further, African countries' yield gap is 2-3X higher, accentuating the continent's lag in extracting value of its arable land. These factors lead to ~ >50% of Africa facing moderate to severe food insecurity.

Sustainable use of fertilizers is one of a suite of interventions that can close this yield gap. Responsible fertilizer use and sustainable agronomy practices[2] can accelerate yield growth. For example, in Rwanda, a 1% increase in fertilizer use resulted in a 0.84 % and 0.35% rise in rice and maize output, respectively. While in Brazil, fertilizer usage increase of 4.4X led to a yield increase of 3.4X across 16 crops.

Nonetheless, a ~ USD 3Bn financing gap impedes fertilizer supply and overall consumption. The average fertilizer usage in Africa (22.6 Kg/ha) is less than half of the Abuja declaration target of 50 Kg/ha, and 6X less than the world average of 139.8 Kg/ha.

A deeper analysis of this consumption lag highlighted critical constraints on the availability, affordability and accessibility of fertilizers:

	Availability	Affordability	Accessibility	Awareness	Advantage
Summary	• International events[3] constrained the supply of fertilizers	• High local retail prices are impacting farmers' affordability	• Persistent infrastructural and distribution issues are impeding access	• Farmers are largely aware of fertilizers and their benefits	• Generally, farmers accept to use fertilizers on their farms

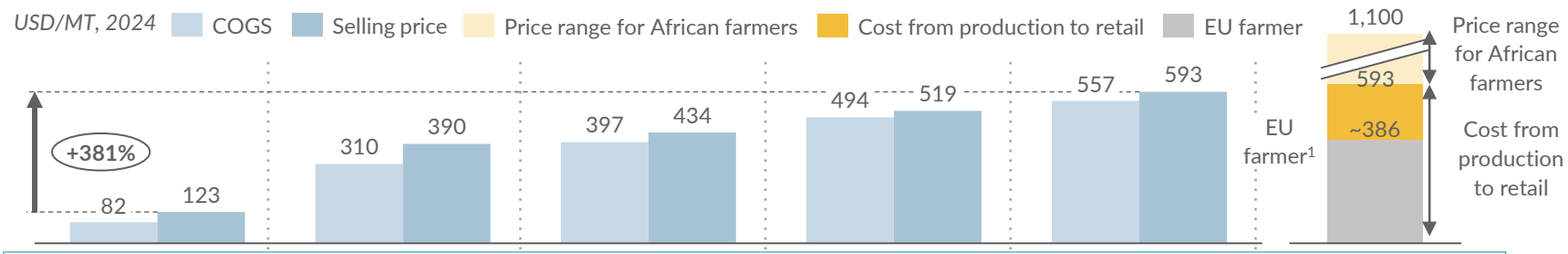
Areas where financing can have the biggest impact

Notes; (1) Yield gap is the attainable yield data minus actual yield data(2) Sustainable agronomy includes conservative soli and water management practices. (3) Events include the COVID-19 pandemic and Russia's war in Ukraine. Sources: FAOSTAT, Food Security Indicators, 2024; Global Yield Gap Atlas, Yield Gap Viewer, 2024; FAO Policy Assistance Support Service (TCSP), Public Policies and Agricultural Investment in Brazil, 2012;UNEP, Effectiveness and Efficiency of Fertilizer Use in Rwanda, 2016; Dalberg analysis, 2024

Value chain | Africa's fertilizer VC consists of high intermediary costs that often mean farmers purchase fertilizers at ~3X the production price

Annual interest rates	Production and sourcing	Inbound logistics	Blending and packaging	Distribution	Retail	Farm usage
Banks	5 – 7%	5-10%	15-20%	20-25%	>20%	>25%
Suppliers	NA	0 – 10%	0 – 10%	0 – 10%	0 – 10%	0 – 30%

Average COGS and selling price for Ammonium Sulphate across the VC in Africa



- **Farmers in Africa pay ~ >380% more for a MT of Ammonium Sulphate at retail than the production price**. Further, African-based farmers pay at least 1.5 – 3X for the MT of Ammonium Sulphate than farmers in India and Europe pay (USD 240 and USD 386, respectively)
- This added cost (similar across other fertilizers) is due to high border clearance levies, inland transport fees, storage charges, and **financing costs**

This report focuses on opportunities to broadening access to fertilizer financing/credit across the value chain

Notes: (1) Indicative fertilizer cost for a European Union-based farmer. Sources: ; Trading Economics, Bank Lending Rate, 2024; Dziwornu, R.K., Agricultural loan pricing, 2024,Government of India, Monthly Bulletin, 2024; Imarc, Ammonium Sulfate Pricing Report, 2024; Dalberg interviews and analysis, 2024

Financing instruments | Farmers and VC actors rely on four main financial instruments to purchase fertilizers

A	**Supplier credit**	**Supplier credit is the primary form of financing.** This credit makes up ~70% of fertilizer sales from producers, inbound logistics players, and blenders to large-scale public and private distributors. However, large-scale players are often reluctant to offer credit to retail agro-dealers due to informal financial structures and high default risk, imploring the retailers to pivot to savings and informal loans to access fertilizers.
B	**Input –based credit** *(as a form of supplier credit)*	**Input-based credit is a widely used avenue for farmers to access fertilizers.** FFOs and off-takers[1] often avail input credit as a bundled service consisting of fertilizers, seeds, and crop protection products. In turn, registered farmers repay the principal and a zero to low interest margin (generally under 10% p.a) after the harvest cycle. This credit is more favorable compared to the high and rigid[3] interest rates that banks typically offer at ~20% - 35% p.a.
C	**Commercial bank loans**	**Banks are seeking to expand lending to the Ag sector[2] but still set onerous requirements for VC actors.** Banks' rigorous processes often mean that only a subset of actors, producers to large scale distributors, access loans. Further, these local blenders and hub-level distributors often deal with high interest rates (>20% p.a.) and constant loan renegotiations.
D	**Grants and concessional loans**	**Grants and concessional loans often finance projects or cover gaps of the other instruments.** Donors offer broad loans that range from financing the development of large-scale plants across Africa to financing input credit schemes for smallholder farmers.

Notes (1) FFOs refer to Farmer Facing Organizations such as One Acre Fund who offer inputs to farmers. (2) Banks in Africa seek to extend their loan portfolio in agriculture from ~5% to 15. (3) Not adjusted at the harvest cycle. Sources: Dalberg, Analysis and Stakeholder Interviews, 2024

Risks | However, a set of risks impact the effectiveness of these instruments, causing substantial financing gaps for farmers, retailers, distributors and blenders

Business model risk

- Lenders note that that **low profitability of borrowers, coupled with the high costs** associated with reaching, assessing, disbursing, and monitoring loans, **frequently restrict lending to underserved and unprofitable segments**

Credit (default) risk[1]

- All lenders **are cautious of credit (default) risks stemming from delayed or denied payments by borrowers** (e.g., distributors, agro-dealers, governments – **sovereign risk**) due to uncertainty of cash flows and/or competing priorities. Hence, lenders limit lending

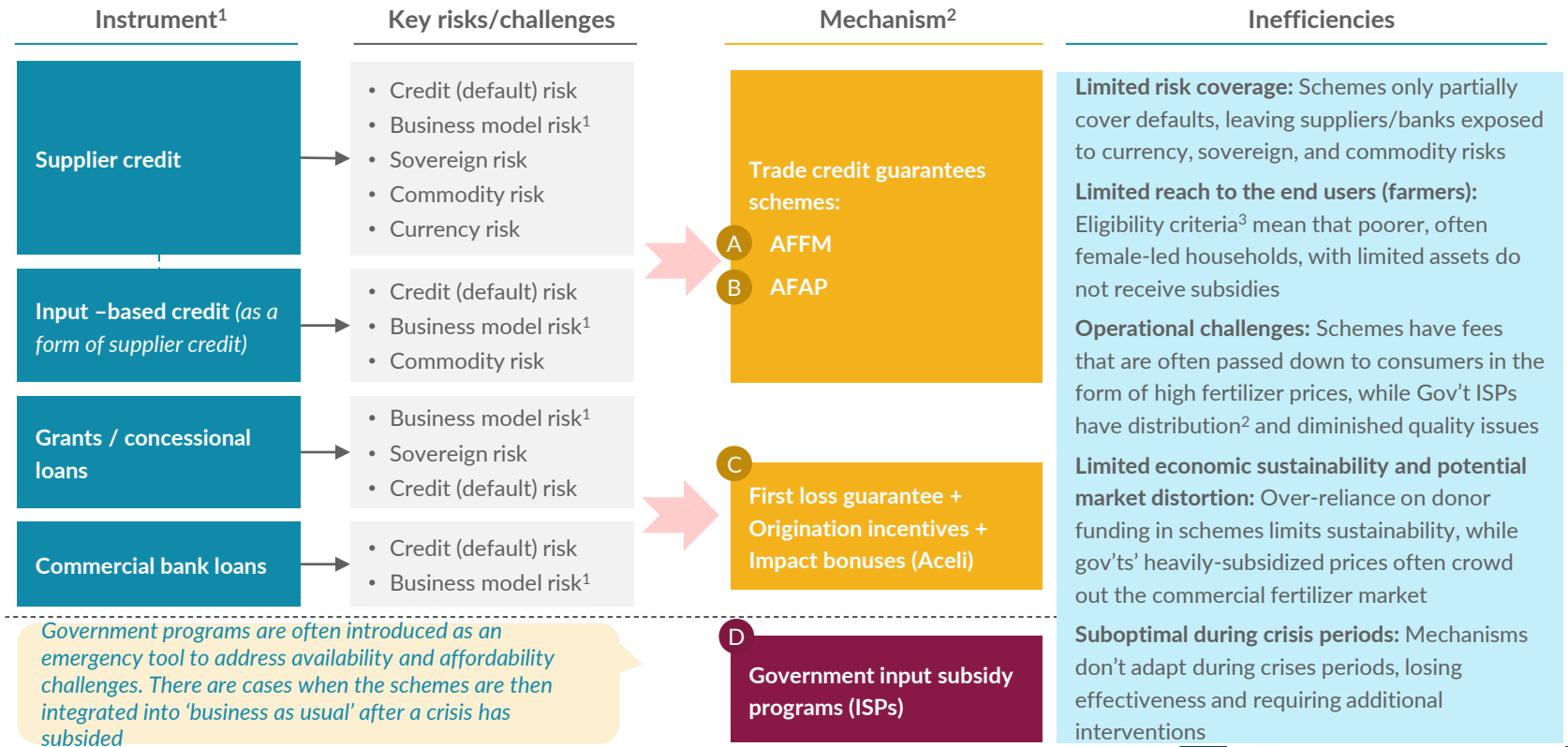
Market dynamics risk

- Lenders are wary of market risks:
  - **Currency and forex risks**, when they buy and sell products in unstable local currencies, or have challenges accessing USD, and
  - **Commodity risks** due to fluctuating input and output prices that position them to losses

Local blenders , distributors and farmers have non-standardized financial structurers, limited credit history, supply chain issues and agronomic output uncertainty that increase the intensity of these lending risks and greatly constrain their access to financing

Notes (1) Credit risk originating from challenges/risks directly affecting borrowers. Sources: Dalberg, Stakeholder Interviews, 2024

Financing mechanisms | Mechanisms exist in the market to address these core risks, but they also have limitations that constrain their use



Notes (1) Business model involves hidden and known costs incurred when providing a lending facility. (2) Distribution issues include poor networks and theft that often affect timely delivery. (3) ISPs typically have criteria requiring farmers to have minimal land holdings and specific crops. Sources: Dalberg, Stakeholder Interviews, 2024

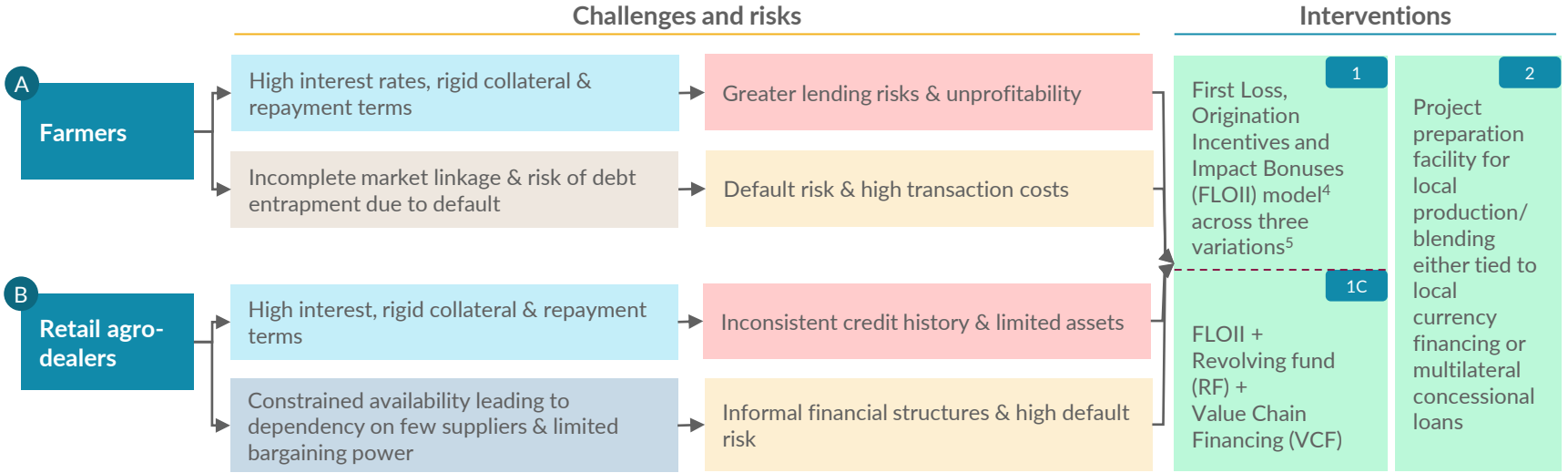
Interventions | The study proposes two potential solutions to address financing gaps and improve availability, affordability, and accessibility of fertilizers (I/II)

Click here to access FLOII details

Non-addressable/Non-bankable VC actors[1]

VC actors[2] → Technical assistance[3]

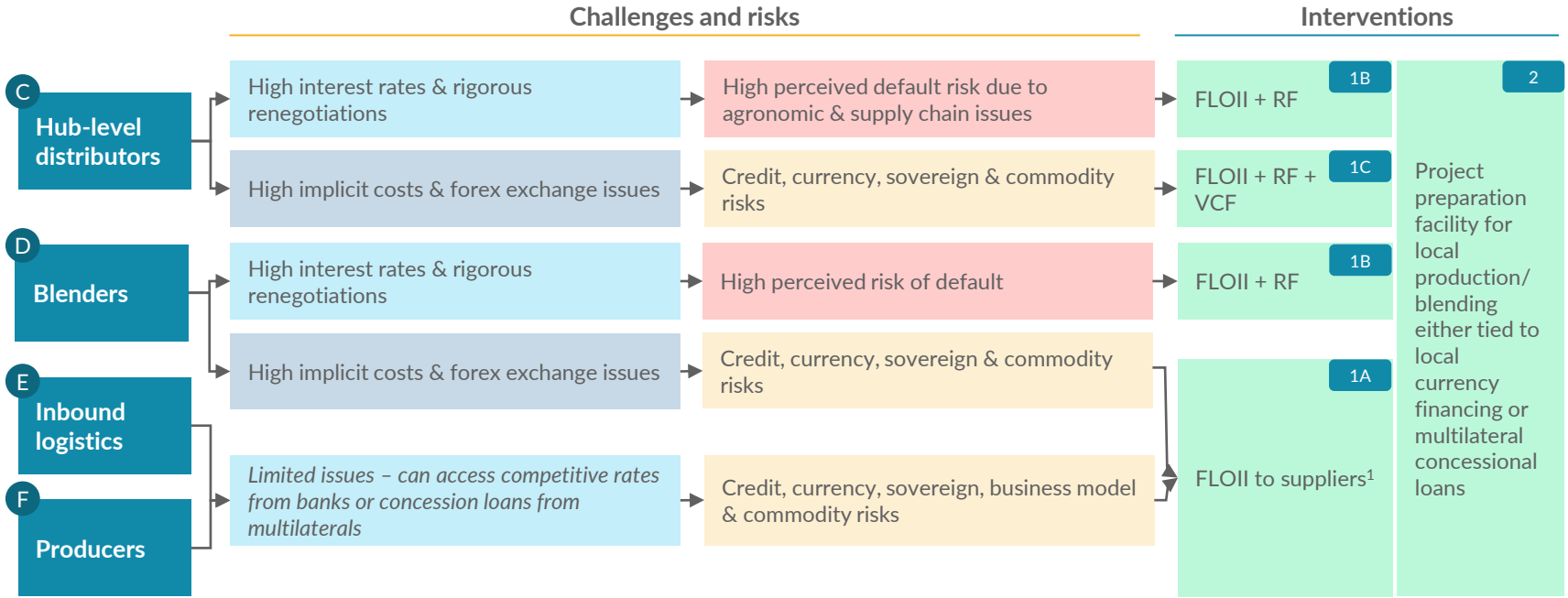
Addressable/bankable VC actors[1]



Key: Borrowers' issues with bank | Farmers' issues with FFOs[6] | Borrowers' issues with suppliers | Banks' issues with borrowers | Suppliers' issues with borrowers | Interventions

Notes: (1) Addressable/bankable refers to VC actors who despite challenges can access a form of credit. (2) VC actors include all players in each node, from producers to farmers. (3) Orgs that make VC actors bankable through providing inputs, financial formalization services, and market linkages. (3) FLOII stands for First Loss, Origination Incentives, and Impact Bonuses – essentially Aceli model. (5) Variations explained in 1A, B & C. (6) FFOs refer to orgs such as One Acre Fund who offer inputs to farmers.
Sources: Aceli, Approach, 2024; Dalberg analysis, 2024

Interventions | The study proposes two potential solutions to address financing gaps and improve availability, affordability, and accessibility of fertilizers (II/II)



Key: *Borrowers' issues with bank* | *Farmers' issues with FFOs*[4] | *Borrowers' issues with suppliers* | *Banks' issues with borrowers* | *Suppliers' issues with borrowers* | *Interventions*

Notes: (1) The solution provides incentives directly to producers/inbound logistics to extend more supplier credit downstream. Sources: Aceli, Approach, 2024; Dalberg analysis, 2024

Interventions | Each proposed solution employs distinct instruments and strategies to enhance existing mechanisms

Current gaps in existing mechanisms		Solutions Proposed
Limited risk coverage: Schemes (e.g., AFFM and AFAP) only partially cover defaults (50% pari-passu),[3] leaving suppliers/banks exposed to currency & convertibility, sovereign, and commodity risks[4]	**Credit risk**	• **Portfolio first-loss (1):** Improve Agri-SME credit protection to incentivize supplier lending to new segments
	Currency & convertibility risk	• **Currency compensations (1A & 1B):** Up to ~USD 5 K[1] per credit to cover currency losses. • **Forward contracts (1C):** By agreeing on set exchange rates in advance through forward contracts • **Local currency financing (2):** Debt instruments denominated in local currency
	Sovereign risk	• **Subsidy repurposing (all): G**radually repurpose ISPs into interventions that unlock PS financing • **Conditional agreements (all) :** For governments to phase out ISPs,[1] while fostering the needed PS EE.[1]
Limited reach to the end users (farmers) and high impact segments: Programs (e.g., AFFM and AFAP) aren't tied to real lending economics. Moreover, eligibility criteria[5] from ISPs (e.g., Malawi) exclude subsidies for poorer, often female-led households with few assets.		• **Origination incentives (1)**: Compensate for initial losses incurred to reach underserved segments • **Impact bonuses (1): I**ncentivize lenders to prioritize high-impact borrowers • **RF (1B & 1C):** Provide the needed financing to players with closer ties and understanding of farmers • **VCF (1C):** Establish a pool of funds that can be deployed from input suppliers to farmers • **Local production and blending (2):** To reduce long-term fertilizer prices
Operational challenges: Schemes (e.g., AFFM and AFAP) have fees that are often passed down to consumers in the form of high fertilizer prices, while Gov't ISPs (e.g., Kenya) have distribution[2] and diminished quality issues		• **No fee model (1)**: Limits barriers to suppliers and other borrowers' participation. Combined with the FLOII, it incentivizes financial institutions and suppliers to target new markets and segments • **Conditional agreements (all) :** For governments to phase out ISPs, while fostering the needed PS EE
Limited scale, long-term sustainability and potential market distortion: Reliance primarily on donor funding (e.g., AFFM and AFAP) pose challenges of limited scale and sustainability over time. Gov'ts' heavily-subsidized prices (e.g., Malawi and Kenya) distorts the market		• **Subsidy repurposing (all):** Gradually repurpose ISPs into interventions that unlock PS financing, aiming for a substantial financial mobilization to address the financing gap • **RF (1B & 1C):** Unlock financing from financing institutions
Suboptimal during crisis periods: Mechanisms (e.g., AFFM and AFAP) don't adapt during crises periods, losing effectiveness and requiring additional interventions		• **Crisis adjustments (1):** Increase first loss coverage, new incentives, volume guarantees, etc. • **Crisis adjustments (2):** Establish volume guarantees, adjust credit, appropriate insurance coverage, etc.

Notes: (1) ISPs: Input Subsidy Programs; PS: Private Sector; EE: Enabling Environment; RF: Revolving Fund; VCF: Value Chain Financing (2) This is illustrative and should be customized for each country based on the specific currency depreciation; (3) Pari passu means security interest that gives lenders an equal claim on the borrowers' assets. (4) Commodity risk is mitigated with value chain financing – explained under "Limited reach to the end users". (5) ISPs typically have criteria requiring farmers to have minimal land holdings and specific crops Sources: Dalberg analysis, 2024

Sovereign risk | The outlined interventions address sovereign risk challenges through conditional agreements and subsidy repurposing

Problem and affected actors

- **Private sector market distortion:** The distribution of subsidized fertilizers through government programs disrupts the private market, impacting the value chain inc. **producers and retailers**
- **Delayed payments:** Government periodically delay payments to fertilizer suppliers which constrains the flow of fertilizers to **producers/inbound logistics** in subsequent seasons
- **Changes in government policy:** Favorable government policy can encourage investment, but sudden changes, as seen with Kenya's recent Finance Act, can change the equation and jeopardize investments

Interventions

Subsidy repurposing (all): The objective is to incentivize governments to gradually repurpose Input Subsidy Programs into interventions (e.g., intervention 1 and 2) that unlock private sector financing. To facilitate this transition and build out the proof of concept, donors should pledge to match the initial government funding

Conditional agreements (all): Design and implement conditional agreements with governments to phase out funding for ISPs, while fostering an enabling environment for private sector growth. For instance, donors could redirect funding if governments fail to comply with specified regulatory reforms or contribute to designated interventions

Strategic alliances: This would require significant policy work and convening power, potentially led by major lenders like AfDB and the WB. Such organizations should seek to form strategic alliances with NGOs and the private sector to exert more influence on policy decisions

Sources: Dalberg analysis, 2024

Currency risk | Currency compensations, FLOII, forward contracts, and local currency financing can help mitigate currency depreciation risks

Problem and affected actors

- **Currency depreciation risk:**
  - **Blenders and hub-level distributors** often buy raw materials or fertilizers in USD but sell them in (unstable) local currencies
  - Some **producers and inbound logistics** providers offer supplier credit in dollars but receive payment in local currency. This is particularly common when lending to governments. Some governments tend to delay their payments, exacerbating local currency depreciation
- **Challenge accessing forex (convertibility): Blenders and hub distributors** often receive USD loans, but are paid in local and struggle to access USD to pay off their obligations
- **Lower returns on investments**: Making investments in a foreign currency exposes **investors** to exchange rate fluctuations, which can significantly impact the value of their investments (e.g., investing in a local fertilizer production plant). If the local currency depreciates against the foreign currency, the cost of repaying loans increase or the value of returns on equity investments decreases, leading to financial instability

Interventions

Currency compensations (1A and 1B): Compensations of up to ~USD 5 K[1] per credit ranging between USD 15K to USD 1.5 Mn to cover currency losses. This applies to **producers and inbound logistics** in 1A, and to **blenders and hub-level distributors** in 1B

FLOII (1A,1B, and 1C): Offering origination and impact incentives in USD, along with first-loss when applicable, helps mitigate potential losses due to currency risk to **suppliers and banks**

Forward contracts (1C): By agreeing on set exchange rates in advance through forward contracts, **off-takers, traders, and input suppliers** shield themselves from potential depreciation in the local currency. Moreover, the consortium should prioritize sourcing inputs locally whenever possible

Local currency financing (2): Debt instruments denominated in local currency to protect **investors** from FOREX risks and currency fluctuations. The financing originates from: (i) Local currency loans from banks and/or (ii) Local currency denominated concessional loans from multilaterals

Notes: (1) This is illustrative and should be customized for each country based on the specific currency depreciation. Sources: Dalberg analysis, 2024

Interventions | Intervention 1 aims to unlock supplier credit and FIs financing, while intervention 2 seeks to increase local production and blending

	Solution	Financiers	Direct beneficiaries	Secondary beneficiaries	Potential Facility Lead[3]	Intended impact
Intervention 1	**1A: FLOII**	• MDBs; DFIs; Foundations; Gov't	• Producers; Inbound logistics providers; Large-scale blenders	Hub-level distributors & retail agro-dealers	AFAP; Aceli; Sustain Africa; AFFM; AGRA	Incentivize supplier credit from producers, inbound logistics companies, and large-scale blenders with the financial capacity to do so
	1B: FLOII + RF	• ***FLOII:*** DFIs; MDBs: Gov't • ***RF:*** Banks; MFB	• ***FLOII:*** Banks; MFBs • ***RF:*** Blenders; Distributors & Agro-dealer associations	Retail agro-dealers and commercial farmers		Mobilize FIs capital to establish a rotating pool of funds that can be deployed from blenders to farmers enhancing credit accessibility
	1C: FLOII + RF+ VCF	• ***FLOII:*** DFIs; MDBs; Gov't • ***RF:*** Banks; MFB	• ***FLOII:*** Banks; MFBs • ***RF:*** Traders; Farmers association; Off-takers[1]	Commercial farmers and SHFs		Mobilize FIs capital to establish a rotating pool of funds that can be deployed from input dealers to farmers enhancing credit accessibility, market access, and risk-sharing
Intv. 2	**2: PPF tied to local currency financing**	• ***PPF:*** DFIs; MDBs; Gov't • ***Local currency:*** Banks; MDBs; DFIs;	• ***PPF:*** Project developers[2] • ***Local currency:*** Accredited entities[2]	Hub-level distributors, retail agro-dealers and farmers	An alliance of AFAP; AFFM; SA; GCF; AfDB; Equity Bank and BMGF	Support the development, preparation, and investment in local blending and production of fertilizer to potentially reduce long-term fertilizer prices

Notes: (1) Off-takers working directly with SHFs can access the revolving fund directly, bypassing smaller traders. (2) Entrepreneurs, or existing businesses interested in establishing local fertilizer production/blending facilities in Africa. (3) Indicative names of potential leads. Sources: Dalberg analysis, 2024

Intervention 1A | First Loss Cover, Origination Incentives and Impact bonuses (FLOII) to suppliers would unlock supplier credit down the fertilizer VC

Click here to access detailed solution

FLOII for suppliers — A mechanism that provides first loss coverage, origination incentives and impact bonuses (FLOII) to **producers, inbound logistics companies, and large-scale blenders** with the financial capacity to offer more supplier credit.

What is the tool?

- **First loss** coverage at a portfolio level for credit ~ USD 15K – USD 1.5Mn[1,2]
- **Origination incentives** are payments to suppliers/lenders that compensate them for the lower revenues and higher operating costs of extending credit to smaller and newer borrowers that would not otherwise have access to finance
- **Impact bonuses** in form of higher first-loss coverage and origination incentives for credit to high-impact borrowers (e.g., youth and women-owned businesses[3])
- **Currency compensations** for suppliers experiencing losses from depreciations
- **Conditional agreements** to implore gov'ts to transition from ISPs to this scheme[4]
- **TA facility** to agro-dealers to build capacity and minimize business risk

When it can be used?

- **When providers of finance** are unwilling to extend more supplier credit due to perceived high risk of default
- **When borrowers** require financing but do not meet requirements for non-guaranteed lending and are perceived as high risk

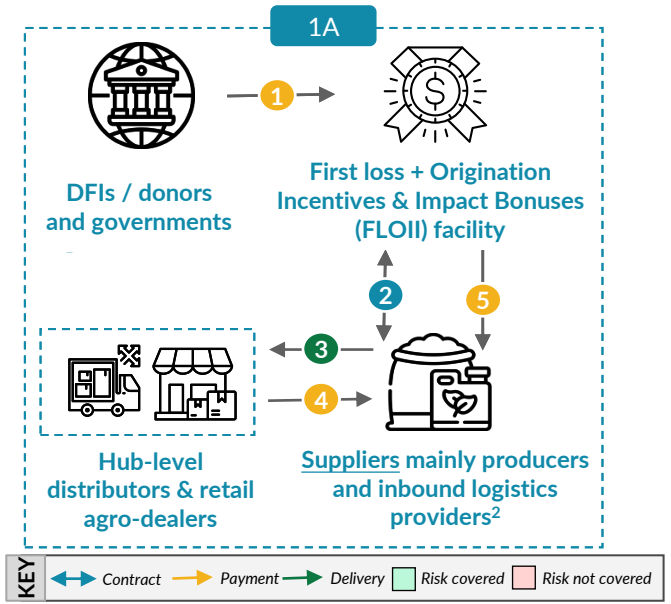
Who uses it?

Financiers:
- MDBs; DFIs; Foundations; Gov'ts

Beneficiaries:
- Producers; Inbound logistics; Large-scale blenders

Potential Facility Lead[5]:
- AFAP; Aceli; Sustain Africa; AFFM; AGRA

Critical risks targeted: Credit; Business model; Sovereign; Currency; Commodity



Notes: (1) With each qualifying credit, a lender earns a credit (e.g., ~ 4% of the credit value) into a reserve account. (2) Maintaining small credit bands (e.g., USD 15K) is crucial for serving high-impact market segments. However, these figures are indicative and need to be validated for each specific player. (3) Lead to determine the sub-segments of women/youth the incentive will cover. (4) Page 15 has further details. (5) Indicative names of potential leads. Source: Dalberg analysis, 2024

Intervention 1B | A RF to blenders and hub-level distributors, coupled with FLOII to banks, would unlock supplier credit to retail agro-dealers

E. Sum

Click here to access detailed solution

FLOII model + RF	A RF to blenders, hub-level distributors, or retail agro-dealer associations, coupled with FLOII to banks,[1] **mobilizes capital to establish a rotating pool of funds that can be deployed from blenders to farmers** enhancing credit accessibility

What is the tool?

- A **revolving fund (RF)** is a mechanism that provides a continuous source of funding to blenders, hub-level distributors, or retail agro-dealers associations. This cyclical process **allows the fund to be used repeatedly for similar activities without requiring additional renegotiations and capital infusions**
- **FLOII aims to catalyze FIs into providing revolving funds,** thereby attracting commercial capital that would have otherwise remained untapped
- **TA facility** to agro-dealers associations to build capacity and minimize

When it can be used?

- **When providers of finance** can clearly identify trusted borrowers that generate regular income to repay the fund periodically
- **When recipients of finance** have sustainable business models but need working capital to meet (and scale) the seasonal cycle

Who uses it?

Financiers:

- ***FLOII:*** DFIs; MDBs; Gov'ts
- ***RF:*** Banks; MFB

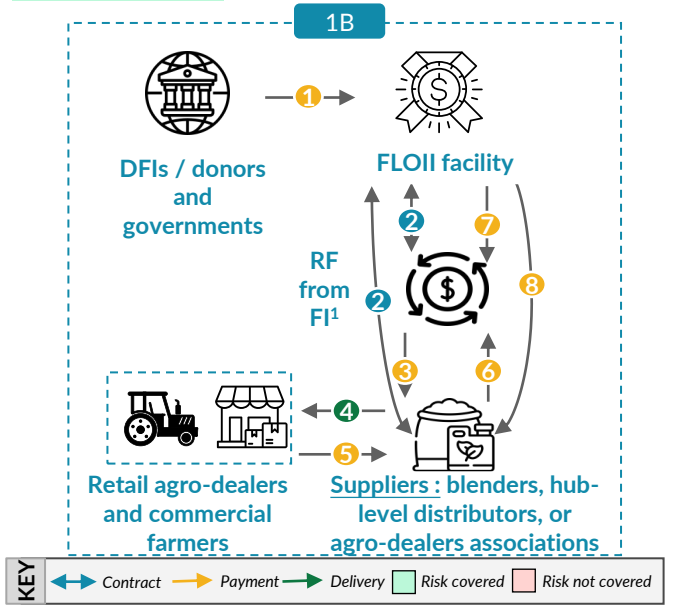
Beneficiaries:

- ***FLOII:*** Banks; MFBs
- ***RF:*** Blenders; Distributors & Agro-dealer associations

Potential Facility Lead:

- AFAP; Aceli; Sustain Africa; AFFM; AGRA

Critical risks targeted: Credit; Business model; Sovereign; Currency; Commodity



Notes: (1) The incentives: first loss coverage, origination incentives and impact bonuses would limit the transaction costs and defaults for banks and other lenders, increasing their appetite to participate in a revolving fund. Source: Dalberg, Stakeholder interviews, 2024

Intervention 1C | FLOII for banks to provide a RF for VC financing involves mobilizing capital to establish a rotating pool of funds from producers to farmers

Click here to access detailed solution

FLOII model + RF+ VCF

A revolving fund for value chain financing, coupled with a FLOII to banks,[1] involves **mobilizing capital to establish a rotating pool of funds that can be deployed from input dealers to farmers** enhancing credit accessibility, market access, and risk-sharing.

What is the tool?

- A **revolving fund (RF)** is a mechanism that provides a continuous source of funding. This cyclical process **allows the fund to be used repeatedly for similar activities without requiring further renegotiations and capital infusions**
- The **FLOII facility** incentivizes banks to provide an RF for VCF
- The tool is **a strategic alliance between the FI** (that provides the RF) and **several VC actors** (input providers, aggregators, farmers and off-takers) **to reduce transaction costs and lower risks** that impede access to traditional financing
- **TA facility** focused on business acumen and making aggregators more investable

When it can be used?

- **When providers of finance** accept VCF as protection against farmers lacking physical collateral, high outreach costs, and other risks
- **When recipients of finance** require financing and possess forward contracts, but cannot collateralize these contracts

Who uses it?

Financiers:

- ***FLOII:*** DFIs; MDBs; Gov'ts
- ***RF:*** Banks; MFB

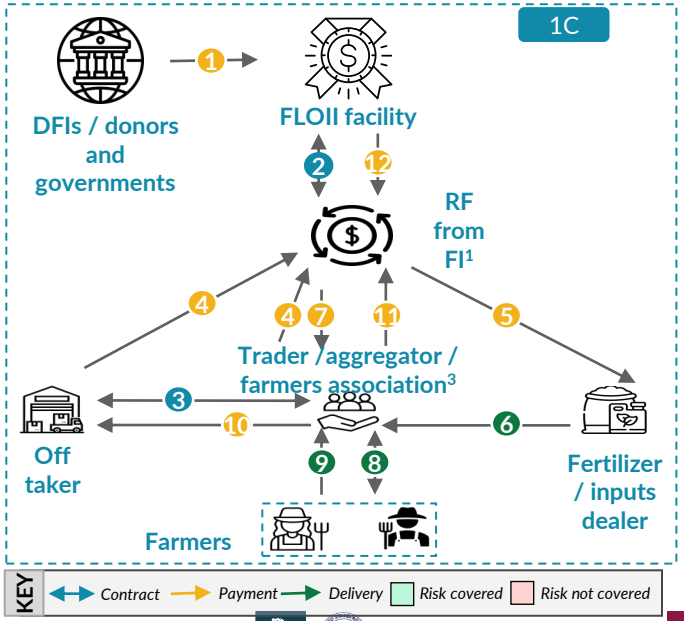
Beneficiaries:

- ***FLOII:*** Banks; MFBs
- ***RF:*** Traders; Farmers association; Off-takers[2]

Potential Facility Lead:

- AFAP; Aceli; Sustain Africa; AFFM; AGRA

Critical risks targeted: Credit | Business model | Sovereign | Currency | Commodity



Notes: (1) Incentives: First loss coverage, origination incentives and impact bonuses would limit transaction costs and defaults for banks and other lenders, increasing their appetite to participate in a revolving fund (2) Off-takers working directly with SHFs can access the revolving fund directly, bypassing smaller traders. Source: Dalberg, 2024

Intervention 1 | Across solutions, re-allocating 15% of countries' subsidy budgets and pairing with donor funds can incentivize supplier credit of ~ USD 1.5 Bn

- To maximize the interventions' impact, it is critical to secure a sizable allocation of funds, particularly **mobilizing financial support strategically from donors and governments to ultimately unlock private capital**. This would require significant advocacy efforts, potentially led by major lenders such as AfDB
- The **initiative could be seed funded by donors to build out the proof of concept before transitioning to government to allocate funds as a percentage of existing input subsidy schemes, with donors matching contributions**. To incentivize donors to join the scheme, it is critical to articulate the potential social and climate impact of each intervention

Sustain Africa's focus countries: Illustrative	 Ghana	 Nigeria	 Zambia	 Malawi	 Tanzania	 Kenya
Size of the input subsidy programs (ISP)	USD 100 Mn	USD 130 Mn	USD 270 Mn	USD 150 Mn	USD 130 Mn	USD 200 Mn
15% of the ISP	USD 15 Mn	USD 20 Mn	USD 40 Mn	USD 22.5 Mn	USD 20 Mn	USD 30 Mn
Donor matching	USD 15 Mn	USD 20 Mn	USD 40 Mn	USD 22.5 Mn	USD 20 Mn	USD 30 Mn
Total size per country	USD 30 Mn	USD 40 Mn	USD 80 Mn	USD 45 Mn	USD 40 Mn	USD 60 Mn
Total size	**~USD 300 Mn**					

With 5X annual leverage,[1] the USD 300 Mn can incentivize supplier credit of USD 1.5 Bn, which is 50% of the USD 3 Bn financing gap

Notes: Utilized a 5X annual leverage as an illustration because the industry considers leverage above 3 acceptable. While many players aim for x10, serving countries and actors with higher risk may entail lower leverage but greater impact. Sources: Rehema Karata, The impact of smart ISP in Tanzania, 2024; The Citizen, Higher fertilisers demand, 2023; Parlamient, Status of FISP for 2023/2024 farming season, 2023; Tiri Gyang, GESS, 2020; USDA, Ghana's Agricultural Subsidy Program, 2022; PLOS, The politics of agricultural policy and nutrition, 2023; IFPRI, How is Kenya's National FSP working? 2023

Intervention 1 | During crises,[1] it is critical to increase first loss coverage, and introduce new incentives, conditional agreements, and volume guarantees

Crisis	Description	Aggravated risks	Adjustments to the solution[3]
Market dynamics and supply chain disruptions	• Significant price volatility in raw materials or fertilizers • Considerable currency depreciation in a short period of time • Shipping delays/strikes	• Default risk • Currency risk • Commodity risk	• **Adjust terms and conditions** e.g., in the RF, extend repayment periods for new credit, and offer grace periods for existing loans • **Inject additional capital[5] and increase the coverage % of the first loss cover** to provide greater security against defaults • **Introduce additional incentives and bonuses**, paying them in USD to incentivize FIs to continue originating loans • **Establish volume guarantees[4]** for suppliers
Regulatory changes	• Adverse policy changes that constrain the supply and use of fertilizers	• Business model risk • Sovereign risk	• **Form strategic partnerships** with NGOs, and private sector to form a united front can exert more influence on policy decisions • **Conditional agreements** directing donors to redirect funds if policymakers do not make improvements to regulations and policies
Natural disasters and wars	• Extreme weather or political events that disrupt the fertilizer value chain	• Default risk • Supply chain risk	• **Inject additional capital** into the revolving fund to bolster lending resources/funds amidst the crisis • **Establish volume guarantees[4]** for suppliers • **Introduce a period-defined emergency plan targeting farmers,** e.g., subsidized fertilizer, and seed, coupled with extension services • **Donors to act as last resort** to cover major defaults due to these events

Beyond these adjustments, there is need for governments to provide short term funds to back up/guarantee private sector systems to limit fertilizer shortages

Notes: (1) When relevant and needed; (2) Revolving Fund; (3) Adjustments of resilience interventions during shock/crisis periods; (4) Contract between a guarantor and a supplier, which guarantees that procurers will purchase a minimum quantity of an existing product over shock periods. In return, the supplier lowers the price. (5) DFIs / donors and governments. Sources: Dalberg, Interviews and Analysis, 2024

Intervention 1 | The FLOII facility is designed to incentivize the expansion of supplier credit to unaddressed risk segments (1A) and new audiences (1B & 1C)

Features	Existing solutions (e.g., AFFM, AFAP)	FLOII facility
Guarantee beneficiaries	Producers and inbound logistics	• **1A:** Producers and inbound logistics • **1B:** Blenders, hub-level distributors, or agro-dealers associations through FIs • **1C:** Trader /aggregator / FFO[2] through FIs
Credit beneficiaries	Hub agro-dealers	• **1A:** Hub agro-dealers & retail agro-dealers • **1B:** Retail agro-dealers and commercial farmers • **1C:** Commercial farmers and SHF
Fees[1]	Upfront fee and annual commission	No fee and commission model
Critical risks targeted[1]	Credit risk (50% pari-passu[3])	• Credit risk (first loss + crisis adjustments) • Business model risk (origination incentives) • Currency risk (currency compensations) • Sovereign risk (conditional agreements) • Commodity risk[4] (VCF)

Intended impact

- **1A: Expand supplier credit.** Change lending behavior to serve unaddressed risk segments through no fees, first loss coverage, origination incentives and impact bonuses
- **1B: Target different audiences.** Increase supplier credit from blenders, hub-level distributors, or agro-dealers associations to retail agro-dealers and commercial farmers
- **1C: Target different audiences.** Increase credit to farmers and SHF by facilitating market access and strengthening the VC

Notes: (1) this applies to 1A, 1B, and 1C. (2) Off-takers working directly with SHFs can access the revolving fund directly, bypassing smaller traders. (3) Pari passu means security interest that gives lenders an equal claim on the borrowers' assets. (4) This only applies to 1C, not 1A and 1B Sources: Dalberg analysis, 2024

Intervention 2 | The PPF tied to local currency financing could be the gateway to enhancing local production/blending and mitigation of critical risks

E. Sum

Click here to access detailed solution

PPF tied to financing

The PPF helps accredited entities in preparing full proposals based on a concept note cleared for project preparation support. If a viable case exists, **the PPF connects investors with financial institutions that provide local currency financing**

What is the tool?

- **A PPF is a financial and technical resource designed to support the preparation stages of project development.** This funding/financing generally comes from multilaterals, foundations, and/or governments.
- **Local currency finance refer to debt instruments denominated in local currency to protect borrowers from FOREX risks and currency fluctuations.** The financing originates from: (i) Local currency loans from banks and/or (ii) Local currency-denominated concessional loans from multilaterals
- **Conditional agreements** to implore gov'ts to transition from ISPs to this scheme[3]

When it can be used?

- **When providers of finance** seek to limit borrower's exposure to currency mismatches and to contribute to development of domestic capital markets
- **When recipients of** finance struggle to raise finance locally and need to borrow from international funders lending in a different currency

Who uses it?

Financiers:

- ***PPF:*** DFIs; MDBs; Gov'ts
- ***Local currency:*** Banks; MDBs; DFIs;

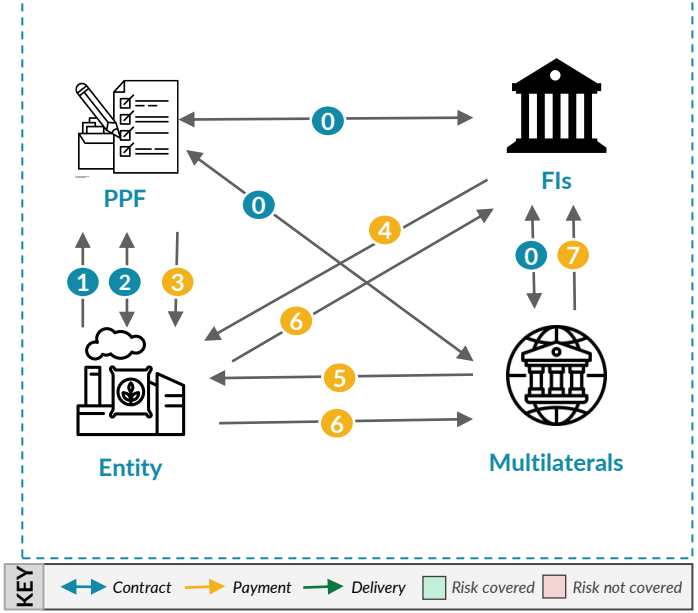
Beneficiaries:

- ***PPF:*** Project developers[1]
- ***Local currency:*** Accredited entities[2]

Potential Facility Lead:

- An alliance of AFAP; SA; GCF; Equity Bank and BMGF

Critical risks targeted: Credit; Business model; Sovereign; Currency; Commodity



Notes: (1) Entrepreneurs, or existing businesses interested in establishing local fertilizer production/blending facilities in Africa. (2) Organization that has been approved by the PPF and have a viable business case. (3) Additional information on page 15. Sources: Dalberg, Stakeholder interviews, 2024

Intervention 2 | During crises,[1] it is critical to establish volume guarantees, adjust credit, and ensure appropriate insurance coverage is in place

Crisis	Description	Aggravated risks	Adjustments to the solution[1]
Market dynamics and supply chain disruptions	• Significant price volatility in raw materials or fertilizers • Considerable currency depreciation in a short period of time • Shipping delays/strikes	• Default risk • Currency risk • Commodity risk	• **Establish volume guarantees**[2] for local producers/blenders • **Adjust terms and conditions** from the local currency credit e.g., extend repayment periods for new credit, and offer grace periods for existing loans
Regulatory changes	• Adverse policy changes that constrain the supply and use of fertilizers	• Business model risk • Sovereign risk	• **Form strategic partnerships** by collaborating with agricultural organizations, NGOs, and private sector entities to form a united front can exert more influence on policy decisions • **Conditional agreements** that direct donors/support systems to redirect funds to other regions on condition that policymakers do not make improvements to regulations and policies
Natural disasters and wars	• Extreme weather or political events that disrupt the fertilizer value chain	• Default risk • Supply chain risk	• **Insurance cover** to protect against natural disasters and wars, which can disrupt project timelines and finances

Notes: (1) Adjustments of resilience interventions during shock/crisis periods; (2) Contract between a guarantor and a supplier, which guarantees that procurers will purchase a minimum quantity of an existing product over shock periods. In return, the supplier lowers the price. Sources: Dalberg, Interviews and Analysis, 2024

Additional interventions | Enhancing market maturity and reducing financing costs also needs associations, TA, market intelligence, and credit ratings

Term	Solution	Targeted actor	Intended impact
Short term	3 **Technical assistance (TA) to farmers**	• Farmers	• Organizations (generally non-profits) that make **farmers actors bankable** through providing inputs, financial formalization services, extension services, and market linkages
Short term	4 **Aggregation of retail agro-dealers and TA to its association**	• Retail agro-dealers	• **Aggregate retail agro-dealers** within a unified association t**o strengthen the VC**, foster peer accountability, and establish credit profiles for retailers • Provide TA to these associations for long-term sustainability and professionalism, with optional financial management support (Intervention 1B).
Medium term	5 **Market Intelligence**	• All VC actors	• **Generate and transfer insights on fertilizer prices, trades, and regulations** to increase transparency and **enable VC actors secure better deals**
Long term	6 **Credit rating to VC actors**	• Blenders to farmers	• **Issue credit ratings** to all VC participants, particularly from blenders to farmers, **to increase their visibility and probability to access affordable financing**

Sources: Dalberg analysis, 2024

Operationalization | The primary aim is to enhance current and emerging mechanisms

		Rationale for possible selection	How does it work?	Risks and Mitigations
1A	**Enhance existing and emerging credit guarantee schemes e.g., AFFM and AFAP[1]**	• Leverage established frameworks, networks, and resource to facilitate linkages between suppliers and hub-level distributors and enhance the technical and business capabilities of hub-level distributors to reduce implementation and business risks	• **Overlay the FLOII model to existing credit guarantee schemes** to increase utilization rates and incentivize engagement with high-impact segments • **Use a data driven approach to adjust the design of the model** (e.g., coverage, incentives) in each country	• Highlight benefits of this model to address potential limited openness from AFFM and AFAP due to their current focus on capitalizing existing offerings • Carefully assess the trade-offs and ensure that the benefits of implementing mixed models outweigh the challenges
1A	**Advisory to suppliers and borrowers**	• Maximize the use of current tools and solutions available to the stakeholders	• **Provide direct advisory services to suppliers** and borrowers. Helping them access, tailor, and implement current financial tools effectively.	• Adapt existing financial structures to better fit the specific needs of suppliers and borrowers.
1B & 1C	**Include RF and/or VCF in Aceli facility and emerging initiatives[2]**	• Harness Aceli's data-driven approach, experience with FIs, and methodologies to streamline operations and maximize impact	• **Leverage Aceli model to onboard fertilizer suppliers.** In the short term, work in Aceli focus countries with opportunity to expand as Aceli scales	• Articulate the impact opportunity and prevent operational drift to engage Aceli. • Identify appropriate partners in each country to manage the complexity of RF and VCF (e.g., One Acre Fund)
2	**Advisory on the development of new structures and coalitions**	• Leverage deep knowledge of fertilizers (AFAP, Sustain Africa), PPFs expertise (GCF, AfDB), financing facilities (Local FIs, IFC), convening power (AfDB, AGRA, USAID, BMGF)	• The participants would need to **choose a participating organization to be the Coordinating Lead** of the alliance and the initiative	• Careful planning, defined roles, and clear communication channels to manage differing priorities, coordination challenges, and the need for strong leadership in a coalition

Notes: (1) AFFM and AFAP are responsible for leading the evaluation, amendment, and implementation of changes to their schemes.. Sustain Africa is available to provide advisory support, should AFFM and AFAP be amenable to it. (2) Aceli could also explore 1A. Ideally, in collaboration with AFAM and AFAP. Sources: Dalberg analysis, 2024

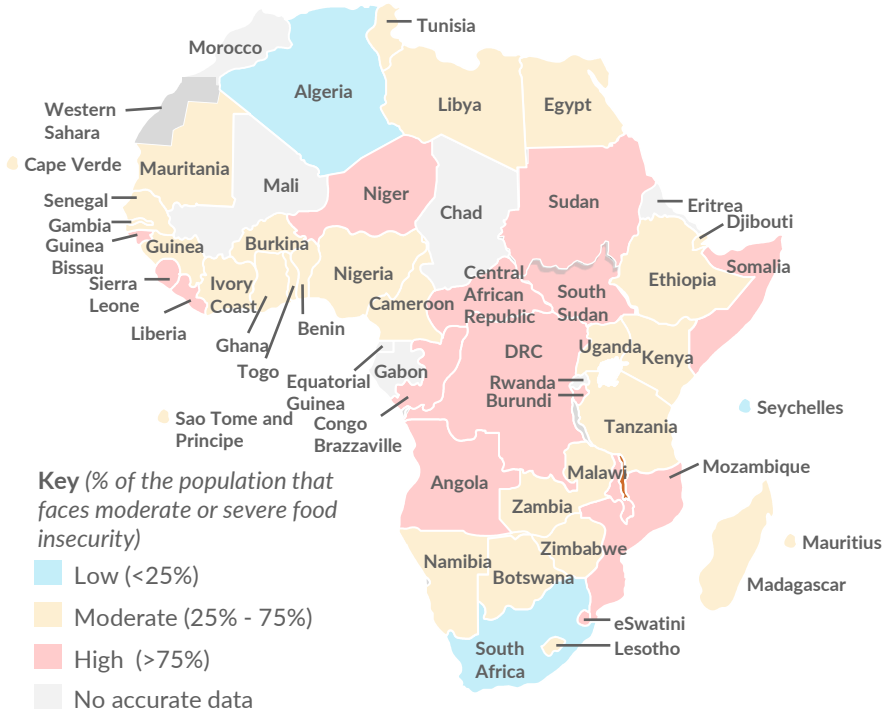
II. Landscape overview

More than half of Africa's population faces moderate or severe food insecurity

Overview

Intensity of food insecurity in African countries

3-year average (%), 2020 – 2022



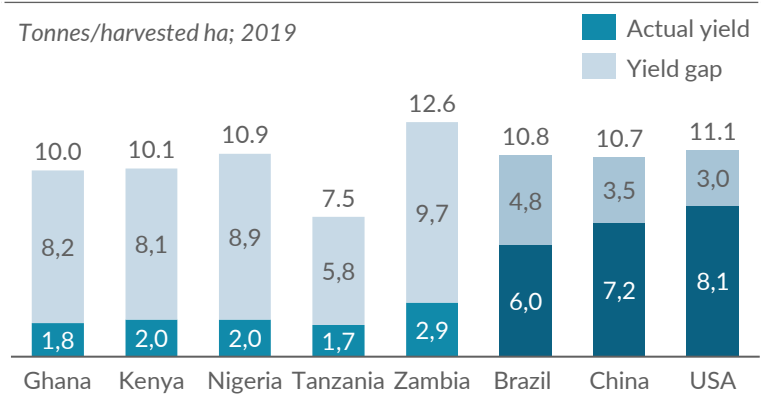
- Africa has a total population of 1.49Bn, predicted to grow annually by ~2.5% to 1.71 Bn in 2030. Thus, there is a **critical need for a stable food system** to sustain and nurture the growing population
- Nonetheless, the FAO estimates that **282 million people, ~20% of the continent's population, are malnourished**. Furthermore, **868 million people, 58% of the population, were moderately or severely food insecure**
- This food insecurity is disproportionately worse in nations with **fragile food systems exacerbated by ongoing conflicts and associated humanitarian crises**

Sources: FAOSTAT, Food Security Indicators, 2024; UN Population, Total Population by Sex, 2024; Dalberg analysis, 2024

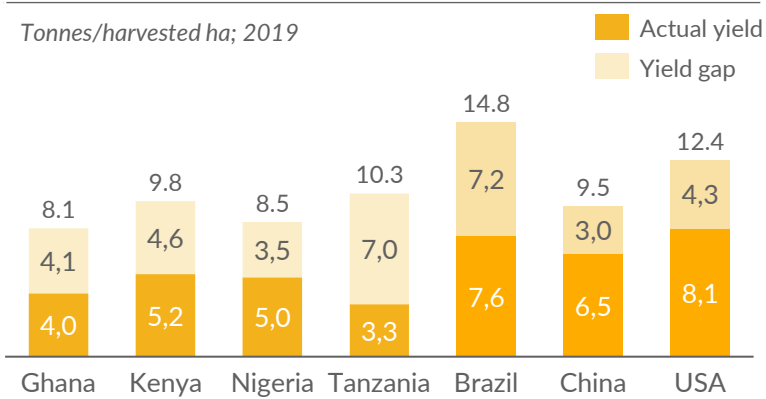
Underlying the continent's food insecurity is the notable yield gap of staple foods across the continent

Overview

Actual yield vs. yield gap[2] for rainfed maize[1] in Africa



Actual yield vs. yield gap for irrigated rice[1] in Africa[3]



- Across Sustain Africa's (SA) focus countries, the **average yield of rainfed maize (tonnes/ha) is 3-4X lower** than leading global producers. Further, African countries' gap to potential yield is **2-3X higher**, highlighting the continent's lag in extracting the economic value of its arable land
- This situation persists in irrigated crops such as rice, where the gap for African countries stands at **1.5 – 2X higher** than China and USA
- Overall, these gaps point to **unsustainable agricultural practices** such as limited availability of inputs and equipment, use of outdated planting techniques, and untimely weather information **limiting the full potential of the continent's farmers and their lands**

Notes: (1) Maize and rice are in the top 5 most produced food groups in Africa. (2) Yield gap is computed as attainable yield data minus actual yield data. (3) The source did not include Zambia's latest statistics. Brazil, China and USA were identified as comparator countries since they lead global production of maize and rice. Sources: Global Yield Gap Atlas, Yield Gap Viewer, 2024; FAOSTAT, Agricultural production by crop, 2024; Dalberg analysis, 2024

The responsible use of fertilizer is an important part of improving crops' productivity, resilience, and health

Overview

In this report, we will explore two categories of fertilizers:

- **Synthetic fertilizers -** Chemical substances manufactured from organic elements to provide plants with macronutrients e.g., nitrogen, phosphorous, and potassium. The commonly used fertilizers are Nitrogen-Phosphorous-Potassium (NPK), Urea, Diammonium Phosphate (DAP), Ammonium Nitrate (AN), and Muriate of Potash (MOP)
- **Organic fertilizers** - Materials of animal origin rich in macro, and micro-nutrients, including Calcium and Magnesium

Fertilizers, in addition to better agronomic practices such as crop breeding, water, and soil management, have notable benefits, including:

Increased yield

- Improved and sustainable use of fertilizers increases yield per ha

Focus area

Improved livelihoods

- With increased output, farmers can sell more and realize higher profits/VCR[1], improving standards of living

Resilient crops

- Fertilizer supplies essential nutrients to plants and soils, enhancing their resilience against climate stressors

Improved micronutrients

- Fertilizers provide needed micronutrients that boost human health, including zinc, iron, selenium, and iodine

Notes: (1) VCR stands for Value Cost Ratio, which is the amount of money earned per amount of money spent e.g., for fertilizers and other inputs. Sources: International Fertilizer Association, Food Security in Africa, 2024; Dalberg analysis, 2024

More specifically, evidence exists that sustainable use of fertilizers can improve productivity and close the yield gap in Africa

Overview

We have highlighted case studies below from Rwanda and Brazil to illustrate how ***sustainable large-scale use can improve national production***

Rwanda[1]

- **Objective:** Rwanda launched the Crop Intensification Program (CIP) to **improve the availability and use of fertilizers**
- **Process:** Through the CIP, the government coordinated the bulk procurement of fertilizers, while **incentivizing the development of a private-led distribution and advisory system**
- **Results:** Fertilizer use tripled from **3.4 Kg/ha in 2006 (pre-program) to 11.3 Kg/ha in 2013.** Further, between 2007 and 2014, **a 1% increase in fertilizer use resulted in a 0.84 % and 0.35% rise in rice and maize output**, respectively

Brazil[1]

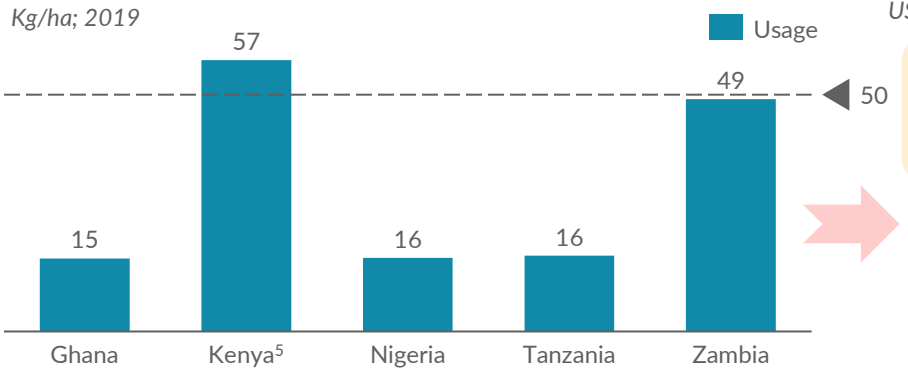
- **Objective:** Brazil launched the National Program for Fertilizers and Agricultural Limestone (PNFCA) in 1974 to **improve fertilizer supply through concessional lines of credit to local producers**
- **Process:** The PNFCA credit facilities **expanded the production capacities of Urea, DAP, and Ammonium Nitrate,** with the fertilizers used to improve yield countrywide
- **Results:** During the program's tenure (1974 and 2001), FAO estimates that **fertilizer use increased by 4.4X, and yield of the top 16 crops increased by 3.4X**

Notes: (1) Rwanda and Brazil were highlighted as examples due to their exponential growth in fertilizer usage and associated yield after introduction of fertilizer-specific programs. Sources: FAO, Fertilizer Use by Crop in Brazil, 2004; FAO Policy Assistance Support Service (TCSP), Public Policies and Agricultural Investment in Brazil, 2012;UNEP, Effectiveness and Efficiency of Fertilizer Use in Rwanda, 2016; Ministry of Agriculture in Rwanda, National Fertilizer Policy, 2014; Dalberg analysis, 2024

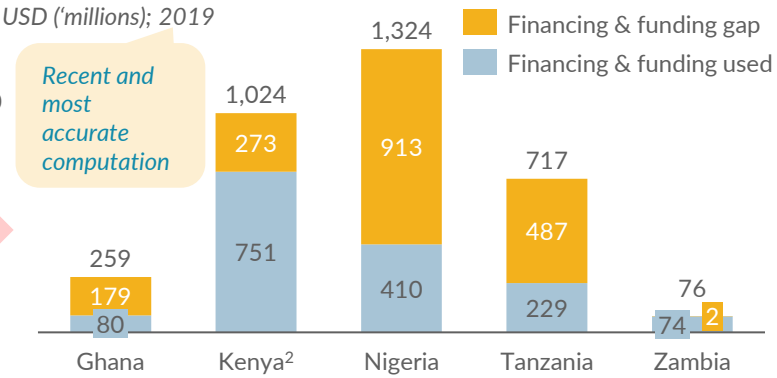
Nonetheless, the annual financing and funding gap exceeds USD 3 Bn and impedes fertilizer supply on the continent

Overview

Fertilizer usage across SA countries and select nations



Fertilizer financing and funding gap across SA countries[1,4]



- **Industrial crops receive higher levels of fertilizer than local food crops**, which lag the Abuja Declaration target of 50 Kg/ha
- AGRA estimates that the **financing and funding gap for agricultural transformation in Africa is ~ USD 23 Bn - USD 31 Bn annually**
- More specifically, **the annual fertilizer financing and funding gap for African countries to reach and sustain the Abuja declaration target[3] of 50 Kg/ha was estimated at ~ USD 3 Bn in 2020,** with an **additional ~ USD1 Bn** needed due to the recent fertilizer price hikes

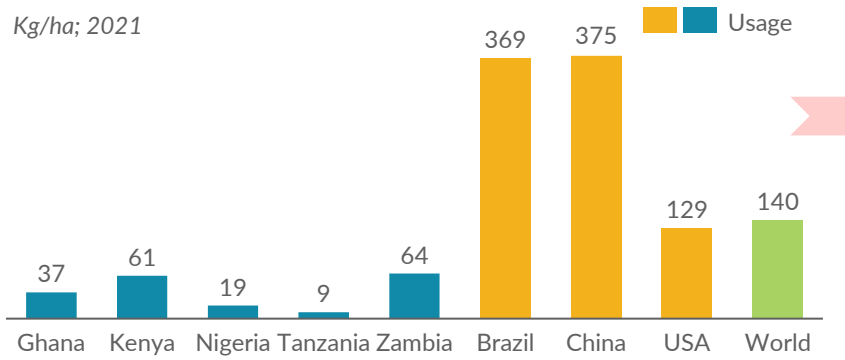
This financing and funding gap is driven by several interrelated factors that we will explore in this report.

Notes: (1) The funding and financing needed for each target country to reach the Abuja Declaration target of 50 kg/ha (nutrient basis). Funding and financing gap = ∑ [(Target Fertilizer Use per Hectare (50 Kg/ha) - Actual Fertilizer Use by crop per Hectare) × Hectares under Cultivation × Local Fertilizer Prices] (2) Kenya is based on an updated target of 150 kg/ha since fertilizer use there already exceeds the Abuja target of 50 kg/ha nutrients. (3) In 2006, the AU adopted the 12-Resolution "Abuja Declaration on Fertilizer for the African Green Revolution," to resolve the worrying trend of poor productivity by increasing fertilizer use from 8.0 kg/ha at the time to 50 kg/ha, by 2015; (4) Funding refers to grants or contributions from philanthropic sources or governments, while financing refers to loans/investments expecting commercial gain. (5) Kenya has a high fertilizer usage due a well developed private-sector-led distribution network and public investment in SHFs. Sources: AGRA, AGRA's Five-Year Strategy, 2022; Africa Fertilizer Financing Mechanism, Baseline Study, 2019; Dalberg analysis, 2024

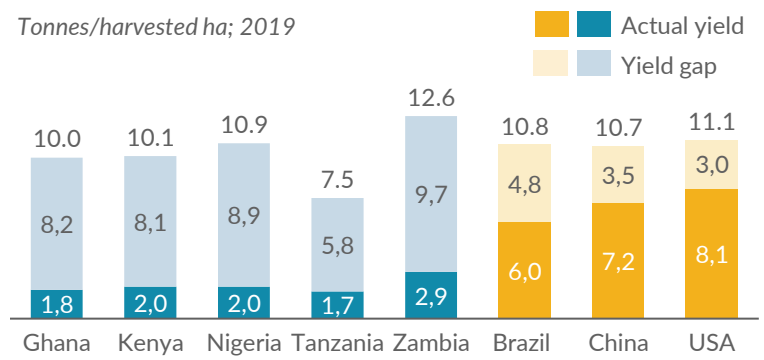
Furthermore, Africa's kg/ha consumption still lags behind the global average, adversely constraining the continent from meeting its yield potential

Overview

Fertilizer usage across SA countries and select nations



Actual yield vs. yield gap for rainfed maize in Africa



- Between 2010 and 2020, fertilizer consumption in SSA grew by 58% from 14.3 Kg/ha in 2010 to 22.6 Kg/ha in 2021. This is largely fueled by the increase in the supply of fertilizers through **government-led subsidy programs, entry of large manufacturers in countries such as Nigeria, and improvement in awareness amongst farmers**

"Through forms of demand creation activities, we are seeing farmers' appetite and uptake of fertilizers improving." ~ *Cross-cutting actor (lender)*

- Nonetheless, the average fertilizer usage in Africa (22.6 Kg/ha) is **persistently lower than the Abuja declaration target** of 50 Kg/ha usage. Further, Africa's usage is **6X less than the world average of 139.8 Kg/ha**
- Critically, **fertilizer-producing countries such as Nigeria and Morocco still have lower rates** at 18.6 Kg/ha and 55.3 Kg/ha, despite availability of locally-sourced fertilizers

Sources: World Bank, Fertilizer consumption (kilograms per hectare of arable land), 2024; Dalberg analysis, 2024.

To better understand the consumption issues, we will assess: (i) Availability, (ii) Affordability, (iii) Accessibility, (iv) Awareness, and (v) Advantage of fertilizers

Availability

- Production and supply of fertilizers in the continent

Affordability

- Price movements and purchasing power/effects on farmers

Accessibility

- Infrastructural and network factors that influence 'physical' access of fertilizers

Awareness

- Knowledge of farmers on the types of fertilizers and when to use them

Advantage

- Willingness and ability of farmers to use the fertilizers

Sources: Dalberg analysis, 2024

Availability | Recent international events constrained the supply of fertilizers in many African countries

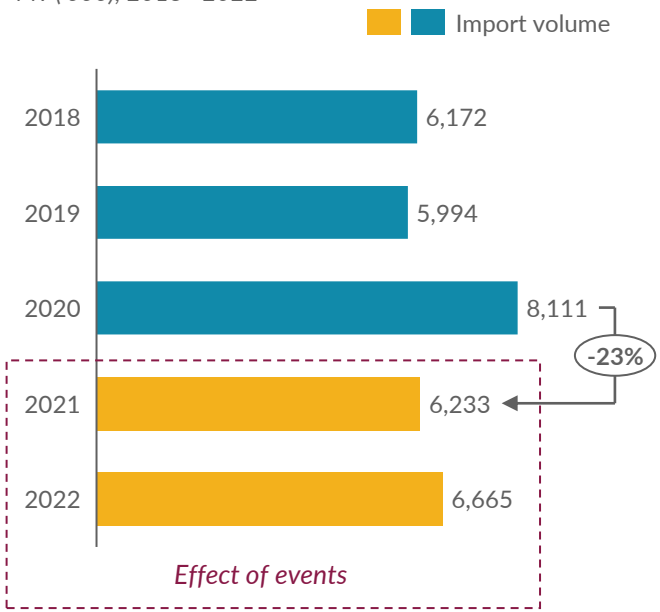
Overview

Notable events have impacted the flow of fertilizer into and within the continent:

Covid-19	• The pandemic precipitated border closures and lockdowns that **disrupted the supply chain of fertilizers to Africa**
Russia's war in Ukraine	• Associated sanctions limited the production and supply of fertilizers from **Russia and Belarus, which, in 2020, accounted for 41% of the global trade in potash**
Raw material shortage	• In parallel, an increase in the prices of natural gas and coal led to **widespread production cutbacks in ammonia in 2022**
Supply restrictions	• **Country-wide restrictions –** Countries such as China suspended fertilizer exports to ensure **domestic availability for farmers** • **Supplier restrictions –** Suppliers restricted the flow of fertilizers into Africa[1] due to the **perceived risk of payment defaults exacerbating** as result of these events • **Gov't involvement –** Gov'ts such as Kenya intensified subsidies often **bypassing private supply chains, with significant implications on their cash flows and overall confidence in the market**

Total import volumes across 18[2,3,4] African countries

MT ('000); 2018 - 2022



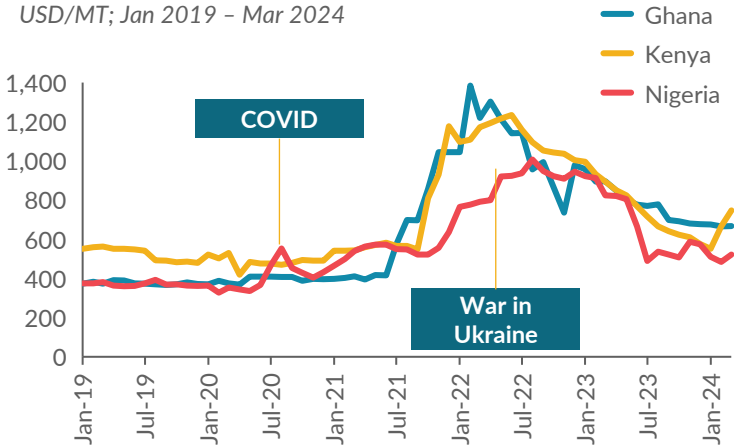
Notes: (1) 90% of Africa's fertilizer is imported. (2) Select countries: Burkina Faso, Burundi, Benin, CIV, Ethiopia, Ghana, Kenya, Mali, Malawi, Mozambique, Niger, Nigeria, Rwanda, Senegal, Togo, Tanzania, Uganda, and Zambia. (3) 2019 – 2020 growth: In 2019, the Nigeria gov't banned import of NPK, while in 2020, gov'ts of Kenya and Ghana intensified their subsidies leading to increased imports. (4) We excluded 2023 data since figures from ETH, KE, MZ, TZ, UG and ZM are unverified. Sources: IFPRI, The Russia-Ukraine war after a year: Impacts on fertilizer production, prices, and trade flows, 2023; World Bank, How to manage the world's fertilizers to avoid a prolonged food crisis, 2022; Africa Fertilizer, Trade Statistics, 2024

Affordability | As such, the prices of fertilizers rose significantly, adversely impacting farmers' affordability and profitability

Overview

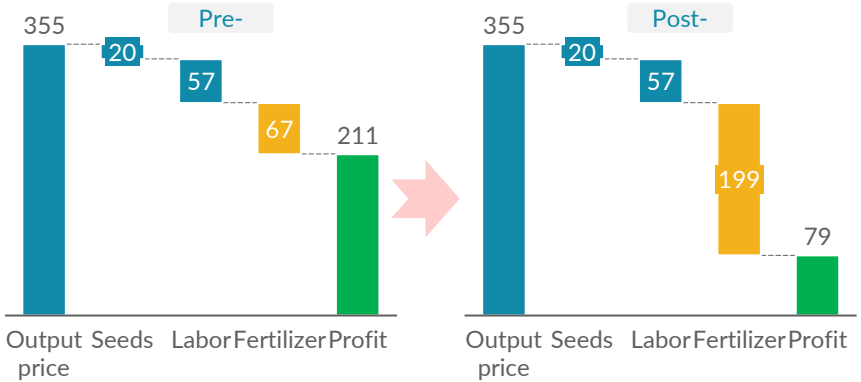
National prices of urea in Ghana, Kenya and Nigeria

USD/MT; Jan 2019 – Mar 2024



Illustrative farmer returns at pre and post crisis fertilizer prices[1]

USD cost per MT Maize in Ghana, 2021 - 2022



- The constrained supply of fertilizers led to a price hike between 2021 and 2022, where prices **increased by an average of ~122% compared to pre-pandemic levels (2019)**
- These price hikes severely affected **farmers' profitability and livelihoods**. For example, at the median level, smallholder farmers in Ghana spent 197% more to acquire fertilizers, decreasing their overall profit by 167%
- Despite international prices largely returning to pre-pandemic prices, **retail prices in local currencies remain high due to national factors such as currency depreciation, high inflation and tax rate hikes**, leaving farmers still bearing the brunt of expensive input costs

Notes: (1) Calculations are based on a cost-model for smallholder maize farming in Ghana, accounting for inputs to produce average maize yields of 1960kg/ha. All USD prices were converted to local currency as of June 2021 and June 2022 to enable like-for-like comparisons. Output markets assume producer prices of USD 355/MT based on WFP Food Prices Dataset for January 2022. Fertilizer costs apply (i) 2020 commercial retail prices from AfricaFertilizer.org at USD 19/50kg bag for NPK and Urea, and (ii) 2022 retail prices from AfricaFertilizer.org at USD 55/50kg NPK and USD 61/50kg urea. Sources: Africa Fertilizer, National Prices, 2024; IFPRI, Who's afraid of high prices, 2024;

Access | Further, the events exacerbated existing internal issues, adversely impacting smallholder farmers access to fertilizers

Poor infrastructure

- African countries have **outdated port infrastructure that often delay the importation and clearing process of fertilizers.** Additionally, poor road networks further **constrain access, leading to untimely delivery of fertilizers that affect the farmers' planting cycle**

*"In Nigeria, reducing transport costs by a half, and ensuring efficient delivery could increase the number of plots with profitable fertilizer use by ~40% ." ~ **World Bank report***

Limited distribution networks

- Certain African countries (e.g., Mozambique) still **lack functional and reliable fertilizer distribution structures owing to the poor coordination at the national level**, and limited investment in transportation infrastructure

*"Mozambique has only recently developed its hub and retail distribution network. Even so, they lack last-mile distribution to the farmer shopping centers in rural and semi-urban areas." ~ **Cross-cutting actor (advisor)***

Sources: World Bank, Is Increasing Inorganic Fertilizer Use in Sub-Saharan Africa Profitable? Evidence from Nigeria, 2020; The Breakthrough Institute, African Farmers Need Access to Synthetic Fertilizer Now, 2023; Dalberg analysis, 2024

Awareness and Advantage | While farmers are aware of fertilizers, some refrain from using them due to limited GAP knowledge, and perceived risks

Overview

Aside from affordability and access, there are acceptability issues that make farmers who are aware of fertilizers not to use them:

Limited knowledge of Good Agricultural Practices (GAP)

- Despite steady improvement, there are clusters of farmers that either **rely on outdated farming practices, hence devaluing the importance of fertilizers, or use fertilizers excessively/inappropriately**
- For example, a recent study in Northern Nigeria indicated that 40% of farmers did not believe that cowpeas needed any fertilizers despite the availability, and awareness of input-based schemes

"Supply is the first stage problem; you have to invest in training farmers how to use the fertilizers appropriately for you to generate continous demand." ~ ***Cross-cutting actor (advisor)***

Perceived adverse effects

- Many farmers over anchor the **impact of excessive use of fertilizers**, including nutrient loss, water contamination, and air pollution, **thereby avoiding synthetic fertilizers**

"Some farmers still have the notion that all fertilizers are bad for them and the environment." ~ ***Farmer facing organization (FFO)***

Despite these instances, it should be noted that farmers are generally aware of fertilizers' benefits, and are inclined to use them on their farms when they can afford and access them

Sources: Heliyon, Farmers' knowledge, perception, and use of phosphorus fertilization for cowpea production in Northern Guinea Savannah of Nigeria, 2020; Farmer line, The Impact of Fertilizers on the Environment: Inorganic vs. Organic, 2023; Dalberg analysis, 2024;

Focus area | In line with this context, the project will map opportunities to improve financing as a pathway to build resilience and inspire catalytic change

	Availability	Affordability	Accessibility	Awareness	Advantage
Summary	• International events constrained the supply of fertilizers	• High local prices are impacting farmers' affordability	• Persistent infrastructural and distribution issues are impeding access	• Farmers are largely aware of fertilizers and their benefits	• Generally, farmers accept to use fertilizers on their farms

Areas where financing can have the biggest impact

While multiple cross-cutting issues impact the fertilizer market in Africa, the report will map opportunities to ***improve financing as a pathway to enhancing availability, affordability and accessibility of fertilizers.***

Sources: Dalberg analysis, 2024

III. Financing instruments and mechanisms

This section maps the fertilizer supply chain actors, key financing transactions, existing mechanisms, and inherent challenges and risks

Financing assessment

Actors and financing needs

- Who are the **main players** in each node of Africa's fertilizer supply chain?
- What are **the financing needs** for these players?

Financing instructments

- What are the **most common tools** these actors use to meet their financing needs?

Financing mechanisms

- Which **mechanisms are actors in Africa fertilizer ecosystem** using to de-risk and enhance these instruments?

Inherent challenges and risks

- Across these instruments and programs, what are the **persistent challenges and risks that limit their effectiveness?**

Sources: Dalberg analysis, 2024

Africa's fertilizer financing market comprises a diverse set of borrowers and lenders at each node of the value chain

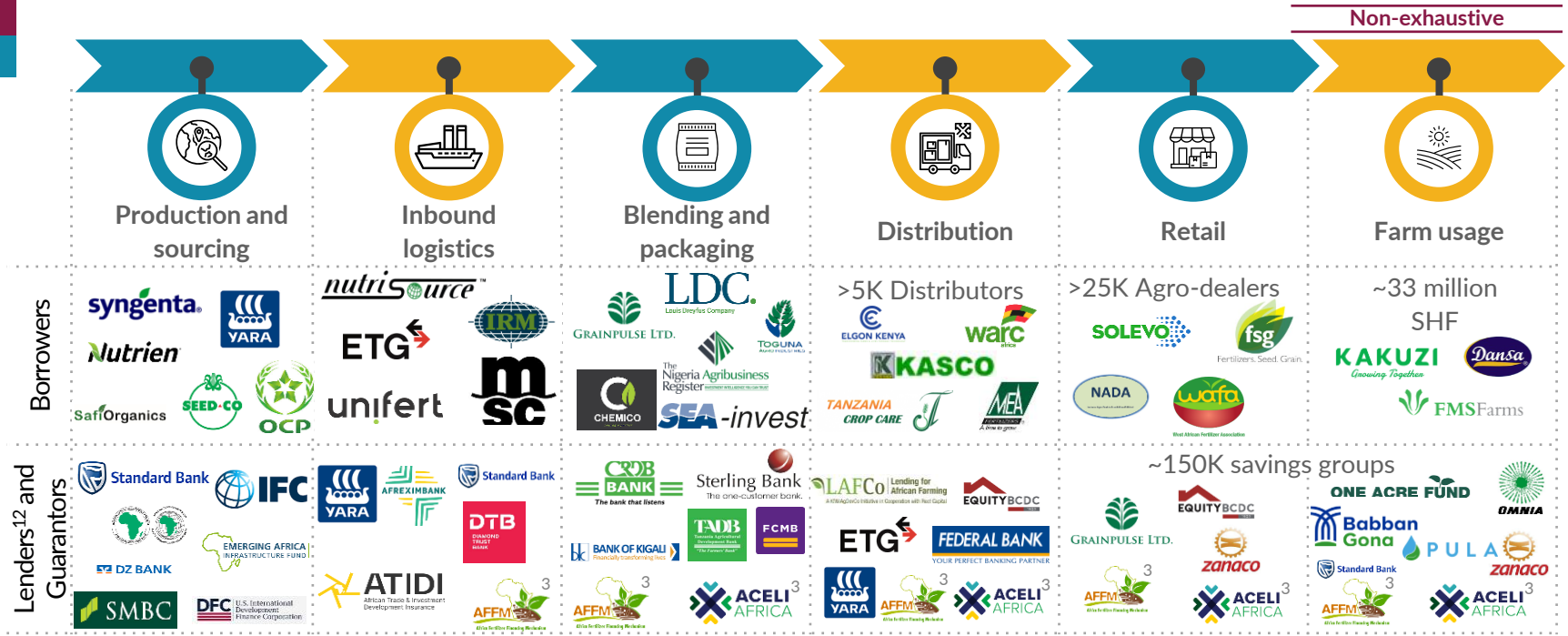
	Production and sourcing	Inbound logistics	Blending and packaging	Distribution	Retail	Farm usage
Borrowers	• Input producers, including private companies and public agencies	• Logistics companies, including transport and warehousing providers	• Fertilizer blending plants • Packaging facilities	• Hub-level distributors	• Retail agro-dealers	• Farmers • Farmer groups and cooperatives
Lenders[1]	• Sovereign lenders • Commercial lenders • Multilateral organizations (via grants)	• Commercial lenders • Producers (via supplier credit)	• Producers (via supplier credit) • Concessional financiers • Commercial lenders	• Producers/blenders (via supplier credit) • Concessional financiers • Commercial lenders	• Producers/blenders/distributors (via supplier credit) • Concessional financiers • Commercial lenders	• Input suppliers[2] • Saving groups • NGOs • Concessional financiers • Commercial lenders

Notes: (1) We have provided examples of the types of lenders that often provide financing to the respective actors, hence, we are cognizant that the list is not fully exhaustive.
(2) Input suppliers include producers, blenders, off takers, and farmer facing organizations. Sources: Dalberg analysis, 2024

In general, large multinational companies constitute production and logistics, while many small-sized local players make up distribution and farm usage

Actors

Non-exhaustive

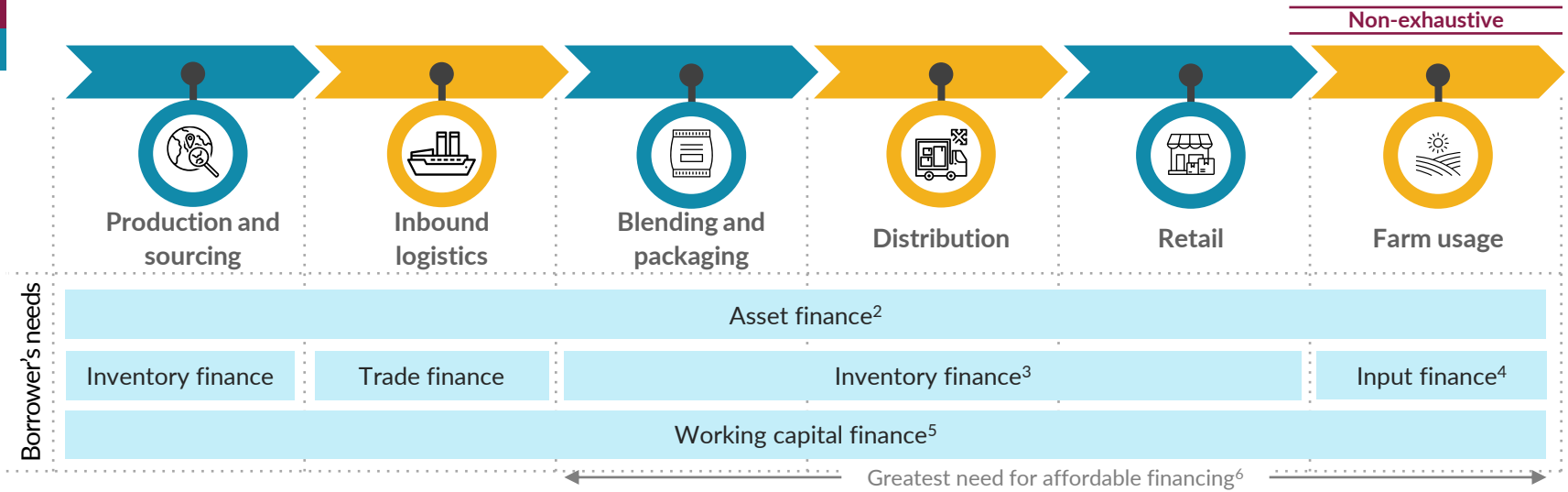


- The number of companies increases as you move down the value chain, while the size of companies decreases. For instance, we transition from a few large global producers, with 17 companies having a market cap of ~ USD142 Bn, to over ~33 million SHFs, along with ~150,000 savings groups in Africa

Notes: (1) We have provided examples of the types of lenders that often provide financing to the respective actors. (2) We have also added insurance providers. (3) Guarantors/facilities that incentivize lending to value chain actors. Sources: FAO, SHF, 2023, IFDC, Fertilizer Logistics, 2022; CGAP, ECWG, Saving groups, 2020; CGAP, Saving Groups, 2011; Global Ranking, Largest fertilizer companies by market cap, 2024; AGRA, input distributors, Retrieved on 2024; AFFM, Boosting access to fertilizers through innovative financing solutions, 2019; Dalberg analysis, 2024

Needs

Different actors have varying financing needs1 ranging from long-term asset loans to seasonal-based credit depending on their position in the supply chain



- **The financing needs vary across the value chain,** from large upfront capital for local production and blending, to short-term capital for retailers to procure inventory
- Critically, **seasonal financing is crucial for downstream actors such as distributors to effectively navigate fluctuations**. This includes managing inventory and covering operational expenses during the intervals between planting and harvest cycles

Adequate and affordable financing throughout the value chain benefits everyone, from producers to farmers, ensuring a steady flow of fertilizers and promote agricultural productivity

Notes: (1) On this slide we have listed the major financing needs for each player to produce, access, or use fertilizers. (2) Finance needed to purchase or lease equipment including tractors, (3) Finance needed to pay for products (fertilizers) that that businesses will hold for (re-)sale. (4) Finance needed to purchase fertilizers, seeds, and crop protection. (5) Finance needed to cover day-to-day operations and payroll. (6) Producers and logistics companies access relatively affordable financing from banks and receive equity injections. In contrast, blenders to farmers typically encounter expensive forms of credit. Sources: Dalberg analysis, 2024

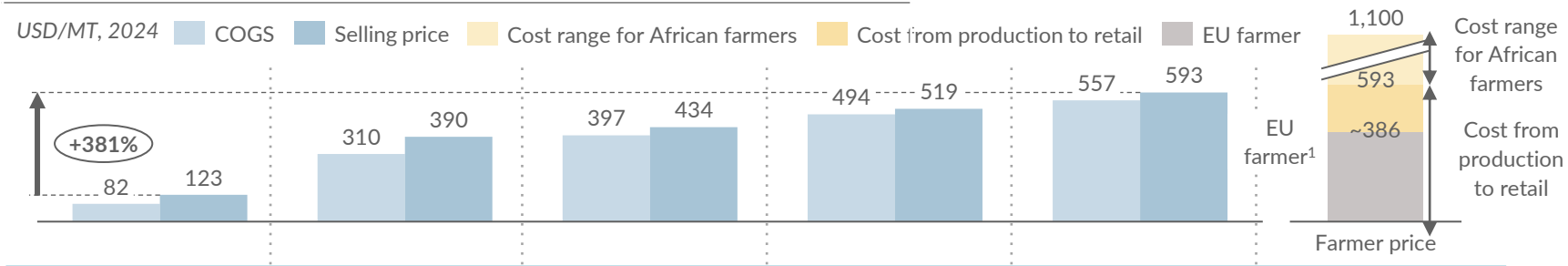
Africa's fertilizer VC consists of high intermediary costs that often mean farmers purchase fertilizers at ~3X the production price

Costs

Annual interest rates

	Production and sourcing	Inbound logistics	Blending and packaging	Distribution	Retail	Farm usage
Banks	5 – 7%	5-10%	15-20%	20-25%	>20%	>25%
Suppliers	NA	0 – 10%	0 – 10%	0 – 10%	0 – 10%	0 – 30%

Average COGS and selling price for Ammonium Sulphate across the VC in Africa



- **Farmers in Africa pay ~ >380% more for a MT of Ammonium Sulphate at retail than the production price**. Further, African-based farmers pay at least 1.5 – 3X for the MT of Ammonium Sulphate that farmers in India and Europe pay (USD 240 and USD 386, respectively)
- This added cost (similar across other fertilizers) is due to high border clearance levies, inland transport fees, storage charges, and **financing costs**

Notes: (1) Indicative fertilizer cost for a European Union-based farmer. Sources: ; Trading Economics, Bank Lending Rate, 2024; Dziwornu, R.K., Yiadom, E.B. and Narteh-yoe, S.B., Agricultural loan pricing by banks, 2024,Government of India - Ministry of Chemicals and Fertilizers, Monthly Bulletin – January, 2024; Imarc, Ammonium Sulfate Pricing Report, 2024; Dalberg interviews and analysis, 2024

Securing affordable financing to purchase fertilizers proves challenging due to the array of risks confronting borrowers and lenders

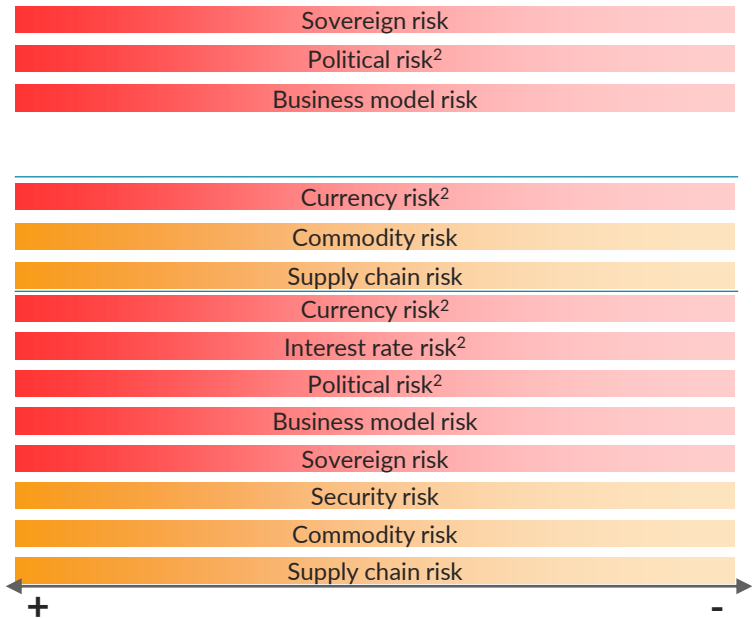
Risks

Risks from a provider of finance perspective

Risks created / occurring at lenders level	Market Dynamics	Currency and forex	Risk of decline in lending value due to exposure to currency fluctuations and in accessing USD to facilitate financing
		Interest rate	Risk of decline in lending value due to exposure to interest rate fluctuations
		Political	Risks resulting from changes in political decisions, events and conditions. May include adverse changes in trade regulations, taxes, legislation, and lead to political instability e.g., conflicts
	Credit Risk[1,2]	Business model risk	Risk resulting from requirement to develop (new) business models to reach new borrowers. In certain situations, associated with lack of information on creditworthiness and lack of familiarity with Ag lending
		Sovereign risk	Risk arising from doing business with governments, including delayed and/or denied payments
Risks created / occurring at borrower / enterprise level	Credit risk[1,3]	Agronomic (including Climate Change)	Risk of low quantity and/or quality of output e.g. low harvest by producers due to bad weather/pest, diseases and soil health. Includes the progressive effect of climate change on normal agronomic risks as well as fundamentally changing potential productivity and locations for cultivation
		Security risk	Risk resulting from theft, vandalism, terrorism, sabotage, unauthorized access, or tampering with shipments during transportation or while they are being unloaded or stored
		Market Dynamics – Commodity	Risk of adverse (or positive) price movements for price of output at time of selling
		Market Dynamics – Currency & forex	(As above, but through the recipient of financing)
		Market Dynamics – Interest rate	(As above, but through the recipient of financing)
		Market Dynamics – Political	(As above, but through the recipient of financing). Additionally, unpredictable or cyclical (e.g. pre-election) policy interventions, such as import bans, unpredictable input subsidies, and unpredictable debt forgiveness, etc.
		Supply chain risk	Risk arising from non-performance of other players in the supply chain e.g. farmers failing to honor contractual agreement to suppliers (side selling) and vice versa (suppliers not buying the crop), or hub-level distributors non-performance due to irregular repayments from retail agro-dealers

Notes: (1) Credit risk refers to the probability of loss due to a borrower's failure to make payments on any type of debt; (2) Credit risk originating from lenders' operations; (3) Credit risk originating from challenges/risks directly affecting borrowers. Sources: Dalberg analysis, 2024

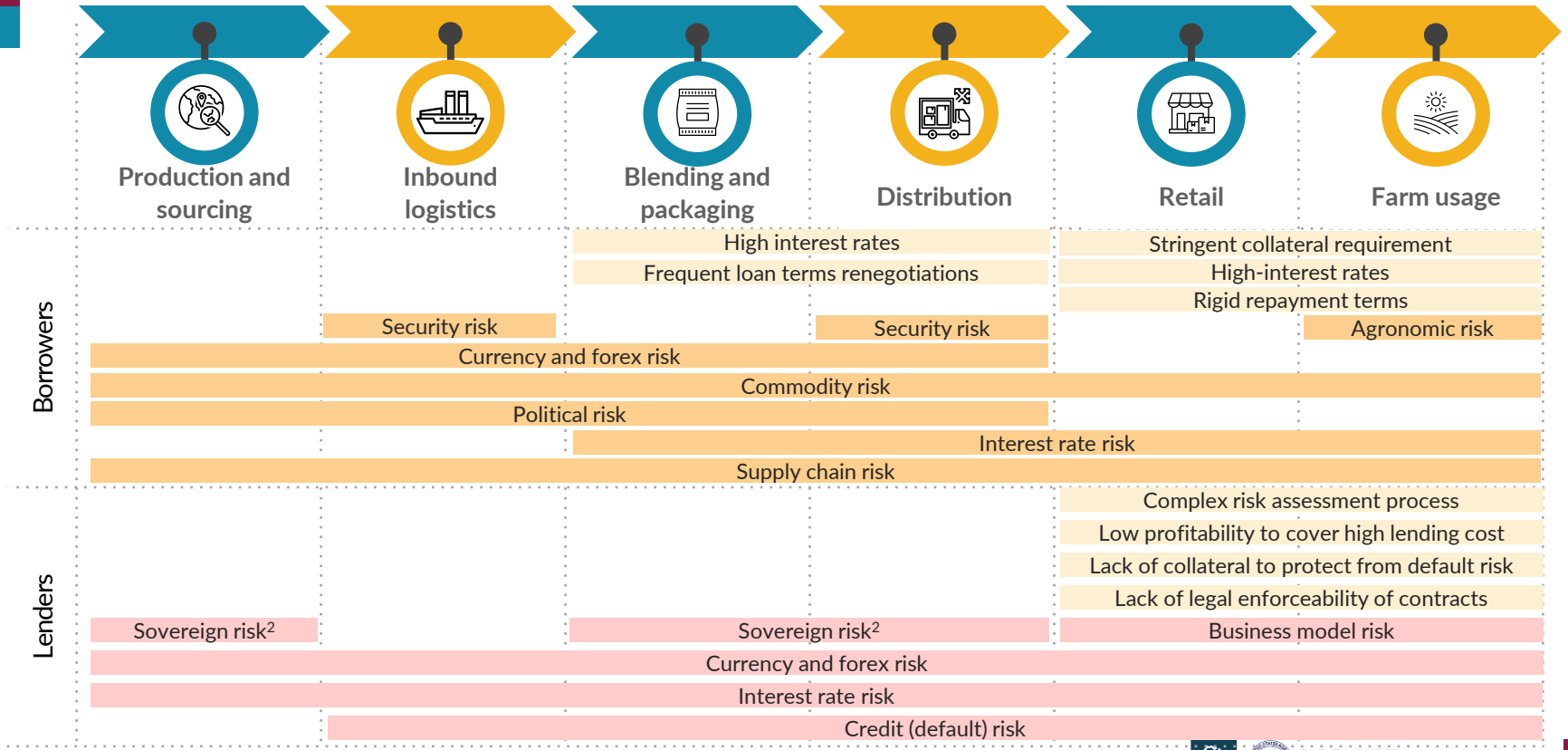
The severity of these risks differs based on country-specific characteristics



Therefore, financing mechanisms will need to account for these characteristics accordingly

Notes: (1) An unstable African economy typically exhibits volatility in politics and key economic indicators such as inflation rates, exchange rates/currency depreciation, GDP growth, and unemployment levels, impeding long-term stability and progress. (2) Both the lender and the borrower are impacted by these factors. It was introduced only once (in red) to avoid repetition. Sources: Growing Africa, The Impact of the Global Fertilizer Crisis in Africa, 2023; Dalberg analysis 2024

Further, these financing challenges and risks are more predominant in the blending, distribution, retail, and farm usage nodes

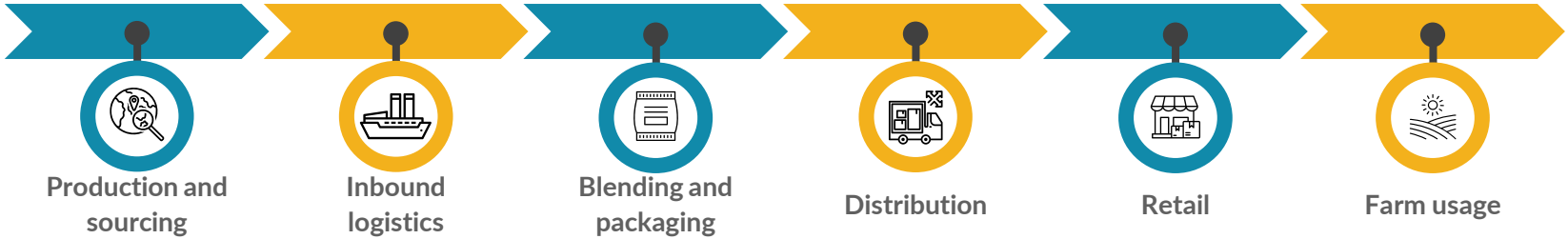


Notes: (1) Initial discussions reveal no significant challenges in accessing financing. In the next phase, we will go deeper to further test it. (2) This impacts suppliers acting as lenders, not banks. Sources: Dalberg analysis, 2024

KEY: Challenges | Risks at lender level | Risks at borrower level

Consequently, as you near the farm usage node, lending gets riskier and costlier

Needs



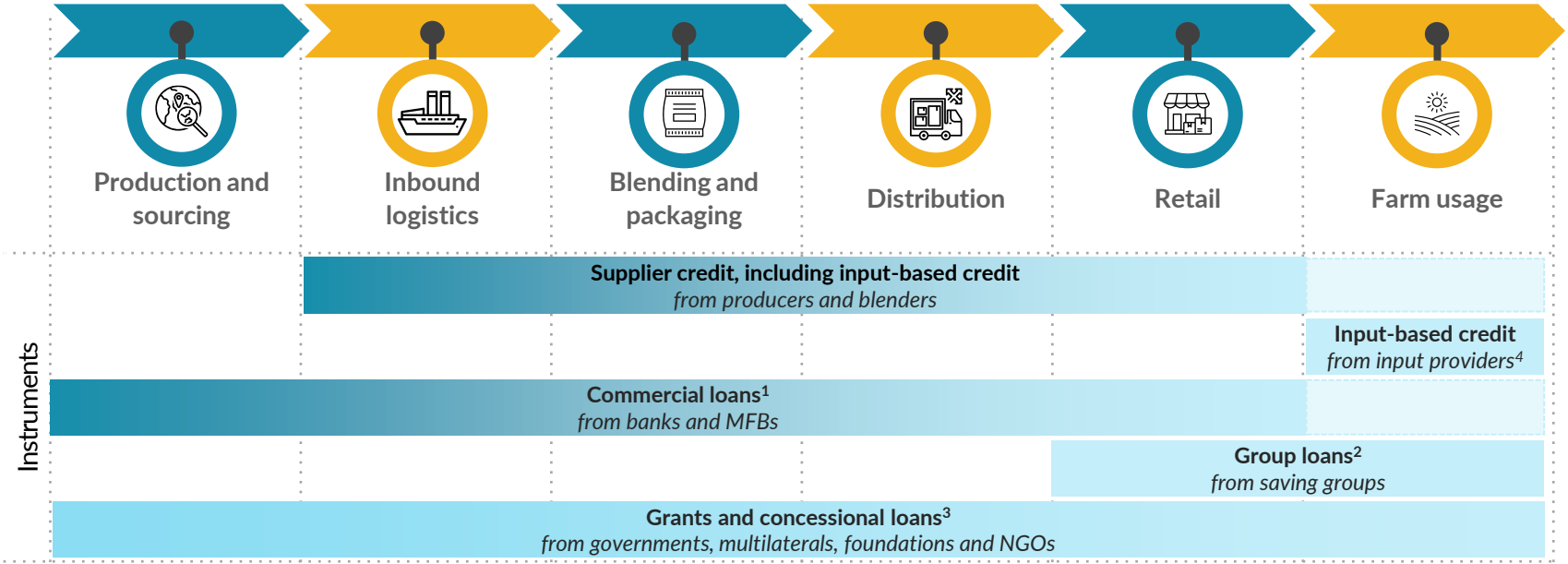
Characteristics	Company size, Formality, Collateral[1], Product understanding, Profitability	Generally, the closer a company is to the farm usage node, the smaller its size tends to be, along with lower formality, collateral's availability and legal enforceability, understanding of the product, and profitability.
Consequences	Availability, Affordability, Accessibility, Awareness, Acceptability[2]	Consequently, the closer the company is to the farm usage node, the lower the availability, affordability, accessibility, and awareness of financial products. For example, lenders charge interest rates ranging from ~ 5% for producers to over 20%, with rates going as high as 47%, for farmers.[3,4]

\+ KEY: Lower risk and cost of lending / Higher risk and cost of lending -

Notes: (1) Collateral's availability and its legal enforceability. (2) We anticipate that acceptability of products is relatively high across all nodes. (3) This stems from initial interviews and will be further adjusted based on subsequent interviews. (4) Only few commercial farmers can access loans from banks, while the majority of SHF do not have access to it and rely in saving groups or informal lending. Sources: Trading economics, lending rate, 2024; MFWA, Ag, Retrieved in 2024; Dalberg analysis, 2024

Instrument

As a result, commercial loans are mainly accessible to producers and logistics actors, while the rest rely on supplier credit, group loans and informal lending



- While hub distributors and few large-scale commercial farmers can secure commercial loans, **SHFs and most retailers are unable to access it due to their informality, low financial records, and rigid repayment terms, etc. Consequently, SHFs and retailers generally rely on supplier credit, saving groups or/and informal lending**

Key: Availability *Very low* *Low* *Moderate* *High*

Notes: (1) Most farmers don't have access to it. (2) Despite their moderate usage, lending amounts are limited. (3) Often subject to fluctuations in funding availability. (4) Farmer-facing organizations (FFOs), off takers and some distributors (collectively referred to here as 'input providers'). Sources: Dalberg analysis, 2024

Financing instruments

Instrument

Three key risks standout across the main financing instruments: (i) Business model risk, (ii) Credit risk, and (iii) Market dynamic risks

Business model risk

- Lenders note that that the **low profitability of borrowers, coupled with the high costs** associated with reaching, assessing, disbursing, and monitoring loans, **frequently restrict lending to underserved and unprofitable segments**

Credit (default) risk[1]

- All lenders **are cautious of credit (default) risks stemming from delayed or denied payments by borrowers** (e.g., distributors, agro-dealers, governments) due to uncertainty of cash flows and/or competing priorities. Hence, lenders limit lending

Market dynamics risk

- Lenders are wary of market risks: (i) **Currency risks**, when they buy and sell products in unstable currencies, and (ii) **commodity risks** due to fluctuating input and output prices that position them to losses

The subsequent slides in this section highlight the challenges and risks in greater detail

Notes (1) Credit risk originating from challenges/risks directly affecting borrowers. Sources: Dalberg, Stakeholder Interviews, 2024

Supplier credit is the primary form of financing, anchoring ~70% of the flow of fertilizers from producers to large-scale public and private distributors

Supplier credit

Supplier credit

- A commercial agreement where the supplier provides fertilizers on credit, with repayment over a defined period
- **Supplier credit represents the primary form of financing,** with ~70%[1] of fertilizers sold on credit primarily between suppliers, blenders and hub distributors. Furthermore, producers provide **extensive volumes of supplier credit to governments that run input subsidy programs (ISPs)**

How does it work?

Supply credit to private sector actors

- **Application:** Suppliers consider: **(i) Working relationship** – suppliers opt to extend credit to clients with 2-3 years relationship; and **(ii) Risk –** supplies assess distributors' projected revenues, and risks
- **Interest and deposit:** Suppliers charge **~ 0 to 10% margin**[1] on the product value to act as 'lending fees.' Further, suppliers require distributors to pay an initial **deposit of ~ 20% - 50%** of the full stock
- **Repayment:** Repayment **vary between 30 – 120 days**[3] depending on the relationship and risk score

Supply credit to governments

- **Tenders:** Gov'ts publish tenders for suppliers to procure fertilizers for their ISPs. Terms vary with gov'ts committing to pay **a deposit of ~ 0 – 30 %**, and repayment oscillating between **30 – 90 days**[4] **.** Gov't schemes can widely vary from representing ~ **34% (Kenya) to 70% (Ghana) of annual supply in a country**

Why is it important?

- Supplier credit is a key financing proponent in the African market since **Agri-SMEs have limited credit avenues**, especially with banks cautious of lending risks associated with the sector

"At times, supplier credit is the only way distributors can access capital to purchase inventory in this country [Uganda]. The banking system is not functional for SMEs and capital markets are non-existent." ~ ***Blender***

Notes: (1) This figure stems from initial interviews and will be further adjusted based on subsequent interviews; (2) "New clients" are customers who have worked with the suppliers for the initial 2-3 years, and now access credit. (3) New clients = 30 – 60 days, long-term clients = 45 – 90 days, contract farmers = 3 – 4 months linked to crop cycle. (4) Gov'ts often delay making these payments e.g., in Ghana. Sources: NCPB, Fertilizer Tender, 2023; Dalberg, Stakeholder Interviews, 2024

Supplier credit

However, delayed payments and non-payments from gov'ts and agro-dealers lead to reduced flow of fertilizers and credit into countries' value chains

What are the main borrowers' challenges?

- **Constrained availability for small-scale actors:** Credit often stops at large distributors, with limited flow down chain. Suppliers are reluctant to offer credit to small agro-dealers/retailers, due to the added working capital costs and high default risks
- **Implicit cost:** At times, distributors are charged a 5 -10% cost above the sale price, which adversely impacts the minimal margins they gain from selling the fertilizers to farmers or agro-dealers
- **Supplier dependency:** Due to the limited availability of suppliers offering credit to the **small retailers**, this can lead to retailers depending on specific suppliers, limiting their flexibility and bargaining power in sourcing goods or services
- **Forex challenge:** Often, hub distributors are paid in local currency for credit and struggle to access USD to pay off their obligations

What are the main risks lenders face?

- **Credit risk:** Delayed and/or denied payment from distributors, agro-dealers and gov'ts due to uncertainty of cash flows and/or competing priorities. For gov'ts, delays extend about 3 - 4 years, and up to ~ 7 years in some cases
- **Business model risk:** Suppliers often bear additional unaccounted costs of assessing recipients' creditworthiness
- **Commodity risk:** Fluctuating commodity prices that place suppliers at a positional risk of losses for sold commodities
- **Currency risk:** The suppliers often buy fertilizers or raw materials in USD but sell them in unstable local currencies. The longer the repayment period, the higher the risk due to unpredictable and wide fluctuations

What are the overall implications of these challenges and risks?

- **Restricted flow of fertilizers and credit into a country's value chain.** Constant delayed and denied repayments especially from procuring governments and agro-dealers often strain balance sheets of suppliers. Hence, these suppliers often opt to **reduce the stock of fertilizers into a country and drastically reduce or stop offering the products on credit**

"In Zambia, suppliers offered supply credit to agro dealers, but the high rate of defaults broke trust and they stopped offering this credit." ***~ Cross-cutting advisor***

Notes: (1) Credit risk originating from challenges directly affecting borrowers. Sources: Dalberg, Stakeholder Interviews, 2024

Input-based credit is a form of supplier credit that channels fertilizers to farmers who meet suppliers' requirements

Input-based credit

Input-based credit	• A financial agreement designed to provide farmers with inputs, including fertilizers and seeds that they will pay back after a defined period either in the form of cash or harvest output • Farmer-facing organizations (FFOs), off takers and some distributors (collectively referred to here as 'input providers') offer this financing as a pivot away from **offering direct funds**, which can be diverted to other priorities

How does it work?

- **Registration process:** Input providers register farmers onto their platforms by assessing **(i) value of inputs needed, (ii) creditworthiness, and (iii) agronomic support needed**. Farmers in groups or cooperatives stand higher chances due to higher coordination, tracking, and training opportunities
- **Deposit:** Farmers pay **10% – 20% of the value of inputs as deposit**
- **Interest:** Input providers charge between **~ 0 to 10% mark-up on the input costs**[1, 2, 3]. Given that repayment is required generally within three months, **this translates to an annual lending interest rate ranging from ~ 0% to 40%**
- **Repayment:** Input providers have varied repayment periods. OAF enables **farmers to pay year-round until the next planting season,** while off-takers often **deduct input costs from harvest sales**

Why is it important?

- Inputs are the biggest costs for SHFs (~86% of SHFs in Kenya need loans for fertilizers). Hence, this **financing provides the right input at the right time**, with limited focus on assets or formality

"Input-based credit schemes with some form of off-taker agreements and tailored repayment cycles (tied to a planting cycle) can be an entry point for increasing financing access to SHFs and overall productivity." ~ ***Lender***

Notes: (1) This differs depending on the country. For example, an input provider does not charge any mark-up in Burundi, while in Uganda it charges a 10% mark-up. (2) If the input provider has received supplier credit, there's an additional cost of credit that gets added to the input cost. (3) This stems from initial interviews and will be further adjusted based on subsequent interviews. Sources: Central Bank of Kenya, Monetary Policy Committee Agriculture Sector Survey, 2023; Dalberg, Stakeholder Interviews, 2024

Input-based credit

Nonetheless, substantial defaults and associated losses limit the instrument's effectiveness and often leads to scheme closures

What are the main borrowers' challenges?

- **Long registration processes:** While less tedious than bank applications, farmers still spend considerable time and costs registering to be part of input-based schemes
- **Inefficient/incomplete market linkage:** At times, off-taker contracts means farmers are linked to sale prices lower than market prices
- **Risk of debt entrapment:** If harvests are poor or prices fall, farmers struggle to repay the credit, leading to a cycle of debt. This can trap them in purchasing from the same supplier even if better options exist

What are the main risks lenders face?

- **Credit risk[2]:** Lenders, including FFOs, cooperatives, and agro-dealers face high default risks primarily due to unpredictable output and high instances of side selling
- **Business model risk:** (i) Lenders, including FFOs face high costs in reaching farmers, assessing their creditworthiness, conducting periodical check-ups, and collecting payments. (ii) Being the only supplier in a region is the most effective mechanism for ensuring repayment from SHFs, as they are forced to pay back to access fertilizer the upcoming season
- **Commodity risk:** Fluctuating commodity prices that place suppliers at a positional risk of losses for sold commodities

What are the overall implications?[1]

- **This instrument often excludes many SHFs.** There is a substantive number of SHFs who either do not pass registration, are unaware of the opportunity, or are in areas this option is unavailable
- **The instrument can lead to substantive losses for input providers.** Defaults from farmers due to side selling and poor harvest often lead to huge losses on the investments and closures of the scheme e.g., East Africa Maltings Limited sorghum scheme. These closures often leave farmers with limited options to access input financing

"The costs of FFOs and distributors to run input-based schemes require high working capital." ~ ***FFO***

Notes: (1) The overall limitations of supplier credit also apply here: (i) Unaffordable working capital, and (ii) Suppliers' reluctance to act as a "financial institution"; (2) Credit risk originating from challenges directly affecting borrowers. Sources: Dalberg, Stakeholder Interviews, 2024

Banks are conservatively increasing their lending portfolio to the agricultural sector

Commercial credit

Commercial credit	• **Value chain actors apply for commercial credit from financial institutions for varying financing needs** • For example, local blenders need a mix of **inventory and working capital financing** to procure, blend, and channel fertilizers to distributors. While distributors, need **working capital loans** to store, and distribute the fertilizers to agro-dealers, cooperatives and farmers

How does it work?

- **Products/schemes:** Over the past decade, banks are increasingly setting up agricultural financing departments to offer tailored Ag-loans. Nonetheless, banks are still conservatively lending to the sector, with commercial lending representing less than ~10% of their loan portfolio
- **Registration process:** VC actors apply for loans, with banks evaluating **their creditworthiness** by assessing collateral owned, historical financial records, and prospective earnings
- **Interest:** Lenders charge annual lending interest rates ranging from ~ 5% for producers to over 20% for farmers[1,2]
- **Terms (repayment):** Repayment also varies on **type of financing disbursed**. Asset loans often have long repayment terms of ~ 5 years, while working capital loans can average ~ 1-2 years

Why is it important?

- Commercial banks are the **largest sources of credit available, with the best overall penetration.** Hence, the need to leverage this financing source to more value chain actors

"Banks are aiming to increasing their lending portfolio to agriculture. Its in line with SDG goals, hires the most people, and can be profitable within the right circumstances. In our bank, we want to have 15% of our lending portfolio dedicated to the Ag sector"

~ Lender (in Nigeria)

Notes: (1) This stems from initial interviews and will be further adjusted based on subsequent interviews; (2) Only few commercial farmers can access loans from banks, while the majority of SHF do not have access to it. Sources: Aceli Africa, The Effect of Central Bank Policies on Lending to Agricultural SMEs in East Africa, 2022; Trading economics, lending rate, 2024; Dalberg, Stakeholder Interviews, 2024

Despite the appetite, banks pose multiple barriers to provide loans, that often excludes small to medium scale blenders, distributors and SHFs

Commercial credit

What are the main borrowers' challenges?

- **Limited availability:** Most banks operate within urban and peri-urban regions, constraining availability for rural players
- **Constrained accessibility:** Limited credit history and collateral required (up to or even beyond 100% of the loan amount) hinder access for small-scale actors like retailers and SHFs. Moreover, the credit terms may not match agriculture sector needs (e.g., seasonal repayments)
- **Frequent and costly renegotiations:** Borrowers, especially from blenders to farmers, rarely have access to working lines of credit, leading to repeated and costly loan renegotiations with local banks
- **Unaffordable:** Margins in this VC are typically slim, especially for distribution and farm usage. Thus, banking interests commonly above 20% become unaffordable for numerous stakeholders

What are the main risks lenders face?

- **Business model risk:**
  - Risk resulting from the requirement to develop (new) business models to reach new borrowers, combined with limited information on creditworthiness and lack of familiarity with Ag lending
  - It is expensive, beyond average administration costs, to reach, assess, and receive payment back from farmers and small-scale agro-dealers
- **Credit risk[2]:** Credit risk originating from challenges and risks directly affecting borrowers such as security and agronomic risk

What are the overall implications?

- **SMEs and farmers are often excluded from bank financing opportunities to access fertilizers.** Serving new and smaller borrowers at small loan sizes (~ USD 15K) results in losses for banks, even for efficient[1] ones. Hence, these products are not optimally available and/or accessible for small to medium scale blenders, distributors and SHFs

"The unpredictable nature of cashflows and output mean that banks are not serving retailers, and farmers." ***~ Agro-dealer***

Notes: (1) I.e. for a bank at the 75th percentile of annualized operating costs in our dataset; (2) Credit risk originating from challenges directly affecting borrowers. Sources: McKinsey, Winning in Africa's agricultural market, 2019; CRU, Is 2017 a turning point for West African fertilizer demand?, 2017; Dalberg, Stakeholder Interviews, 2024

Grants and concessional loans can bridge the gap between market-based approaches and the pressing needs of actors unable to afford fertilizer

Grants / concessional loans

Grants and concessional loans	• **Grants:** Funding provided by donors, governments, and companies to schemes that support African-based farmers to access and use fertilizers • **Concessional credit:** Credit typically extended by multilateral development banks or governments on more favorable terms (e.g., lower rates and tailored repayment window) than those available to the borrowers in the local financial markets

How does it work?

- **Products/schemes:**
  - **Targeted subsidies:** Some African governments and non-profits offer direct subsidies to farmers for fertilizer purchases. These can be targeted at specific crops or regions
  - **Risk-sharing facilities:** Donor-funded organizations provide risk-sharing facilities (e.g., credit guarantees) to banks and suppliers in Africa, facilitating concessional credit across the VC
  - **Concessional loans**: Either from MDBs/gov'ts to gov'ts, or from banks and suppliers to VC players[1] to fund projects e.g., production/blending plants or extension services for sustainable fertilizer use
- **Interest:** For the private sector (PS) range from 0% to 10% p.a,[1] while concessional loans to the gov't range from 0% to 2% p.a.
- **Terms (repayment):** PS fertilizer financing typically spans up to a year,[1] while concessional loans to the government range from 15 to 30 years, with a possible 10-year grace period

Why is it important?

- **Properly structured grants and concessional loans often offer the 'missing funding'** to fund fertilizer facilities, establish distribution networks and plug short term funding gaps as long- term plans are conceptualized[2]

"Thanks to a credit guarantee from the World Bank, we could reduce our cost of capital and effectively reduce interest rates from ~18% to ~9% p.a., thereby improving conditions for both blenders and hub-level distributors" [3]

~ Bank in Rwanda

Notes: (1) De-risking mechanisms like credit guarantees enable banks and suppliers to offer concessional finance to blenders/distributors/retailers /farmers. (2) It is critical to design grants with long term plans to incorporate a level of sustainability into projects. (3) The guarantee likely had an additional infusion of 'lending funds' that lowered the cost of capital leading to the rate reduction. Sources: AfDB, African Emergency Food Production Facility, Retrieved in 2024; Ng, Japan strengthens food security in Nigeria with usd108 million loan agreement, 2024. Dalberg, Stakeholder Interviews, 2024

Grants / concessional loans

However, poorly designed grants and concessional loans can distort the market and undermine the sector's long-term sustainability

What are the main borrowers' challenges?

- **Political risk:** Government changes or policy shifts can affect **subsidy** programs, leading to discontinuation or reduced support affecting farmers outputs and profitability
- **Implementation delays**: Bureaucratic inefficiencies may delay **subsidy** distribution, impacting planting cycles and yields
- **Sustainability risk:** Donor-funded **risk-sharing facilities** might be unsustainable in the long term if donor support diminishes

What are the main risks lenders face?

- **Sovereign risk**: **Concessional loans** to governments carry the risk of sovereign default, especially in politically or economically unstable countries
- **Moral hazard:** Borrowers can deprioritize repayments once they access **guaranteed loans**. Since guarantees typically cover ~50% of losses, defaults also negatively impact lenders
- **Currency risk**: Exchange rate fluctuations can impact the value of repayments for **concessional loans**, especially for loans denominated in foreign currencies

What are the overall implications?

- **Unfair competition:** Farmers or VC actors who do not receive subsidies/participate in similar programs face higher costs, and limited profitability in uneven and less competitive markets
- **Weakened private sector:** If subsidies have dominated the market, private sector players might not have developed the necessary infrastructure, distribution networks, or competitive pricing strategies. This weakness can result in supply shortages and higher prices when subsidies are withdrawn

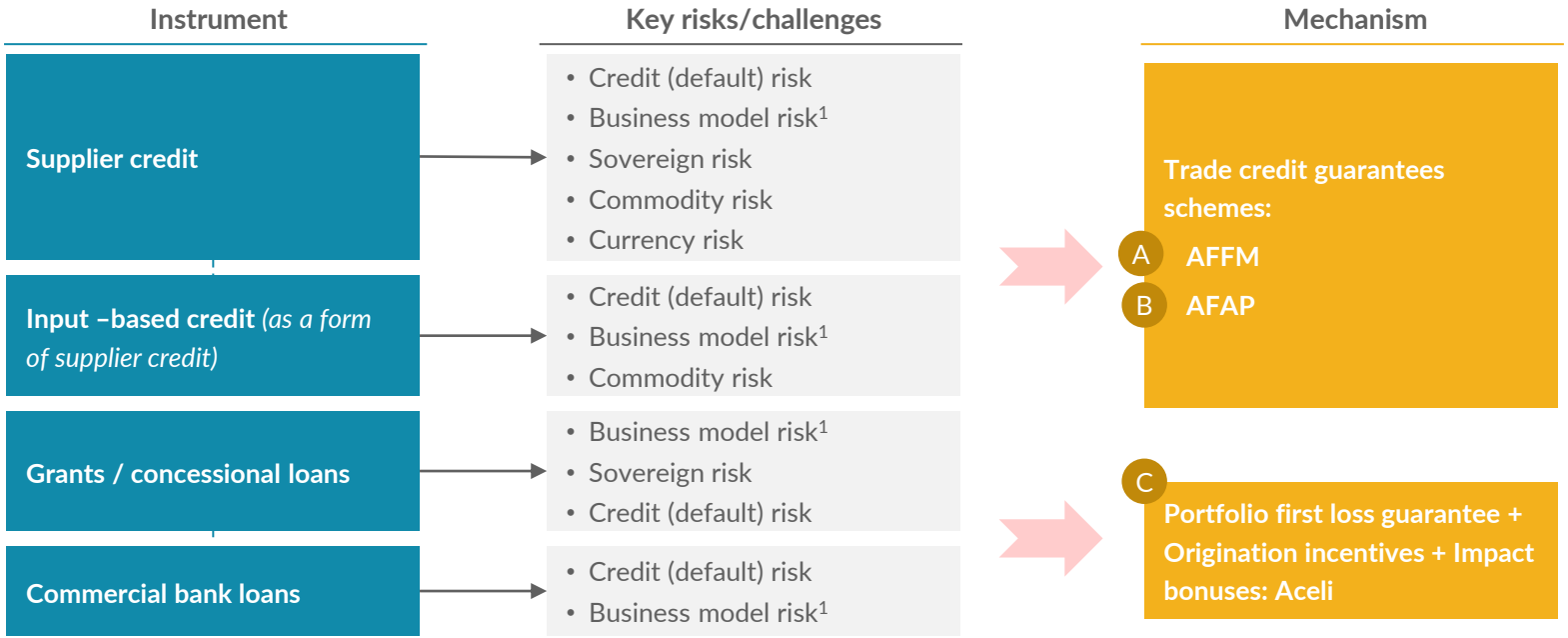
"In Kenya, the government sought low prices but purchased limited quantities, causing product shortages and price hikes." ~ ***Supplier***

Sources: Dalberg, Stakeholder Interviews, 2024

Financing mechanisms

Mechanism

Mechanisms exist to de-risk persistent challenges of financing transactions and boost the financing and flow of fertilizers in the supply chain



- *We explored government schemes, with the caveat that they do not seek to improve these financing transactions directly but instead focus on improving the availability and affordability of fertilizers for farmers*

Notes: (1) Business model involves hidden and known costs incurred when providing a lending facility. Sources: Dalberg, Stakeholder Interviews, 2024

A | AFFM has a trade credit guarantee that aims to de-risk defaults inherent in supplier credit transactions and catalyze financing of fertilizers

Trade credit guarantee – Dev't sector led

Overview:

The Africa Fertilizer Financing Mechanism (AFFM) is a special fund administered by AFDB to accelerate fertilizer use. AFFM has a trade credit guarantee that **incentivizes suppliers to offer goods on credit to downstream actors.**

Problem addressed | **Default risk**

Features of the mechanism:

- **Countries:** CIV, Ghana, Kenya, Mozambique, Nigeria, Tanzania, Uganda and Zimbabwe
- **Guarantee:** AFFM works with in-country partners to link to suppliers, and distributors. AFFM shares a 50% pari-passu[5] guarantee with suppliers who provide fertilizers on credit
- **Two-model approach:** The guarantee either reaches (i) agro-dealers (in Tanzania) or (ii) farmers (in CIV) depending on the country's market structure[1] and partner reach
- **Capacity building:** AFFM provides additional grants for training on agronomic practices, and financial literacy to build capacity and demand of agro-dealers and farmers to purchase fertilizers

Results[2]: *Tanzania guarantee (Sep 2019 – February 2022)*

USD 2.4 Mn *guarantee*

- **USD 30.5 Mn** — value of fertilizer traded on credit
- **15.3 X** — times the guarantee has been leveraged[3]
- **3.7%** — default rate from borrowers[4]

Nigeria guarantee (Sep 2019 – February 2022)

USD 2.4 Mn *guarantee*

- **USD 14.2 Mn** — value of fertilizer traded on credit
- **5.9 X** — times the guarantee has been leveraged[3]
- **0%** — default rate from borrowers[4]

Notes: (1) Refers to robustness of existing distribution networks. (2) Verified results from successfully closed projects. (3) The Tanzania scheme had a higher leverage frequency, because the guarantee only reached agro dealers, with farmers paying them in cash as opposed to paying after harvest. (4) Three hub agro-dealers did not finalize credit payments.(5) Pari passu means security interest that gives lenders an equal claim on the borrowers' assets. Sources: AFFM, 2022 Annual Report, 2023; AFFM, Newsletter of the AFFM, 2022; Africa Fertilizer Financing Mechanism, Baseline Study, 2019 Dalberg, Stakeholder Interviews, 2024

A | Despite its initial success, AFFM is a low volume scheme which needs design changes to improve risk coverage and reach

Trade credit guarantee – Dev't sector led

AFFM
Africa Fertilizer Financing Mechanism

Major challenges:

% of guarantee disbursed[1]	**51%** (USD 12 Mn/23.9 Mn)

Operational challenges

- AFFM now charges suppliers a fee of 0.5% - 1% of the guarantee amount to cover costs, however, **suppliers pass these fees down in the form of higher fertilizer prices**
- Further, partners state that AFFM guarantee has a **long processing time, which leads to untimely access to fertilizers for participating distributors**

Low volume and limited reach

- AFFM has a total guarantee amount of USD 24 Mn, which with **an average leverage of 10X (leading to USD 240 Mn), only covers 8% of the ~ USD 3 Bn annual value needed** to bridge the financing and funding gap of fertilizers in Africa
- This low volume often means that AFFM's credit impacts a **minimal proportion of distributors and farmers in select countries**

Limited risk coverage

- The AFFM guarantee **effectively addresses default risk, but inadvertently leaves suppliers still exposed to currency, business model and commodity risks** that impact their operations and flow of credit

"AFFM is a low volume guarantor, which needs structural changes and more funding to sustainably grow and reach more farmers and retailers." ~ ***Lender***

Notes: (1) Data accurate as of the 2022 Annual report published in March 2023. Sources: AFFM, 2022 Annual Report, 2023; Dalberg, Stakeholder Interviews, 2024

B | AFAP has a trade credit guarantee that aims to incentivize suppliers to extend credit, in the form of fertilizer product, to hub agro-dealers

Trade credit guarantee – Dev't sector led

Overview:

African Fertilizer and Agribusiness Partnership (AFAP) is a non-profit social enterprise that develops agricultural inputs value chains. AFAP, in collaboration with partners, developed the Africa Fertilizer Trade Credit Guarantee Program (AFTCGP) to incentivize suppliers to extend credit (in the form of fertilizer products) to hub agro-dealers.

Problem addressed | **Default risk**

Features of the mechanism:

- **Countries:** Successfully implemented in Tanzania. Currently replicating the program in 6 countries: Ghana, Kenya, Mozambique, Tanzania, Uganda, and Zambia
- **Guarantee:** AFAP shares a 50% pari-passu[1] guarantee with suppliers who provide fertilizers on credit. For AFAP's 50% liability, it covers the first USD 2 Mn, and the guarantor covers the balance[2]
- **Two-model approach:** AFAP either (i) uses AFAP escrow accounts to manage the guaranteed funds[3] or (ii) relies on underwriters[4]
- **Capacity building:** It enhances hub agro-dealers with technical support. Additionally, AFAP pre-qualifies hubs, reducing suppliers' credit risk assessment burden

Results[2]: *Tanzania guarantee (2019 – To date[5])*

USD 2 Mn *guarantee*

- **USD 26 Mn** — value of fertilizer traded on credit
- **13 X** — times the guarantee has been leveraged
- **>1%** — default rate from borrowers

Notes:.(1) Pari passu means security interest that gives lenders an equal claim on borrowers' assets. (2) This is a first loss arrangement between AFAP the guarantor donor. (3) The escrow accounts ensure funds are readily available in a 'waiting' account in case of defaults, providing a safety net and building trust with suppliers. (4) The collateral manager (e.g., AfDB) issues an agreement on behalf of AFAP, committing to underwrite defaults within the prescribed arrangement. (5) To validate the end date with AFAP.
Sources: AFFM, 2022 Annual Report, 2023; AFFM, Newsletter of the AFFM, 2022; Africa Fertilizer Financing Mechanism, Baseline Study, 2019; Dalberg, Stakeholder Interviews, 2024

B | AFAP's success in Tanzania provides learning opportunities to embed broader risk coverage and incentivize suppliers to reach underserved segments

Trade credit guarantee – Dev't sector led

Major challenges:

% of guarantee disbursed[1]	**11%** (USD 2 Mn/18 Mn)

Reluctance to incur the incremental risk associated with reaching underserved market segments

- The AFTCGP covers 50% of loan losses, seen by many lenders as **partial insurance but not enough to encourage lending to new, riskier borrowers**

Low volume and limited reach

- After the positive results in Tanzania, AFAP has raised ~**USD 18 Mn[1] in total funding to scale the AFTCGP** in Ghana, Kenya, Mozambique, Tanzania, Uganda, and Zambia. **With a potential leverage of 10X, leading to USD 180Mn, the scheme only covers 6%** of the ~ USD 3 Bn annual value needed to bridge the financing and funding gap of fertilizers in Africa
- The low volume emphasizes the need to either increase funding or merge with similar guarantee schemes to increase volume and reach to farmers

Limited risk coverage

- Similar to AFFM, AFAP's credit guarantee **addresses default risk, but inadvertently leaves suppliers exposed to sovereign currency, business model and commodity risks** that impact their operations and flow of credit

*"Sovereign risk [delayed/denied gov't payments] affect participating hub distributors. The severity of losses from such risk can greatly affect guarantee schemes and their respective loss covers." ~ **Lender***

Notes: (1) Information sourced from a dated document; hence the actual value could have significantly changed. Sources: Dalberg, Stakeholder Interviews, 2024

C | Aceli is an example of a market incentive that has combined first loss, origination incentives, and impact bonuses to catalyze financing

Portfolio first loss guarantee

ACELI AFRICA

Overview:

Aceli is a market facility incentivizing banks and other lenders to channel more funding to Agri-SMEs. Their incentives target loans from USD 15 K – USD 1.75 Mn, with a particular focus on loans in the USD 15 K USD 200 K range, a previously underserved segment

Problems addressed | **Default risk and business model risks**

Features of the mechanism:

- **Countries:** Kenya, Rwanda, Tanzania, Uganda and Zambia
- **Portfolio first loss:** For each qualifying loan, Aceli deposits 2% - 8% of the loan value into a reserve account available to cover the first losses across the lender's portfolio
- **Origination incentive:** Aceli offers incentives at USD 0 – USD 10 K for each loan, ranging between USD 25 K – 500 K, to cover for costs to reach underserved segments. Aceli deposits the sums quarterly to banks, providing a level of certainty
- **Impact bonus:** Aceli offers an additional bonus of up to 2%[2] and USD 4K[3] for each loan targeting high-impact segments of women and youth. Aceli is planning to provide bonuses to banks targeting SMEs arid areas

Results:

USD 152 Mn **Value of loans disbursed under the Aceli facility** since inception (2020)

9.9 X For every **USD 1 spent in incentives, USD 9.9 worth of loans** were disbursed

2% to 4% **% growth in Agri-lending directed to Agri-SMEs.** Aceli-supported loans account for 10% of Agri-SMEs loans in Eastern and Southern Africa

"Aceli aims to build an evidence base that improved lending to the agricultural space deepens economic activity, thereby incentivizing lending behavior." ***~ Lender***

Notes: (1) Aceli can incentivize loans up to USD 1.75 Mn. (2) Impact bonus for the portfolio first loss; (3) Impact bonus for the origination incentives. (4) Capital leverage is measured as capital mobilized/ cost of financial incentives. Sources: Aceli Africa, Learning Report: Year 3, 2024; Dalberg, Stakeholder Interviews, 2024

C | As Aceli evolves, it continues to adapt its model to enhance effectiveness and sustainability

Portfolio first loss guarantee

ACELI AFRICA

High interest/lending rates

- Despite the loan incentives, **banks lending rates remain significantly high (more than 25% p.a.),** leaving borrowers with sizeable interest payments for low ticket size loans (~ USD 15K)

Limited risk coverage

- The Aceli model covers **default and business risks adequately but leaves out currency and commodities risks**
- Furthermore, given that this model offers financing for farmers, there is a need to **effectively embed crop yield insurance to cover agronomic risks**
- Overall, similar schemes create moral hazard risks of (i) **borrowers defaulting payments, and (ii) banks reducing their diligence rigor** due to the loss coverage

Limited economic sustainability

- Although the mechanism appears to be more effective than credit guarantees, it **lacks sustainability and heavily depends on donor funding**
- Therefore, there might be a need to **evaluate more sustainable and recurrent opportunities** to fund the mechanism such as fees or incorporating a return provision/expectation

"The question remains on whether the origination incentives is the underlying reason for banks to improve lending to the sector, and whether without it, the 'new' lending behavior can be sustained." ~ ***Lender***

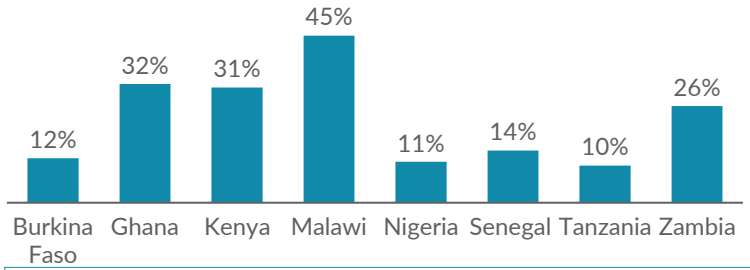
Sources: Dalberg, Stakeholder Interviews, 2024

D | Government input subsidy programs (ISPs) have a mixed impact of improving fertilizer supply, while their inefficiencies can cause market distortion

Gov't subsidy

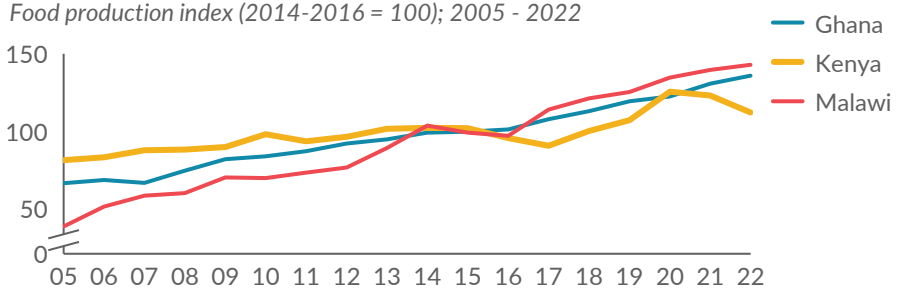
Cost of ISPs as a percentage of agricultural budgets

%; Average (2010 – 2019)



Gross Production Index of select African countries[1]

Food production index (2014-2016 = 100); 2005 - 2022



- Governments in Africa developed **Input Subsidy Programs (ISPs) to accelerate the supply of modern inputs, including high-yielding seeds and fertilizers**, to improve land productivity. Typically, government expenditure on ISPs ranges **between USD 600 Mn to 1 Bn annually**, accounting for **~14% - 26% of annual public agricultural expenditure**
- Several studies indicate that ISPs have improved access to fertilizers for farmers, which in turn has led to an **uptick in food production**. Furthermore, an AGRA study highlighted that ISPs opened access for **underserved and excluded segments, including female-led households, households with fewer assets. Despite this 'new' access, over time, richer households benefited from more volumes**
- Overall, these schemes are often constrained by **operational deficiencies and complaints of opacity**. Additionally, the **ISPs can crowd out private sector activity**. For example, an additional 100 Kg of ISP fertilizer crowds out up to 50 Kg of commercially sold fertilizer in Kenya, 35 Kg in Nigeria, 18 Kg in Malawi, and 13 Kg in Zambia

The study will deep dive into government ISPs in Malawi (long term scheme) and Kenya (emergency scheme)[1]

Notes: (1) The graph highlighted Ghana, Kenya and Malawi, given they had the largest budgetary allocations. Sources: AGRA, Review of Agricultural Subsidy Programs in Sub-Saharan Africa: The Impact of the Russia – Ukraine War, 2023; FAOSTAT, Gross Production Index, 2024; Dalberg, Stakeholder Interviews, 2024

D | Malawi launched a landmark FISP program that reached a significant number of farmers and improved productivity

Gov't subsidy

Overview *(Government-led market)*:

- **Malawi's Farm Input Subsidy Program (FISP)** was introduced in the 2005/06 season to improve agricultural productivity against a background of weather shocks, prolonged food shortages, and high input prices. Throughout its tenure (2005 – 2020)[1], **the government allocated ~USD 150 million annually to the program**

Features of the ISP:

- **Sourcing:** The Malawi government would typically provide tenders to leading fertilizer companies such as Yara, and ETG to import fertilizers into the country
- **Distribution mode (Network):** Gov't monopolized distribution of fertilizers to farmers during the first 10 years, before (re-)introducing private actors to the scheme
- **Distribution mode (Eligibility):** Village Development Committees (VDCs) would choose eligible farmers to receive subsidized fertilizer coupons. Eligibility criteria includes farmers who own land and are village/local area residents
- **Subsidy discount:** The discounts ranged between 75% - 90% depending on the type of synthetic fertilizer

Results:

~ 79% At its peak, **the program directly benefitted ~79% of farming households** in Malawi

~ 54% **Estimated increase in national maize yield** between '04 and '20 attributed to the scheme

16% A 1% increase in fertilizer use per ha led to a 16% **increase in crop net income**[2]

*"Malawi's gov't-run subsidy is viewed as a key cog of agricultural productivity , with gov't subsidizing up to 90% ."~ **Advisor***

Notes: (1) The government has introduced a new scheme - Affordable Inputs Program (AIP), which is universal offering covering more crops and farmers. (2) The results are confined to a study done with 10 K farmers. Sources: Aecr Africa, Impact of Agricultural Input Subsidy on Nutritional Outcomes in Malawi, 2021; IFPRI, The impacts of agricultural input subsidies in Malawi, 2011; PLOS Global Public Health, The politics of agricultural policy and nutrition: A case study of Malawi's Farm Input Subsidy Programme (FISP), 2023; Dalberg analysis, 2024

D | This program distorted private sector activity, and its supply chain disruptions and delayed payments constrained farmers' reach

Gov't subsidy

Key challenges:

Private sector market distortion

- The heavy government involvement **stifled the growth of the commercial fertilizer market in Malawi**. It is estimated that for every 100 kg of subsidized fertilizer, ~ 18 – 30 kg of private fertilizer is crowded out
- Furthermore, the gov't handling of the distribution to farmers means that there are **limited entry points for private sector involvement within a scheme that can reach up to 79% of households**

Supply chain disruptions and payment delays

- Cases of **theft, diversion, and poor quality** disproportionately affected SHFs who at times received the fertilizers late into the planting seasons
- Further, the gov't has **periodically delayed payments to fertilizer suppliers** which often meant suppliers constrained the flow of fertilizers in subsequent seasons

Constrained reach to farmers with limited assets

- The eligibility criteria (landholdings) often meant that **poorer and female-led households with smaller landholdings did not receive the subsidies**

"Malawi's fragmented distribution network and infrastructure often means that fertilizers are 'lost' on the road either due to theft, corruption or mechanical difficulties that constrain farmers' access." ***~ Advisor***

Sources: PLOS Global Public Health, The politics of agricultural policy and nutrition: A case study of Malawi's Farm Input Subsidy Programme (FISP), 2023; DANIDA, Agricultural input subsidies in Sub-Saharan Africa, 2012; Dalberg, Stakeholder Interviews, 2024

D | Kenya launched an emergency subsidy program to improve the supply of fertilizers during the price hikes of 2022

Gov't subsidy

Overview *(Private sector-led market):*

- The Government of Kenya launched the **National Fertilizer Subsidy Program (NFSP) in September 2022, to expand fertilizer supply in 2022, amidst the fertilizer crisis,** before expanding the programs to cover rainy seasons in 2023 and 2024

Features of the mechanism:

- **Sourcing:** The government, via the Kenya National Trade Corporation (KNTC), issues tenders for private actors to either (i) source fertilizers, or (ii) import compounds and blend them locally
- **Distribution mode:** The procured fertilizers are distributed and availed to farmers at county-level depots of the National Cereals and Produce Board (NCPB) - a public agency
- **Subsidy discount:** The government sold fertilizer to farmers at a discount of 45% - 50% of the market price

Results[1]:

20% — **~ 20% of farmers** registered on the Ministry of Agriculture's platform received the fertilizer in 2022

3.5 Mn — **MT of fertilizers** supplied to farmers in Kenya in 2022 and 2023

5%–7% — A 1% increase in subsidized fertilizer usage led to a **5% – 7% maize yield increase in 2022/23**

"Despite its flaws, the program alleviated the cost of fertilizers at a time when the cost of living was too high." ***~ Advisor***

Notes: (1) The results are largely preliminary given the recent timescale of the program. Sources: IFPRI, How is Kenya's National Fertilizer Subsidy Program working? 2023; Ministry of Agriculture and Livestock Development, Fertilizer Subsidy, 2022; Dalberg, Stakeholder Interviews, 2024

D | This program has faced multiple operational and publicity issues that are adversely impacting the trust of SHFs and distorting market activity

Gov't subsidy

Key challenges:

Private sector market distortion

- The distribution of subsidized fertilizers through government depots is distorting the well-developed private market. It is estimated that an **additional 100 Kg of ISP fertilizer crowds out up to 50 Kg of commercially sold fertilizer in Kenya**

Supply chain disruptions

- Across the current two-year period, the government has often distributed the fertilizers late into the planting cycle, meaning that farmers often access the **inputs untimely reducing its impact on productivity**

Poor quality

- Recently exposed cases of the **government supplying fake fertilizers** has broken the trust of farmers to purchase subsidized inputs, and is set to impact the yield of the current planting season

"The scandals involving fake fertilizers in Kenya have broken the trust of farmers who borrow and spend a lot of money to purchase inputs. We will feel this effect via reduced food production in the coming months." ~ ***Cross-cutting actor***

Sources: The Africa Report, Kenya: Government knowingly supplied fake fertilizer to farmers, 2024; Business Daily, How Kenya can boost agricultural productivity with fertilizer subsidy, 2024; Dalberg, Stakeholder Interviews, 2024

IV. Interventions

The development of interventions includes definition of principles, articulation of design features and identification of complementarity opportunities

Principles

- Articulation of the key principles that anchor the design and implementation of our solutions

Design features

- Explanation of the tool including beneficiaries, challenges/risks addressed, likely partnerships, and adjustments to country archetypes and crisis settings

Complementarity

- Identification of the opportunities for the tools to synergize their offerings and work in tandem

Source: Dalberg analysis, 2024

The interventions and their design will consider a set of principles to ensure their long-term effectiveness and sustainability

1	Building market resilience		**Assess opportunities to strengthen the resilience of Africa's fertilizer value chain**, thereby bolstering the capabilities of actors and enhancing the supply of fertilizers to farmers in 'normal conditions'
2	Crisis preparedness		**Evaluate strategies and intervention designs to fortify Africa's fertilizer value chain against unforeseen shocks/disruptions**, ensuring readiness to mitigate and adapt to crisis impacts
3	Market systems approach	Multi-sector actor involvement	**Adopt a comprehensive approach that considers the entire value chain, and its actors**[1]. Ideally, from production & blending to guarantee availability, to aggregation & distribution networks for accessibility, farmers for acceptability, financing service providers for affordability, and governments & donors for derisking and support in crisis periods
		Integrated solutions	**Develop integrated solutions or bundled mechanisms** that address a wider scope of risks in an overarching value chain approach
4	Cross-cutting lens	Soil-health lens	**Ensure interventions and their designs consider soil health and climate change considerations.** Thereby, promoting sustainable agricultural practices that enhance soil fertility, and resilience, while mitigating adverse environmental impacts
		Gender lens	Design interventions that address gender gaps and **push the needle towards gender and structural transformation**

Notes: (1) For each of these actors, we will highlight their incentives to engage in the value chain. Sources: Dalberg analysis, 2024

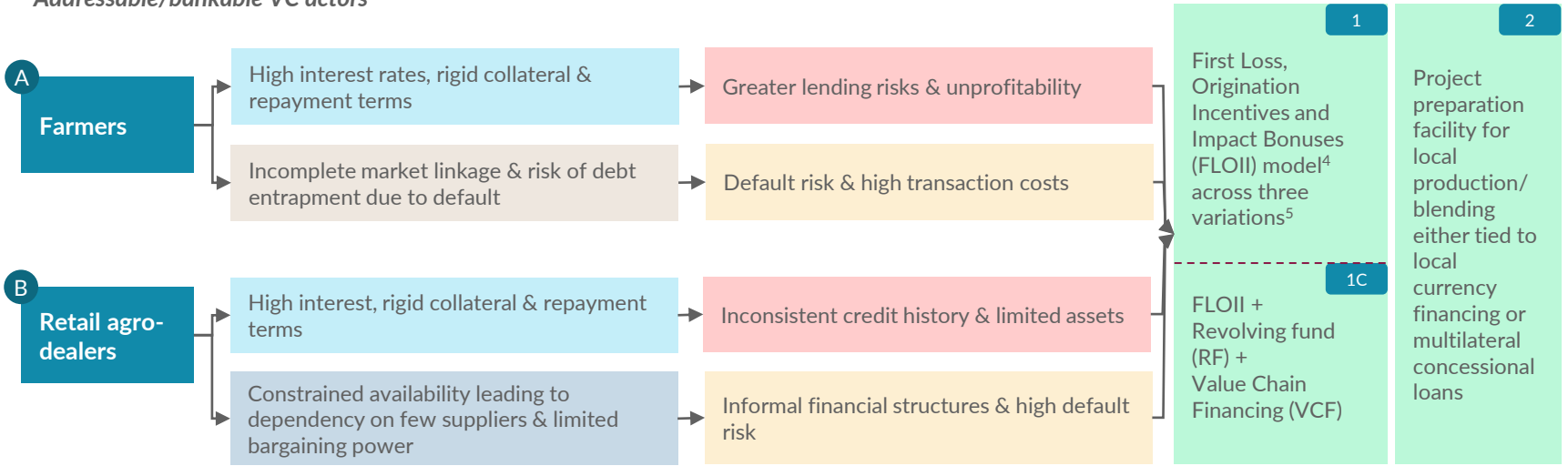
Drawing from the principles, we propose two solutions to address financing gaps and improve availability, affordability, and accessibility of fertilizers (I/II)

2. Design

Non-addressable/Non-bankable VC actors[1]

VC actors[2] → Technical assistance[3]

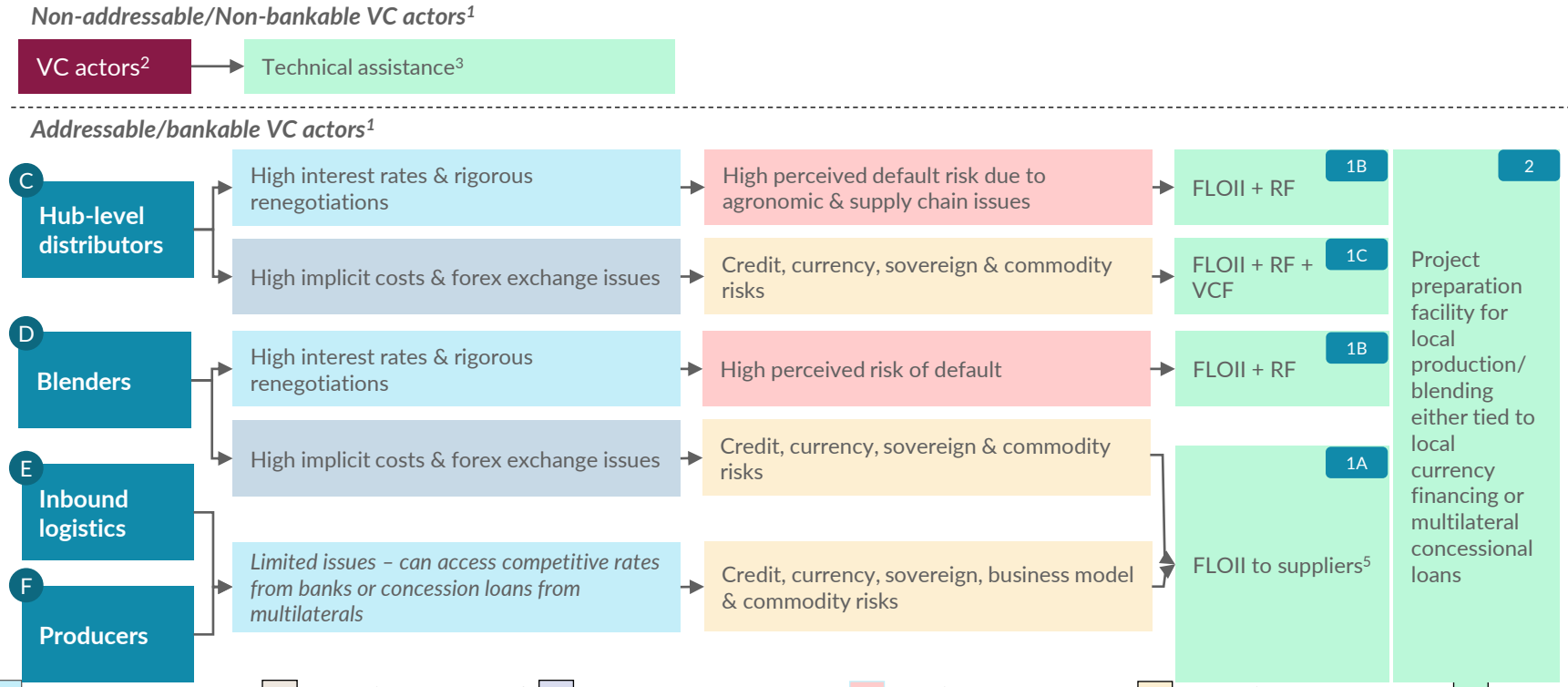
Addressable/bankable VC actors[1]



Key: *Borrowers' issues with bank* | *Farmers' issues with FFOs[6]* | *Borrowers' issues with suppliers* | *Banks' issues with borrowers* | *Suppliers' issues with borrowers* | *Interventions*

Notes: (1) Addressable/bankable refers to VC actors who despite challenges can access a form of credit. (2) VC actors include all players in each node. (3) Orgs that make VC actors bankable through providing inputs, financial formalization services, and market linkages. (3) FLOII stands for First Loss, Origination Incentives, and Impact Bonuses – essentially Aceli model. (5) Variations explained in 1A, B & C. (6) FFOs refer to orgs such as One Acre Fund who offer inputs to farmers. Sources: Aceli, Approach, 2024; Dalberg analysis, 2024

Drawing from the principles, we propose two solutions to address financing gaps and improve availability, affordability, and accessibility of fertilizers (II/II)



Key: Borrowers' issues with bank | Farmers' issues with FFOs[4] | Borrowers' issues with suppliers | Banks' issues with borrowers | Suppliers' issues with borrowers | Interventions

Notes: (1) Addressable/bankable refers to VC actors who despite their challenges can access a form of credit. (2) VC actors include all players in each node. (3) Orgs that make VC actors bankable through providing inputs, financial formalization services, and market linkages. (4) FFOs refer to farmer facing orgs such as One Acre Fund who offer inputs and other services. (5) The solution provides incentives directly to producers/inbound logistics to extend more supplier credit downstream. Sources: Aceli, Approach, 2024; Dalberg analysis, 2024

Initially, these solutions will enable VC actors to access fertilizers at prevailing prices. In the long term, fertilizers will be available at more affordable rates

Term	Solution	Targeted actor	Intended impact
Short to medium term	**1 First Loss, Origination Incentives and Impact Bonuses (FLOII):** A FLOII model for suppliers B FLOII model + Revolving fund C FLOII model + Revolving fund + Value chain financing	• Farmers • Retail agro-dealers and distributors • Blenders • Inbound logistics providers • Producers	• Financing that enables farmers and distributors to **afford, and access fertilizers at the prevailing market prices**
Long term	2 **Project Preparation Facility (PPF)** tied to local currency financing or concessional loans	• Blenders and producers	• Long term financing investment to **increase the local production and, effectively, the supply of fertilizers at more affordable prices/rates**

Sources: Dalberg analysis, 2024

In the following section, we will build each intervention across three sub-sections: (I) Summary, (II) Design features, and (III) Adaptations

Summary

- Articulation of the key financing issues the solution is targeting
- An overview of the solutions' features, beneficiaries and targeted risks

Design features

- Deep-dive into each solution's:
  - Design features e.g., tool provider, beneficiaries, currency, coverage, payments and maturity
  - Provisions and success factors
  - Critical risks targeted
  - Operationalization steps, and
  - Potential partnerships to explore across the six focus countries

Adaptations

- Identification of the changes needed to adapt the solutions to:
  - Country archetypes
  - Crisis situations

Source: Dalberg analysis, 2024

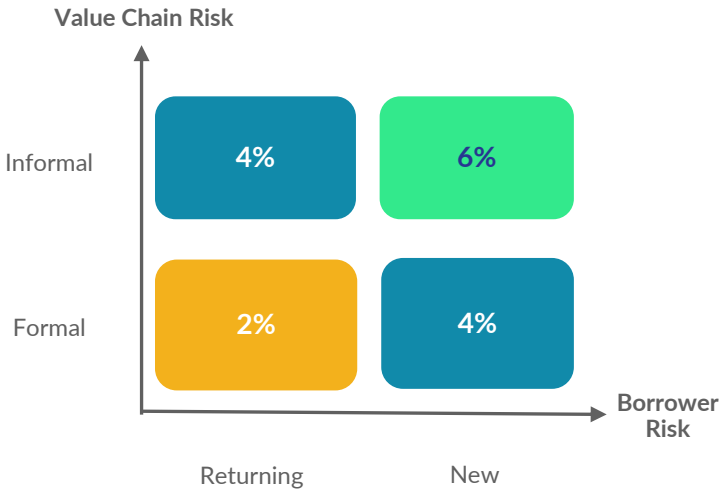
Intervention 1

Portfolio first-loss guarantee is a financing mechanism designed to change lending behavior, offering increased protection as lending volume rises

Solution 1 Rationale

First-loss guarantee

% awarded per loan



In addition to the amounts shown here, lenders can earn up to an additional 2% through this mechanism for certain high-impact loans (see Slide 83), to help ensure that impact is "part of the equation" for lenders evaluating potential borrowers

How first-loss protection works

- Lender makes a qualifying loan between $15K-$1.5m[1]
- FLOII makes an **upfront deposit** into the lender's reserve account
- The upfront deposit ranges from **2-6% of the disbursed loan amount**, depending on the borrower type: more coverage is provided for a new borrower and for one operating in an informal value chain (as data indicates that these are higher risk)
- Aceli's data suggests this is currently the optimum percentage to incentivize banks, but it is reviewed annually based on a detailed benchmarking exercise
- Lender's reserve account **builds up with each loan**; lender can draw on reserve as a first-loss loss cover for **any losses of loan principal from the portfolio of loans** registered in its account

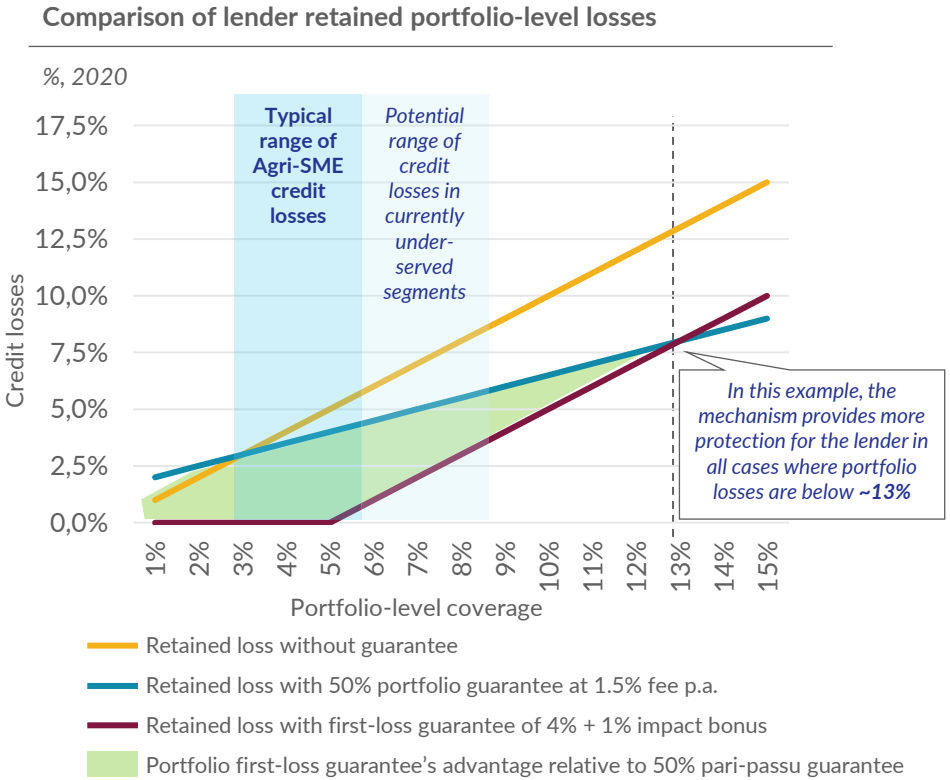
  ***Loan example**: Loan of $100k to coffee cooperative (formal, new borrower) qualifies for 4% coverage = $4K*

  ***Portfolio example**: $10m with avg coverage of 4%. The lender builds up a reserve of $400K that can be drawn as first loss in event of any losses in portfolio of qualifying loans.*

Notes: (1) Maintaining small credit bands (e.g., USD15,000) is crucial for serving high-impact market segments (e.g., women and youth). However, these figures are indicative and need to be validated for each specific player and country. Sources: Aceli Africa, Bridging the Financing Gap: Unlocking the Impact Potential of Agricultural SMEs in Africa, 2020; Dalberg analysis, 2024

Portfolio first-loss guarantees provide more protection for the typical range of Agri-SME credit losses (3%- 6%)

Solution 1 Rationale



- In the fertilizer market, mechanisms such as AFFM anchor on partial credit guarantees to de-risk financing. These schemes usually **cover 50% of a specific loan portfolio's or individual loans' losses after recovery**
- While these schemes are effective in reducing net losses, **they don't incentivize lenders to expand their reach to higher-risk but also high-impact segments**, such as new borrowers in informal value chains or higher ticket sizes
- Guarantee schemes often come with **fees that further impacts loan profitability**:
  - Upfront fees vary between 0% - 3%
  - Annual commissions are between 0.5% - 2% of the guaranteed amount
- Within the typical range of Agri-SME credit losses (3%-6%), and for underserved segments (losses (6%- 9%), **first-loss protection is stronger than a partial credit risk guarantee**[1]

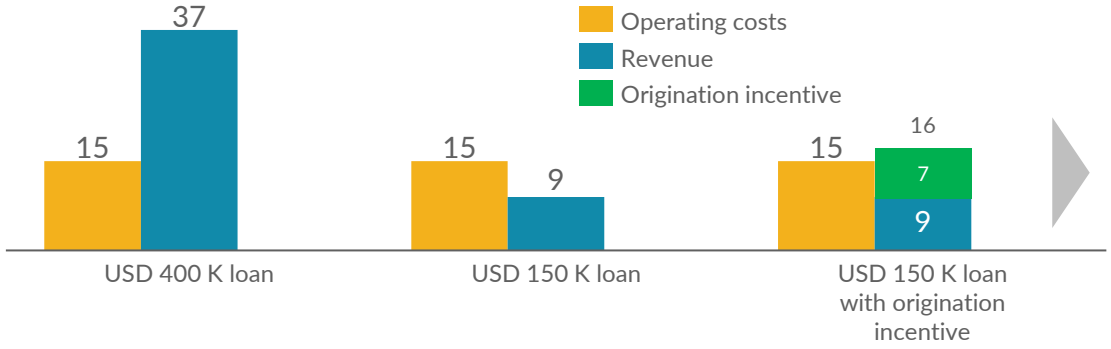
Notes: (1) Serving underserved segments grants the lender with impact bonuses that provide additional protection. More details can be found on slide 85.. Sources: Aceli Africa, Bridging the Financing Gap: Unlocking the Impact Potential of Agricultural SMEs in Africa, 2020; Dalberg analysis, 2024

The introduction of origination incentives compensate for initial losses incurred to reach underserved segments

Solution 1 Rationale

Costs vs revenue for 1-year working capital loans made by an efficient[1] bank

USD 'Thousands, 2020



1. *For large loans, revenue comfortably exceeds costs, even for shorter-term loans*
2. *But at small sizes, revenue fall short of costs even among more efficient lenders, creating a disincentive to serve new & smaller borrowers*
3. *Origination incentives, provide additional revenue to make smaller loans more attractive*

- As an example, if an efficient bank makes losses of USD 6 K for each USD 150 K loan, an origination incentive of ~5% would make this loan profitable
- In designing a similar scheme, incentives can be set at a fixed percentage (4% - 7% of the loan amount) to **create a level playing field that attracts competition and rewards efficiency**
- Over time, **incentive levels (%) can be adjusted down** as the market becomes more efficient
- **Donors often contribute/deposit funds into a facility**, which disburses these incentives to the lenders. In the longer term, a more re-investable and sustainable source of funding is needed

Notes: (1) A bank at the 75th percentile of annualized operating costs in the Central Bank dataset (2). For example, in our cost-allocation exercise, social lenders reported up to 50% higher origination costs, due to the need for in-person visits and more research to understand the dynamics in a new value chain or market. Sources: Dalberg analysis, 2024

Furthermore, incorporating impact bonuses incentivizes lenders to prioritize high-impact borrowers, and improve overall effectiveness

Solution 1 Rationale

Incentives based on risk, loan size, and borrower status + **Additional incentives based on impact segments** → **Total incentives**

First loss incentives

- Incentivizes and rewards lending to more beneficiaries, rather than being viewed solely as an insurance
- It also incentivizes taking higher risk
- Coverage varies with 2% - 6%[2] of loan facility saved in a reserve account

Origination incentives

- Compensate for the initial losses incurred to reach underserved segments
- Therefore, encourages lending to new beneficiaries
- Incentives for old and new borrowers could be USD 0 – 10K[2]

Impact bonuses

To enhance the effectiveness of these two mechanisms, impact bonuses could be introduced to incentivize lenders to seek out and serve additional high-impact borrowers.[1] Impact bonus are in the form of higher first-loss coverage and origination incentives for loans to high-impact borrowers. For example:

- Farmers/distributors/traders in arid lands
- Women and youth
- Farmers practicing climate-smart agriculture

Additional incentives of ~ 2% - 5%[2,3]

Additional incentives of ~ USD 5K[2,3]

Incentives are designed to:

- Address risky market segments
- Reward high-impact lending
- Vary along a smooth curve to account for threshold effect

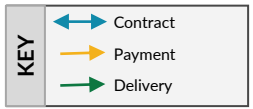
Potential example: Lending to new informal businesses offers 6% in first-loss incentives to a reserve account and $10K in origination incentives. If the borrower is a young woman, this increases to 9% and $13K, respectively.[2]

Notes: (1) To qualify for the first-loss protection and origination incentives above, a loan must meet a minimum set of criteria indicating that the borrower benefits smallholder farmers and/or low-wage workers. This mechanisms also provides an "impact bonus" in the form of higher first-loss coverage and origination incentives for loans to borrowers whose businesses target farmers in arid lands, women and youth ,etc. (2) These are illustrative figures that can be adapted to each country/context. (3) These are the impact bonuses, which represent the additional percentage that will be added to the first loss incentive, or the additional USD that will be added up to the origination incentives. An example demonstrating how it works can be found under the total incentives section. Sources: Dalberg analysis, 2024

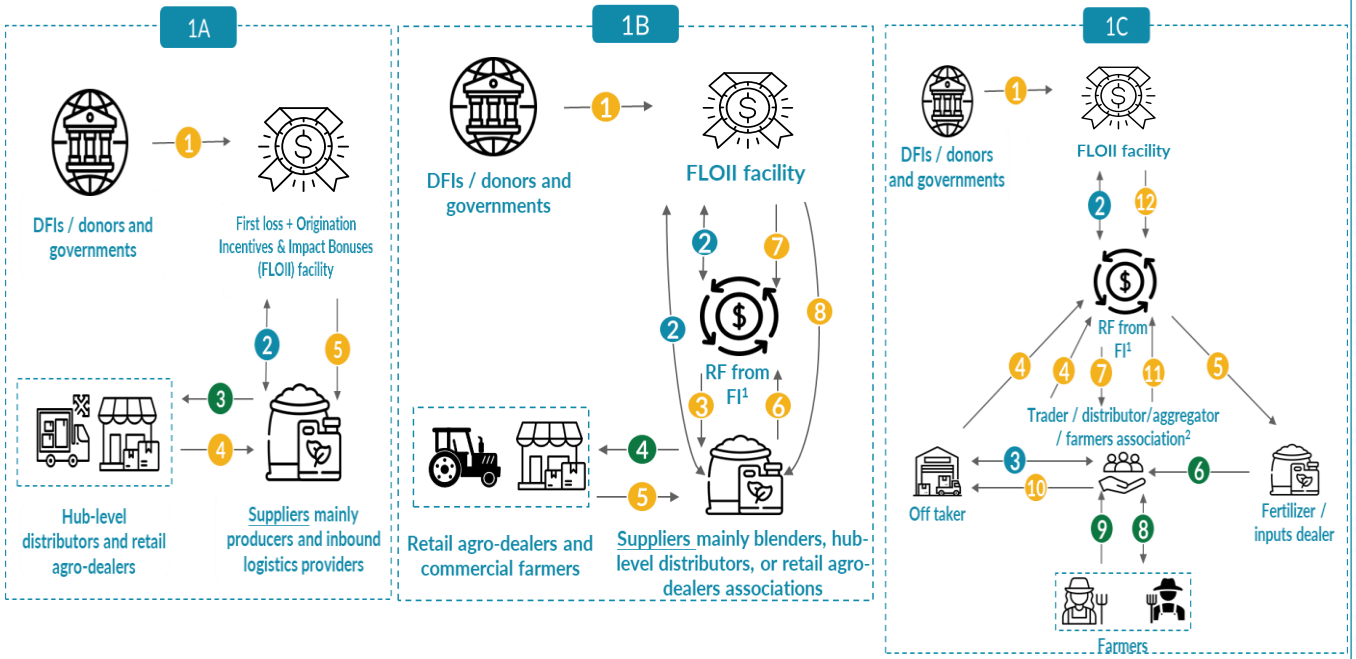
Intervention 1 comprises advanced versions of first loss guarantee, origination incentives and impact bonuses, targeting new actors beyond banks

Solution 1 Rationale

Current version



Advanced versions[2]



Notes: (1) Revolving Fund from a financial institution (2) These solutions requires a credible entity to act as a catalyst and coordinator between organizations. Further detail is provided in the subsequent slides. Sources: Dalberg, Stakeholder Interviews, 2024

Intervention 1A

Supplier credit dominates fertilizer financing, but informality and default risk limit reach to retailers and farmers; FLOII for suppliers could bridge the gap

1A Summary

Situation

Supplier credit from producers and inbound logistics providers is the primary form of financing, anchoring ~70%[1] of the flow of fertilizers from producers and blenders to large-scale public and private players:

- The large-scale private players include hub-level distributors, with extensive distribution networks and robust financial/credit records. While the public actors often include governments running input subsidy programs (ISPs)

Complication

Despite having sufficient balance sheet liquidity to extend more supplier credit, suppliers often restrict it to hub-level distributors in countries they already serve. Existing credit guarantees generally do not adequately incentivize them to enter new markets or reach retail agro-dealers

- Suppliers have limited appetite to provide credit further down the value chain as actors lack formal financial structures and records needed for credit worthiness assessments
- Further, constant delayed and denied payments from gov'ts and other players have deepened the reluctance from suppliers with some opting to limit or stop providing credit in certain countries e.g., Zambia
- This limited availability of credit to retail agro-dealers, often constrains their ability and bargaining power in sourcing goods

Intervention

Availing first loss coverage, origination incentives and impact bonuses (FLOII) to producers, inbound logistics providers and large-scale blenders could expand their appetite to extend more affordable supplier credit in new markets and down the value chain

- The first loss coverage will allow suppliers to target unreached risk segments within agriculture: (i) informal retail agro-dealers, (ii) small ticket sizes, and (iii) lending to new borrowers (e.g., smaller blenders)
- Origination incentives and impact bonuses will motivate lenders to provide supplier credit also to underserved retail agro-dealers e.g., those in rural areas
- During relationship building and creditworthiness assessment, origination incentives will compensate lenders for higher operating costs in underserved markets

"Suppliers are wary of providing credit to retail agro-dealers due to defaults. The agro-dealers who can access this credit are those who can place collateral between 100% – 150% of the credit/stock value." ***~ Agro-dealer Association (Zambia)***

Notes: (1) This figure stems from initial interviews and will be further adjusted based on subsequent interviews. Sources: Dalberg analysis, 2024

A First Loss Cover, Origination Incentives and Impact bonuses (FLOII) to suppliers would unlock supplier credit within the fertilizer value chain

FLOII for suppliers

- A mechanism that provides first loss coverage, origination incentives and impact bonuses (FLOII) to **producers, inbound logistics companies, and large-scale blenders** with the financial capacity to offer more supplier credit.

What is the tool?

- **First loss** coverage at a portfolio level for credit ranging in size from USD 15 K – USD 1.5 Mn[1,2]
- **Origination incentives** are payments to suppliers/lenders that compensate them for the lower revenues and higher operating costs of extending credit to smaller and newer borrowers that would not otherwise have access to finance
- **Impact bonuses** in the form of higher first-loss coverage and origination incentives for credit to high-impact borrowers (e.g., youth and women-owned businesses[3], etc.)
- **TA facility** to agro-dealers to build capacity and minimize business risk

When it can be used?

- **When providers of finance** are unwilling to extend more supplier credit due to perceived high risk of default
- **When borrowers** require financing but do not meet requirements for non-guaranteed lending and are perceived as high risk

Who uses it?

Tool provider:

- MDBs and DFIs
- Dedicated DFI-funded
- Private donors and foundations
- Gov'ts

Tool beneficiary:

- Producers
- Inbound logistics companies
- Large-scale blenders

Critical risks targeted

Business model	Credit	Currency
Sovereign	Commodity	

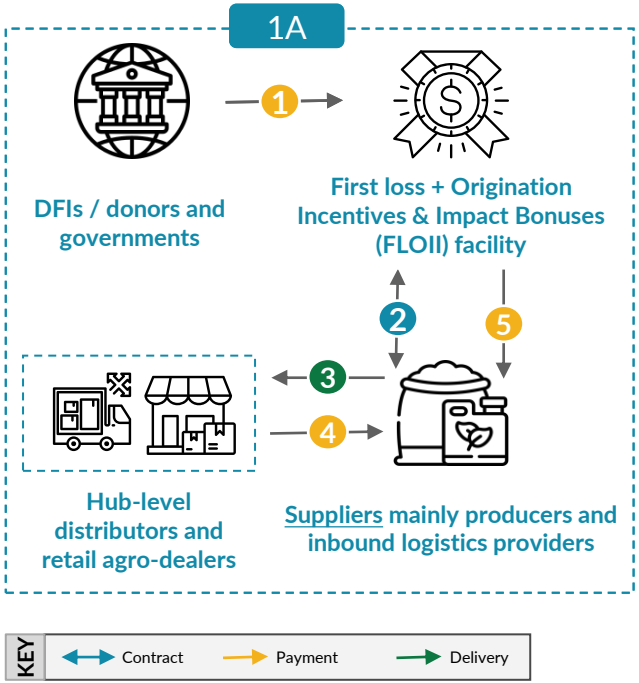
Key: Risk covered in the solution | Risk not covered

Notes: (1) With each qualifying credit, a lender earns a credit (an average of, for example, 4% of the value of the credit) into a reserve account. (2) Maintaining small credit bands (e.g., USD15,000) is crucial for serving high-impact market segments (e.g., women and youth). However, these figures are indicative and need to be validated for each specific player. (3) Facility Lead to determine the sub-segments of women/youth that he incetive will cover. Source: Dalberg, Stakeholder interviews, 2024

The guarantee, incentives and bonuses are directed to suppliers to incentivize them to extend more credit to hub distributors and retail agro-dealers

1A Design

How does it work?



0 A Coordinating Lead with support from partners could **either create a FLOII for suppliers or encourage similar models e.g., Aceli to facilitate FLOII for suppliers**

1 **DFIs, donors and governments contribute the needed funding** to set-up an impactful FLOII facility

2 **Agreement between the FLOII Coordinator and suppliers about the terms and conditions** i.e., providing a designated volume of goods on credit, with distinct focus on underserved segments, and consumer-favorable repayment terms

3 **The supplier provides fertilizer on credit** mainly to hub-level distributors and retail agro-dealers

4 **Hub-level distributors and retail agro-dealers reimburse suppliers** after the agreed tenor[1]

5 FLOII Coordinator pays origination incentives and impact bonuses to supplier. Additionally, in case of losses, **the FLOII facility covers the initial loss payments** as agreed in the terms and conditions. In countries experiencing currency depreciation that results in supplier losses, the FLOII facility also provides currency compensations to suppliers

Notes: (1) Additional information regarding the tenure and other design features is provided in the subsequent slides. (2) This mechanism also works for large-scale blenders.
Sources: Aceli Africa, Approach, retrieved in 2024; Dalberg interviews and analysis, 2024

This solution would need co-investment by governments and donors to ensure timely fundraising and payouts to suppliers[1]

1A Design

Design features

Target investment and leverage

- **Target investment:** USD 300 Mn into the FLOII facility
- **Target annual leverage:** 5X

*With the 5X annual leverage, the USD 300 Mn can incentivize **supplier credit of USD 1.5 Bn, which is 50% of the USD 3 Bn financing gap***

Financing instruments and contribution (share and rationale)

- **Donors: 50% via grants**
- **Governments: 50% via public expenditure**

Gov'ts could re-direct spending from ISPs to this scheme. Essentially, gov'ts could contribute ~USD 15 Mn to USD 40 Mn to their scheme annually, representing ~ 15% of typical ISP budgets

Administrator/Coordinating Lead

- A designated foundation/multilateral e.g., AGRA, or AFAP
- A pact of foundations/multilaterals e.g., Sustain Africa

Currency

- **FLOII disbursement currency:** USD

Coverage ratio

*Coverage and bonuses are tied to the **principal amount of the supplier credit.***

- **First loss coverage:** For each supplier's credit transaction, 2% - 8% of the loan amount is deposited into a reserve account to cover future losses[2]
- **Origination incentive:** For the credit range of USD 15K – 1.5 Mn, incentives are up to USD 6K for returning borrowers and USD 10K for new borrowers[3]
- **Impact bonus:** Additional 1% - 2% of each credit that passes the criteria[3]

Maturity and payments

- **Maturity:** Credit guaranteed for full tenor (~ 1 year)

Payments/fees from suppliers to FLOII:

- **Upfront fees and annual commission:** None

Payments from FLOII to suppliers:

- **First loss coverage:** When the loss occurs on the credit portfolio
- **Origination incentives and impact bonuses:** Paid quarterly

Notes: (1) Both FLOII options, whether create a FLOII for suppliers or encourage similar models (e.g., Aceli), necessitate funding. This funding would be used for either the initial establishment or to expand Aceli's capacity to also cover suppliers. (2) Total coverage depends on total loans and reserve amount. (3) The exact criteria and payment range needs to be informed by a deep dive study into suppliers' transactions across Africa. Sources: AGRA, Review of Agricultural Subsidy Programs in Sub-Saharan Africa: The Impact of the Russia – Ukraine War, 2023; FAO, Monitoring and Analyzing Food and Agricultural Policies (MAFAP), Retrieved – 2024; Dalberg, Interviews and Analysis, 2024

Additionally, the solution could adopt provisions such as a zero interest and fees, and incentives to incorporate gender and climate lens

1A Provision

Provisions

Interest rates

- **Apply a no-interest rate provision.** Currently, suppliers charge 0% - 10% of the value of stock sold on credit. The support and incentives provided by the FLOII model minimizes financing costs in these transactions, allowing suppliers' credit to be extended with minimal or no financing costs

Tenor

- **Cap the credit term and volume to 1 year.** The cap allows for retail agro-dealers to maintain sufficient stock year-round, while providing space for them to recover from any shortfalls in demand as they transition across seasons in the year

Fees

- **Incorporate an initial no-fee model to enhance lender participation.** Initially, the scheme can charge zero fees to incentivize the flow of supplier credit and drive market maturation to a point where it functions independently without external support. If the market growth is slower and needs longer intervention, the scheme can integrate fees and commissions to sustain the model's viability

Gender lens

- **Include gender bonuses** to encourage lending to more women-owned business

Soil-health lens

- **Prioritize customers (retail agro-dealers) that** stock and promote organic fertilizer usage

Offer gender and climate bonuses[1]: An additional 1-2% increase for first-loss coverage and provide additional USD 1-2K in origination incentives[2]

Notes: (1) The gender and climate bonuses pertain to the impact bonus structure previously outlined. (2) These are illustrative figures that can be adapted to each country/context. Sources: Dalberg, Interviews and Analysis, 2024

Overall, embedding a data-driven approach to align capital supply and demand is key for balancing responsible lending with protection against defaults

1A Success

Challenges and success factors

Potential challenges within the solution

- **Intentional default:** Several retail agro-dealers deliberately default on their obligations, and afterward, create another company with a different name. Hence, emphasizing the need for a robust selection process for the credit recipients
- **Moral hazard:** There is an inherent risk of suppliers/creditors reducing their due-diligence rigor in presence of loss coverage. Thus, the need for the FLOII Coordinator to constantly monitor and re-communicate the quality standards expected in the scheme
- **Program sustainability:** Often, finding long-term, reliable sources of funding for a FLOII model can be challenging, especially given the competing priorities of multilaterals. Thus, highlighting the need for sustainable funding for longer-term schemes

Likely success factors

- **Provide TA** to agro-dealers to build capacity and minimize business risk
- **The scheme's success will rely on adopting a data-driven, market-based approach to align capital supply and demand.** Specifically:
  - **First-loss coverage:** Employ historical default rates to establish optimal coverage rates (%) for suppliers, balancing responsible lending with protection against defaults
  - **Origination incentives**: Assess supplier (un)profitability to expand into new segments, crafting incentives that offset potential losses while maintaining commercial appeal
  - **Monitoring and evaluation**: Continuously assess program performance by analyzing participation data, defaults, and impact metrics. Additionally, use insights to refine coverage levels (%), incentives, and consumer targeting
  - **Secure timely payments from the FLOII** for the first loss, origination incentives, and impact bonuses, fostering predictability and trust. This ensures supplier satisfaction and retention, ultimately driving program success

Sources: Dalberg, Interviews and Analysis, 2024

This FLOII model targets credit risk from agro-dealers, and business model, sovereign and currency risks when operating in local, underserved markets

Credit risk	• The portfolio first loss guarantee covers likely defaults, **incentivizing lenders to expand their reach not only to higher-risk but also high-impact segments, such as new informal retail agro-dealers in rural areas or those requiring higher ticket sizes**. This proves especially valuable in early stages, where default risks are heightened due to outreach to new segments lacking established credit histories
Business model risk	• Origination incentives covers the **initial unaccounted costs of assessing recipients' creditworthiness**, as well as reaching borrowers in remote areas and requiring smaller credit
Currency risk	• **Offering origination and impact incentives in USD, along with first-loss when applicable**, helps mitigate potential losses due to currency risk, especially for producers and inbound logistics who run their balance sheet costs in USD • Potentially, the solution could consider **compensations of up to ~USD 5 K per credit ranging between USD 15K to USD 1.5 Mn to cover currency losses** for producers and inbound logistics providers
Sovereign risk	• **Establishing appropriate conditional agreements,** where gov'ts commit to implementing reforms or regulatory changes if there are payment delays or defaults to the FLOII model, **thereby ensuring disbursement of agreed funds into the intervention**

Sources: Dalberg analysis, 2024

FLOII addresses gaps in credit guarantee schemes, which often provide only partial solutions for the challenging economics of lending to Ag MSMEs (I/II)

1A
Addressed gaps

Agri-SME lending challenges	Gaps in existing solutions (e.g., AFFM, AFAP)	Changes in the FLOII model
High credit risk due to agriculture and MSMEs profile	**Partially:** Guarantees typically cover 50% of losses per loan, which **many lenders view as insurance for loans but not sufficient to incentivize lending to new and riskier borrowers.** Moreover, current guarantee schemes also come with fees that further impacts loan profitability: (i) Upfront fees vary between 0-3%, (ii) Annual commissions are between 0.5-2% of the guaranteed amount As a result, utilization rates vary with many lenders and guarantors reporting that guarantees are having limited impact.	**First loss + impact bonuses:** A financing mechanism designed to **change lending behavior, rather than being viewed solely as insurance.** Specifically, a tool that targets unattended risk segments within agriculture: • Loose and informal value chains, small ticket sizes, and lending to new borrowers • Lending to MSMEs remains riskier than lending to large agri-businesses[1] **No fee model:** Limits barriers to suppliers and other borrowers' participation
Reluctance to incur the incremental risk associated with reaching underserved market segments		
High operating costs disincentives lending to borrowers in remote areas or requiring smaller loans	**Partially:** Donor funds partially mitigates high operating costs, but **pricing is not favorable enough to incentivize lenders to make smaller loans in informal value chains or remote areas**.	**Origination incentives:** Financial incentives targeted to **compensate lenders for higher operating costs of reaching underserved markets, aligned with impact criteria**
Higher credit risk during shock periods	**Partially:** Although guarantees cover ~50% of losses, this is **insufficient during crisis, when losses double or triple**	**Adjustment during crisis**: Provisions to **increase guarantee coverage (%) during shocks** to ensure adequate support for lenders

Sources: Aceli Africa, Bridging the Financing Gap: Unlocking the Impact Potential of Agricultural SMEs in Africa, 2020; Dalberg analysis 2024

FLOII addresses gaps in credit guarantee schemes, which often provide only partial solutions for the challenging economics of lending to Ag MSMEs (II/II)

1A
Addressed gaps

Agri-SME lending challenges	Gaps in existing solutions (e.g., AFFM, AFAP)	Changes in the FLOII model
High currency risk for certain players and markets	**Partially:** Credit guarantees may cover 50% of loan losses in USD but does not shield suppliers from **currency depreciation between sale agreement and payment.**	**Currency compensations:** Suppliers are **compensated for losses due to high currency depreciation**. This ensures the instrument functions effectively in countries experiencing high currency depreciation.
Environmental & social factors not considered in lending decisions	**Partially:** Donors provide incentives linked to impact e.g. gender, but **programs are not tied to actual lending economics and efforts to value impact are still nascent.**	**Impact bonuses:** Financial incentives exist to **motivate lenders to identify and serve higher-impact MSMEs** such as farmers in arid lands, women and youth.
High sovereign risk from doing business with governments	**Partially:** Guarantees only cover a portion of the losses, but **don't address the root causes of sovereign risk.**	**Gov't contribution**: Gov'ts gradually and methodically redirecting spending from ISPs[1] to this scheme. **Conditional agreements:** Gov'ts commit to implementing reforms if there are payment delays or defaults to FLOII, **ensuring disbursement of funds into the model.**
Moral hazard risks involving lenders' due diligence and borrowers' repayments	**Partially:** Lenders can reduce due diligence rigor due to presence of a guarantee. In turn, borrowers can deprioritize repayments once they access guaranteed loans. While guarantees cover the losses, substantial defaults can impact lenders	**Incentives/rewards:** Provisions that **rewards return borrowers who pay back their loans timely**. Examples include: (i) Retailers securing higher supplier credit after consecutive timely repayments,[2] and (ii) Suppliers with zero defaults, due to strict due diligence, earning higher origination incentives for new borrowers.[3]

"We currently restrict the use of existing guarantees (e.g., AFAP) to extend credit to players and countries we already serve. However, the FLOII would incentivize us to extend supplier credit into new markets" ~ ***Inbound logistics***

Notes: (1) ISPs – Input Subsidy Programs. (2) Provision aims to reduce non-payment risk despite guarantee coverage. (3) This provision discourages relaxed due diligence despite guarantees. Sources: Aceli Africa, Bridging the Financing Gap: Unlocking the Impact Potential of Agricultural SMEs in Africa, 2020; Dalberg analysis 2024

Four main avenues to operationalize this model: enhance credit guarantees, advise suppliers, include supplier credit in Aceli, or set up a new mechanism

1A Operation-alization

		Rationale for possible selection	How does it work?	Risks to manage
1	**Enhance existing and emerging credit guarantee schemes e.g., AFFM and AFAP[1]**	• Leverage established frameworks, networks, and resource to facilitate linkages between suppliers and hub-level distributors and enhance the technical and business capabilities of hub-level distributors to reduce implementation and business risks	• **Overlay the FLOII model to existing credit guarantee schemes** to increase utilization rates and incentivize engagement with high-impact segments • **Use a data driven approach to adjust the design of the model** (e.g., coverage, incentives) in each country	• Highlight benefits of this model to address potential limited openness from AFFM and AFAP due to their current focus on capitalizing existing offerings • Carefully assess the trade-offs and ensure that the benefits of implementing mixed models outweigh the challenges
2	**Advisory to suppliers and borrowers**	• Maximize the use of current tools and solutions available to the stakeholders	• **Provide direct advisory services to suppliers** and borrowers. Helping them access, tailor, and implement current financial tools effectively.	• Adapt existing financial structures to better fit the specific needs of suppliers and borrowers.
3	**Include supplier credit in Aceli or emerging facility**	• Harness Aceli's data-driven approach, and methodologies, to streamline operations, maximize impact, and foster mutually beneficial partnerships	• **Leverage Aceli model to onboard fertilizer suppliers.**[2] In the short term, work in Aceli focus countries with opportunity to expand as Aceli scales	• Engage donors to highlight benefits of extending an early successful model to persistent financing issues on fertilizers, limiting concerns of duplicative models
4	**Advisory on the establishment of a standalone solution**	• Provide autonomy and flexibility, allowing control over decision making and customization of solutions to specific contexts	• **Reach interested partners** in these interventions (e.g., Yara) to have convening power • Set up a **pilot test in a country where current models are non-existent**	• Confront the challenge of limited ecosystem support by highlighting the pilot phase proof of concept and table ideas for further collaboration.

Ideally, strive for a blend of options 1 and 2, even if it necessitates further stakeholder alignment. This approach maximizes sector expertise and knowledge

Notes: (1)) AFFM and AFAP are responsible for leading the evaluation, amendment, and implementation of changes to their schemes.. Sustain Africa is available to provide advisory support, should AFFM and AFAP be amenable to it. (2) Producers, inbound logistics companies, and large-scale blenders. Sources: Dalberg analysis, 2024

To launch this solution, a Coordinating lead is required to analyze data, craft the FLOII agreement, and start implementation

1A
Steps

- This solution requires existing or emerging mechanisms to overlay (e.g., AFAP, AFFM) or integrate (e.g., Aceli) the FLOII model to their existing credit guarantee schemes
- The points below articulate the steps to operationalize this solution:

1	**Review data and incorporate a market-based approach.** Review data on supplier credit transactions and conduct country interviews with lenders, TA providers, and ecosystem actors to gain insights on how best to tailor the FLOII model for each crop and country, ensuring it incentivizes lending without distorting markets.
2	**Develop the FLOII terms and conditions.** Craft the terms and conditions for participation in the FLOII facility. This would include requirements for suppliers, such as offering credit to underserved segments with favorable repayment terms, and mechanics of distributing incentives.
3	**Design bundled (financial) services.** For example, offering TA to hub-level distributors, or providing collateral-based financing. These bundles can significantly amplify their impact, especially when customized to each country.
4	**Implement the solution.** Once the agreement is finalized, FLOII facility can be rolled out officially. The FLOII coordinator would then manage supplier onboarding, incentive distribution, and potentially cover first-loss payments according to the agreed-upon terms.
5	**Conduct robust and data-driven MEL.** The MEL enables the Coordinating Lead to assess whether the solution is providing the right level of loss coverage, origination incentives and impact bonuses. This learning will determine whether minor adjustments or major structural changes are needed for the model.

Notes: (1) Additional examples of potential stakeholders in the "Partners" slide. Sources: Dalberg analysis, 2024

Finally, a select group of partners with the necessary industry expertise are needed to anchor this intervention across each country

1A Partners

Role	Likely partners in each focus country					
	Ghana	Kenya	Malawi	Nigeria	Tanzania	Zambia
Fertilizer suppliers[1]	OCP, Glofert, YARA	YARA, ETG, ELGON KENYA	agora, ETG, meridian	GOLDEN FERTILIZER, INDORAMA, DANGOTE FERTILISER	Minjingu Mines & Fertilizer Ltd., OCP, YARA	UNITED CAPITAL Fertilizer, omnia NUTRIOLOGY, fsg Fertilizers. Seed. Grain.
Coordinating Leads[2]	afap, SUSTAIN AFRICA, AFFM, AGRA, IFDC					

Notes: (1) The majority of these players have the balance sheet liquidity to extend more supplier credit. (2) A Coordinating Lead could either be one of the organizations listed there or an alliance comprising them. Sources: Dalberg, Interviews and Analysis, 2024

Intervention 1B

Blenders and distributors lack funds and tailored financing to extend more supplier credit; a RF for them coupled with FLOII for banks could bridge the gap

1B Summary

Situation

Local blenders and hub-level distributors have a deep understanding of retail agro-dealers and are best placed to extend supplier credit to these actors:

- Local blenders and hub-level distributors are cognizant that **supplier credit is the most viable route to generate sales and revenue,** despite their initial reluctance to extend credit due to high default risk
- Therefore, these players leverage their deep understanding and closer ties to tailor products and terms for their retail agro-dealers

Complication

Nonetheless, these players lack affordable and tailored financing to extend more supplier credit:

- Local blenders and hub-level distributors **rarely have guaranteed access to working lines of credit,** leading to repeated renegotiations with banks
- Further, margins are typically slim for distributors in the VC. **Thus, banking interest rates, often above 20%, become unaffordable for many distributors**
- Finally, those who access loans are still exposed to defaults via supplier credit

Intervention

Providing a revolving fund (RF) to blenders, hub-level distributors, or retail agro-dealers associations[1], coupled with a FLOII to banks could improve supplier credit from blenders to farmers:

- The introduction of first loss coverage, origination incentives, and impact bonuses to banks cut down their transaction costs and risk exposure (credit and business model risk)
- Therefore, incentivizing them to channel funds to blenders, hub-level distributors, or retail agro-dealers associations, who in turn, **have more leverage to deepen supplier credit down the value chain**

"We would appreciate a mechanism that provides us with less cumbersome access to bank credit. In an ideal future we can be the gateway of credit between banks and distributors ." ~ ***Local blender (Uganda)***

Notes: (1) Professionalized associations (i) have knowledge of agro-dealers with capabilities to pay loans and (ii) can monitor payments. Sources: Dalberg analysis, 2024

A RF to blenders, hub-level distributors, and agro-dealer associations, coupled with FLOII to banks, would unlock supplier credit to retail agro-dealers

1B Summary

FLOII model + RF

A revolving fund to blenders, hub-level distributors, or retail agro-dealers associations, coupled with a FLOII to banks,[1] involves **mobilizing capital to establish a rotating pool of funds that moves from blenders to farmers** enhancing credit accessibility.

What is the tool?

- A **revolving fund (RF)** is a mechanism that provides a continuous source of funding to blenders, hub-level distributors, or retail agro-dealers associations. This cyclical process **allows the fund to be used repeatedly for similar activities without requiring additional renegotiations and capital infusions**
- **FLOII aims to catalyze financial institutions into providing revolving funds,** thereby attracting commercial capital that would have otherwise remained untapped
- **TA facility** to agro-dealers associations to build capacity and minimize

When it can be used?

- **When providers of finance** can clearly identify trusted borrowers that generate regular income to repay the fund periodically
- **When recipients of finance** have sustainable business models but need working capital to meet (and scale) the seasonal cycle

Who uses it?

Tool provider:

FLOII

- MDBs and DFIs
- Dedicated DFI-funded
- Private donors and foundations
- Gov'ts

RF

- FI (e.g., Banks, MFB)

Tool beneficiary:

FLOII

- FI (e.g., Banks, MFB)

RF

- Blenders
- Hub-level distributors
- Retail agro-dealer associations

Critical risks targeted

Business model	Credit	Currency
Sovereign	Commodity	

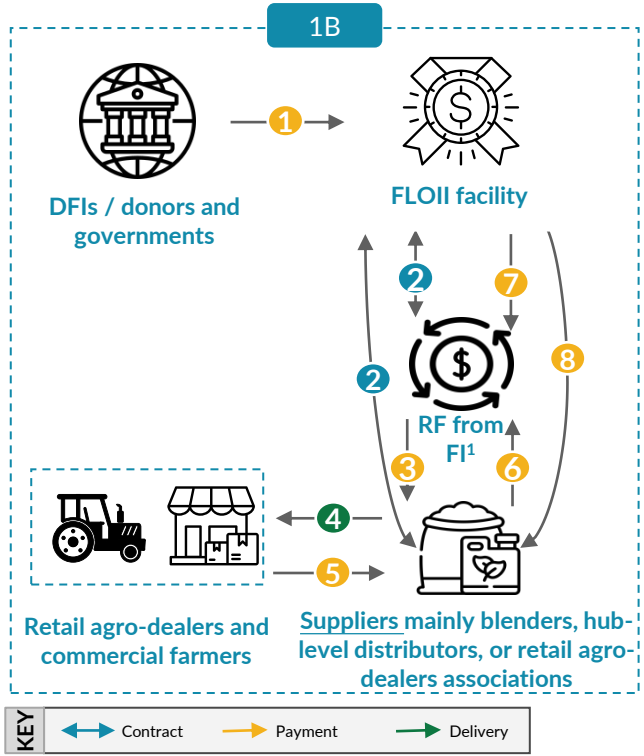
Key: *Risk covered in the solution* *Risk not covered*

Notes: (1)) The incentives: first loss coverage, origination incentives and impact bonuses would limit the transaction costs and defaults for banks and other lenders, increasing their appetite to participate in a revolving fund. Source: Dalberg, Stakeholder interviews, 2024

The RF avails an added pool of capital, enabling the extension of supplier credit while allowing beneficiaries to establish formal relationships with banks

1B Design

How does it work?



0. A Coordinating Lead with support from partners could create a FLOII for banks incentivizing them to offer revolving funds to blenders, hub-level distributors, or retail agro-dealers associations. Alternatively, encourage similar models e.g., Aceli to facilitate FLOII into this specific value chain
1. DFIs, donors and governments provide the needed funding to set up the FLOII facility
2. Tripartite agreement between the FLOII, bank, and supplier about the terms e.g., interest rate and tenor of the revolving fund, and currency origination incentives for the supplier
3. The FI offers a revolving fund to blenders, hub-level distributors, or retail agro-dealer associations. The model's beneficiaries can vary by country. For example, in countries with professionalized agro-dealer associations, these associations may be better suited to administer the revolving fund, leveraging their understanding of agro-dealers and influencing positive peer pressure as a strategic advantage
4. The supplier provides fertilizer on credit mainly to retail agro-dealers and commercial farmers
5. Retail agro-dealers and commercial farmers reimburse suppliers after the agreed tenor[2]
6. Suppliers pay back credit to the revolving fund, cementing a relationship with the FI
7. The FLOII facility pays origination incentives and impact bonuses to FI. In event of losses, FLOII provides first loss cover
8. In countries experiencing currency depreciation that results in supplier losses, the FLOII facility provides currency compensations to the supplier

Notes: (1) Revolving fund from a Financial Institution (2) Additional information regarding the tenure and other design features is provided in the subsequent slides. Sources: Aceli Africa, Approach, retrieved in 2024; Dalberg interviews and analysis, 2024

The solution incorporates FLOII's features in 1A, and adds bank's debt and payments terms for the RF

1B Design

Design features

Target investment and leverage

- **Target investment –** USD 300 Mn into the FLOII facility
- **Target annual leverage –** 5X

*With the 5X annual leverage, the USD 300 Mn can incentivize **supplier credit of USD 1.5 Bn, which is 50% of the USD 3 Bn financing gap***

Financing instruments and contribution (share and rationale)

- **RF** – FIs (e.g., Banks, MFB) via 100% debt. Suppliers' repayments will be the main source of replenishment. In case of losses, FLOII will cover the agreed coverage ratio
- **FLOII** – 50% donor-funded, 50% government-funded[1]

Administrator/Coordinating Lead

- A designated foundation/multilateral e.g., AfDB, or IFDC
- A pact of foundations/multilaterals e.g., Sustain Africa

Currency

- **RF** – **USD** for local blenders and **local currency** for hub-level distributors and retail agro-dealers associations
- **FLOII disbursement currency** – USD

The FLOII will compensate the blender in case of currency depreciation

Coverage ratio

- **FLOII –** *Coverage and bonuses are tied to **the principal amount of the bank credit along with the associated interest rates.**[2]*
- Other FLOII design features: 2% -8% first loss coverage, up to USD 10K origination incentives and 1%-2% impact bonus per qualifying loan[1]

Maturity and payments

RF:

- **Maturity –** Credit guaranteed for full tenor
- **Payments -** Suppliers provide a 10% deposit to the FI to access the RF

FLOII: 1-year guaranteed credit. No fee model. FLOII pays quarterly incentives and bonuses and immediate coverage for first loss[1]

Notes: (1) For a more detailed description, please refer to the design features of Intervention 1A; (2) The aim is for banks to lower interest rates, hence, covering both principal and interest payment. Dalberg, Interviews and Analysis, 2024

The intervention could incorporate a low interest rate, tailored tenor, varied fees and impact lenses to enhance its effectiveness and sustainability (I/II)

1B Design

Provisions

Interest rates

- **Set a low interest rate.** Banks in Africa charge interest rates exceeding 20% p.a.. With the first loss and incentives covering risks, **the objective is to set interest closer to a country's Central bank base lending rate.** This objective is attainable in the long term as the market matures. Presently, initiatives like Aceli are incentivizing some banks to reduce rates by up to ~3%, while a Credit Guarantee run by World Bank, RDB[1] and Equity Bank cut rates from 18% to 9% p.a.[2] Strategies for lowering interest rates include:
  - When a donor covers the first loss but the bank lends its own funds, the interest rate is usually near the prime rate, which is lower than typical rates but may still be high depending on the market.
  - When the first loss is covered by the donor and the funds lent are a combination of donor and bank funds, the interest rate will be a blended finance rate.
  - When the donor covers the first loss and lends 100% of the funds, the donor can set the interest rates.

Tenor

- **Incorporate a tailored tenor.** The FI needs to adjust the tenor to ensure borrowers have sufficient capital for a specified duration to provide supplier credit tailored to the specific crop and country requirements. For example, **blenders would need working capital with a tenor of ~2 years, while distributors can work with a ~1-year arrangement given the expected high turnover of stock**

Notes: (1) RDB – Rwanda Development Board. (2) The guarantee likely had an additional infusion of 'lending funds' that lowered the cost of capital leading to the rate reduction. Sources: Dalberg, Interviews and Analysis, 2024

The intervention could incorporate a low interest rate, tailored tenor, varied fees and impact lenses to enhance its effectiveness and sustainability (II/II)

Provisions

Fees

- **Charge zero fees at inception.** This zero-free model would incentivize the flow of supplier credit and deepen market maturation. If the market growth is slower and needs longer intervention, the scheme can integrate fees and commissions[1] to sustain the model's viability

Gender lens

- **Include gender bonuses** to encourage lending to more women-owned, accompanied by tailored criteria that address the specific needs of women (e.g. collateral requirements aligned with assets more commonly owned by women)

Soil-health lens

- **Prioritize blenders implementing climate-friendly practices,** such as blenders focusing on organic fertilizer or transitioning to low-carbon emissions
- **Prioritize hub-level distributors, or retail agro-dealers associations** that stock organic fertilizer and promote sustainable agricultural practices

Offer gender and climate bonuses: An additional 1-2% increase for first-loss coverage and provide additional USD 1-2K in origination incentives.[2]

Notes: (1) Fees and commission can be charged at 0.5% - 2% of the loan fees. (2) These are illustrative figures that can be adapted to each country/context. Sources: Dalberg, Interviews and Analysis, 2024

Strong coordination to find the right beneficiary in each country, coupled with currency origination incentives for suppliers is key for this model

1B
Success

Challenges and success factors

Challenges

- **Identification of the right beneficiary for the RF in each country:** This is often a highly intensive effort. In some countries, agro-dealer associations are the best fit due to their market understanding and ability to exert peer pressure on members to repay loans. However, this requires a professionalized and highly effective associations
- **Program sustainability:** Finding long-term, reliable sources of funding for a FLOII facility, can often be challenging
- **Onboarding banks:** Banks often are wary of guarantee schemes due to history of delayed and denied payments. Hence, the Coordinator would need to create an open communication platform on timely payments and improvement areas to build trust

Success factors

- **Strong coordination:** The model requires from a strong coordinating lead who can bring together the right stakeholders, including FLOII, banks, and beneficiaries (e.g., blenders, hub-level distributors, or retail agro-dealers associations)
- **Currency origination incentives to protect supplier:** While the primary focus of the FLOII is on engaging banks to establish a revolving fund, it's essential to incorporate currency origination incentives for suppliers. This ensures that this mechanism also works in countries with currency depreciation affecting blenders and hub-level distributors.
- **Data-driven, market-based MEL approach**: Given that this is a new model, it is important to have a robust data-driven, market-base MEL approach to align capital supply and demand. Providing the right level of loss coverage, origination incentives and impact bonuses. As the program initiates, continuous monitoring and necessary adjustments are key.[1]
- **Timely payments from the FLOII [1]:** Thereby, ensuring that there is a level of certainty in the payments and their timings to ensure the borrowers better plan their activities

Notes: (1) Similar to the success factor in 1A, albeit tailored to this particular mechanism (i.e., FLOII targeting mainly banks rather than suppliers directly). Sources: Dalberg, Interviews and Analysis, 2024

There are three potential RF models involving the private sector (PS): (i) Donor funding with PS management, (ii) Blended RF, and (iii) PS RF

1B
RF

Problem: Historical ineffectiveness

In the 1990s, RFs often failed due to ineffective cooperative structures, disparate efforts and donor dependency.

- **Ineffective cooperative structures:** In the 1990s, many RFs in Africa were overseen by cooperatives or organizations that were frequently poorly structured and managed. They lacked the necessary governance and oversight mechanisms, leading to inefficiencies and misuse of funds
- **Donor dependency**: Many revolving funds were heavily reliant on donor funding. Donors provided the initial capital, but this led to insufficient due diligence because there was less pressure to ensure financial viability and loan repayment.
- **Absence of modern financial practices**: RFs in the 1990s did not benefit from the integration with modern financial practices and systems. This lack of integration meant that funds were not managed with the same rigor as contemporary financial products, further contributing to their inefficacy

Interventions and examples

Revisit the concept of revolving funds with a focus on private sector involvement to ensure rigorous due diligence, management and accountability. Therefore, reducing the historical issues of poor loan performance and dependency on donor funding.

Examples

For the RF, there are three primary models involving the private sector (PS): (i) Donor funding with PS management, (ii) Blended RF with donor and PS financing, and (iii) PS RF. Examples:

- **(i) Sanitation Revolving Fund in Ghana, Nigeria and Togo:** Initial funding in USD from UNICEF and donors (e.g., Netherlands, Canada) in collaboration with the Government of Ghana. Fund managed by ARB APEX Bank and Rufinlit.[1] APEX Bank loans to FSPs (community banks, MFIs, FNGOs) at 2% interest. FSPs lend to households at 12%, keeping 10%. Loans to households are issued in local currency. Similar RFs are also established in Nigeria and Togo.
- **(ii) Agriculture RF in Nigeria:** Initial funding provided by the Mastercard Foundation (65% in USD) and Sterling Bank (35% in local currency). Sterling Bank manages the fund, extends loans in local currency, and earns a 9% margin.
- **(iii)** This is a novel concept that some players with experience in the agriculture sector and/or revolving credit facilities are willing to explore with the right level of guarantee (e.g., Equity Bank). Example of banks with Revolving Credit Facilities[3]:
  - **Standard Bank Revolving Credit Facility (e.g., Kenya and South Africa):** Initial funding (in local currency) and managed by Standard Bank. Offered in several countries, including Kenya and South Africa (SA). In SA, interest rates are personalized, ranging from 3% to 10.5%.
  - **Absa Revolving Credit Facility in South Africa:** Initial funding (in local currency) and managed by Absa. Interest rates are personalized, up to 14%.

Notes: (1) PS: Privaate Sector; (2) Rufinlit operates differently as a fund administrator compared to ARB APEX Bank. Rufinlit, provides the fund interest-free to the FSPs, which are usually FNGOs, MFIs or RCBs. These then provide the loan at a 12-15% interest rate to households. Rufinlit's costs are covered by a Direct Cash Transfer from UNICEF. (3) This refers to banks with Revolving Credit Facilities, not RFs, which might be suitable candidates for exploring this model. Sources: UNICEF, Case Study – Ghana, 2024. Sterling Bank, Annual Report, 2022. Standard Bank, Revolving Loan, 2024. Absa, Revolving Facility, 2024. Dalberg analysis, 2024

Implementing the RF for suppliers and FLOII for banks mitigates business model, credit, sovereign and currency risks

Credit risk	• The portfolio first loss guarantee, which covers the initial losses that a bank could suffer, **effectively minimizes the total volume/effect of defaults** • Furthermore, leveraging the understanding and relationship of retail agro-dealers associations, banks have **an 'agent' on the ground to follow up on payments, limiting instances of delayed/denied repayments**
Currency risk	• The FLOII could consider compensations of up to ~USD 5 K per credit ranging between USD 15K to USD 1.5 Mn[1] to cover currency losses for blenders and hub-level distributors buying in USD and selling in local currency • Moreover, offering origination and impact incentives in **US dollars, along with first-loss when applicable**, helps mitigate potential losses due to currency risk
Business model risk	• Rather than banks directly engaging with underserved farmers and small-scale agro-dealers, they can connect with them indirectly through blenders, hub-level distributors, or retail agro-dealers associations, who have deeper understanding and closer ties • Hence, **reducing the administrative costs to reach, assess, and receive payment back from farmers and small-scale agro-dealers.**
Sovereign risk	• **Creating suitable conditional agreements,** where governments pledge to enact reforms or regulatory changes in case of payment delays or defaults to the FLOII model, **thus guaranteeing the release of agreed funds into the intervention**

Notes: (1) The exact incentives size needs to be determined by a deep-dive analysis into supplier credit transactions across Africa. Sources: Dalberg analysis, 2024

Two main avenues to operationalize this model: engage with banks providing RFs and include RF for suppliers in Aceli and emerging facilities

	Rationale for possible selection	How does it work?	Risks to manage
1 Engage banks providing revolving products	• Leverage their expertise, streamlined processes, risk management capabilities, extensive networks, financial stability, regulatory compliance, customization options, and robust monitoring and reporting systems	• Work with banks to determine the specific first-loss coverage and incentives needed in each country to establish a revolving fund for the different actors (e.g., off-taker, trader, FFOs)	• Employ a robust data-driven approach involving multiple banks to mitigate the risk of offering excessive incentives, which could potentially impact the times the guarantee can been leveraged
2 Include RF for suppliers in Aceli and emerging facilities	• Harness Aceli's data-driven approach, and methodologies, to streamline operations, maximize impact, and foster mutually beneficial partnerships	• Leverage Aceli model to encompass RF for suppliers (mainly blenders, hub-level distributors, or retail agro-dealers associations) • In the short term, work in Aceli focus countries[1] with opportunity to expand as Aceli scales	• Articulate the impact opportunity and prevent operational drift to engage Aceli. • Identify appropriate banks in each country to provide the RFs

Ideally, strive for a blend of options 1 and 2, even if it necessitates further stakeholder alignment. This approach maximizes sector expertise and knowledge

Notes: (1) For example, starting with those common to Aceli and Sustain Africa. Sources: Dalberg analysis, 2024

A Coordinating Lead is needed to launch RF for suppliers and FLOII for banks, and use a data-driven, market approach to develop and implement the solution

1B
Design

The points below articulate the steps to operationalize this solution:

1. **Review data and legal frameworks in each country to follow a market-based approach.** Review banks' data on credit transactions and conduct country interviews with lenders, technical assistance providers, and ecosystem actors. Leverage available data and information to tailor the FLOII facility for each borrower, crop, and country, ensuring it incentivizes lending without distorting markets. Additionally, perform a detailed legal analysis to adapt the fund modalities to each country context.

2. **Develop the FLOII terms and conditions.** Design terms and conditions for participation in FLOII. This would include (i) requirements from banks, such as offering a revolving fund to blenders, hub-level distributors, or retail agro-dealers associations with favorable repayment terms, and (ii) FLOII to provide currency origination incentives for suppliers.

3. **Implementation.** Once the agreement is finalized, FLOII can be rolled out. The FLOII Coordinator would then manage banks and suppliers onboarding, incentives and bonuses distribution, and cover first-loss payments according to agreed terms. The mechanism should start by engaging banks that already have track record and infrastructure in the sector, such as Equity Bank in Kenya or Zanaco in Zambia.

4. **Conduct robust and data-driven MEL.** Given that this is a new model, it is important to have a robust data-driven, market-base MEL approach to provide the right level of loss coverage, origination incentives and impact bonuses. As the program initiates, continuous monitoring and necessary adjustments are key.

Notes: (1) Additional examples of potential stakeholders in the "Partners" slide. Sources: Dalberg analysis, 2024

Finally, a select group of partners with the necessary industry expertise are needed to anchor this intervention across each country

1B Partners

. Sources: Dalberg, Interviews and Analysis, 2024

Intervention 1C

Several players are impacting SHF through VC financing, but lack affordable financing for fertilizers; a tailored revolving fund for VC financing could help

1C Summary

Situation	Complication	Intervention
Several organizations are positively impacting farmers, especially smallholder farmers (SHF), through value chain financing (VCF): • Primarily, the two types of players providing VCF include: (i) off-takers/traders in profitable crops and (ii) non-profit organizations working with underserved farmers • Often, these players require affordable and tailored financing to supply fertilizers, inputs, and extension services to farmers	**Nonetheless, these actors lack access to affordable and tailored financing to consistently and sufficiently provide input services to farmers:** • Small to mid-sized traders/off-takers in Africa often **struggle to access affordable and tailored[1] formal financing** due to agronomic risks, supply chain inefficiencies and unvalidated models that limit the appetite of lenders • Likewise, non-profits like One Acre Fund face similar issues, **despite having access to donor funding, since they seek financing to transition into sustainable models**	**Availing a revolving fund (RF) and tying it to value chain financing (VCF) and incentives could reduce business model, credit, currency and commodity risks and drive overall financing in the fertilizer space:** • The incentives: first loss coverage, origination incentives and impact bonuses would **limit the transaction costs and defaults for banks and other lenders, increasing their appetite to participate in a revolving fund that avails more financing to the traders and non-profit organizations**

"Off-takers and farmer facing organizations (FFOs) have challenges accessing working capital finance from banks, limiting their ability to greatly impact farmers." ***~ FFO in Kenya***

Notes: (1) Financing that best links to Source: Dalberg, Interviews and Analysis, 2024

FLOII for banks to provide a RF for VC financing involves mobilizing capital to establish a rotating pool of funds that moves from producers to farmers

1C Summary

FLOII model + RF+ VCF

A revolving fund for value chain financing, coupled with a FLOII to banks,[1] involves **mobilizing capital to establish a rotating pool of funds that moves from producers to farmers** enhancing credit accessibility, market access, and risk-sharing.

What is the tool?

- A **RF** is a mechanism that provides a continuous source of funding. This cyclical process **allows the fund to be used repeatedly for similar activities without requiring further renegotiations and capital infusions**
- The **FLOII facility** incentivizes banks to provide an RF for VCF
- The tool is **a strategic alliance between the FI (**that provides the RF) and **several VC actors** (input providers, aggregators, farmers and off-takers) **to reduce transaction costs and lower risks** that impede access to traditional financing
- **TA facility** focused on business acumen and making aggregators more investable

When it can be used?

- **When providers of finance** accept VCF as protection against farmers lacking physical collateral, high outreach costs, and other risks
- **When recipients of finance** require financing and possess forward contracts, but cannot collateralize these contracts

Who uses it?

Tool provider:

FLOII

- MDBs and DFIs
- Dedicated DFI-funded
- Private donors and foundations
- Gov'ts

RF

- FI (e.g., Banks, MFB)

Tool beneficiary:

FLOII

- FI (e.g., Banks, MFB)

RF

- Trader/aggregator/ distributor
- Farming Facing Organizations[3]
- Off-takers[2]

Critical risks targeted

Business model	Credit	Currency
Sovereign	Commodity	

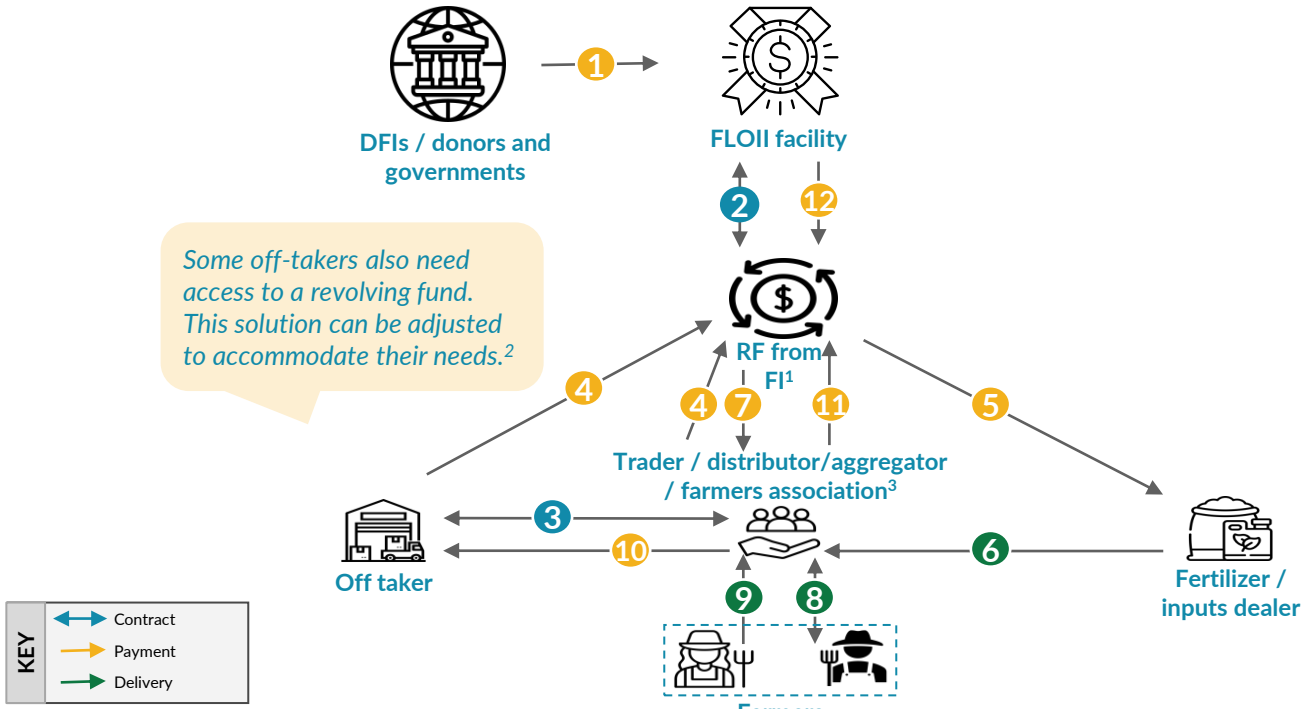
Key: *Risk covered in the solution* *Risk not covered*

Notes: (1) The incentives: first loss coverage, origination incentives and impact bonuses would limit the transaction costs and defaults for banks and other lenders, increasing their appetite to participate in a revolving fund (2) Off-takers working directly with SHFs can access the revolving fund directly, bypassing smaller traders. (3) Farming Facing Organizations (FFOs) such as One Acre Fund. Source: Dalberg, Stakeholder interviews, 2024

This solution involves multiple actors and requires extensive coordination (I/II)

1C Design

How does it work?



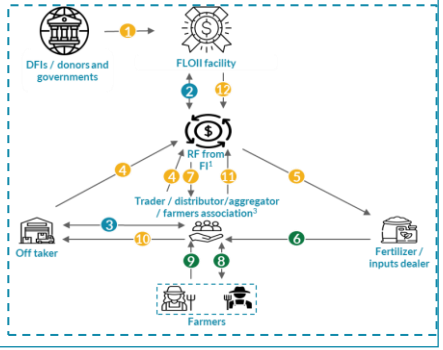
Notes: (1) Revolving fund from a Financial Institution; (2) For instance, if off-takers engage in exports, they would need credit from the time they purchase the product until it reaches the destination harbor (e.g., ~ 8 weeks). If they need to process, the required time is longer (e.g., 3 to 6 months). (3) To simplify, we'll use the term "aggregator" in the upcoming slides to denote this group. Sources: Aceli Africa, Approach, Retrieved in 2024; AGRA, Financing farm inputs through a risk-sharing consortium, 2023; Zanaco, Agriculture Banking, 2024. Dalberg Stakeholder interviews and analysis, 2024

This solution involves multiple actors and requires extensive coordination (II/II)

1C Design

How does it work?

0. A Coordinating Lead with support from partners could either create a FLOII for VC financing or encourage similar models e.g., Aceli to facilitate FLOII for VC financing
1. DFIs, donors and governments provide the needed funding to set an impactful FLOII
2. All actors[1] come together as a 'consortium' to coordinate their roles and share financing risk. There is the need for a credible actor to serve as a system orchestrator
3. Off takers agree with aggregator on forward contract
4. The off-taker and the aggregator each deposit 10% of the value of the inputs at the bank as a blocked deposit, thereby offsetting the bank's risk by 20% (or a different percentage, as agreed in each specific case)
5. The FI sends payment to the input supplier for 90%, for example, of the value of the inputs. Thus, the input supplier maintains 10% of the risk (as-yet unpaid but delivered inputs), and the bank is carrying 70% of the risk with no physical collateral
6. Fertilizer / input dealer provides the fertilizer and inputs
7. Financial institution (FI) provides a revolving fund[2] to the aggregator[3] to support farmers beyond inputs
8. Aggregator provides farmers inputs & financing[6] using output agreements. The financing enables farmers to (i) hire labor and (ii) expand farming operations across more land cover. Moreover, the cash payments before harvesting time mitigates side-selling
9. Farmers sell produce to aggregator
10. Aggregator sells produce to off taker/agro-processors
11. Aggregator pays back credit to the revolving fund
12. The FLOII facility pays origination and impact incentives to FI. In event of losses, FLOII covers first loss



Notes: (1) Off-taker, trader, input supplier, farmers Fis and FLOII (e.g. Sustain Africa); (2) A revolving fund is a fund or account that remains available to finance an organization's continuing operations without any fiscal year limitation, because the organization replenishes the fund by repaying money used from the account; (3) Off-takers working directly with SHFs can access the revolving fund directly, bypassing smaller traders. Sources: Aceli, Approach, retrieved in 2024; AGRA, Financing farm inputs through a risk-sharing consortium, 2023; Zanaco, Agriculture Banking, 2024.

The solution would need co-investment by governments and donors, with donor funding being crucial for establishing a system orchestrator

1C Design

Design features

Target investment and leverage

- **Target investment –** USD 300 Mn into the FLOII facility[1]
- **Target annual leverage –** 5X

*With the 5X annual leverage, the USD 300 Mn can incentivize **supplier credit of USD 1.5 Bn, which is 50% of the USD 3 Bn financing gap***

Financing instruments and contribution (share and rationale)

- **RF –** FIs (e.g., Banks, MFB) via 100% debt. Aggregator repayments will be the main source of replenishment. In case of losses, FLOII will cover the agreed coverage ratio.
- **FLOII –** Donors 70% via grants (given the needed expenditure for the system orchestrator role) and government 30% via public expenditure

Administrator/Coordinating Lead

- A designated foundation/multilateral e.g., AGRA
- A pact of foundations/multilaterals e.g., Sustain Africa

Currency

- **RF –** Local currency
- **FLOII disbursement currency** – USD

The FIs channels the funds to the input suppliers[2], and provides local currency to aggregator to support farmers beyond inputs[3]

Coverage ratio

- **FLOII –** *Coverage and bonuses are tied to the **principal amount of the bank credit along with the associated interest rates**[4]*

Maturity and payments

- **RF –** The off-taker and the aggregator each deposit 10% of the value of the inputs at the bank as a blocked deposit, while the FI pays 90% to the supplier, leaving the bank with 70% risk
- **FLOII –** *1-year guaranteed credit. No fee model. FLOII pays quarterly incentives and bonuses and immediate coverage for first loss*[5]

Notes: (1) This solution is more complex given the stakeholder coordination required. (2) As banks channel funds to input suppliers, it is the aggregator who confirms the inputs that farmers need. (3) The financing enables farmers to (i) hire labor and (ii) expand farming operations across more land cover. Moreover, the cash payments before harvesting time mitigates side-selling. (4) The aim is for banks to lower interest rates, hence, covering both principal and interest payment. (5) For a more detailed description, please refer to the design features of Intervention 1A. Sources: Dalberg, Interviews and Analysis, 2024

Tailoring the interest rate and loan duration to suit the specific crop, country, and economic conditions is crucial for this solution to work in various contexts (I/II)

1C Design

Provisions

Interest rates and margins

- **Interest -** FLOII can, in the long-term, lead to reduced interest rates for lenders. This will vary based on the scenario.
  - Donor covers the first loss, with bank as lender: Interest rate is usually near the prime rate, which is lower than typical rates.
  - Donor covers the first loss, with bank and donor as lenders: Interest rate will be a blended finance rate.
  - Donor covers the first loss, and provides the funding to banks to lent: Interest rate can be set by the donor
- **Margin –** Set a provision for suppliers and aggregators to attach **a zero to minimal margin** on the fertilizers sold on credit

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Tenor, varies by VC actor:

- **Farmers –** Link the **supplier credit repayment time to the farmer's crop lifecycle**, renewing the loan only after complete repayment of the past cycle's facility
- **Aggregator – Cap the loan term to two years** linked to the inventory and working capital needed by the trader

"As farmers, we often face very high interest rates (>25% p.a.), since many of us rely on informal lending or savings groups for borrowing. This intervention (1C) could help us access markets and reduce interest expenses." ~ ***Farmers***

Sources: Dalberg, Interviews and Analysis, 2024

Tailoring the interest rate and loan duration to suit the specific crop, country, and economic conditions is crucial for this solution to work in various contexts (II/II)

1C Design

Provisions

Fees

- At the pilot, **charge zero entry fees** to incentivize actors to join the scheme. Afterward, charge a fee of 0.5% - 1% of the total loan amount to **systematically build economic sustainability** and pivot away from the initial donor funding

Gender lens

- **Include gender bonuses** to encourage financial institutions to lend to more women-owned businesses

Soil-health lens

- **Provide impact bonuses to** prioritize lending to farmers/groups adopting sustainable farming[1] and traders to encourage organic fertilizer usage and carbon sequestration techniques

Offer gender and climate bonuses: An additional 1-2% increase for first-loss coverage and provide additional USD 1-2K in origination incentives.[1]

Notes: (1) Examples include regenerative agriculture, crop rotation, reduced tillage, water conservation techniques, integrated pest management, agroforestry, etc. Source: Dalberg, Interviews and Analysis, 2024

Additionally, the solution needs critical factors including insurance, agronomic support, and rigorous protocols to counter complexity and side selling

1C Success

Challenges and success factors

Challenges

- **Complexity**: The solution involves multiple stakeholders, cross-border transactions, and integration of operational processes. **This complexity is a challenge when implementing standardized VC finance solutions.** Thus, articulate the need for defining clear leadership of the intervention
- **Side selling:** Farmers sell their produce to buyers other than the contracted party due to cash needs or higher prices, emphasizing the need for contractual agreements within the scheme

Success factors

To enable the successful implementation of this intervention, further design elements are needed:

- **Crop and weather index insurance:** Encourage and incentivize farmers to adopt crop and weather index insurance, enabling access to higher credit limits and reduced fees. This ensures that default and agronomic risks are sufficiently covered while promoting broader participation
- **Agronomist support:** Link the scheme to public or private extension services, supporting farmers to embed GAP practices to maximize yield and potentially profitability
- **Efficient financing support:** Establish protocols, schedules and mechanism that ensures timely provision of financing and inputs to business and farmers in the intervention
- **Rigorous selection and contractual agreements:** Establish a criteria that incorporates high value processing and exports-related off-takers. Further, set up clear agreements with penalties for delayed payments and side selling. Given enforcement challenges, particularly among SHFs, the priority is to first customize the model to prevent these issues through measures like on-the-ground presence, agronomic support, and financial assistance. If issues persist, effective penalties may include temporary loss of benefits (e.g., premium prices, input support), and in severe cases, contract termination.

Notes: (1) These are illustrative figures that can be adapted to each country/context. Sources: Dalberg, Interviews and Analysis, 2024

The solution targets business model, credit, currency and commodity risks that are inherent in the fertilizer value chain's financing instruments

Credit risk	• The consortium's mechanism of **rigorous borrower selection, reduced information asymmetry,**[2] **financing linked to future sales contracts, and sharing risk across multiple partners** ensures credit risk is distributed and effectively reduced
Business model risk	• FIs can see substantially **lower transaction costs in delivering and servicing multiple financial products by relying upon existing credit information and transaction platforms of value chain financing partners.**[1]
Commodity risk	• The solution locks in **set prices for commodities (inputs and outputs) for a specific period (often a crop season)** • Moreover, due to reduced information asymmetry (e.g., shared market data and price forecasts), the actors can make **more informed decisions about production, purchasing, and pricing strategies**
Currency risk	• By agreeing on set **exchange rates in advance through forward contracts, off-takers, traders, and input suppliers shield themselves from potential depreciation in the local currency**. Moreover, the consortium should prioritize sourcing inputs locally whenever possible
Sovereign risk	• **Establishing appropriate conditional agreements,** where governments commit to implementing reforms or regulatory adjustments in the event of payment delays or defaults under the FLOII model, **thereby ensuring the disbursement of agreed funds into the intervention**

Notes: (1) Channeling loans for crop through the buyers eliminates or reduces the need for the bank to have full information about all value chain participants. In fact, extensive due-diligence may be needed mainly at the outset of the relationship and will likely focus on the main buyer or buyers.
(2) Information asymmetries are substantially reduced because the FI – through partnerships or contracts with value chain participants such as aggregators and processors – is able to utilize information that otherwise would have been unavailable or expensive to obtain. Sources: Dalberg analysis, 2024

Three main avenues to operationalize FLOII for value chain financing: partner with AGRA, include RF for VCF in Aceli facility, or set up of a new mechanism

	Rationale for possible selection	How does it work?	Risks to manage
1 Partnering with AGRA to scale VC financing	• Leverage AGRA's expertise, network, credibility and trust	• Establish a FLOII in countries where AGRA is operating to scale the intervention	• Build internal capacity to reduce dependence on AGRA's resources, expertise, and funding • Create clear communication channels to avoid diverging priorities, or approaches between the two organizations resulting in conflicts or inefficiencies in achieving shared objectives
2 Include RF for VCF in Aceli and emerging facilities	• Harness Aceli's data-driven approach, and methodologies, to streamline operations, maximize impact, and foster mutually beneficial partnerships	• Leverage Aceli model to encompass RFs for VCF • In the short term, work in Aceli focus countries[1] with opportunity to expand as Aceli scales	• Articulate the impact opportunity and prevent operational drift to engage Aceli. • Identify appropriate partners in each country to manage the complexity of VCF (e.g., One Acre Fund, off-takers, etc.)
3 Advisory on the establishment of a standalone solution	• Provide autonomy and flexibility, allowing full control over decision making and customization of solutions to specific needs and changing circumstances without being bound by collaboration constraints	• Partner with organizations engaged in value chain financing, yet lacking access to financing (e.g., traders, off-takers or FFOs). • Seek a bank willing to offer a RF upon provision of the FLOII	• Streamline interactions among stakeholders to manage the complexity of this system and its various stakeholders • Identify appropriate partners in each country to scale the mechanism while ensuring quality and risk management across various crops and regions

Notes: (1) For example, starting with those common to Aceli and Sustain Africa. Sources: Dalberg analysis, 2024

To launch a revolving fund for VCF, a credible entity needs to establish FLOII, engage stakeholders, design mechanisms, & measure impact for optimization

1C Operation

- This solution needs a **Coordinating Lead** to play the role of a **system orchestrator overseeing activities and actors.** The entity could be a multilateral with capable convening power and deep industry knowledge e.g. AFAP, or an alliance consisting of key organizations in the space e.g., Sustain Africa. Its roles would include:

1. **The entity can either raise funds or collaborate with development partners (e.g., Aceli Africa, AfDB)**[1] to set up the First Loss, Origination and Impact incentives (FLOII) model

2. **The entity can engage with stakeholders** (e.g., Zanaco, ABAZ, One Acre Fund)[1] **and review legal frameworks** to explore the development of a revolving fund for VC financing, coupled with the FLOII. The FLOII ideally incorporates the unique characteristics of the focus crop and the country. The mechanism should start by engaging banks that already have track record and infrastructure in the sector, such as Equity Bank in Kenya or Zanaco in Zambia. Additionally, it is important to perform a detailed legal analysis to adapt the fund modalities to each country's context.

3. **Measure the impact of the FLOII and revolving fund,** to assess their effectiveness and identify areas for improvement, **to continuously adapt and maximize their impact**

Notes: (1) Additional examples of potential stakeholders in the "Partners" slide. Sources: Dalberg analysis, 2024

Finally, a select group of partners with the necessary industry expertise are needed to anchor this intervention across each country

Role	Likely partners in each focus country					
	Ghana	Kenya	Malawi	Nigeria	Tanzania	Zambia
Financial institution	standard chartered	EQUITY	NB	Sterling Bank The one-customer bank.	CRDB BANK The bank that listens	zanaco
Fertilizer supplier	OCP	YARA	agora "Helping to grow your future"	GOLDEN FERTILIZER	Minjingu Mines & Fertilizer Ltd.	omnia NUTRIOLOGY
Aggregator[2]	wafa West African Fertilizer Association	ONE ACRE FUND	Malawi Fertilizer Co.	Babban Gona	TANZANIA CROP CARE	ABAZ Agro Business Association of Zambia
Off-taker	WARC	eabl	Malawi Milk Producers Association MMPA	Arila	Maza Hub	NWK AGRI-SERVICES
Coordinator Lead	afap Partnerships. Productivity. Prosperity.	SUSTAIN AFRICA	AFFM Africa Fertilizer Financing Mechanism	AGRA Sustainably Growing Africa's Food Systems	IFDC Developing Agriculture from the Ground Up	

Notes: (1) Example of potential partners in Zambia. (2) Trader / distributor/aggregator / farmers facing organizations. Sources: Dalberg, Interviews and Analysis, 2024

Intervention 1 - Consolidated

Payment guarantees, conditional agreements, supplier agreements, forward contracts, and first loss guarantees are needed in different country contexts

Solution 1
Adaptation

Government vs private-sector led	**Government-led e.g., Malawi**	**Private-sector led**
	Conditional agreements, where Gov't's commit to enact reforms or changes in regulations in the event of payment delays/defaults to the FLOII model, ensuring gov'ts disburse agreed amounts	**Rigorous selection process** to ensure local-based suppliers, blenders, and hub distributors can participate in the interventions
	Partnership with MIGA[3]: Exploring and leveraging MIGA's political risk insurance (guarantees) could be beneficial for government-led countries. Moreover, MIGA's status as a member of the WBG[3] and its relationship with governments provides additional leverage in achieving subsidy repurposing and government cooperation.	
Import vs domestic production-dependent	**Import-dependent e.g., Zambia**	**Domestic production e.g., Nigeria**
	Offer **adjustable loan interest rates tied to fertilizer price movements** to cover hikes from the international markets	Establish agreements with domestic producers to ensure **specific quantities are sold locally through the interventions** [2]
Unstable vs stable macro-economic condition	**Unstable macro-economic condition e.g., Ghana**	**Stable macro-economic condition e.g., Tanzania**
	Forward contracts where off-takers, traders and input suppliers agree on set prices and exchange rates to limit currency [1]	**Impact incentives to encourage comprehensive coverage of retail agro-dealers nationwide** to maximize farmer reach. For example, in Tanzania, 30% of farmers live more than an hour away from an agro-dealer
	Inflation-indexed financial products or regular adjustments of the interest rate	
	First loss guarantee with higher protection coverage to maintain the revolving fund's operation and bring interest rates down even in unstable countries	

Notes: (1) Off takers agree with traders on forward contract, and trader with farmer, ensuring protection for all parties from currency depreciation. (2) Further details and measures to ensure a portion of African-produced fertilizer remains within the continent under intervention "Project Preparation Facility tied to either local currency financing or concessional loans". (3) MIGA; Multilateral Investment Guarantee Agency. WBG: World Bank Group. Sources: Rutsaert, P., Chamberlin, J., Oluoch, K.O. et al. The geography of agricultural input markets in rural Tanzania. Food Sec., 2021; Dalberg, Interviews and Analysis, 2024

Solution 1
Adaptation

During crises,[1] it is critical to increase first loss coverage, and introduce new incentives, conditional agreements, and volume guarantees

Crisis	Description	Aggravated risks	Adjustments to the solution[3]
Market dynamics and supply chain disruptions	• Significant price volatility in raw materials or fertilizers • Considerable currency depreciation in a short period of time • Shipping delays/strikes	• Default risk • Currency risk • Commodity risk	• **Adjust terms and conditions** e.g., in the RF, extend repayment periods for new credit, and offer grace periods for existing loans • **Inject additional capital[5] and increase the coverage % of the first loss cover** to provide greater security against defaults • **Introduce additional incentives and bonuses**, paying them in USD to incentivize FIs to continue originating loans • **Establish volume guarantees[4]** for suppliers
Regulatory changes	• Adverse policy changes that constrain the supply and use of fertilizers	• Business model risk • Sovereign risk	• **Form strategic partnerships** with NGOs, and private sector to form a united front can exert more influence on policy decisions • **Conditional agreements** directing donors to redirect funds if policymakers do not make improvements to regulations and policies
Natural disasters and wars	• Extreme weather or political events that disrupt the fertilizer value chain	• Default risk • Supply chain risk	• **Inject additional capital** into the revolving fund to bolster lending resources/funds amidst the crisis • **Establish volume guarantees[4]** for suppliers • **Introduce a period-defined emergency plan targeting farmers,** e.g., subsidized fertilizer, and seed, coupled with extension services • **Donors to act as last resort** to cover major defaults due to these events

Beyond these adjustments, there is need for governments to provide short term funds to back up/guarantee private sector systems to limit fertilizer shortages

Notes: (1) When relevant and needed; (2) Revolving Fund; (3) Adjustments of resilience interventions during shock/crisis periods; (4) Contract between a guarantor and a supplier, which guarantees that procurers will purchase a minimum quantity of an existing product over shock periods. In return, the supplier lowers the price. (5) DFIs / donors and governments. Sources: Dalberg, Interviews and Analysis, 2024

Intervention 2

Africa's goal of expanding local fertilizer production and blending is hindered by costly preparation and currency risks; a PPF tied to financing could assist

Solution 2 Summary

Situation

Most African countries depend on imported fertilizers despite the presence of raw materials, e.g., natural gas deposits and phosphate reserves on the continent:

- Even though Africa has substantial natural gas resources to produce nitrogen-based fertilizers (Nigeria, Mozambique, Algeria), ~67% of the nitrogen used in 2021 was imported. Many raw materials for fertilizer production are exported outside Africa. Additionally, the continent produces substantive crop residues and animal manure, which can be converted into organic fertilizer
- Investing in local production and blending can **improve availability of fertilizers, reduce the distribution costs and limit the exposure of local players to forex fluctuations**

Complication

Fertilizer production projects typically require a costly preparation phase to ensure projects are investment-ready and can attract investors. Further, currency risk poses an additional challenge for oversees investors:

- Generally, the preparation costs could run up to **~ 20% of total capital expenditure (~ USD 70K / 375K for small-scale blending plants, and USD 250K/6 Mn for larger plants)**[1]. This cost covers the feasibility study, including the project's technical, economic, and financial viability, as well as upstream planning studies and enabling environment support

Intervention

A Coordinating Lead[1] with the support of Gov'ts and dev't partners, can develop a Project Preparation Facility (PPF) tied to local currency financing or concessional loans:

- With ~19 blending facilities planned in Africa, the PPF could support the design and preparation phases of these plants
- For viable cases, the PPF can partner with banks to **provide long-term local currency financing, while multilaterals could offer concessional credit**
- Critically, PPF's funding seeks a **social return for supporting the refinement of the local production/blending plans** that will improve farmers' accessibility to fertilizers. Conversely, FIs providing local currency financing for the longer-term dev't will **expect economic returns on the loans**

Notes: (1) These are figures for blending facilities, with large scale production facilities reaching to upwards of USD Bn. (2) A Coordinating Lead refers to Foundation, Multilateral agency, or Non-profit with enough credibility to convene partners and lead industry-wide initiatives. Sources: The Breakthrough Institute, It's Time to Expand Fertilizer Manufacturing Across Africa, 2021; IFPRI, Africa Agriculture Trade Monitor, 2019; Finmodelslab, How much does it cost to start a fertilizer business, 2024; Dalberg analysis, 2024

The PPF tied to local currency financing could be the gateway to enhancing local production/blending and mitigation of critical risks in the long term

Solution 2 Summary

PPF tied to financing

The PPF helps accredited entities in preparing full proposals based on a concept note cleared for project preparation support. If a viable business case exists, **the PPF connects investors with financial institutions that provide local currency financing**

What is the tool?

- **A PPF is a financial and technical resource designed to assist in the early stages of project development.** It provides support for the planning and project preparation phase to bring a project from concept to implementation. This funding/financing generally comes from multilaterals, foundations, and/or governments.
- **Local currency finance refer to investment loans, or other debt instruments denominated in local currency to protect borrower from foreign exchange risks and currency fluctuations**. These financing options typically originate from: (i) Local currency loans from banks and/or (ii) Local currency-denominated concessional loans from multilaterals

When it can be used?

- **When providers of finance** seek to limit borrower's exposure to currency mismatch on the balance sheet and seek to contribute to development of domestic capital markets
- **When recipients of** finance struggle to raise finance locally and need to borrow from international funders lending in a different currency

Who uses it?

Tool provider:

PPF

- MDBs and DFIs
- Dedicated DFI-funded
- Private donors and foundations
- Gov'ts

Local currency finance

- FI (e.g., Banks, MFB)
- MDBs and DFIs

Tool beneficiary:

PPF

- Project developers[1]

Local currency finance

- Accredited entities[2]

Critical risks targeted

Business model	Credit	Currency
Sovereign	Commodity	

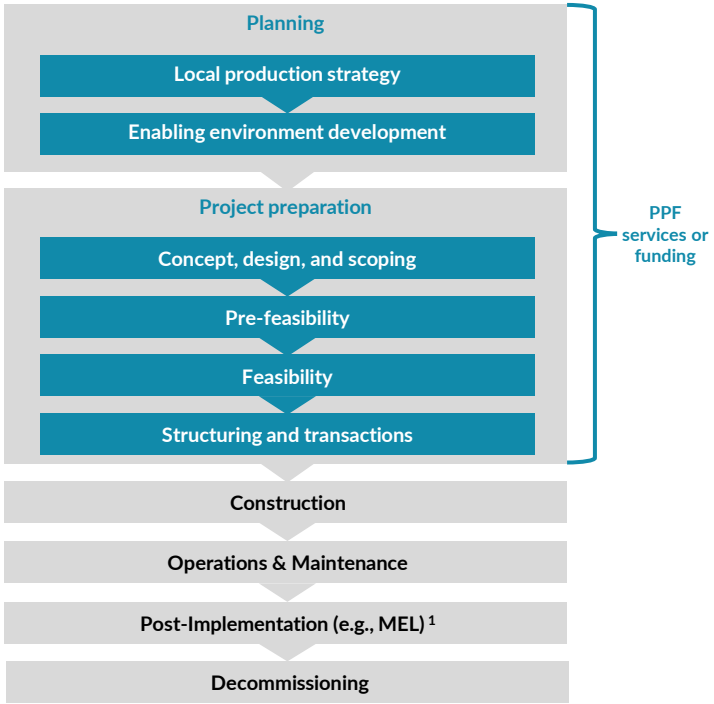
Key: *Risk covered in the solution* *Risk not covered*

Notes: (1) Entrepreneurs, or existing businesses interested in establishing local fertilizer production/blending facilities in Africa. (2) Organization that has been approved by the PPF and have a viable business case Sources: Dalberg, Stakeholder interviews, 2024

At a high level, PPF comprises entities that could support countries develop bankable, investment-ready projects

Solution 2
Design

How does it work?



Accredited entities (AE) have two support options: PPF Funding or PPF Service, depending on their preparation requirements. In both cases, the AE must manage oversight, ensure quality, and submit the funding proposal to the PPF

PPF funding

- AEs can obtain grants, repayable grants, or equity to independently manage project preparation activities. Consequently, they handle procurement and implementation directly, ensuring oversight and reporting of the allocated funds and activities.
- Critically, the PPF funding is geared toward a **social return of developing local projects as opposed to an economic return**

PPF service

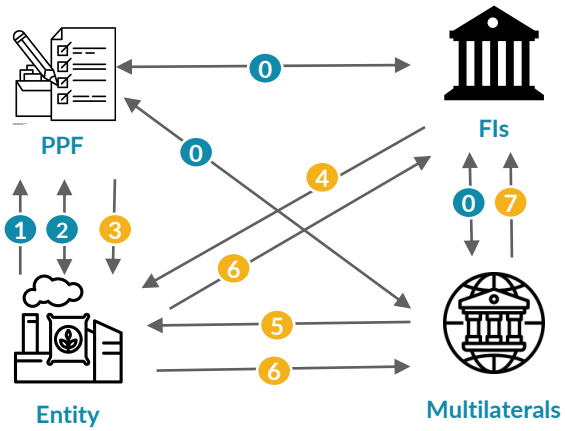
- The PPF offers project preparation services directly to AEs via a pool of independent consultancy firms. This ensures swift and high-quality delivery for AEs that prefer not to manage procurement and project management of PPF activities by themselves.

Notes: (1) Monitoring, Evaluation, and learning how the new plant is performing and make adjustments as needed. Sources: GCF, PPF, Accessed in 2024; Cities Climate Finance Leadership Alliance, PPF, 2022; Dalberg analysis, 2024

By connecting to local banks and multilaterals, the PPF ensures viable cases access capital to support development of blending or production plants

Solution 2
Design

PPF[1] tied to either local currency financing or concessional loans



0. An agreement between PPF and financial institutions and/or concessional financiers to provide support once an investable opportunity arises. In certain cases, multilateral organizations may also agree to provide guarantees to FIs[2]
1. Entity (production facility investor) applies to PPF
2. PPF secretariat reviews and the applicant entity revises - until there is approval and a legal agreement is signed
3. Implementation of PPF's services or funding[3]
4. If a viable business case exists, financial institutions offer local currency financing
5. Multilaterals can support with concessional financing if the inorganic or organic plant/investment meet their considerations
6. Once the local fertilizer plant generates revenue, it will start repaying to both FIs and multilateral organizations
7. In specific situations (e.g., government-led countries), multilateral organizations can offer guarantees to FIs (e.g., political risk guarantees)

Notes: (1) Project preparation facility. (2) Additional information regarding these instances can be found in the subsequent slides.(3) **PPF funding:** AEs can obtain grants, repayable grants, or equity to independently manage project preparation activities. **PPF service:** The PPF offers project preparation services directly to AEs via a pool of independent consultancy firms. Sources: GCF, PPF, Retrieved in 2024; Cities Climate Finance Leadership Alliance, PPF, 2022; Dalberg analysis, 2024

Strategically, this solution could consider optimizing for sub-regional hubs, incentivizing local demand, and accelerating organic fertilizer production

Solution 2 Design

Sub-regional hub approach

- The funding for local fertilizer production and blending need to focus on **establishing sub-regional hubs that can sufficiently cater to several nations, optimizing for countries with the raw materials and spreading investment costs**. For example, at full capacity, Dangote and Indorama plants can produce ~4.4 million tons of fertilizer annually, capable of meeting West Africa's needs. This strategy should target countries or sub-regions where existing plants are already operating at the necessary utilization rates and there is demand for additional blending or production facilities.

Local demand

- Set up **conditional agreements to provide an enabling environment for local plants to supply to governments and local private sector actors, and in turn, financing incentives for these actors to actively purchase from the suppliers** limiting the overreliance on imports[1] and strengthening in-country distribution networks
- The local production/blending would also limit forex risks due to the denomination of loans and transactions in local currency

Organic fertilizers

- In line with the Nairobi Declaration[2], the intervention will seek to **optimize funding to support innovative solutions that use local raw materials and resources to produce/blend organic and hybrid fertilizers**

Advocacy efforts will be required alongside to push for policies that, enable the private sector to secure necessary working capital, adopt new technologies, and benefit from regulated export practices

Notes: (1) Africa imports 90% of its fertilizers. (2) The Nairobi Declaration was signed by Heads of State in the Africa Soil Health Summit as commitments to strengthen fertilizer systems and soil health management. Sources: UNDP, Toward Food Security and Sovereignty in Africa, 2022; AU, Nairobi Declaration - Africa Fertilizer and Soil Health Summit, 2024; Dalberg analysis, 2024

At the design stage, the solution would need co-investment by donors, gov'ts and private investors to embed a market-based approach and avoid distortions

Solution 2
Design

Design features

Target investment

- **Target:** USD 30 – 90 Mn into the PPF *(upfront feasibility)* and USD 120 - 500 Mn committed to local currency loans *(plant dev't)*[1,]

The USD 30 Mn from the PPF can be allocated to 20 projects: 15 in-country blending facilities and 5 regional production hubs.

Financing instruments and contribution (share and rationale)

PPF:

- **Donors**[2]**:** 25% via repayable grants
- **Governments:** 25% via repayable grants[3]
- **Investors:** 50% via equity

Plant development:

- **Donors:** 50% commitment and disbursed via concessional loans
- **Banks:** 50% commitment and disbursed via competitive loans

Administrator/Coordinating Lead

- A designated foundation/multilateral e.g., World Bank or AfDB
- An existing project preparation facility e.g., Green Climate Fund

Currency

- **PPF disbursement currency –** Local currency to mitigate currency risks

Coverage ratio

If a PPF leads to a viable project with income-generating potential, the portion financed by the PPF (I.e., up to USD 1.5 Mn)[3] should be fully repaid upon financial closure of the funded activity, whether it is in the form of a repayable grant or equity. In addition, repayment of the local currency financing (I.e., up to USD 6 Mn)[4] is also required by the investor.

Payments and investments

Payments/investments from project developers/investors to PPF:

- **Upfront payments/investments –** None

Investments/Grants from PPF to investors:

- Funding available is up to USD 1.5 Mn for each application to the PPF

Local currency financing from banks to investors:

- Financing available is up to USD 6 Mn for each viable project

Notes: (1) Preparation costs can run up to ~ 20% of total capital expenditure. (2) Donors include foundations, multilaterals and philanthropic organizations. (3) 50% of funding both donors and government for more complex and high-risk projects, which may require additional investment in the enabling environment, such as organic fertilizer production. Conversely, leverage equity for more viable and less risk blending projects. (4) Refers to the "Investments/Grants from PPF to investors". (4) Refers to the "Local currency financing from banks to investors". Sources: GCF, PPF, Accessed in 2024; Cities Climate Finance Leadership Alliance, PPF, 2022; Dalberg analysis, 2024

The PPF will be tied to local currency financing, offering necessary market interest rates and tenor to incorporate gender and soil-health considerations

Solution 2
Design

Provisions

Interest rates

- Set the **annual rate close to the Central Bank base lending rate (+/- 2%)**, given that the PPF certifies the most viable business models that should access financing through loans

Tenor

- The construction timeline varies greatly depending on several factors, such as fertilizer type, plant capacity, regulatory approvals, location and infrastructure, etc. **Consequently, loan terms for these projects can range from 5 to 20 years to accommodate the varying construction durations.**

Financing support

- **Financial support (through grants, repayable grants, or equity) to AE in preparing funding proposals** for submission to local investors If a viable business case exists: (i) **Financial institutions offer local currency financing** and/or (ii) **Multilaterals can support with concessional financing** if the inorganic or organic plant/investment meet their considerations

Gender lens

- **Targeted outreach:** Actively reach out to women-led entrepreneurs with an interest to develop fertilizer projects
- **Integrate gender impact assessments** into the feasibility study process to understand opportunities to embed gender empowerment
- **Gender-balanced hiring and gender equity training** for all PPF staff

Soil-health lens

- **The selection criteria considers environmentally friendly criteria** e.g., production/blending methods, resource management
- **Integrate soil-health lens for the project preparation services/funding e.g.,** environmental impact assessment, low carbon design, etc.

Notes: (1) Further detail in the previous slide. Sources: ESFC, Mineral fertilizer plant construction, Retrieved on 2024; Finmodelslab, Fertilizer manufacturing, 2024; Dalberg, Interviews and Analysis, 2024

Solution 2
Risks

The local production and blending of fertilizers targets currency, political, sovereign, security, business model, commodity and credit risks

Currency risk	• Local fertilizer production reduces dependence on imported fertilizers, often priced in USD. This solution **mitigates the local market's exposure to foreign exchange rate fluctuations, stabilizes prices and facilitates credit provision across the value chain** • Local blending also helps mitigate currency risk by incurring some costs in the local currency (e.g., labor). However, there remains some dependence on foreign currency for imported raw materials.
Political and sovereign risk	• Local production reduces dependence on foreign governments and events, **mitigating risks from export restrictions, indirect delayed payments[1] and policy changes that disrupt supply or increase prices**
Security risk	• Local production reduces the **risk of theft, vandalism, or other disruptions during transport of fertilizer over long cross-border distances**
Business model risk	• The robust feasibility studies conducted through the PPF will enable the investors and donors to **identify and plan for costs within the models they'll leverage**
Commodity risk	• Stable local production will **stabilize the price of fertilizers over long periods**, cushioning the country's VC actors against adverse global pressures
Credit risk	• Local production and blending of fertilizer could contribute to cost reduction, supply chain stability, job creation, currency risk mitigation and easier access to credit. These factors collectively enhance **farmers' financial stability, reducing credit risk across the VC**

Notes: (1) Delayed payments and defaults in foreign markets that impact suppliers' capability and willingness to extend credit to Africa's VC actors. Sources: Dalberg analysis, 2024

Solution 2
Adaptation

Political risk guarantees, equity and debt capital structures, conditional agreements, and insurance are needed in different country contexts

Government vs private-sector led	**Government-led e.g., Malawi**	**Private-sector led e.g., Kenya**
	• **Adopt political risk guarantees** to cover commercial projects against risks posed by gov'ts' actions and inactions that could negatively impact equity or debt investments • **Design and set conditional agreements with governments** to progressively transition out of funding input subsidy programs that limit such schemes and distort markets	• **Leverage a capital structure with both equity and debt** to reduce interest rates offered by commercial lenders
Import vs domestic production-dependent	**Import-dependent e.g., Zambia**	**Domestic production e.g., Nigeria**
	• **Establish conditional agreements** between the PPF and investors to ensure specific quantities are sold locally and regionally	• **Prioritize lending to PPF projects** that focus on producing goods currently imported by the country (e.g., MOP in Nigeria)
Unstable vs stable macro-economic condition	**Unstable macro-economic condition e.g., Ghana**	**Stable macro-economic condition e.g., Tanzania**
	• **Leverage insurance products mitigate losses** from political, economic (e.g., inflation), and other project-related risks	• *Not applicable*

Sources: Dalberg, Interviews and Analysis, 2024

During crises,[1] it is critical to establish volume guarantees, adjust credit terms and conditions, and ensure appropriate insurance coverage is in place

Solution 2
Adaptation

Crisis	Description	Aggravated risks	Adjustments to the solution[1]
Market dynamics and supply chain disruptions	• Significant price volatility in raw materials or fertilizers • Considerable currency depreciation in a short period of time • Shipping delays/strikes	• Default risk • Currency risk • Commodity risk	• **Establish volume guarantees**[2] for local producers/blenders • **Adjust terms and conditions** from the local currency credit e.g., extend repayment periods for new credit, and offer grace periods for existing loans
Regulatory changes	• Adverse policy changes that constrain the supply and use of fertilizers	• Business model risk • Sovereign risk	• **Form strategic partnerships** by collaborating with agricultural organizations, NGOs, and private sector entities to form a united front can exert more influence on policy decisions • **Conditional agreements** that direct donors/support systems to redirect funds to other regions on condition that policymakers do not make improvements to regulations and policies
Natural disasters and wars	• Extreme weather or political events that disrupt the fertilizer value chain	• Default risk • Supply chain risk	• **Insurance cover** to protect against natural disasters and wars, which can disrupt project timelines and finances

Notes: (1) Adjustments of resilience interventions during shock/crisis periods; (2) Contract between a guarantor and a supplier, which guarantees that procurers will purchase a minimum quantity of an existing product over shock periods. In return, the supplier lowers the price. Sources: Dalberg, Interviews and Analysis, 2024

This PPF solution needs a Lead who can best coordinate and optimize partners' extensive knowledge, track record, and convening power in Africa's Ag space

Solution 2
Operation

Qualifications of likely partners for this solution

Deep knowledge of Africa's fertilizer value chain – The partners need to have 10+ years of experience and distinguishable expertise from working on the continent

Extensive expertise in establishing and manging PPFs – The partners needs to have credible experience of overseeing successful PPF initiatives in the broader agricultural space in Africa

Track record of developing local currency financing facilities – The partners needs extensive knowledge of local financial markets, and expertise in structuring financial solutions (normal or concessional loans) denominated in local currency to support fertilizer ventures in Africa

Convening power – The partners need to have developed meaningful relationships with leading multi-laterals, governments, and foundations in the sector and have the credibility to convene them in policy, fundraising and implementation discussions

Taking into consideration all these qualifications, the initiative would need a coalition of different partners leveraging different competencies:

1. **Deep knowledge of fertilizers –** AFAP and Sustain Africa
2. **Expertise managing PPFs -** Global Climate Fund (GCF)
3. **Track record of financing facilities –** Local FIs such as Equity Bank and multi-lateral lenders e.g., IFC
4. **Convening power –** AfDB, AGRA, USAID or BMGF

The participants would need to choose a participating organisation to be the Coordinating Lead of the alliance and the initiative

Sources: Dalberg, Interviews and analysis, 2024

Collectively, several entities can form public-private partnerships in their countries to drive this initiative

Solution 2
Partners

Role	Likely partners in each focus country					
	Ghana	Kenya	Malawi	Nigeria	Tanzania	Zambia
Financial institution	access	EQUITY BANK	First Capital BANK	FCMB	TADB Tanzania Agricultural Development Bank "The Farmers' Bank"	absa
Governments						
Multinational lender	BILL & MELINDA GATES foundation; IFC; THE WORLD BANK; mastercard foundation					
Coordinator Lead	afap African Fertilizer and Agribusiness Partnership; SUSTAIN AFRICA; GREEN CLIMATE FUND; GROWAFRICA; CGAP					

Source: Dalberg Interviews and analysis, 2024

SUSTAIN AFRICA; USAID FROM THE AMERICAN PEOPLE; Dalberg

Additional Interventions

Enhancing market maturity and reducing financing costs also requires aggregation, TA, market intelligence and credit rating

Term	Solution	Targeted actor	Intended impact
Short term	3 Technical assistance (TA) to farmers	• Farmers	• Organizations (generally non-profits) that make **farmers actors bankable** through providing inputs, financial formalization services, extension services, and market linkages
Short term	4 Aggregation of retail agro-dealers and TA to its association	• Retail agro-dealers	• **Aggregate retail agro-dealers** within a unified association t**o strengthen the VC**, foster peer accountability, and establish credit profiles for retailers • Provide TA to these associations for long-term sustainability and professionalism, with optional financial management support (Intervention 1B).
Medium term	5 Market Intelligence	• All VC actors	• **Generate and transfer insights on fertilizer prices, trades, and regulations** to increase transparency and **enable VC actors secure better deals**
Long term	6 Credit rating to VC actors	• Blenders to farmers	• **Issue credit ratings** to all VC participants, particularly from blenders to farmers, **to increase their visibility and probability to access affordable financing**

Sources: Dalberg analysis, 2024

Topics for further exploration

We have identified two main areas for potential further exploration as the interventions are rolled out

Further exploration

Conduct a legal analysis on RFs' modalities

In slide 109, examples of revolving funds from various countries are presented, demonstrating that such structures often exist with international partners. Should the recommendation be pursued, a detailed legal analysis to adapt the fund modalities to each country's context would be required.

Review suppliers' data on credit transactions

Leverage the Aceli benchmarking as the starting point. Supplement it with a review of suppliers' credit transactions and country interviews with lenders, technical assistance providers, and ecosystem actors. Leverage this information to tailor the FLOII facility for each lender (e.g., supplier or bank providing a RF), borrower, crop, and country, ensuring it incentivizes lending without distorting markets

Sources: Dalberg analysis, 2024;

V. Annex

Annex A | Methodology

Structure

	Objective	Target	Duration / Format
Desk research	• Mapped the value chain to understand the key actors, financing needs and bottlenecks, and to identify potential financing options	• Prior Dalberg work in Agriculture financing, especially Africa's fertilizer supply chain • Research reports on fertilizer and financing options in Africa	• On-going literature review for duration of project
Interviews	• Validated our research, particularly on key challenges, risks and opportunities	• ~ 40 stakeholder interviews with borrowers and lenders of the fertilizer supply chain	• 1 hour virtual/telephonic interviews
Validation workshop	• Presented research findings, gathered additional inputs, and discussed recommendations	• 2 validation workshops with the Sustain Africa ED, finance expert and project lead • Validation workshop with the Sustain Africa Advisory Board	• 1 – 1.5-hour virtual sessions

Source: Dalberg analysis, 2024

Annex B | Stakeholders interviewed (I/III)

Fertilizer VC	Organization	Contact	Position
Production and sourcing	Syngenta[1]	Given Mudenda	East and Southern Africa Business Head
	Yara[1]	Luis Alfredo Perez	Senior vice-president of Yara Sub-Saharan Africa
Inbound logistics	ETG[1]	Sushant Gaggar	Senior Manager of Trade and Operations
	K+S Fertilizers Kenya	Florian Pickert	Managing Director
	IRM	Jason Scarpone	Chief Sustainability Officer
Blending	Grainpulse[1]	Alta Theon	CEO
		Sophie Mirembe	Head of Commercial
Distribution and retail	Nigeria Agro Input Dealers Association (NAIDA)	Osho Akinbolawa Olugbenga	M&E Lead
	Gangpur farmers - Input dealer Uganda	Obua Frank	Manager
		Openy Joel	Sales
		Ocakacon Junior	Sales
	Agrodealer Association of Zambia	Mary Tembo	President

Notes: (1) Sustain Africa partner; Sources: Dalberg analysis, 2024.

Annex B | Stakeholders interviewed (II/III)

Fertilizer VC	Organization	Contact	Position
Farm usage	One Acre Fund[1]	Eric Pohlman	CEO & Co-Founder
		Mike Tweed	Global Impact Ventures Director
	Smallholder and Commercial farmers	Susan Abolo	SHF
		Yose Oketayot	SHF
		Palabek	Employs 30 SHFs
		Lokung	Employs 4 SHFs
		Akenda Walter	Commercial farmer
Cross-cutting	Sustain Africa (SA)	Ben Valk	Executive Director
		Tom Kehoe	Deputy Director, BMGF
		Frances Bell	Learning Agenda Lead
		Arun Sharma	Value Chain Finance Consultant
	IFDC[1]	Peter Kirimi	Deputy Director, Innovative Finance
	AFFM	Marie-Claire Khalingabo	Head of AFFM
	Aceli Africa	Carla Legros	Head of Products

Notes: (1) Sustain Africa partner; Sources: Dalberg analysis, 2024.

Annex B | Stakeholders interviewed (III/III)

Actors list

Fertilizer VC	Organization	Contact	Position
Cross-cutting	AFAP[1]	Michael Sudarkasa	CEO
		Joseph Mwangangi	Deputy CEO
		Gene Phiri	Country Director Zambia
		Margaret Mukwenha	Country Manager Malawi
		Sergio Ussaca	Regional Director for East and Southern Africa
		Joel Kakaire	Country Manager Uganda
	AGRA	Hedwig Siewertsen	Head Inclusive Finance
	Arila	Dimieari Von Kemedi	Managing Director
	FCMB Nigeria	Kudzai Gumunyu	Divisional Head Agribusiness
	Sterling Bank Nigeria	Vera Ebhohon	Head, Agribusiness Development and Product Management
	Equity bank	Manasseh Manirakinga	Manager: Food and Agriculture finance
		Teofora Madilu	Senior Manager Agribusiness
	AFRIQOM	Mounir Halim Belfkih	CEO

Notes: (1) Sustain Africa partner. Sources: Dalberg analysis, 2024.

Annex C | Sustain Africa Advisory Board

Organization	Contact	Position
Sustain Africa	Arun Sharma	Value Chain Finance Consultant
Sustain Africa and Robobank	Ben Valk	Executive director of Sustain Africa and Global Head Food and Agri Partnerships for Rabobank
AFAP	Joseph N. Mwangangi	Deputy CEO and Director
Bill and Melinda Gates Foundation	Joshua Ariga	Senior program officer
AFFM	Marie-Claire Khalingabo	Head of AFFM
IFDC-2SCALE	Peter Kirimi	Senior Financial Inclusion Manager

Notes: (1) Sustain Africa partner. Sources: Dalberg analysis, 2024.

Annex D | Glossary: acronyms and abbreviations

Acronym	Meaning
AE	Accredited Entity
AFFM	Africa Fertilizer Financing Mechanism
AfDB	African Development Bank
AFAP	African Fertilizer and Agribusiness Partnership
AZAB	Agro Business Association of Zambia
AGRA	Alliance for Green Revolution in Africa
CEO	Chief Executive Officer
Dev't	Development
DFI	Development Finance Institution
ED	Executive Director
FFO	Farmer Facing Organizations
FI	Financial Institutions
FLOII	First Loss, Origination Incentives and Impact Bonuses
Gov't	Government
GCF	Green Climate Fund
ISPs	Input Subsidy Programs
IFDC	International Fertilizer Development Center
IRM	International Raw Materials

Acronym	Meaning
MSMEs	Micro, Small And Medium Enterprises
MFB	Microfinance Banks
Mn	Million
MEL	Monitoring Evaluation and Learning
MDB	Multilateral Development Bank
MOP	Muriate of Potassium
NAIDA	Nigeria Agro Input Dealers Association
NGOs	Non-Governmental Organization
PPF	Project Preparation Facility
RF	Revolving Fund
SMEs	Small and Medium Enterprises
SHF	Small Holder Farmer
TA	Technical Assistance
USD	United States Dollar
VC	Value Chain
VCF	Value Chain Financing