

Transforming Nigeria's Livestock Sector

Aquaculture pilot design and implementation

April 2026



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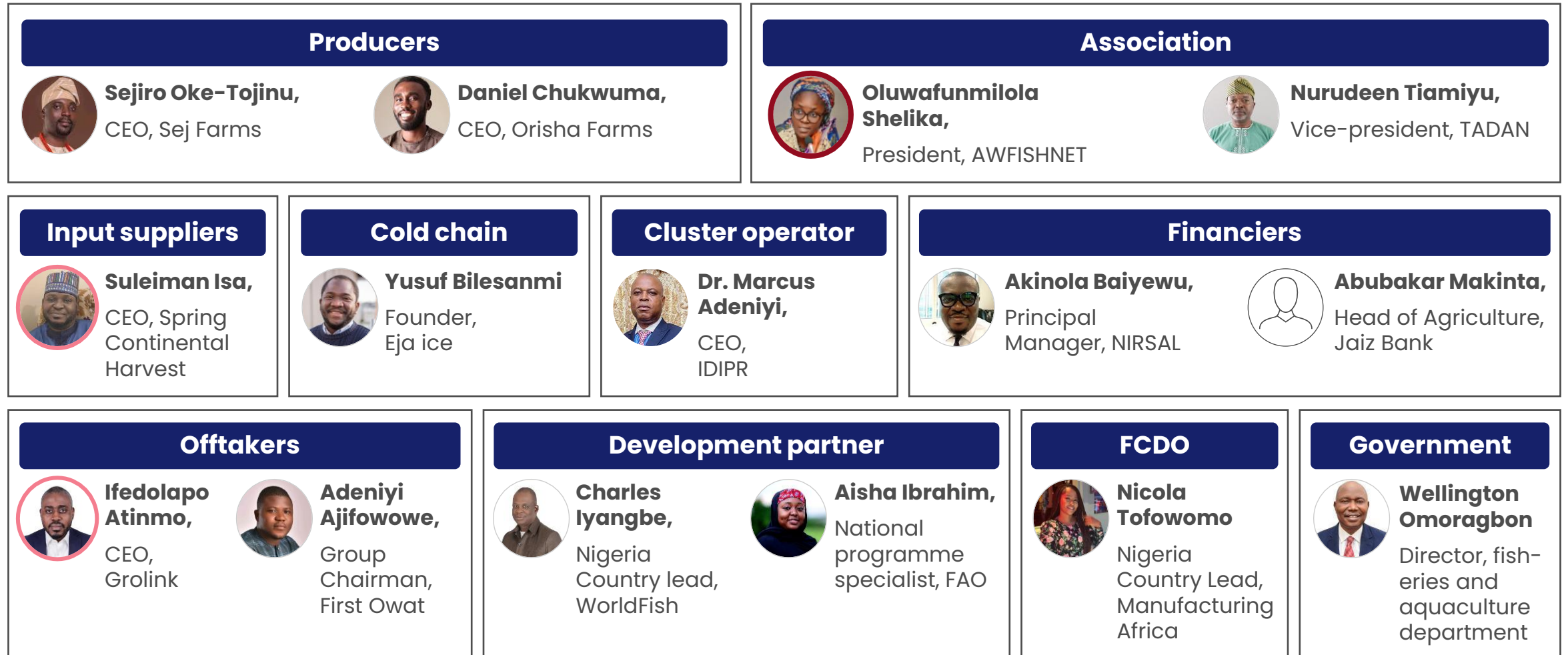
Executive summary

Nigeria Aquaculture value chain

Dimension	Description	Champion
Cluster commercialisation	Grolink's pilot is designed to organise ~1.2k farmers into 28–30 clusters across Kwara and Delta, with cluster leaders forming a cooperative to support input coordination, aggregation, extension, and repayment discipline The pilot combines a defined eligibility framework with a productivity improvement package across five FCR levers, targeting ~14% FCR improvement (1.4 to 1.2) and survival improvement from 70% to 90%. Seven financiers have been identified across grants, blended finance, and commercial working-capital options, with ~\$2.6 million per production cycle required So far, cluster sites have been prioritised, 700–1,200 farmers identified, financier engagement has commenced, and pilot preparation is underway for a tentative April 2026 launch	GROLINK
Genetic improvement	Spring Harvest's pilot is focused on establishing a selective breeding nucleus and multiplier hatchery network to supply improved broodstock and fingerlings The pilot design has defined the target customer segments to focus on, the value proposition to offer each segment, the pricing strategy to support adoption and value capture, and the marketing and sales approach required to drive demand and uptake Five financiers have been identified across grants, blended finance, and commercial bank working-capital routes Site acquisition has been completed, construction is in progress, and pilot preparation is underway for a tentative May 2026 start	SPRING HARVEST
Tech-enabled fish sales	The platform was prioritised as a new investment idea to address weak market linkages in Nigeria's catfish trade, where sales remain highly intermediated and pricing, weighing, and logistics inefficiencies reduce farmer margins The proposed model could improve farmer margins by ~N290/kg, improve wholesaler margins by ~N150/kg. It requires ~N1 billion (~\$0.8 million) in funding. Under the blended-finance base case, the project could achieve ~46% IRR, reach profitability in ~5 years, generate ~7% EBITDA margin by Year 10	GROLINK

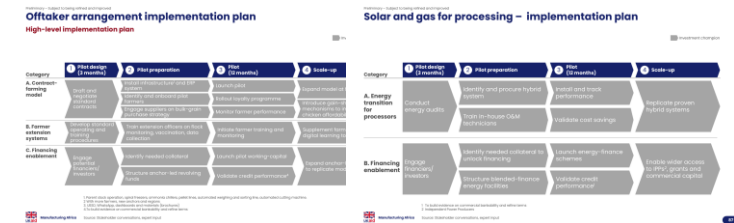
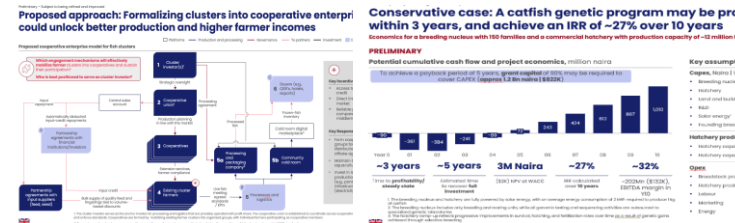
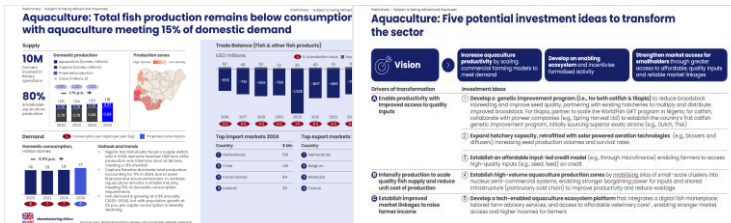
Aquaculture Committee

 Committee champion  Investment idea champion



Overview of our Livestock Sector Transformation Effort in Nigeria

 We are here now



Progress of the Aquaculture transformation effort in Nigeria

Impact potential from pilot to scale-up:

~\$200Mn | ~ N 270 Bn untapped investment opportunity by 2035

\$5M | ~ N6.5Bn investment required for pilots

2000+ farmers with improved incomes

Phase 1A: Diagnostics

Diagnostic fact base built

32% (~0.5MT) fish supply deficit

16% Local demand met by domestic aquaculture

10–15 t/ha catfish productivity

20% Broodstock mortality rate

Phase 1B: Opportunity development

- **5 investment opportunities identified**
- **2 prioritised and moved into pilot design**

1. Cluster commercialisation

GROLINK

Description: Formalise catfish farmers into clusters to improve farmer productivity and margins

Pilot Objectives:

~ 14% (1.4 to 1.2) FCR¹ improvement

30% higher survival rate and ~15–25% faster growth

2. Genetic improvement

SPRING HARVEST

Description: Set up a selective breeding nucleus and multiplier hatchery network to supply improved broodstock and fingerlings

Pilot Objectives:

Improvement in fingerling production by raising fertilisation success by **~15–30%** etc., and growth rates by **~30%**

Phase 2: Pilot prep and early implementation

1. Cluster commercialisation: Pilot preparation in progress

GROLINK

2.3k farmers identified

~2 financiers engaged to finance \$2.6Mn

2. Genetic improvement: Pilot preparation in progress

SPRING HARVEST

GTM and value proposition defined

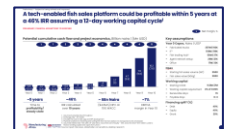
1 grant financier engaged to finance \$1.5Mn

3. Tech-enabled fish sales: Business case defined

GROLINK

~1Bn initial investment required for Y1 Capex and working capital

~46% estimated IRR





Cluster commercialisation

- Pilot design
- Financing
- Pilot update

Genetics improvement

Tech-enabled fish sales platform

Government interventions

Next steps

Cluster commercialisation– Executive summary

Dimension	Description
 Pilot design	Three key design elements were completed for Grolink’s cluster commercialisation pilot: – Pilot structure and site prioritisation: designed a model to organise ~0.7k–1.2k farmers into 28–30 clusters across Kwara and Delta – Eligibility framework: defined criteria for farmers, cluster leaders, the cooperative, and Grolink – Productivity improvement package: developed interventions across five FCR levers incl., quality fingerlings & feed, right stocking density, water exchange and waste removal design to deliver ~14% FCR improvement (1.4 to 1.2) and improve survival from 70% to 90%, supported by extension, monitoring, and farmer incentives such as Input discounts
 Financing	Seven relevant financiers were identified across three financing options for Grolink’s cluster commercialisation: – Catalytic grants and technical assistance for pilot OPEX: best fit for “public good” elements and non-dilutive, reducing cash burn and total pilot risk; relevant financiers are Gates Foundation and Global Innovation Fund – Blended finance: can fund commercialisation and job creation projects through milestone-based support, though timing may be uncertain; relevant financiers are FISH4ACP and SEFAA – Commercial bank working-capital loan: offers the fastest path to liquidity if guarantee coverage and documentation are robust; relevant financiers are NIRSAL, Bank of Agriculture, and Bank of Industry
 Pilot update	The cluster commercialisation pilot is in preparation and early implementation, with a tentative start date of April 2026. Grolink has already prioritised cluster sites, is engaging farmer groups and financiers, and has identified 700–1,200 farmers for onboarding, while financing discussions for working capital are underway Over the next 60 days, the priority is to finalise financing arrangements for the pilot, complete farmer screening and cluster selection, and formalise partnerships with certified input suppliers, including hatcheries and feed providers. These actions are intended to move the pilot from preparation into launch readiness while locking in the governance, input quality, and financing discipline required for the first production cycle



Cluster commercialisation

- **Pilot design**

- Financing
- Pilot update

Genetics improvement

Tech-enabled fish sales platform

Government interventions

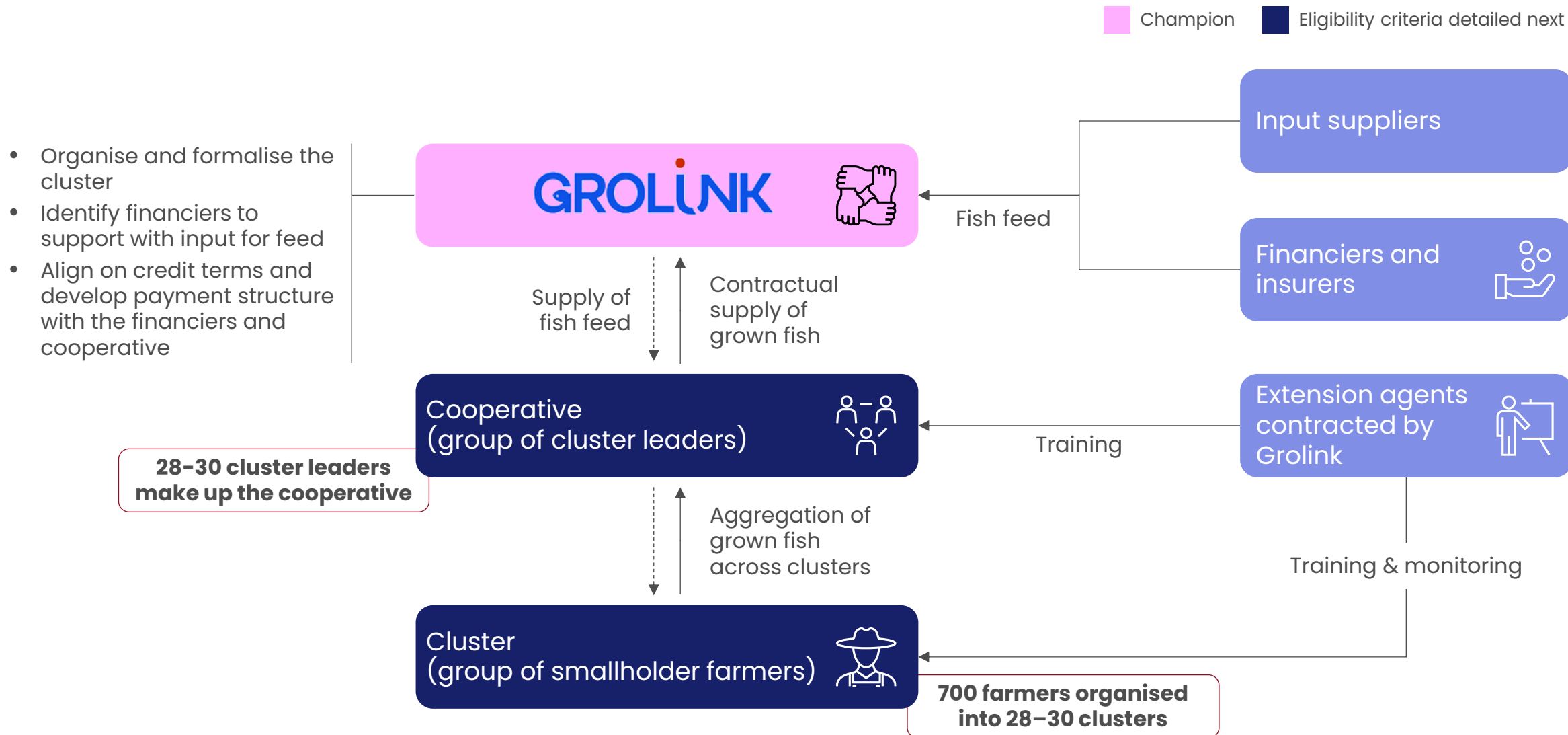
Next steps

Grolink's cluster commercialisation pilot preparation began with key milestones

Activity 	Milestones 
1 Cluster site and financing sizing	Pilot cluster sites prioritised in Kwara and Delta Input financing requirement sized at ~\$2.6m per production cycle 700–1200 Farmers identified
2 Farmer onboarding and formalisation	Eligibility criteria defined for cluster membership
3 Productivity improvement package	Target productivity outcomes set , FCR 1.4 to 1.2 and survival 70% to 90% Extension delivery plan, monitoring, and incentives being finalised
4 Identification of potential financiers	7 potential financiers identified Financier fact packs prepared for champion outreach Ongoing engagements with financiers

Detailed in the next section

1| Grolink's cluster commercialisation pilot could comprise 28 clusters, engaging ~700 smallholder farmers



2| Key eligibility criteria have been defined for various players across the cluster commercialisation value chain (1/2)

Key player

1. Smallholder farmer



2. Cluster leaders



Dimension	Minimum requirement	Rationale
Production capacity	Recent cycle completion and ponds ready for stocking	Protects pilot volumes and reduces underproduction and default risk
Willingness to sell-through	Agreement to route sales via structured buyer channel or central sales account	Enables repayment at source and reduces cash leakage
Data & traceability	Simple farm records for inputs received, stocking date, mortalities, and harvest volumes	Enables performance tracking and early risk detection
Biosecurity & husbandry	Adopt cluster SOPs covering stocking density limits¹ , water management routines² , and feeding protocol , verified through weekly compliance spot-checks	Ensures farm productivity , reduces volatility in output and supports predictable cash-flows
Governance	Farmer nominated leadership agreed at a cluster meeting with signed attendance and role acceptance	Strengthens coordination and improves compliance
Financial controls	Basic records kept including cashbook, input distribution log, sales log, and monthly summary shared with farmers	Builds accountability and supports access to larger input facilities
Aggregation discipline	Consolidated input required across farmers and transparent distribution rules applied consistently across farmers	Prevents leakage and supports consistent repayment behaviour

¹ Set a pond-specific biomass cap based on pond type and aeration // ² Routine partial exchange during heat and peak feeding weeks plus weekly sludge removal // ³ Standard feed spec and pellet size plan by weight band (so farmers don't improvise)

2| Key eligibility criteria have been defined for various players across the cluster commercialisation value chain (2/2)

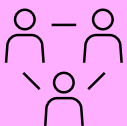
Key player

3. Cooperative



Dimension	Minimum requirement	Rationale
Single contracting counterparty	Authorisation to contract on behalf of the smallholder farmers	Simplifies tripartite agreements and reduces transaction costs
Auditability	Named treasurer and monthly reconciliation , with quarterly member reporting	Enables repeat financing and supports expansion potential
Central sales account governance	Clear rules on deductions and payouts	Enables repayment-at-source and “no collateral” comfort

4. Grolink



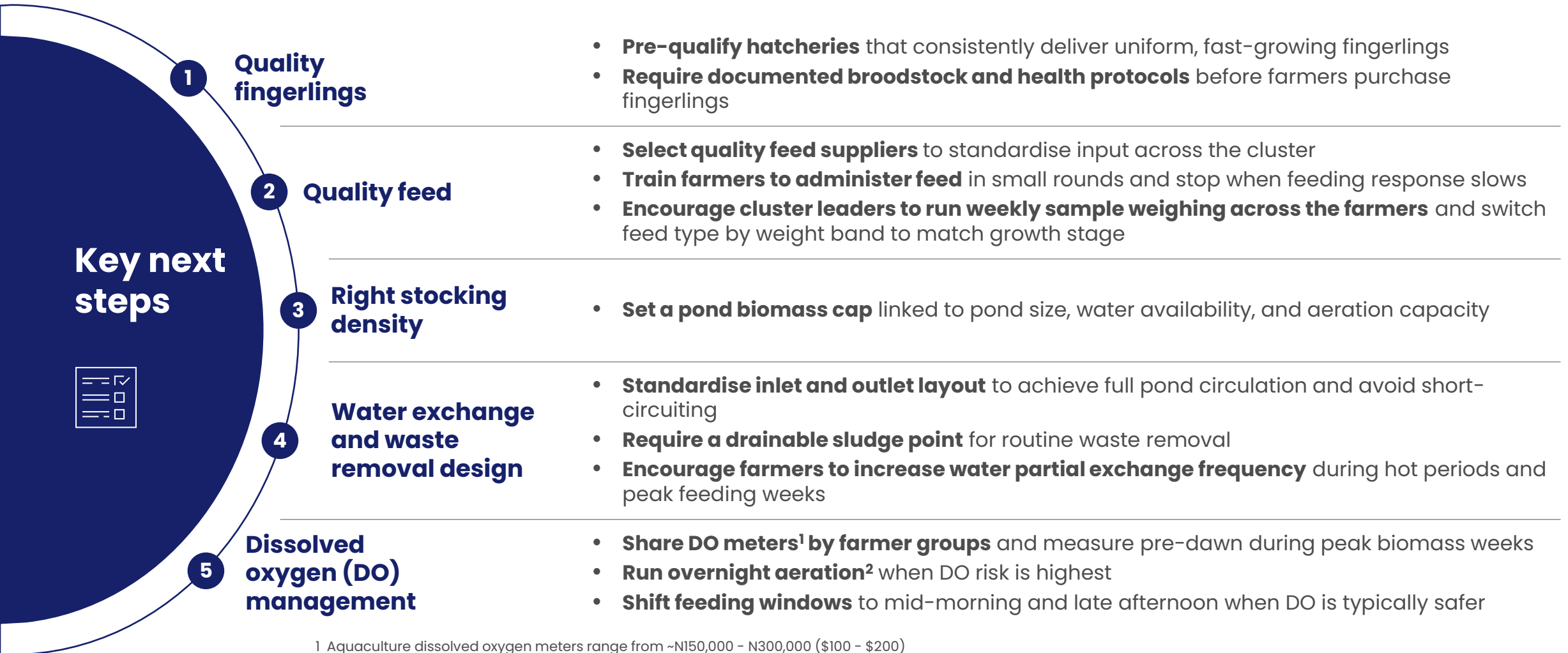
Contributions from the Champion		
MIS / reporting	Ability to track farmer registry, input distribution, harvest, and repayments	Supports lender confidence and scaling decisions
Buyer linkage	Verified buyer¹ channel with purchase history or signed offtake intent plus agreed pricing and payment terms	Reduces price volatility and supports sell-through discipline
Extension capacity	Defined extension cadence with named staff or partners, weekly farmer touchpoints, and escalation protocol for mortality and feed issues	Drives productivity gains and reduces farmer credit risk

¹ Verified buyer means proven purchases in the last 12 months or signed intent to buy pilot volumes with payment via the central account

3| Best practices to lock in consistent growth, survival, and feed efficiency

Lever	Best practices and key learnings	Improvement
1 Quality fingerlings 	• Use outcrossed improved strains and avoid inbred broodstock • Source only from verified hatcheries with documented broodstock and health protocols	FCR from 1.91 to 1.69
2 Quality feed 	• Ensure consistent use of high-quality feed • Reject low-quality substitutions that break performance and predictability	FCR from 2.78 to 1.34
3 Right stocking density 	• Stock within carrying capacity using a clear biomass cap per pond • Trigger corrective actions e.g., aeration and partial exchange when limits are exceeded	FCR from 2.48 to 1.28
4 Water exchange and waste removal design 	• Design for full circulation with correct inlet/outlet placement and a sludge low-point • Run routine renewal and sludge removal to control ammonia and solids	FCR from 2.94 to 1.21
5 Dissolved oxygen (DO) management 	• Measure pre-dawn DO during peak biomass and act before stress shows • Run aeration overnight when risk is highest and shift feeding to safer windows	Feed intake from 6% at 2.6 ppm DO to 45% at 5.7 ppm DO

3| Potential actions for Grolink across five Feed Conversion Ratio (FCR) levers to improve productivity across farmers



¹ Aquaculture dissolved oxygen meters range from ~N150,000 – N300,000 (\$100 – \$200)

² Aerator cost between N60,000 – N180,000 (\$40 – \$120)

Grolink could offer incentives to drive farmer compliance and use bulk input discounts to fund financial incentives

FCR target would be assigned based on input quantity provided to clusters

Recommended option

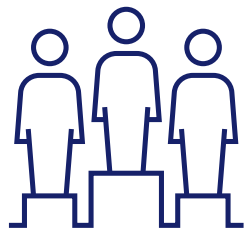
Potential Incentives

Financial incentives



- Input discounts at next cycle e.g., free feed²
- Loan top-up eligibility
- Performance-linked rebate, etc.

Non-financial incentives



- Public recognition during cooperative meetings
- Priority access to demo or training pilot
- Role as peer mentor or lead farmers, etc.

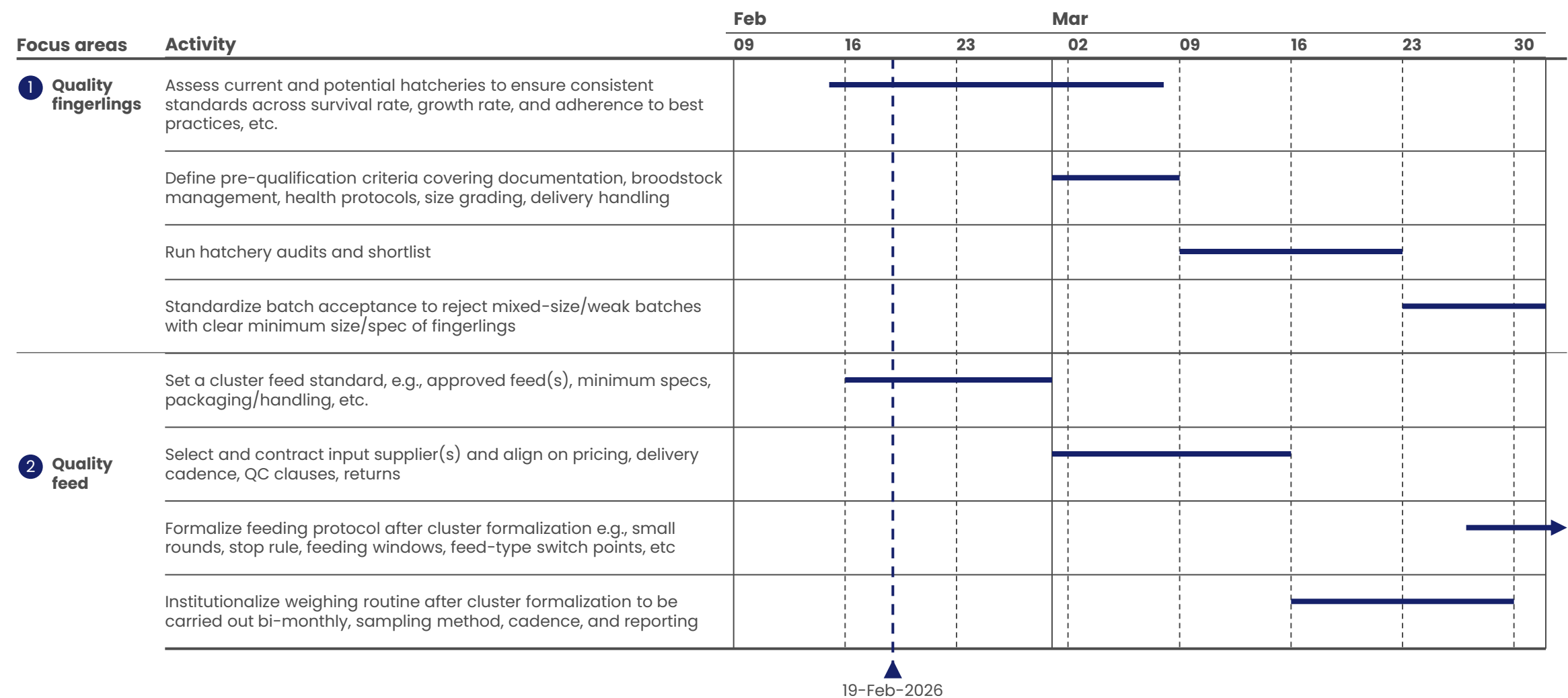
The financial incentives could be funded by a bulk discount from feed purchase (4.5%¹ in total)

	Option 1: 0.5% of the discount shared	Option 2: 1% of the discount shared	Option 3: 1.5% of the discount shared
Total discount savings ³ (NGN m)	38	77	115
Discount savings per cluster ⁴ (NGN m)	1.4	2.7	4.1
Discount savings per farmer ⁵ (NGN)	54,750 (= 15kg of feed)	109,500 (= 30kg of feed)	164,350 (= 45kg of feed)
Discount savings with existing rebate structure(NGN)	9,120 NGN per ton of feed purchased	18,250 NGN per ton of feed purchased	27,370 NGN per ton of feed purchased

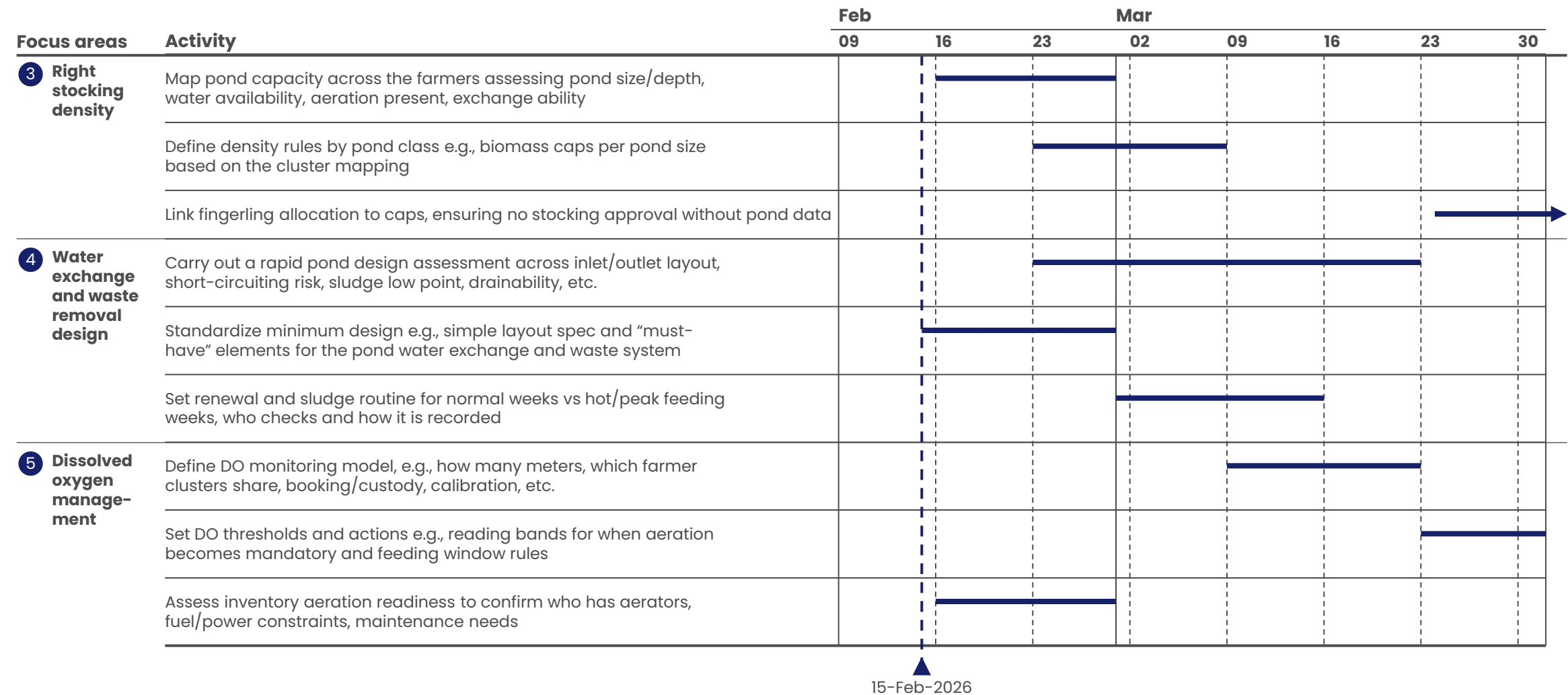
The discount savings available to farmers, depending on the Grolink-selected option, have been baked into their **existing discount scheme of 4,000 NGN per ton of feed**. Farmers within clusters that meet targets are awarded this increase

1 4.5% discount from an aggregated volume of 1000 tonnes per quarter // 2. The available monetary bonus to farmers that meet the FCR target could also be used to provide free feed // 3. Maximum savings available to all farmers based on the % Grolink is willing to share // 4. Savings available to each cluster; 28 clusters for the 700 farmers. Clusters that default in targets would have reduced feed allocation or applicable cautions to ensure compliance // 5. Savings available to a single farmer annually (2 production cycles)

We have developed an implementation timeline for Grolink to improve productivity across farmers (1/2)



We have developed an implementation timeline for Grolink to improve productivity across farmers (2/2)





Cluster commercialisation

- Pilot design

- **Financing**

- Pilot update

Genetics improvement

Tech-enabled fish sales platform

Government interventions

Next steps

Seven relevant financiers across three financing options have been identified for Grolink's cluster commercialisation pilot

 Smallholder farmers specific financing option  Deep dive follows

Financing options	Pros	Cons	Relevant financiers
A Catalytic grants and technical assistance (TA) for pilot OPEX 	Best fit for “public good” elements (genetic improvement, biosecurity systems, farmer adoption evidence of improved catfish) Non-dilutive, reduces cash burn and lowers total pilot risk	Slower cycles, heavy compliance and reporting - Often restricted cost categories and may not fully cover routine operations	 
B Blended finance 	Can fund commercialisation and job creation projects - Milestone-based support	- Competitive Timing uncertainty and compliance load	FISH4ACP 
C Commercial bank working-capital loan 	Fastest path to liquidity if guarantee coverage and documentation are robust Scalable in line with cash flow growth and proven performance	Requires collateral, covenants, and robust cash-cycle discipline Pricing may remain high without strong de-risking, and renewals depend on portfolio performance	  

A| Potential grant financiers for Grolink have been identified based on pilot investment alignment (1/2)

CATALYTIC GRANTS AND TECHNICAL ASSISTANCE

 Major focus
  Minor focus
 High¹  Medium  Low 

Financier	Alignment ²		Average ticket size	Rationale	Priority
	AG ³	Africa			
Gates Foundation (direct grants)			Multi-year, multi-million (varies)	Gates Foundation funds large-scale agriculture and food systems programs across Africa, including aquaculture productivity and fish genetics work delivered through international partners	
Global Innovation Fund (GIF) (staged grants/investments)			\$50k–\$230k (Pilot grants); up to \$2.3 m (scale-up)	GIF supports social innovations worldwide (incl. Africa). It backed One Acre Fund's scale-up to reach 1 million+ African farmers. Ideal for early-stage agri-tech	
IDH – Sustainable Trade Initiative (Value Chain Grants and TA)			€500k–€2 million (typical co-funding)	IDH is scaling its value chain programmes in Nigeria (grains, aquaculture) as of 2026. It provides grants plus technical support to agribusinesses and tech providers (e.g. remote water monitoring for fish farms) to drive innovation. With a strong Nigeria focus and aquaculture named as high-potential, IDH could substantially support Grolink's cluster model	
Africa Enterprise Challenge Fund (AECF) (grants and repayable grants)			Up to ~\$1.5 million	AECF finances African agribusinesses via competitive calls. Documentation shows grants reaching the \$1–1.5 million range. Notably, AECF launched a "Blue Economy" window for aquaculture enterprises, visible aligned window is currently Kenya focused, so near term eligibility for a Nigeria catfish cluster pilot is uncertain unless a Nigeria eligible call opens	
Skoll Foundation (social enterprise grants)			~\$1.5–\$2 million (often over 3 years)	Skoll backs transformative social enterprises. In 2025, Skoll invested in Nigerian agri ventures like Babban Gona. While Skoll's focus is global, its funding of a Nigerian farmer cooperative model indicates interest in agri-food solutions	

1. High: clear, active focus and repeat activity; Medium: adjacent focus or indirect exposure; Low: limited evidence of focus // 3. Alignment reflects evidence of active programmes or repeat transactions in (i) agriculture, (ii) aquaculture, and (iii) Africa // 3. Agriculture

Source: [Gates Foundation](#); [IKEA](#); [GPP](#); [FRP](#); [ARAA](#); [AECF](#); [ACCF](#); [CFYE](#); [GIF](#); [YEFFA](#); [SKOLL](#); [IDH](#)

A| Potential grant financiers for Grolink have been identified based on pilot investment alignment (2/2)

CATALYTIC GRANTS AND TECHNICAL ASSISTANCE

 Major focus
  Minor focus
 High¹

 Medium
 
 Low
 

Financier	Alignment ²		Average ticket size	Rationale	Priority
	AG ³	Africa			
AfDB Africa Climate Change Fund (ACCF) (multilateral grants)			Up to ~\$1.5 million (grant ceiling)	Climate-focused fund under AfDB that can support resilient aquaculture if framed well. For instance, ACCF grants go up to \$1.5 million. A climate adaptation angle (cold-chain, water management) could qualify Grolink. Very climate-specific M&E requirements, hence lower priority	
Challenge Fund for Youth Employment (CFYE) – Nigeria Window			≥ €200k (matching required 1:1)	A Dutch-funded challenge that will fund agribusinesses only if they create verifiable jobs. Nigeria calls require at least €200k co-investment, matched by the programme. Grolink could leverage it if job creation (especially for youth/women) is central, but funding is contingent on meeting stringent employment targets of at least 500	
ECOWAS/ARAA “DeSIRA” Calls (West Africa R&I grants)			Call-dependent (e.g. €150k–€230k per partner in consortium)	Regional innovation calls (often EU-funded) that support applied agri research and adoption. A recent West Africa agroecology call had a €150k–€230k budget per project partner	
AGRA – YEFFA Program (Young Entrepreneurs in Agribusiness Fund)			~\$100k–\$500k (SME grants)	Alliance for Green Revolution in Africa’s facility for youth-led agribusinesses. It offers organisational grants (often up to a few hundred thousand USD). Given aquaculture’s labour-intensive nature and youth involvement	
IKEA Foundation (grants for livelihoods/food systems)			Multi-million funding (€3.5m to over €30m)	Provides large grants for sustainable agriculture in Africa. e.g., A 2024 partnership integrating regenerative agriculture in East Africa received €8 million from IKEA. Another grant was €4.5 million to a regenerative agriculture initiative in Kenya, illustrating IKEA’s support for food system projects	

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A| Potential engagement plan for Grolink with the Gates Foundation



Funding Overview

The Gates Foundation funds large-scale agriculture and food systems work across Africa. Grant sizes vary widely and can be multi-year and multi-million, so Grolink is most likely to access funding through a partner-led route or as an implementation partner on an existing grant

Considerations

Proposed financial support

Grolink could seek \$6m to launch and validate a first-wave cluster commercialisation pilot, covering **time-bound delivery costs** for farmer onboarding, FCR-focused training, compliance monitoring, and an adoption evidence pack

Strategic fit

This pilot directly addresses a binding productivity constraint by standardising cluster operating discipline that improves **FCR and survival**, strengthens traceability, and creates a scalable pathway to formal market participation

Best fit pathway

- Direct programme engagement where Grolink is introduced via a credible intermediary and positioned as an execution engine with a milestone-based budget and measurement plan

Engagement plan

- 1 Identify the most relevant active Gates grantees in aquaculture and food systems with work in Africa or Nigeria and map a partner route
- 2 Share a short concept note and milestone budget that clearly separates pilot operations from scale expansion
- 3 Propose a subgrant or implementing partner structure with clear deliverables and reporting

Preparation for engagement

Elements to enhance credibility

- **Execution readiness** shown by cluster governance, SOPs, and an operating cadence
- **Measurable pilot plan** with baseline FCR, monthly tracking, and adoption targets
- **Operating controls** covering input QA, farmer compliance, and traceability

Materials

- Concept note, milestone budget, implementation plan, monitoring and evaluation framework, governance and safeguarding pack, partner letters of intent

A Potential engagement plan for Grolink with the Global Innovation Fund

Funding Overview

Global Innovation Fund provides staged financing to test and scale evidence-based innovations, offering grants at early stages and larger follow-on capital for scaling when results are proven. Funding amounts depend on stage and diligence outcomes. Grolink fits as a testable model that improves FCR, farmer margins, and formalisation

Considerations

Proposed financial support

Grolink could seek catalytic funding of \$6m for a pilot validation that measures cluster impact on FCR, survival, growth time, and repayment performance, producing an evidence pack that supports follow-on scale financing

Strategic fit

This fits GIF's mandate because it funds an evidence-led intervention that can prove cluster impact on **FCR, growth time, and repayment discipline**, with a clear path to replication and scale

Best fit pathway

- Direct application through the GIF portal with a strong evidence plan and scaling pathway
- Follow on financing request after pilot milestones are achieved and independently documented

Engagement plan

- 1 Submit a concept aligned to the fund's investment criteria and evidence requirements
- 2 Provide a measurement plan that can credibly attribute outcomes to improved seed
- 3 Prepare for diligence on economics, implementation capacity, and safeguarding

Preparation for engagement

Elements to enhance credibility

- **A credible evidence design** including baseline, comparison approach, and data integrity controls
- **Scale mechanism** showing how clusters replicate and self fund operations over time
- **Operational readiness** that shows the pilot can start immediately once funded

Materials

- Concept note, evidence plan, budget, implementation plan, governance and safeguarding pack

B| Potential equity and blended financing options for GroLink have been identified

EQUITY, GRANTS, BLENDED

 Major focus
  Minor focus
 High¹  Medium  Low 

Financier	Alignment ²		Average ticket size	Rationale	Priority
	AG ³	Africa			
FISH4ACP (EU/OACPS via FAO) – Cluster Upgrading Grants			In-kind grants, infra and TA (millions of € in programme)	This program explicitly funds improvements in aquaculture clusters in ACP countries. In Nigeria, FISH4ACP has provided facilities like a water-quality lab and training for five catfish clusters. It also co-funds infrastructure upgrades (e.g., hatcheries, cold chain) through its EU/BMZ budget. GroLink, being a cluster operator, is directly aligned to benefit from FISH4ACP's ongoing support (the Kwara and Kano cluster upgrades launched in 2025)	
Private Equity or Venture Capital (Regional) – e.g., Sahel Capital (SEFAA)			\$300K –2.4 million	The Social Enterprise Fund for Agriculture in Africa (SEFAA) , managed by Sahel Capital, is an "impact-first" fund. For an aquaculture business in Nigeria, the core requirement is proving that your growth directly improves the lives of smallholder farmers (SHFs) . At least 2 years of active operations in the relevant market and currently profitable or have a "credible plan" to reach cashflow break-even in the short term	
FASA (through Sahel Capital or Aceli)			\$300K –2 million	The Financing for Agricultural SMEs in Africa (FASA) fund is one of the most significant "fund-of-funds" initiatives currently operating. It was officially launched by USAID and the Norwegian Agency for Development Cooperation (Norad) to bridge the \$100 billion financing gap for agri-SMEs in Africa	
NIRSAL Cluster Fund (proposed) – Cluster Project Financing			Blended loans (with guarantees)	NIRSAL has signalled interest in financing aggregation centres and producer clusters as part of its value chain approach. While not a separate fund yet, NIRSAL's 2025 strategy mentions supporting production/processing clusters via its risk-sharing facilities. GroLink could work with NIRSAL to structure a pilot financing where NIRSAL guarantees and co-invests (with a bank) in cluster infrastructure (ponds, feed mills), effectively lowering the cost of capital	

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Source: [FISH4ACP](#); [NIRSAL](#); [SEFAA](#); [FAFIN](#); [Sahel Capital](#); [FASA](#)

B| Potential engagement plan for Grolink with SEFAA via Sahel Capital

Funding Overview

SEFAA is an impact investment facility managed by Sahel Capital that provides growth capital to agribusinesses that improve livelihoods for smallholder farmers and underserved groups. It targets investment tickets in the **hundreds of thousands to low millions of dollars** range depending on the deal and structure

Considerations

Proposed financial support

Grolink could seek **growth capital and structured support** to finance cluster commercialisation, including shared service delivery capability and the working systems that enable farmers to adopt better inputs and route sales through formal channels

Strategic fit

SEFAA backs businesses that deliver measurable improvements for **smallholder farmers**, and Grolink's cluster model directly targets farmer outcomes through **input access, technical support, and market linkage discipline**

Examples of SEFAA beneficiaries



KKL secured a US\$2.4m working capital to finance cocoa procurement from over 100,000 smallholder farmers through cooperative structures



Tomato Jos secured impact financing to strengthen smallholder-linked tomato processing in Nigeria, partnering with farmer groups to boost productivity, quality, and market access

Engagement plan

- 1 Submit a short investment teaser that explains the cluster model, unit economics, and farmer impact logic
- 2 Run a diligence sprint with SEFAA that validates governance, collections controls, and operational execution capability
- 3 Agree on an instrument that matches cashflow reality, with milestones tied to cluster expansion and repayment performance

Preparation for engagement

Elements to enhance credibility

- Clear **collections and cash flow control design**, showing how repayment is enforced through structured routes to market
- Cohort-level evidence that productivity and profitability improve with adoption, supported by farm records and cluster monitoring
- Implementation plan that shows how quality and service consistency are maintained as clusters scale

Materials

- Investment deck and financial model. Cohort performance data and operational playbook
- Governance documents and management biographies
- ESG and safeguarding approach suitable for smallholder operations

Funding Overview

FISH4ACP is a multi-year FAO-led programme that supports fisheries and aquaculture value chains in Africa, the Caribbean, and the Pacific with **technical assistance and targeted upgrading support** to improve productivity, sustainability, and jobs. In Nigeria, it supports **farmed catfish value chain upgrading**, including support to clusters and market linkages

Considerations

Proposed financial support

Grolink could partner with FISH4ACP to deliver an **upgrade package** for a priority catfish cluster, covering **governance formalisation, quality and traceability practices, and shared infrastructure**

Strategic fit

Grolink's cluster model is designed to translate productivity improvements into **bankable farmer cashflows** and more reliable supply for processors and buyers

Best fit pathway

- Grolink positions itself as an **implementing and delivery partner** for an upgrade package under the Nigeria catfish work, anchored on measurable farmer outcomes and cluster-level systems such as traceability, quality control, and service delivery. This aligns with FISH4ACP's documented Nigeria catfish support footprint

Engagement plan

- 1 Request a working session with the FAO FISH4ACP Nigeria team to confirm priority clusters and entry requirements
- 2 Submit a short concept note that defines the cluster, baseline, upgrade package, and measurable outcomes for farmers and processors
- 3 Agree on an implementation plan that clarifies roles, co-funding expectations, and delivery milestones

Preparation for engagement

Elements to enhance credibility

- Clear description of the **cluster boundary and governance**, showing who is in and who enforces rules
- Measurable **productivity and quality baseline**, with survival and growth targets and a traceability approach
- Include evidence that Grolink can enforce **repayment controls** through structured sales and reporting discipline

Materials

- Cluster concept note with baseline and targets
- Operating model and governance documents for the cluster
- Implementation plan with milestones and partner roles
- Simple budget linked to delivery milestones

C| Potential input financiers for Grolink farmers have been identified based on pilot investment alignment

COMMERCIAL BANK WORKING-CAPITAL LOAN

 Major focus
  Minor focus
 High¹  Medium  Low 

Financier	Alignment ²		Average interest rate	Rationale	Priority
	AG ³	Africa			
NIRSAL Plc – Credit Guarantees and Risk Sharing (with partner banks)			Up to 75% guarantee (loans up to NGN50 m common)	NIRSAL (a CBN-backed institution) doesn't lend directly but makes banks comfortable lending to agri firms by guaranteeing 75% of the loan principal. As of 2025, NIRSAL had facilitated NGN70 billion+ in agribusiness loans through commercial banks. By de-risking loans, it effectively enables more favourable terms (often around 9–15% interest instead of 25%+)	
Smallholder Farmers Fund – BOA			Varies by individual/SME size	In September 2025, the Bank of Agriculture and Afreximbank signed a landmark agreement to mobilise up to \$1 billion for the National Smallholder Farmers Fund. This fund is a revolving matching fund in partnership with state governments	
Bank of Industry – BOI Smallholder Farmer Cluster Financing			9–10% per annum with term loans for up to 5 years (loans up to NGN10 bn)	Bank of Industry (BOI) has a dedicated cluster farming support model known as the Smallholder Farmer Cluster Financing (SFCF) Product. The model focuses on the entire Agric Value Chain, providing financing for inputs, equipment, and processing rather than just primary production	
LAPO and Other Microfinance Banks – Agric Loan Products			~2–3% monthly (effective ~24–36% p.a.); short-term	Several Nigerian microfinance institutions (e.g. LAPO MfB) have tailor-made agric loan products for inputs, often with grace periods. e.g., LAPO offers seasonal loans to fish farmers with repayment aligned to harvest, albeit at ~2.5% monthly. These rates (~30% p.a.) are higher than desired, but MFIs require little collateral and are accessible quickly	
Anchor Borrowers' program (ABP) – via Grolink as an Anchor			9% interest; input loans in kind; repayment post-harvest	The CBN has officially stopped processing new applications under previous intervention programmes, with a new board inaugurated December 10, 2025, focused on revamping the existing interventions	
Agricultural Credit Guarantee Scheme (ACGSF) – Small Farmer Loans			5%–9% interest (loans up to NGN50m, 75% guarantee)		

1. High: clear, active focus and repeat activity; Medium: adjacent focus or indirect exposure; Low: limited evidence of focus // 3. Alignment reflects evidence of active programs or repeat transactions in (i) agriculture, (ii) aquaculture, and (iii) Africa // 3. Agriculture

Source: [ABP](#); [FISH4ACP](#); [NIRSAL](#); [ABP](#); [BOI](#)

C| Potential engagement plan for Grolink with NIRSA

Funding Overview

NIRSA offers a Credit Risk Guarantee product that reduces bank risk when lending to agriculture businesses by providing guarantee cover on eligible facilities, covering up to **30–75% depending on the structure**. The guarantee supports credit access, but the lending rate is still set by the bank. **The bank requests 110%–120% collateral on the loan amount**, leaving the customer to provide the 60–70% after NIRSA's guarantee. There's an additional management fee of 1% of the loan paid to NIRSA by the customer

Considerations

Proposed financial support

Grolink could request a CRG-supported bank facility that finances input costs and working capital for an aquaculture cluster model, with repayment anchored in structured collections from aggregated fish across the cluster

Strategic fit

The guarantee aligns because it addresses bank risk constraints coupled with the commercial cluster repayment structure to reduce default probability and improve lender confidence in aquaculture lending

Best fit pathway

- **Grolink acts as the Anchor for the loan** needed for farmers input financing across the cluster commercialisation

Engagement plan

- 1 Confirm the bank sponsor (e.g., StanbicBTC, Nova Bank, Union Bank, etc) and facility structure that best fits aquaculture production cycles
- 2 Submit a bank credit pack that demonstrates repayment controls, reporting, and operating SOPs
- 3 Align monitoring triggers and early warning mechanisms with the lender

Preparation for engagement

Elements to enhance credibility

- **Collections and repayment discipline** evidenced by a clear waterfall and reporting cadence
- **Bankable operating controls** including QA, biosecurity, and traceability
- **Demand backed cash flow logic** supported by real customer pipeline evidence

Materials

- Bank credit pack, financial model, sales pipeline evidence, operating SOPs, risk register

C| Overview of Bank of Industry Product offerings for the Agriculture sector



NON-EXHAUSTIVE

Overview

The Bank of Industry (BOI) is Nigeria's leading development finance institution, providing long-term financing to priority sectors, including agriculture

Relevant product offering



Smallholder financing

BOI finances smallholders through an anchor/aggregator model, where the aggregator borrows and on-lends to farmers in-kind (inputs and services)



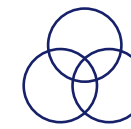
Agro-processor financing

BOI provides term loans for equipment, facility expansion, and cold-chain infrastructure, alongside working capital facilities for input procurement and seasonal operations. These are suited to processors, feed mills etc.



Energy & climate financing

BOI offers concessional renewable energy financing, including solar solutions, to support reliable power, energy efficiency, and climate-smart infrastructure for agribusinesses



Bundled financing solutions

BOI can combine multiple facilities (e.g., term loans, working capital, solar financing) into a tailored package to optimise overall cost of capital

For discussion

- BOI product offerings, applicable interest rates, and eligibility criteria
- Next steps

C| Potential engagement plan for Grolink with the Bank of Industry

Funding Overview

Bank of Industry's **Smallholder Farmer Cluster Financing product** is designed to finance agriculture value chain clusters through **intermediaries that act as farm aggregators**. The published terms include **10% per annum** interest, a **maximum tenor of 36 months** with up to **12 months moratorium**, and a **single obligor limit of up to NGN 10 billion**, with security that includes a **100% bank guarantee** and **guaranteed off-take agreements covering at least 50% of the facility**

Considerations

Proposed financial support

Grolink could seek a Cluster Financing facility to fund **feed and fingerling packages** for farmers, with repayment structured through **closed-loop controls** tied to verified input delivery and sales collections through the aggregation channel

Strategic fit

This facility aligns with Bank of Industry's MSME and agriculture value chain mandate because Grolink operates as a **farm aggregator** that can expand access to affordable inputs for smallholders

Best fit pathway

- **Aggregator borrower route** where Grolink participates as the intermediary farm aggregator financing clustered farmers across the value chain segments
- **Offtake anchored structure** where Grolink secures bankable offtake agreements for at least half of the facility and aligns collections with sales proceeds through the aggregation channel

Engagement plan

- 1 **Confirm eligibility and structure fit with BOI** by positioning Grolink as the farm aggregator intermediary targeted by the product and aligning the facility to the published SFCF terms
- 2 Agree repayment controls using offtake linked deductions and transparent records
- 3 Launch a cohort then scale based on repayment and productivity results

Preparation for engagement

Elements to enhance credibility

- **A borrower eligibility framework** that is auditable and repeatable
- **A closed loop repayment mechanism** through controlled sales channels and transparent deductions
- **A monitoring plan** that tracks production and cash flows across cycles

Materials

- Pilot term sheet, borrower screening tools, distribution and repayment controls, monitoring dashboard



Cluster commercialisation

- Pilot design
- Financing

- **Pilot update**

Genetics improvement

Tech-enabled fish sales platform

Government interventions

Next steps

Pilot progress update for the cluster commercialisation investment idea



Pilot started



Preparation in-progress



Not started

Pilot description

GROLINK

Formalise about 700 to 1,200 catfish farmers into a commercial cluster by unlocking about \$2.6m in input financing per production cycle, and lift productivity through improved FCR and survival rate. Tentative start date for pilot is **April 2026**



Status

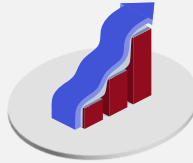
Engagement with financiers has commenced for farmer working capital

Grolink has prioritised cluster sites and is currently engaging stakeholders on farmer formalisation and financing

Pilot Description

The pilot will formalise production and market relationships for multiple clusters of catfish farmers across Kwara and Delta, while structuring input financing and extension support to lift productivity and reliability of supply

Pilot Objectives



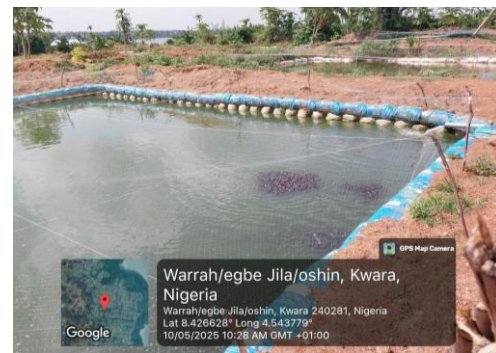
14%
improvement in FCR,
from **1.4 to 1.2**



30%
increase in survival rate,
from **70% to 90%**



Grolink is engaging farmer groups and financiers¹ to structure cluster governance and financing





Cluster commercialisation

Genetics improvement

- Pilot design
- Financing
- Pilot update

Tech-enabled fish sales platform

Government interventions

Next steps

Dimension	Description
 Pilot design	Four key design elements were developed for the genetic improvement pilot: – Target market and customer segmentation: defined three priority customer groups: commercial farmers, catfish clusters, and hatcheries – Value proposition and positioning: anchored on increased profitability due to faster growth rates and improved FCR, higher survival, and more reliable seed supply – Pricing strategy: premium pricing for commercial farms and hatcheries, with slightly lower pricing for clusters to support adoption – Marketing and sales strategy: identified awareness-building, trust and credibility measures, farmer conversion activities, and ecosystem partnerships to drive uptake
 Financing	Five relevant financiers were identified across three financing options for Spring Harvest: – Catalytic grants and technical assistance for pilot OPEX: best fit for “public good” elements such as genetic improvement, biosecurity systems, and farmer adoption evidence of improved catfish; relevant financiers are Aqua-Spark, Gates Foundation and Global Innovation Fund – Blended finance: can fund commercialisation and job creation projects through milestone-based support; relevant financier is Aqua-Spark – Commercial bank working-capital loan: offers the fastest path to liquidity if guarantee coverage and documentation are robust, and is scalable with cash flow growth and proven performance; relevant financiers are NIRSAL and FCMB
 Pilot update	• Pilot preparation is in progress, with a tentative start date of May 2026. Spring Harvest has completed site acquisition for expansion, construction is underway, and the business is engaging potential donors for the pilot • The next 60 days will focus on three priorities: advance financing discussions with identified financiers; identify and select improved catfish strains for import; and progress construction of the breeding nucleus and hatcheries



Cluster commercialisation

Genetics improvement

- **Pilot design**

- Financing
- Pilot update

Tech-enabled fish sales platform

Government interventions

Next steps

Various core elements are required to define a go-to-market strategy

NON-EXHAUSTIVE

Element¹

1 Target market and customer segmentation



Description

A clear definition of the priority customer segments based on their needs, pain points, and purchasing behaviours

2 Value proposition and positioning



The unique value delivered to target customers and the differentiation of the offering relative to competitors

3 Pricing



The pricing approach and structure (e.g., tiers or packages) designed to align with customer willingness to pay and support revenue objectives

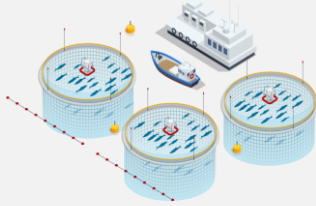
4 Marketing and sales strategy



The channels and approaches used to build awareness, generate demand, and deliver the product or service to customers

1. Three customer segments with distinct needs and behaviours form the core focus of the genetic improvement programme

1. Commercial farmer



2. Catfish cluster



3. Hatchery



Description

Operate **medium to large-scale fish farms** (typically 5–50+ ponds¹ or tanks)

Smallholder farmers² located in the same geographic area, often organised through **cooperatives and clusters**

Produce **catfish fingerlings for sale to farmers**

Needs

- Affordable high-quality fingerlings with fast growth rates
- High survival rates to reduce losses
- Reliable supply of fingerlings throughout the year

- Access to high-quality broodstock
- Improved breeding performance
- Higher hatch rates and survival of fry
- Farmer trust in product quality

Purchasing behaviour

- Buy fingerlings multiple times in a year
 - Prefer suppliers with proven performance and rely on word-of-mouth recommendations
 - May be willing to pay a premium for better-performing stock
- Often purchase in bulk through cooperatives or clusters
 - More price-sensitive than commercial farms

- Purchase broodstock annually or ad hoc
- Interested in long-term supplier relationships

Pain points

- Inconsistent fingerling quality reduces growth and survival
 - Limited access to reliable suppliers
- Inconsistent access to affordable, quality fingerlings
 - High price sensitivity limits uptake of improved stock

- Limited access to quality broodstock
- Low farmer trust due to inconsistent product quality

1. Stocking in ponds is typically staggered throughout the year, ensuring fish are present at different stages of the growth and production cycle

2. A smallholder farmer produces 6 metric tons or less of fish per year.

2. The genetic improvement programme offers key value propositions across customer segments

 High

 Medium

Value proposition		Description	Relevance			
			Commercial farmer	Catfish clusters	Hatchery	
1	Increased profitability		Faster growth rates (15–25% ¹) and improved FCR (from 1.4–1.2 ¹), enabling shorter time to market and lower costs			
2	Higher survival rates		Stronger disease resistance resulting in lower mortality (from 30% – 10% or less) and more predictable harvest outcomes			
3	Supply consistency		Consistent and dependable supply , reducing sourcing uncertainty and reliance on less reputable hatcheries			

¹ Potential uplift

Source: Press search, stakeholder conversations

3. Pricing strategy can be tailored to different customer segments based on their key characteristics

Customer type	Pricing strategy	Rationale	Illustrative pricing benchmark	
Commercial Farmers 	Premium above standard market fingerlings (e.g. 10–20%)	Commercial farmers prioritise performance and profitability and could accept higher pricing for higher productivity gains	Type	Current cost¹ Illustrative premium cost²
Catfish Clusters 	Slightly lower than commercial farm price (e.g. 5%) Discounts for bulk orders	Clusters are more price-sensitive but purchase in larger volumes; pricing should incentivise group purchases	Fingerlings	N65– N70/3–5g N71.5– N84/3–5g
Hatchery 	Premium pricing reflecting improved broodstock genetic value (e.g. 10–25% above market rate)	Hatchery operators purchase broodstock periodically and prioritise performance , and could be willing to pay a premium to enhance fingerling quality	Broodstock	N10,000 – N12,000/kg N11,000 – N15,400/kg

- **Market entry pricing** can be set at the **market rate or up to 10% below** it to encourage early adoption during the pilot
- However, any discount should be clearly communicated to ensure transparency about the product's true value

¹ Current cost based on going rates in Kwara states. To be validated with local market testing; prices vary by supplier, fish size, geography, and volume.

² Illustrative costs are based on the assumed benefits to farmers; however, the final premium cost should be validated against pilot results

4. Various marketing activities can be employed to raise awareness and drive demand

NON-EXHAUSTIVE

1. Awareness & demand generation



- **Data-driven content marketing** targeted at farmer groups and hatcheries, highlighting improved performance
- **Targeted physical and digital marketing** e.g., WhatsApp groups and Facebook communities

2. Trust & credibility building



- **Farmer testimonials** and pilot evidence demonstrating improvements in key metrics
- **Certification and branding programme** (e.g., Spring Harvest Hatchery Partner)
- **Partnerships with aquaculture research institutions**

3. Farmer adoption & conversion



- **Farmer extension / training workshops** on improved genetics and best practices
- **Referral incentives** to drive word-of-mouth adoption
- **Demonstration ponds** for farmer training purposes

4. Scale & ecosystem partnerships



- **Collaboration with government** and development programmes to scale access to improved fingerlings
- **Targeted partnerships with farmer associations** to expand outreach and coordinate group adoption



Cluster commercialisation

Genetics improvement

- Pilot design

• **Financing**

- Pilot update

Tech-enabled fish sales platform

Government interventions

Next steps

Five relevant financiers across three financing options have been identified for Spring Harvest

Deep dive follows

Financing options	Pros	Cons	Relevant financiers
A Catalytic grants and technical assistance (TA) for pilot OPEX 	Best fit for “public good” elements (genetic improvement, biosecurity systems, farmer adoption evidence of improved catfish) Non-dilutive, reduces cash burn and lowers total pilot risk	Slower cycles, heavy compliance and reporting - Often restricted cost categories and may not fully cover routine operations	 
B Blended finance 	Can fund commercialisation and job creation projects - Milestone-based support	- Competitive Timing uncertainty and compliance load	
C Commercial bank working-capital loan 	Fastest path to liquidity if guarantee coverage and documentation are robust Scalable in line with cash flow growth and proven performance	Requires collateral, covenants, and robust cash-cycle discipline Pricing may remain high without strong de-risking, and renewals depend on portfolio performance	 

A| Potential grant financiers for Spring Harvest have been identified based on pilot investment alignment (1/2)

CATALYTIC GRANTS AND TECHNICAL ASSISTANCE FOR PILOT OPEX

 Major focus
  Minor focus
 High¹  Medium  Low 

Financier	Alignment ²		Average ticket size	Rationale	Priority
	AG ³	Africa			
Gates Foundation (direct grants)			Multi-year, multi-million (varies)	Gates Foundation funds large-scale agriculture and food systems programs across Africa, including aquaculture productivity and fish genetics work delivered through international partners. Spring Harvest is best positioned as a Nigerian implementation partner under an active Gates-supported programme that needs local hatchery delivery, field sites, and adoption execution	
Global Innovation Fund (GIF) (staged grants/investments)			\$50k–\$230k (Pilot grants); up to \$2.3 m (scale-up)	GIF supports social innovations worldwide (incl. Africa). It backed One Acre Fund's scale-up to reach 1 million+ African farmers. Ideal for early-stage agri-tech pilots – e.g. Spring Harvest could seek ~\$200k to prove its model before larger investment. However, competition is global, and agri is one of many sectors	
Mastercard Foundation – Fund for Resilience and Prosperity (FRP)			~\$0.5 million–\$2.5 million per award	FRP's Agribusiness Challenge Fund targets agribusiness solutions for resilience/prosperity. It explicitly lists grant ranges up to \$2.5 million and focuses on African agri-SMEs. This could potentially cover Spring Harvest's ~\$0.8–1.5 million needs via a single award or multiple calls	
IDH – Sustainable Trade Initiative (Value Chain Grants and TA)			€500k–€2 million (typical co-funding)	IDH is scaling its value chain programmes in Nigeria (including grains and aquaculture) as of 2026. The organisation provides grants alongside technical assistance to agribusinesses and technology providers to catalyse innovation. With a strong focus on Nigeria and aquaculture identified as a high-potential sector, IDH could be a potential financier. However, beneficiaries are required to co-finance at least 50% of total project costs	
Africa Enterprise Challenge Fund (AECF) (grants and repayable grants)			Up to ~\$1.5 million	AECF finances African agribusinesses via competitive calls. Documentation shows grants reaching the \$1–1.5 million range. Notably, AECF launched a "Blue Economy" window for aquaculture enterprises, visible aligned window is currently Kenya focused, so near term eligibility for a Nigeria catfish genetics pilot is uncertain unless a Nigeria eligible call opens or Spring Harvest joins an eligible consortium	

1. High: clear, active focus and repeat activity; Medium: adjacent focus or indirect exposure; Low: limited evidence of focus // 3. Alignment reflects evidence of active programmes or repeat transactions in (i) agriculture, (ii) aquaculture, and (iii) Africa // 3. Agriculture

Source: [Gates Foundation](#); [IKEA](#); [GPP](#); [FRP](#); [ARAA](#); [AECF](#); [ACCF](#); [CFYE](#); [GIF](#); [YEFFA](#); [SKOLL](#); [IDH](#)

A| Potential grant financiers for Spring Harvest have been identified based on pilot investment alignment (2/2)

CATALYTIC GRANTS AND TECHNICAL ASSISTANCE

 Major focus
  Minor focus
 High¹
 Medium
 Low

Financier	Alignment ²		Average ticket size	Rationale	Priority
	AG ³	Africa			
Skoll Foundation (social enterprise grants)			~\$1.5–\$2 million (often over 3 years)	Skoll backs transformative social enterprises. In 2025, Skoll invested in Nigerian agri ventures like Babban Gona. While Skoll's focus is global, its funding of a Nigerian farmer cooperative model indicates interest in agri-food solutions. Spring Harvest could attract Skoll's attention as a high-impact, scalable model when business maturity is achieved, and the model is proven, as one of the key requirements of Skoll	
Challenge Fund for Youth Employment (CFYE) – Nigeria Window			≥ €200k (matching required 1:1)	A Dutch-funded challenge that will fund agribusinesses only if they create verifiable jobs. Nigeria calls require at least €200k co-investment, matched by the programme. Spring Harvest could leverage it if job creation (especially for youth/women) is central, but funding is contingent on meeting stringent employment targets of at least 500	
ECOWAS/ARAA “DeSIRA” Calls (West Africa R&I grants)			Call-dependent (e.g. €150k–€230k per partner in consortium)	Regional innovation calls (often EU-funded) that support applied agri research and adoption. A recent West Africa agroecology call had a €150k–€230k budget per project partner. Spring Harvest could join such consortia as an implementation partner/testbed in Nigeria, however, timing for the next challenge remains uncertain	
AGRA – YEFFA Program (Young Entrepreneurs in Agribusiness Fund)			~\$100k–\$500k (SME grants)	Alliance for Green Revolution in Africa's facility for youth-led agribusinesses. It offers organisational grants (often up to a few hundred thousand USD). Given aquaculture's labour-intensive nature and youth involvement, Spring Harvest could qualify, however, Designated lower priority given the pending launch of the Nigeria window	
IKEA Foundation (grants for livelihoods/food systems)			Multi-million funding (€3.5m to over €30m)	Provides large grants for sustainable agriculture in Africa. e.g., A 2024 partnership integrating regenerative agriculture in East Africa received €8 million from IKEA. Depending on the chosen partner, offers a combination of technical assistance and grant funding. Operates through partner-based contributions , without accepting individual applications	

1. High: clear, active focus and repeat activity; Medium: adjacent focus or indirect exposure; Low: limited evidence of focus // 3. Alignment reflects evidence of active programs or repeat transactions in (i) agriculture, (ii) aquaculture, and (iii) Africa // 3. Agriculture

Source: [Gates Foundation](#); [IKEA](#); [GPP](#); [FRP](#); [ARAA](#); [AECE](#); [ACCF](#); [CFYE](#); [GIF](#); [YEFFA](#); [SKOLL](#); [IDH](#)

A| Potential engagement plan for Spring Harvest with the Gates Foundation

Funding Overview

The Gates Foundation funds large-scale agriculture and food systems work across Africa. Grant sizes vary widely and can be multi-year and multi-million, so Spring Harvest is most likely to access funding through a partner-led route or as an implementation partner on an existing grant

Considerations

Proposed financial support

Spring Harvest could seek \$800k to launch and validate the Nigeria catfish genetic improvement pilot, covering time-bound operating costs for the breeding nucleus, hatchery operations, founder broodstock, and adoption evidence generation

Strategic fit

This pilot directly addresses a binding productivity constraint in Nigerian aquaculture, by building a scalable seed system and adoption pathway that improves farmer performance and strengthens food security outcomes

Best fit pathway

- **Implementation partner route through an active Gates supported aquaculture genetics programme in Nigeria** e.g., Gates working with WorldFish on fish genetics transfer and productivity work in Nigeria through local sector partners
- Direct program engagement where Spring Harvest is introduced via a credible intermediary

Engagement plan

- 1 Identify the most relevant active Gates grantees in aquaculture and food systems with work in Africa or Nigeria and map a partner route
- 2 Share a short concept note and milestone budget that clearly separates pilot operations from scale expansion
- 3 Propose a subgrant or implementing partner structure with clear deliverables and reporting

Preparation for engagement

Elements to enhance credibility

- **Execution readiness** demonstrated by completed technical design and already funded core assets
- **A measurable pilot plan** with defined cycles, output volumes, and adoption targets
- **Strong operating controls** including biosecurity, broodstock management, and traceability standards for certified multipliers.

Materials

- Concept note, milestone budget, implementation plan, monitoring and evaluation framework, governance and safeguarding pack, partner letters of intent

A| Potential engagement plan for Spring Harvest with the Global Innovation Fund

Funding Overview

Global Innovation Fund (GIF) provides staged financing to test and scale evidence-based innovations, offering grants at early stages and larger follow-on capital for scaling when results are proven. Funding amount depends on stage and diligence outcomes. Spring Harvest could therefore position the genetics pilot as a rigorous evidence generating intervention with a clear path to scale

Considerations

Proposed financial support

Spring Harvest could seek catalytic funding (\$50–\$230k) for a pilot validation that measures genetics-linked productivity outcomes and adoption willingness to pay, creating an evidence pack that supports follow-on scale financing

Strategic fit

The pilot aligns with the fund's mandate, as it seeks to validate an innovation designed for scale through a multiplier hatchery network, while delivering measurable improvements in farmers' livelihoods

Examples of GIF's beneficiaries



GIF has invested in Babban Gona in Northern Nigeria. This model provides end-to-end services (inputs, training, storage) to smallholders, which is a blueprint for the "Test and Transition" or "Scale" stages Spring Harvest could aim for

Engagement plan

- 1 Submit a concept aligned to the fund's investment criteria and evidence requirements via the GIF portal
- 2 Provide a measurement plan that can credibly attribute outcomes to improved seed
- 3 Prepare for diligence on economics, implementation capacity, and safeguarding
- 4 Request for follow on financing after the pilot milestones are achieved

Preparation for engagement

Elements to enhance credibility

- **A credible evidence design** including baseline, comparison approach, and data integrity controls
- **A scale mechanism** through certified hatcheries and repeat purchase loops
- **Operational readiness** that shows the pilot can start immediately once funded

Materials

- Concept note, evidence plan, budget, implementation plan, governance and safeguarding pack

Potential blended financing options for Spring Harvest have been identified based on pilot investment alignment (1/2)

BLENDING FINANCE

 Major focus
  Minor focus
 High¹

 Medium
 
 Low
 

Financier	Alignment ²		Average ticket size	Rationale	Priority
	AG ³	Africa			
Aqua-Spark (Aquaculture Investment Fund)			~\$1–3 million equity per deal	World's leading sustainable aquaculture fund; actively investing in African fish startups. E.g., Aqua-Spark led a \$1.7 million investment in Kenya's AquaRech fish farming platform. Germany's BMZ recently committed €15 million to Aqua-Spark's Africa Fund – indicating a major pool dedicated to African aquaculture growth	
Smallholder Farmers Fund – BOA			Varies by individual/SME size; aims to be accessible to small operators	In September 2025, the Bank of Agriculture and Afreximbank signed a landmark agreement to mobilise up to \$1 billion for the National Smallholder Farmers Fund. This fund is a revolving matching fund in partnership with state governments While commercial rates are currently 30%+, this fund targets "single-digit" or "low double-digit" rates (typically 9% to 15%) because it is blended with Afreximbank's lower-cost capital	
Heifer International – AYUte (Impact Investments for Youth in Ag-Tech)			~\$1 million (venture funding)	An NGO blending philanthropy and investment to scale agri innovations. In 2022, Heifer invested \$1 million in Nigeria's Hello Tractor to finance farm equipment for entrepreneurs. This "Pay-as-You-Go" tractor finance helped 17 agripreneurs acquire tractors, repayable via farm service income. AYUte is positioned around scalable agritech innovation, and its showcased champions include platform models such as Hello Tractor, which signals a bias toward broad service platforms rather than species-specific genetics programs	
Agri-Business Capital (ABC) Fund (IFAD/EU blended fund)			\$25k–\$1 million (debt or equity; ~8–12% interest)	The ABC Fund is an IFAD and EU-supported blended finance facility that provides debt and equity to agri SMEs through partner funds, depending on the intermediary and instrument. e.g., In 2020, it lent €395,653 to a Ghanaian sweet potato company for working capital and expansion at a 10% interest rate. The fund, however, has a requirement of being operational for at least 2 years, minimum revenue of €180,000	

1. High: clear, active focus and repeat activity; Medium: adjacent focus or indirect exposure; Low: limited evidence of focus // 3. Alignment reflects evidence of active programmes or repeat transactions in (i) agriculture, (ii) aquaculture, and (iii) Africa // 3. Agriculture

Source: [Aquarech](#); [Aquaspark](#); [Grofin](#); [Root Capital](#); [Heifer](#); [Acumen](#); [Acumen 2](#); [ABC Fund](#); [BOA](#)

Potential blended financing options for Spring Harvest have been identified based on pilot investment alignment (2/2)

BLENDED FINANCE

 Major focus
  Minor focus
 High¹

 Medium
  Low

Financier	Alignment ²		Average ticket size	Rationale	Priority
	AG ³	Africa			
GroFin – SGB Fund (SME Loans with TA)			\$100k–\$1.5 million loans (~10–15% interest)	A specialized SME financier operating in Nigeria and across Africa. GroFin provides business loans in the \$100k–\$1.5M range with medium-term tenors across different sectors. It has invested in over 700 African SMEs, creating ~88k jobs. Notably, GroFin Nigeria has supported agribusiness clients and even hosted workshops for women agro-entrepreneurs	
Root Capital (Nonprofit Agricultural Lender)			\$200k–\$2 million loans (flexible rates)	Provides affordable, flexible loans to agricultural enterprises in underserved markets. Since 1999, Root has lent over \$1.5 billion to 740+ agri-businesses, with loan sizes ranging from \$200k–\$2M. They partner with buyers and donors to keep rates in the single digits. e.g., Root's loans helped West African farmer co-ops (coffee, cocoa) grow while raising farmer incomes. Typically, your business must have at least \$250,000 to \$500,000 in annual revenue	
Acumen Resilient Agriculture Fund (ARAF) (Social VC Fund)			~\$0.5–\$1.5 million (patient capital)	ARAF is an Acumen-managed impact fund focused on African agri-businesses adapting to climate change. Acumen has a history of early-stage investments in African agri ventures, e.g., \$2.1 million in Western Seed, Kenya, to scale drought-tolerant seeds	

1. High: clear, active focus and repeat activity; Medium: adjacent focus or indirect exposure; Low: limited evidence of focus // 3. Alignment reflects evidence of active programmes or repeat transactions in (i) agriculture, (ii) aquaculture, and (iii) Africa // 3. Agriculture

Source: [Aquarech](#); [Aquaspark](#); [Grofin](#); [Root Capital](#); [Heifer](#); [Acumen](#); [Acumen 2](#); [ABC Fund](#)

B| Potential engagement plan for Spring Harvest with Aqua Spark

Funding Overview

Aqua Spark is an impact-oriented aquaculture investor that provides growth capital to scalable aquaculture businesses, typically through equity or structured investment rather than grants. Ticket sizes vary by deal and stage; therefore, Spring Harvest could engage after pilot proof points are strong and the commercialisation model is ready for investor diligence

Considerations

Proposed financial support

Spring Harvest could seek growth capital to scale production and distribution of genetically improved catfish seed once pilot results demonstrate repeatable performance and strong customer adoption

Strategic fit

The opportunity aligns because improved seed systems are a direct lever for sustainable aquaculture productivity and the business can scale through a certified hatchery network without degrading genetic quality

Examples of Aqua Spark beneficiaries



Aquarech, a Kenya-based aquaculture technology company, secured investment in 2023 as part of a \$1.7 million seed round that included Aqua-Spark

Engagement plan

- 1 Share a concise investor memo with pilot readiness and scale plan
- 2 Provide unit economics, risk controls, and governance
- 3 Align on investment structure and diligence process

Preparation for engagement

Elements to enhance credibility

- **Clear traction and repeat purchase evidence** from pilot customers
- **Strong operating controls** for biosecurity, broodstock management, and hatchery certification
- **A disciplined expansion plan** that sequences geography and partner onboarding

Materials

- Investor deck, three statement model, use of proceeds, governance pack, operating KPIs

Potential loan options for Spring Harvest have been identified based on pilot investment alignment

COMMERCIAL WORKING LOANS

 Major focus
  Minor focus
 High¹

 Medium
  Low

Financier	Alignment ² AG ³	Average ticket size	Rationale	Priority
NIRSAL Plc – Credit Guarantees and Risk Sharing (with partner banks)		Up to 75% guarantee (loans up to NGN50 m common)	NIRSAL (a CBN-backed institution) doesn't lend directly but makes banks comfortable lending to agri firms by guaranteeing 75% of the loan principal. As of 2025, NIRSAL had facilitated NGN70 billion+ in agribusiness loans through commercial banks. By de-risking loans, it effectively enables more favourable terms (often around 9–15% interest instead of 25%+)	
FCMB – backed by Proparco/AFD guarantees		Rates are tailored to each business's risk profile	It targets the modernisation of the agri-food sector to reduce food imports and enhance food security. In January 2025, Proparco signed a \$35 million senior credit line with First City Monument Bank (FCMB) in Nigeria. This funding is specifically earmarked for SMEs, with 90% targeted at the agricultural sector	
FISH4ACP Input Finance Initiative (EU/FAO program via banks)		NGN2–5 million per farmer (typical); ~9–15% p.a.	A value-chain programme that partners with banks to fund aquaculture clusters. Launched in 2025, it enabled 40 catfish farmers in Nigeria to access about \$105,000 (NGN80 million) in input loans through Bank of Industry and FCMB. Each farmer received roughly NGN2–5 million for feed and fingerlings, on affordable terms	
Bank of Industry – MSME Fund (FGN Presidential Intervention Fund)		Up to NGN5 million at 9% p.a. (3-year term)	In 2025, the Federal Govt. boosted a BOI-managed MSME fund, allowing small businesses to borrow up to NGN5 million at 9% interest. Over 800,000 Nigerians have benefited, including agro-processors and cluster farming support for about NGN 10bn. While NGN5m (~\$6.5k) is modest for Spring Harvest's scale, this facility could support smaller equipment purchases or be aggregated for a cooperative	
Central Bank of Nigeria – Commercial Agriculture Credit Scheme (CACS) (through banks)		Up to NGN2 billion (≈\$4 m) at 9% p.a.	The CBN has officially stopped processing new applications under previous intervention programmes, with a new board inaugurated December 10, 2025, focused on revamping the existing interventions	
Agricultural Credit Guarantee Scheme Fund (ACGSF) (Administered by NIRSAL)		Up to NGN50 million (loans ~9% p.a.)		
Anchor Borrowers' program (ABP) (CBN/NMFB input-finance scheme)		~NGN250k–NGN500k per farmer; 9% p.a. interest		

1. High: clear, active focus and repeat activity; Medium: adjacent focus or indirect exposure; Low: limited evidence of focus // 3. Alignment reflects evidence of active programs or repeat transactions in (i) agriculture, (ii) aquaculture, and (iii) Africa // 3. Agriculture

Source: [CACS](#); [NIRSAL](#); [ABP](#); [BOI](#); [FISH4ACP](#); [ACGSF](#); [ABP](#); [FCMB](#)

C| Potential engagement plan for Spring Harvest with NIRSA

Funding Overview

NIRSA offers a Credit Risk Guarantee (CRG) that covers 30–75% of eligible agricultural loans, reducing banks' exposure. However, as banks typically require collateral of 110–120% of the loan value, customers must still provide 60–70% collateral coverage after the guarantee. While the CRG improves access to credit, lending rates remain at the bank's discretion, and borrowers pay NIRSA a 1% management fee on the loan amount

Considerations

Proposed financial support

Spring Harvest could request a CRG supported bank facility that finances pilot operating costs and early scale working capital, with repayment anchored in structured collections from fingerling and broodstock sales

Strategic fit

The guarantee aligns because it addresses bank risk constraints while Spring Harvest's sales driven repayment structure and operating controls could improve lender confidence in aquaculture lending

Engagement plan

- 1 Confirm the bank sponsor (e.g., StanbicBTC, Nova Bank, Union Bank, etc.) and facility structure that best fits aquaculture production cycles
- 2 Submit a bank credit pack that demonstrates repayment controls, reporting, and operating SOPs
- 3 Align monitoring triggers and early warning mechanisms with the lender

Preparation for engagement

Elements to enhance credibility

- **Collections and repayment discipline** evidenced by a clear waterfall and reporting cadence
- **Bankable operating controls** including QA, biosecurity, and traceability
- **Demand backed cash flow logic** supported by real customer pipeline evidence

Materials

- Bank credit pack, financial model, sales pipeline evidence, operating SOPs, risk register

C| Potential engagement plan for Spring Harvest with FCMB backed by Proparco

Funding Overview

FCMB is a commercial bank with agribusiness exposure and has been publicly reported as receiving a Proparco senior credit line intended to expand SME lending including agriculture. Facility size and pricing are determined by bank appraisal, so Spring Harvest would pursue a working capital structure that is secured by disciplined repayment controls and verified cash flows

Considerations

Proposed financial support

Spring Harvest is requesting an FCMB working capital facility to fund pilot execution and early commercialisation ramp, with repayment structured against contracted sales and collections into a controlled account

Strategic fit

The facility aligns because it supports real sector SME lending in agriculture while Spring Harvest's structured cash flow controls and measurable pilot milestones reduce credit risk and improve bankability

Best fit pathway

- Direct FCMB agribusiness lending route with a structured collections account and cycle aligned repayment
- Blended structure where a guarantee such as NIRSAL CRG is layered to improve approval odds and pricing when appropriate

Engagement plan

- 1 Engage FCMB agribusiness team with a concise bank pack and repayment structure
- 2 Align tenor and monitoring to production and sales cycles
- 3 Agree covenants and reporting cadence and launch with tight monthly monitoring

Preparation for engagement

Elements to enhance credibility

- **Strong collections controls** that demonstrate repayment discipline
- **Operational readiness proof** showing that the pilot is ready to run once working capital is unlocked
- **Demand evidence** showing a real pipeline of hatchery and farmer customers

Materials

- Bank pitch pack, financial model, sales pipeline evidence, operating SOPs, risk register, governance documents



Cluster commercialisation

Genetics improvement

- Pilot design
- Financing

• **Pilot update**

Tech-enabled fish sales platform

Government interventions

Next steps

Pilot progress update for the genetic improvement programme

✓ Pilot started ✓ Preparation in-progress ✓ Not started

Pilot description

Set up a selective breeding nucleus and multiplier hatchery network to supply improved broodstock and fingerlings, and implementation has yet to commence. Tentative start date for pilot is **May 2026**

Status

SPRING HARVEST



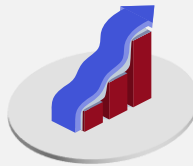
Acquisition of site for expansion completed and construction in progress

Spring Harvest is engaging potential donors for the genetic improvement pilot

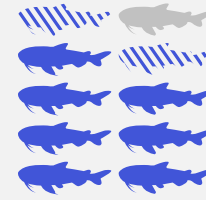
Pilot Description

The pilot focuses on launching a catfish genetic improvement programme in Nigeria, centred on establishing a selective breeding nucleus and a multiplier hatchery network to supply improved broodstock and fingerlings

Pilot Objectives



14%
improvement
in FCR, from
1.4 to 1.2



30%
increase in
survival rate,
from **70% to 90%**



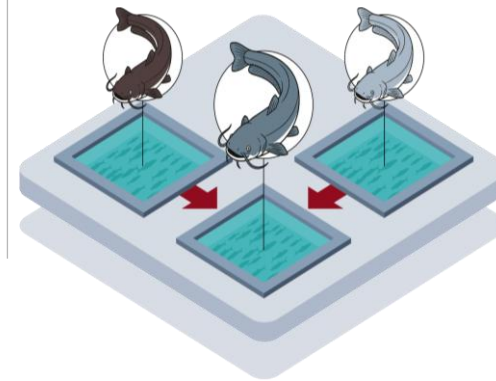
15–25%
increase in
growth rate



Genetics testing lab



Hatchery



Fish farm





Cluster commercialisation

Genetics improvement

Tech-enabled fish sales platform

- Pilot design
- Investment case

Government interventions

Next steps

Tech-enabled fish sales platform– Executive summary

Dimension	Description
 Pilot design	• Prioritisation: the tech-enabled fish sales platform was prioritised as a new investment idea through a three-step process– whitespace analysis, committee engagement, and investment idea development • Challenges addressed: It responds to a highly intermediated catfish market where 80% of farmer sales go to wholesalers, 50–68% of trades pass through two or more intermediaries, and weak handling, traceability, and weighing practices create leakage and buyer risk • Structure : The proposed model is designed to register farmer supply, lock buyer demand upfront, verify farm–gate weighing and grading, coordinate delivery, and enable rapid settlement, with clear stakeholder requirements and success metrics, including order fill rate, supply matching accuracy, visible committed supply, verified weighing compliance, delivery integrity, repeat usage, and working-capital cycle defined for pilot execution
 Investment case	• The platform could create value for both farmers and wholesalers by improving matching, reducing leakage, and simplifying sourcing. – For farmers, the model could reduce under-weighting losses and improve margins by ~N290/kg, while shortening payment cycles to immediate to 3 days; for wholesalers, verified grading and structured pickup could improve realised margins by ~N150/kg • Total funding required is ~N1 billion (~\$0.8 million) to cover capex and working capital. – Under the blended-finance base case, the project could achieve ~46% IRR, reach profitability in ~5 years, generate ~7% EBITDA margin by Year 10, and deliver ~N6 billion NPV at a 6% WACC; returns range from 39–54% IRR depending on funding structure and working-capital assumptions.



Cluster commercialisation

Genetics improvement

Tech-enabled fish sales platform

- **Pilot design**

- Investment case

Government interventions

Next steps

A three-step process was used to assess and prioritise a new investment opportunity with the Aquaculture value chain

x

Detailed next



Producer



Cluster operator



Cold chain



Processor

1. Whitespace analysis



Conducted a whitespace analysis to map unaddressed salient challenges against the identified opportunity areas

2. Committee engagement



Engaged 6 committee members to validate and prioritise the most compelling opportunities

3. Investment idea development



Consolidated Committee insights and conducted a deep dive analysis into the **tech-enabled ecosystem for market linkage**, supported by targeted analysis and relevant case studies



IDIPR – Ijebu
Development Initiative
On Poverty Reduction



AWFISHNET – Africa
Women Fish
processors and trade
network



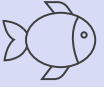
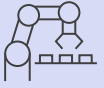
Tech-enabled ecosystem was prioritised from Committee engagements with additional new investments identified

Detailed next **Prioritisation:** ● High ● Medium ● Low

Transformation drivers:

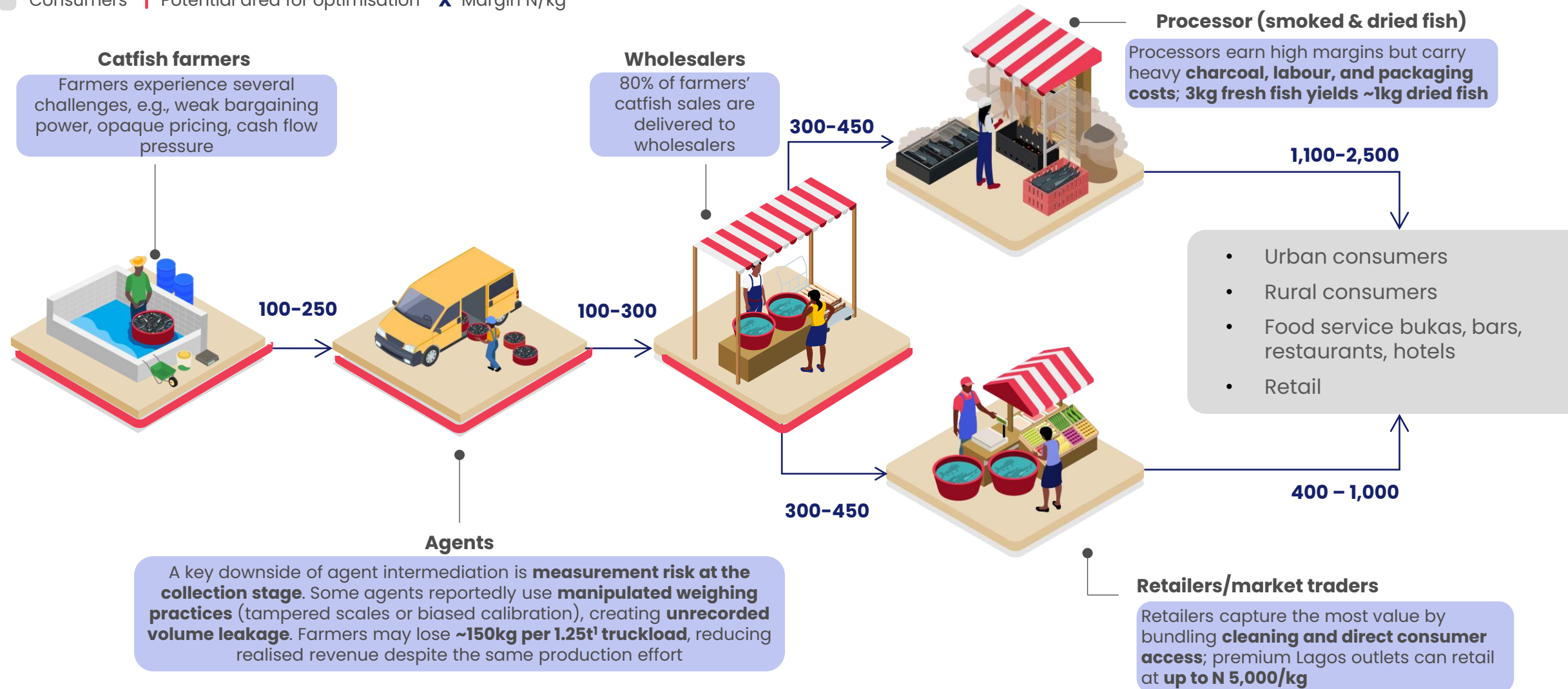
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|----------|--|----------|---|----------|---|----------|---|----------|---|----------|--|
| 1 | Lower input costs and improve feed quality | 2 | Unlock affordable credit and risk tools | 3 | Improve farm productivity through extension and tech uptake | 4 | Fix seed quality through genetics and functional hatcheries | 5 | Strengthen market linkages and transparency | 6 | Scale cold chain and value addition to serve frozen growth |
|----------|--|----------|---|----------|---|----------|---|----------|---|----------|--|

Investment ideas

	Driver	Considerations	Prioritisation
 Develop a tech-enabled aquaculture ecosystem platform	5	• Unlocks direct market access and margin uplift by aggregating supply and enabling buyers to procure reliably, lifting realised prices for farmers and improving fulfilment economics for wholesalers • Replaces agent coordination and opacity with order aggregation, verified weighing, managed dispatch, and predictable settlement	●
 Expand cold storage reach across Nigeria	6	• Enables frozen market expansion by reducing spoilage risk and extending reach to wider urban and regional markets • Requires consumer pull and market activation since live catfish remains preferred in many channels, making uptake dependent on buyer sensitisation	●
 Pilot cage culture as a higher-productivity production model	3	• Lifts production efficiency where site conditions are right and operations are tightly managed • Limits adoption to suitable water bodies since it is not applicable in many inland production zones, constraining scalable rollout	●
 Expand hatchery capacity	4	• Risks scaling low-quality seed if expansion happens without improved broodstock genetics and certification • Creates high O&M and governance risk when delivered as multi-site retrofits with fragmented ownership and weak maintenance incentives	●

Nigeria's catfish market linkages today depend on intermediaries, leading to low visibility and transparency across the value chain

■ Consumers | Potential area for optimisation X Margin N/kg



Structural gaps block direct sales from fish farmers to buyers, keeping Nigeria's catfish market intermediated

● Wholesalers ● Retailer ● Processor ● Restaurants

Current challenges	What we observe in Nigeria today	Implication for market linkage design
Fragmented supply raises transaction costs 	50–68% of catfish trades go through ≥2 intermediaries , only 32–50% go through one intermediary	Buyers want one accountable counterparty that aggregates volume and guarantees delivery, not many one-off trades
High transport mortality and post-harvest leakage 	Typical mortality is 5–10% , rising to 15–25% when fish stays longer in the chain or market before sale	Managed logistics and handling rules are non-negotiable , or buyers keep pricing in risk
Opaque pricing keeps farmers dependent 	Agents add N100–300/kg , excluding any additional logistics markup due to weak price transparency	Fast payout plus transparent pricing reduces forced discount selling and shifts trade toward repeat transactions
Weak handling and traceability increase buyer risk 	65% of actors do not use sealed containers for fish transport and often lack basic controls, reducing buyer confidence	Auditable standards and traceability are required for formal buyers to procure directly

Nigeria's catfish trade remains intermediated, as agents provide aggregation, logistics coordination, and fast cash settlement that most farmers cannot consistently offer

A market linkage solution could replicate and improve these functions, as reliable pickup, delivery, and predictable payment, enabling buyers to procure directly with confidence

Case: AquaConnect improved farmer income by bundling advisory, inputs, finance, and market linkages

aquaconnect®



Background

- **Farmers faced gaps in advisory, quality inputs**, formal finance, and market access. Digital-only tools struggled because trust and logistics require an offline layer
- AquaConnect positioned itself as a full-stack platform connecting farmers to buyers while also improving the pre-harvest layer through advisory and input access

How the ecosystem operated¹

- AquaPartners act as rural entrepreneurs providing in-person, last-mile support
- **The platform combines digital tools with a physical delivery network**, so farmers can access advisory and inputs locally
- **AquaConnect monetises via trade margins on input** and output, plus financing margin via AquaCred, rather than a single explicit marketplace transaction fee

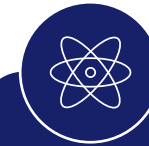
Key offering and element



- **Phygital model via AquaPartners** as the trusted last-mile interface
- **Data layer using AI and remote sensing** to improve decisions and risk visibility
- **Embedded finance orientation** to connect farmers to credit and insurance
- **End-to-end linkage ambition** across pre and post-harvest, not listings only

Impact and traction

- **Reported working with 90,000 fish and shrimp farmers** and 500-plus AquaPartners
- **Reported 4x revenue growth over 18 months** and continued emphasis on linkage plus logistics



Key learnings



Field layer is mandatory

AquaPartners makes adoption real and enforces service quality



Distribution and fulfilment are not optional

Reliability depends on inputs, delivery, and execution, not software alone



Pre-harvest consistency is a prerequisite

Repeat offtake needs a predictable supply, then marketplaces scale

¹ AquaConnect announced a USD 15m Series A with participation including Lok Capital, Louis Dreyfus Company, Omnivore, Rebright Partners, and others

Case: XpertSea (Xchange) market linkage innovation was used to reduce disputes and trigger faster buyer payments

Primary regions: Latin America and Asia (shrimp supply chains)



Background

- Shrimp farmers faced **few buyers and slow payments**, reducing bargaining power. Disputes over **quality and size** were common because verification was inconsistent
- XpertSea launched its AI marketplace proposition into the Ecuador shrimp ecosystem with visible engagement from sector leadership, including Ecuador's **National Chamber of Aquaculture**

How the ecosystem operated¹

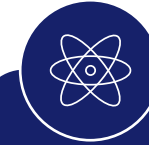
- Farmers use a **smartphone photo workflow** to standardise harvest data and list lots for processor bids
- XpertSea **guarantees the trade** and pays **80% within 24 hours**, with the balance settled shortly after
- XpertSea charges a **per trade transaction fee** that varies by **deal value, terms, and risk absorbed**

Key offering and element

- **Verified quality and size data** to reduce disputes and enable comparable pricing
- **Vetted buyer marketplace** to expand demand beyond existing relationships
- **Fast payout with risk absorption** to remove buyer payment delays for farmers

Impact and traction

- Reported over **7 million pounds traded** via the marketplace in the early months
- Reached **250 farmers** in Ecuador within the first months
- Expanded customer footprint across over **50 countries**



Key learnings



Trust in the product is key

Linkage scales when the platform standardises data and verification and reduces disputes



An underwriting engine is essential for sustainability

24-hour settlement requires the platform to price counterparty risk and recover it through fees

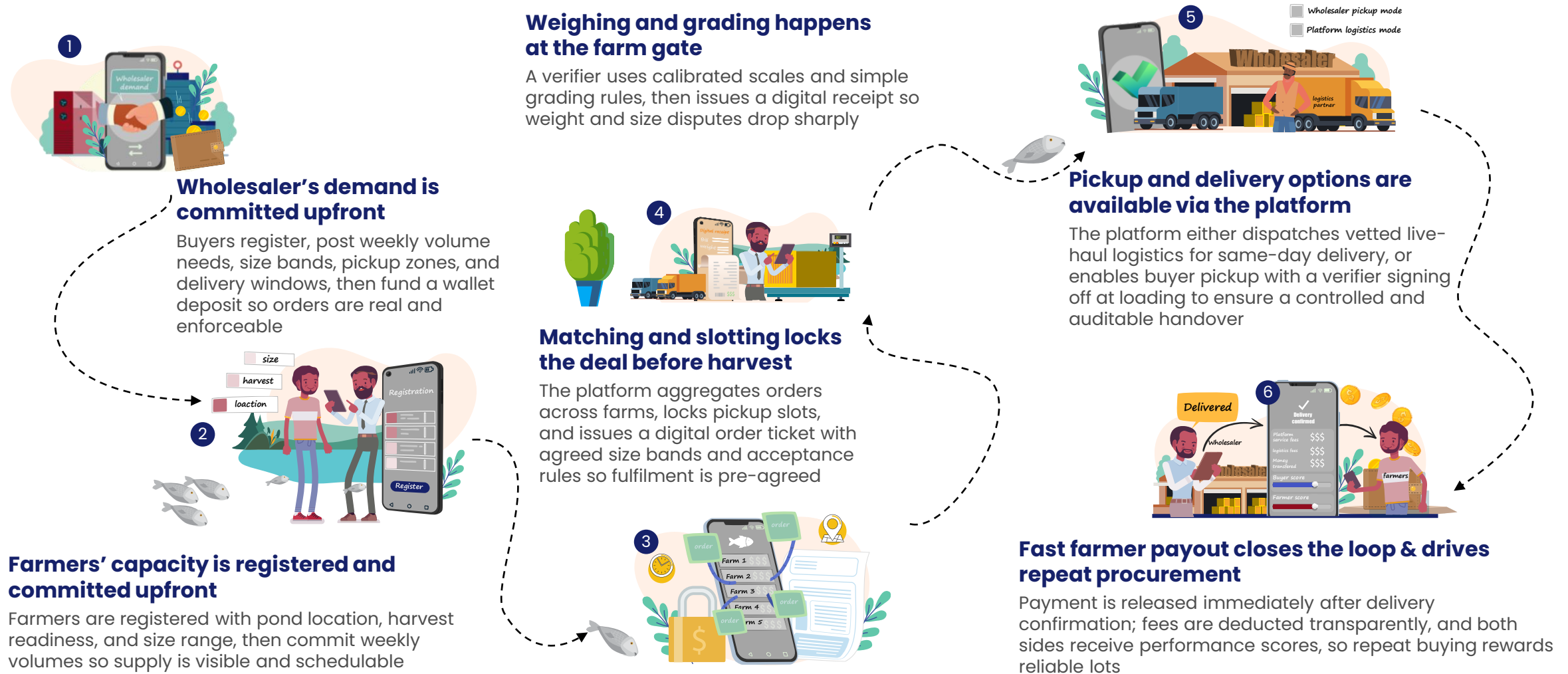


Field execution drives adoption

Results depend on operations and monitoring, not app downloads

Proposed approach for a Nigerian fish market linkage platform that works with live, fast, fragmented trade

A tech-enabled ecosystem that converts spot trade into reliable buyer procurement



Recap | The tech-enabled fish sales platform could unlock more efficient matching, easier market access and improved margins

Overview of the tech-enabled fish sales platform

Description

The tech-enabled fish sales platform:

- Expands market access for fish farmers by matching supply with verified wholesaler demand
- Ensures reliable delivery through owned logistics, certified drivers, and an agent network, improving handling and transportation efficiency

Benefits

To the farmer

Easier market access & collective selling power

Shorter sales cycles: immediate to 3 payment days, which will improve cash conversion

Improved margins

Reduced leakage from underweighing: farm-gate grading boosts average margins
~290N/kg

To the wholesaler

Precise matching

More accurate matching of specific size, type, and volume needs to farmer supply

Simplified sourcing

More efficient and simplified sourcing vs fragmented buying channels

Improved margins

Verified grading and structured pickup reduce delivery risks & mortality rates
(~150N/kg boost)

Investment required



~1Bn Naira (\$0.8Mn) total funding required over 10 years (60% capex and 40% working capital to be funded by debt over 3 yrs)

The key needs that the market linkage platform must address have been identified (1/2)

Stakeholder	Role and responsibility	Needs to be addressed by the platform	Enablers of change
 Fish farmers	Supply fish that meets size bands, harvest timing, and handling expectations	• Predictable harvest commitment that improves cash flow for farmers • Consistent sizing and basic handling that meets buyer acceptance rules	• Guaranteed payout rules with clear timing once delivery is confirmed • Simple grading and handling checklist enforced at the farm gate
 Field agents and verifiers	Onboard farmers, confirm harvest readiness, run farm gate grading and weighing, capture proof	• Credible measurement to eliminate weight and size disputes • Standard verification workflow so every pickup follows the same process • Traceable proof of delivery linked to settlement triggers	• Calibrated portable scales, photo evidence and instant digital receipt • Standard playbooks and training with audit checks and exception reporting • Digital order ID and verification trail that triggers payout once confirmed
 Live haul logistics partners	Provide oxygenated transport, route pickup across farms, deliver live fish on same day windows	• Reliable routing and dispatch for multi farm pickups to hit buyer windows • Mortality and quality control so delivery arrives within acceptable condition • Transparent service accountability so failures are measurable and correctable	• Central dispatch scheduling with locked pickup slots and route planning • Live haul SOPs with acceptance thresholds and basic handling standards • SLA-based payments and performance scoring tied to on-time delivery and mortality

The key needs that the market linkage platform must address have been identified (2/2)

Stakeholder	Role and responsibility	Needs to be addressed by the platform	Enablers of change
 Platform operator and dispatch team	Aggregate wholesaler orders, match to farms, coordinate verification and logistics, manage disputes	• Order aggregation and allocation so buyers see one accountable supply • Clear acceptance and dispute rules so exceptions do not break trust • Operational control to enforce compliance across platform users	• Matching and slotting engine that locks orders before harvest across farms • Structured dispute workflow with defined evidence, timelines, and resolution rules • Access and payout enforcement using compliance scores and restrictions
 Whole-salers as anchor buyers	Post demand forecast, accept delivery against specs, pay through platform rails, provide repeat procurement	• Committed demand so fulfilment is real, not speculative • Standard specs and delivery windows to reduce variability and rejection • Transparent fees and settlement so buyers know the total cost and process	• Buyer wallet deposit or escrow requirement for posted orders • Standard size bands and delivery terms embedded in the order ticket • Clear fee schedule and digital invoices linked to verified delivery events
 Financial institution and payment rails	Hold escrow or central collection account, enable instant settlement, manage buyer limits	• Fast farmer payout without exposing farmers to buyer delay risk • Buyer credit control to prevent defaults in early cycles • Auditable transaction records to expand limits as trust builds	• Escrow or central sales account with rules triggered by delivery confirmation • Buyer limits and staged access that expand with performance history • Transaction ledger and digital receipts to support reconciliation and disputes

Success of the tech-enabled sales platform will depend on a key set of critical metrics

Success metric	Description	Why this is important
 Order fill rate	% of buyer orders fulfilled in full and on time	Shows whether the platform can reliably fulfil buyer demand
 Supply accurately matched to buyer request	% of orders delivered to requested size band / type / timing	Tests the core wholesaler value proposition: getting the right fish, in the right size and volume
 Visible committed supply	% of onboarded farmer volume registered weekly on platform	Ensures supply is transparent and schedulable before matching
 Verified weighing / grading compliance	% of transactions with calibrated weighing and digital receipt	Builds trust and reduces leakage and disputes
 Delivery integrity / transport success	% of deliveries completed without quality loss, mortality, or handover failure	Confirms fish quality is preserved through fulfilment
 Active buyer and farmer repeat rate	% of users transacting again within a defined period	Shows whether both buyers and farmers see enough value to return
 Working-capital cycle	Receivable days and working capital as % of COGS	Ensures platform scalability and commercial viability



Cluster commercialisation

Genetics improvement

Tech-enabled fish sales platform

- Pilot design

- **Investment case**

Government interventions

Next steps

Financial assumptions: Tech-enabled fish sales platform

X Adjusted in the aggressive scenario

↔ No change in aggressive scenario

Element	Key assumptions	Conservative scenario	Optimistic scenario
Revenue 	Fish sales		
	Sales volume growth rate	← 15.5% →	
	Starting volume, MT	← 3,500 →	
	Average annual fish production per farmer, MT	← 6 →	
	Average annual fish purchase per ¹ wholesaler, MT	← 325 →	
	Starting sales price per kg	← (\$2.2) ² N3,000 →	
	Revenue from wholesaler premium	← N50 →	
	Annual sales price growth rate	← 10% →	
Costs 	Cost price of fish per Kg	← (\$2) N2,700 →	
	Cost growth rate	← 10% →	
	CAPEX financing structure	70% debt, 30% grant	100% grant
	Working capital requirement ³	← 4% of annual COGS ⁴ →	
	Business development and marketing share of revenue, %	← 0.5% →	
	Receivable days	← 15 days →	
	Payable days	0 days	3 days 7 days

1 Assumes wholesaler purchases 1.25MT of fish 5 times a week annually

2 Exchange rate assumed - \$1-NI343

3 Working capital from Year 2 is assumed to be debt funded with short term loan

4 Cost of goods sold

Source: Stakeholder conversations, expert input

Recap | Three funding options exist, with varying implications on profitability

Details follow

Funding option¹



Blended finance (70% debt, 30% grant)



Full grant (for initial CAPEX only)



Full debt²

Strategic implications

Best overall economics and most balanced funding structure

Lowest risk but limited scalability / availability

Highest repayment burden; slower path to profitability

IRR at Yr 10

41–46%

48–54%

39–44%

Time to profitability

5–6 years

4 years

6 years

The IRR and time to profitability range is primarily driven by working capital cycle assumptions (12–15 days)

Funding required³

~1Bn Naira (~\$0.8Mn)
funding required to cover capex and year 1 working capital
Subsequent working capital to be funded through short-term debt

- 1 Funding options apply to year 0 and 1 Capex
- 2 Debt financing is assumed at an interest rate of 12% per annum, with a tenor of 5 years
- 3 Total funding requirement for the project of 1Bn, comprising capex, as well as working capital equivalent to 30 days of operations in a year

Optimising the working capital cycle could improve the project's IRR and time to profitability

Assumes project is funded with 70% debt and 30% grant

Details follow

Scenario	Receivable days	Payable days	IRR at Yr 10	Time to profitability
1 15 days working capital cycle	15	0	41%	6 years
2 12 days working capital cycle	15	3	46%	5 years
3 8 days working capital cycle	15	7	54%	4 years

Key takeaway

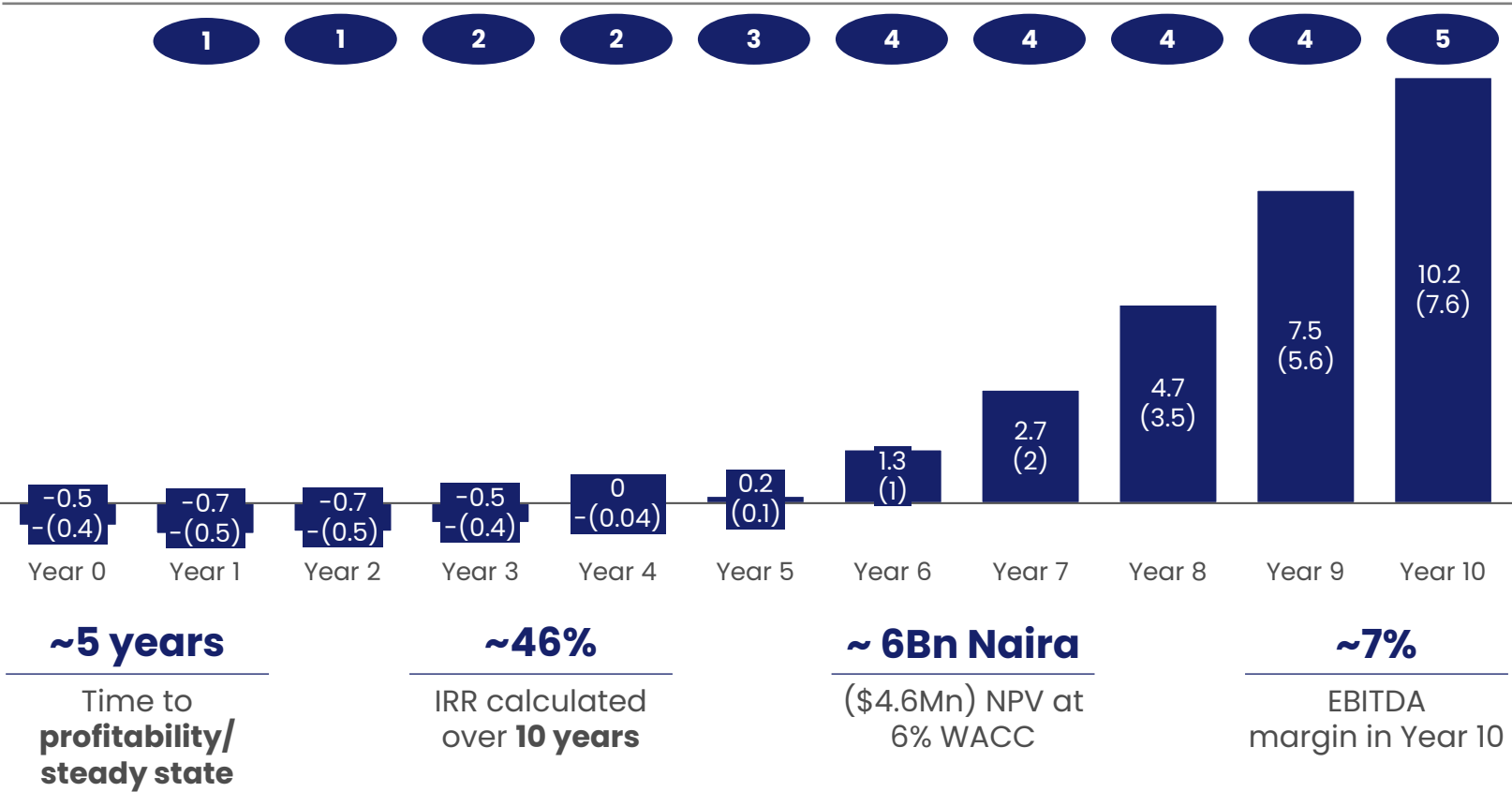
Optimising the working capital cycle, by reducing receivable days and/or extending payable days with farmers (e.g., advancing inputs for the next cycle), can shorten the cycle and improve project economics

A tech-enabled fish sales platform could be profitable within 5 years at a 46% IRR assuming a 12-day working capital cycle¹

Assumes project is funded with 70% debt and 30% grant

x Net margin, %

Potential cumulative cash flow and project economics, Billion naira | (Mn USD)



Key assumptions

Year 0 Capex, Naira | USD²

- Fabricated trucks 257M | 192K
- IT³ 159M | 119K
- Fish trading hub⁴ 50M | 37K
- Agent network setup 29M | 21K
- Office 17M | 13K

Revenue

- Fish sales (N/Kg) | (\$/Kg) 3000 | 2.2
- Platform premium (N/kg) (\$/Kg) 50 | 0.04

Opex

- Starting fish sales volume (MT) 3500
- Fish sales value (N/Kg) 3000

Working capital

- Starting COGS 9.5Bn | 7M
- Working capital requirement 4% of COGS
- Receivable days 15
- Payable days 3

1. Assumes 3 payable days throughout
2. Exchange rate – \$1=₦1,343
3. Includes the cost of web, app and ERP development
4. Physical locations for receiving and sorting fish from farmers before it is transported to the wholesaler

Source: Expert interviews, stakeholder conversations, desktop research

Agenda

Cluster commercialisation

Genetics improvement

Tech-enabled fish sales platform

Government interventions

Next steps



Potential government interventions will be critical in supporting transformation of the Aquaculture value chain



Interventions highlighted by stakeholders

- | | |
|-------------------------------------|---|
| 1 Financing | <p>Expand concessional financing for the value chain: 0–5% for farmers, processors and solar cold-chain logistics, and 0% infrastructure financing with 5–10-year tenors</p> <p>Establish a government-backed aquaculture financing facility to de-risk commercial bank lending and expand affordable financing to farmers, processors, and other value-chain players</p> |
| 2 Input provision | <p>Provide inputs directly to farmers over direct cash disbursement which is often not effectively utilised</p> <p>Invest in research and seed quality to improve the quality of fingerlings and broodstock as well as diversification into other species such as tilapia, shrimp, grouper, and carp</p> |
| 3 Infrastructure development | <p>Develop water harvesting systems, including dams, to ensure reliable water supply</p> <p>Invest in production hubs with access to power, water systems, cold chain, processing & logistics facilities to reduce costs and improve efficiency</p> |
| 4 Market access | <p>Enable access to export markets such as the EU & North America through the Federal Department of Fisheries by developing a Residue Monitoring Plan (RMP)</p> <p>Prioritise locally farmed fish in public institutions (schools, hospitals, feeding programs, etc.) to generate stable demand for local producers</p> |
| 5 Ecosystem coordination | <p>Expand PPPs with experienced operators to establish critical, large-scale facilities such as hatcheries, feed mills & processing plants that can anchor industry growth</p> <p>Fund programme managers to coordinate farmer support</p> |
| 6 Policy environment | <p>Implement a stable, transparent, and investor-friendly policy environment</p> |



What stakeholders are saying

"Giving money directly to farmers often proves ineffective, as it is not always used for its intended purpose. It is better to provide inputs directly and fund programme managers to coordinate delivery..."

"Single digits fund lending not more than 6% for farmers and processors"

"Public institutions (schools, hospitals, feeding programme, etc.) can play a significant role by prioritizing locally farmed fish"

"Periodic (e.g., every five years) provision and upgrading of high-quality parent broodstock to strengthen seed systems and productivity"

"Nigeria currently cannot export farmed fish products to key markets such as the EU and North America ..."

Agenda

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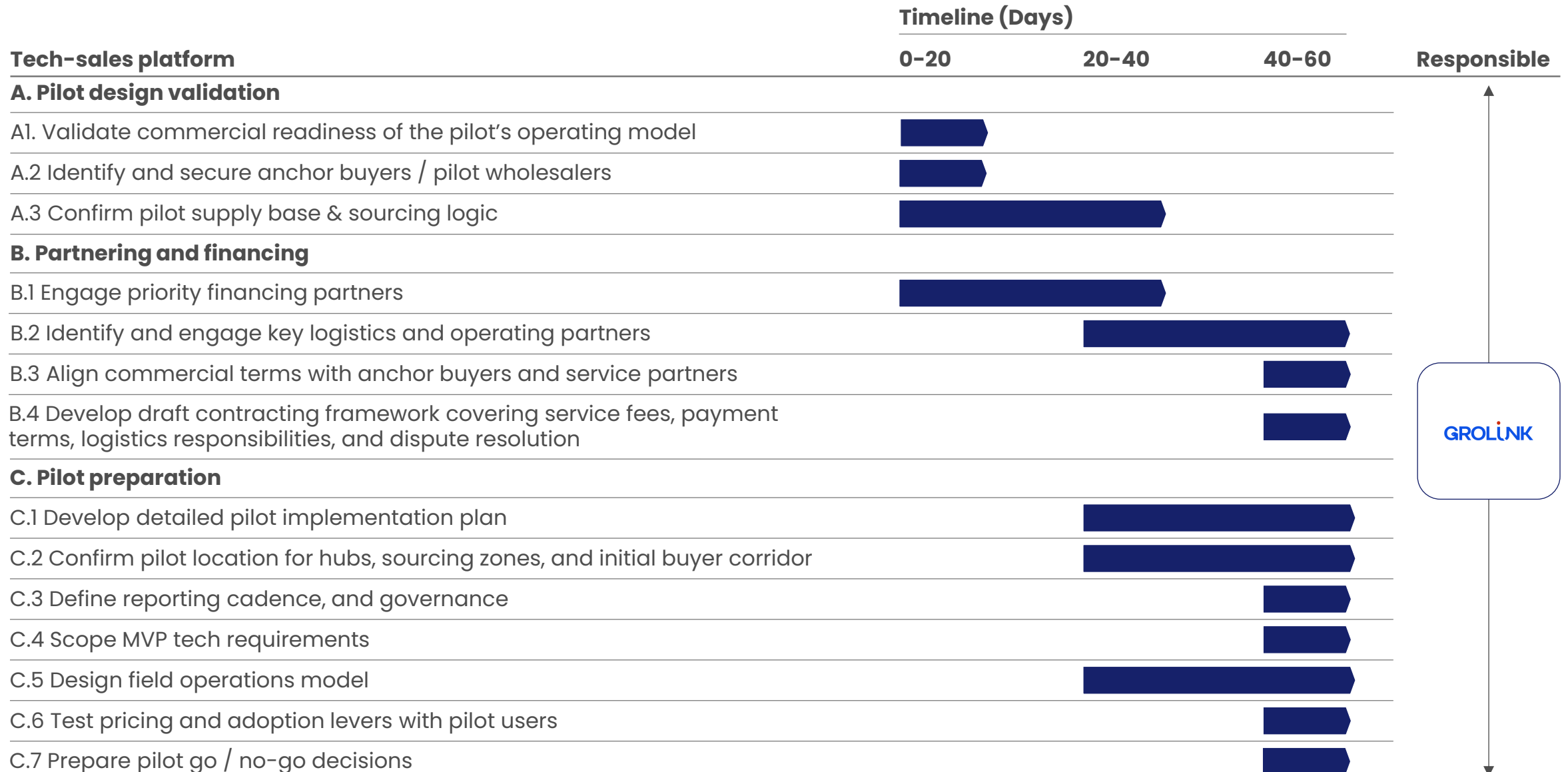
Next steps



The next 60 days for the Aquaculture transformation effort

A. Cluster commercialisation	Timeline (Days)			Responsible
	0-20	20-40	40-60	
A.1 Finalise financing arrangements for cluster pilots with Bank of Agriculture (BOA) and/or the Nigeria Agricultural Development Fund (NADF)				GROLINK
A.2 Complete farmer screening and cluster selection				
A.3 Formalize partnerships with certified input suppliers, including hatcheries and feed providers				
B. Genetics improvement				SPRING HARVEST
B.1 Advance financing discussions with identified financiers				
B.2 Identify and select improved catfish strains for import				
B.3 Progress construction of the breeding nucleus and hatcheries				

The next 60 days for the Aquaculture transformation effort



End