ESMAP-Africa Region Webinar

Africa Energy Learning Series

ELECTRIFYING AFRICA:
Delivering on Mission 300 Faster Together

Webinar: Unlocking the Solar Energy Potential for Enabling Food Security in Mali

Date : May 14

ESMAP Energy Sector Management Assistance Program

ELECTRIFYING AFRICA

MISSION 300 #PoweringAfrica

WORLD BANK GROUP

A Country of Enormous Potential Facing Structural Challenges

22.5M
Population (2025)

#188
Human Dev. Index
out of 193 countries

43,9%
Population below
poverty line (< $2.15/day)

80%
Workforce dependent
on agriculture

AGRICULTURE & FOOD SECURITY

- Agriculture accounts for ~35% of GDP, and 80% of employment
- 97% of cropland is rain-fed; only ~3% under irrigation
- 1.5 million people face acute food insecurity annually (IPC 3+)
- Post-harvest losses reach 30–40%: no energy for storage or processing

KEY BARRIERS TO AGRICULTURAL DEVELOPMENT

Energy access — With rural electrification < 20%, Mali's smallholders rely on diesel now surging **29%** to **940 FCFA/L**

Finance exclusion — <5% of farmers access formal credit;

Water scarcity — Seasonal stress; inadequate pump & storage infrastructure

Value chain gaps — Limited processing, weak cold chain, poor market connectivity

Only

A Structured, Field-Based Intervention

1. **Ecosystem Mapping**
   Cartography of actors, needs, barriers and market opportunities across target regions
2. **Actor Structuring**
   Identification & organisation of MSMEs, aggregators and support institutions
3. **Business Development**
   Co-design of business models and bankable business plans with final beneficiaries
4. **Finance Facilitation**
   Structuring financing packages via aggregators; engagement with ROGEAP & private sector

TARGETED REGIONS

- Kayes
- Sikasso
- Kita
- Koulikoro

TARGETED VALUE CHAINS

- **Irrigated Agriculture**
  Rice, maize, onion, potato, livestoc
- **Cold, Storage**
  Meat, Milk
- **Agro-Processing**
  Milling, drying, cold storage
- **Solar incubators**
  Poultry

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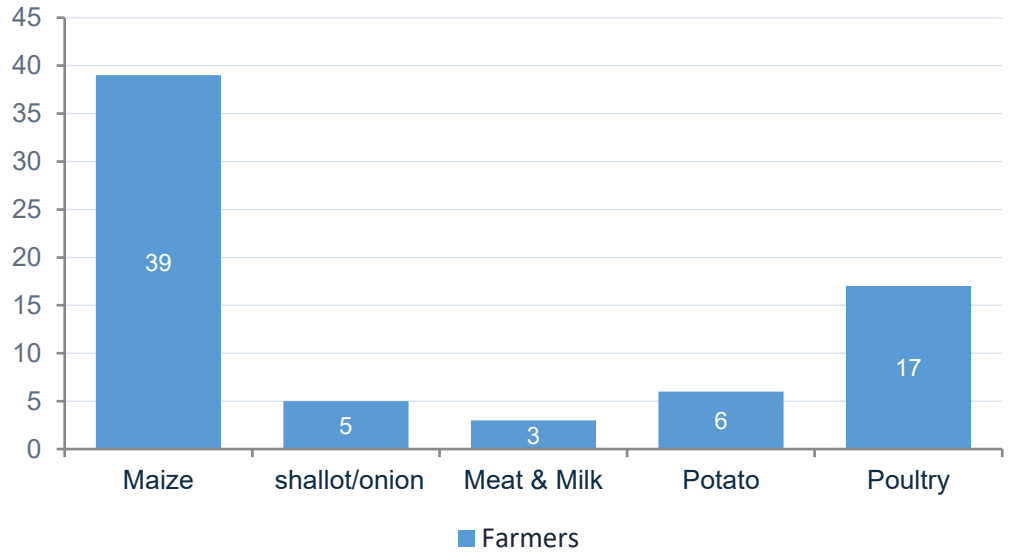
Who We Worked With: 154 Final Beneficiaries

70
Business plan developed

2
Value Chains

2
Aggregators /Projects



VALUE CHAIN	BENEF.	AGGR.	SHARE
Irrigated agriculture (crops)	90	6	58%
Livestock & dairy (meat/milk)	15	2	10%
Poultry	30	2	19%
Agro-processing & cold chain	19	2	12%
TOTAL	**154**	-	**100%**

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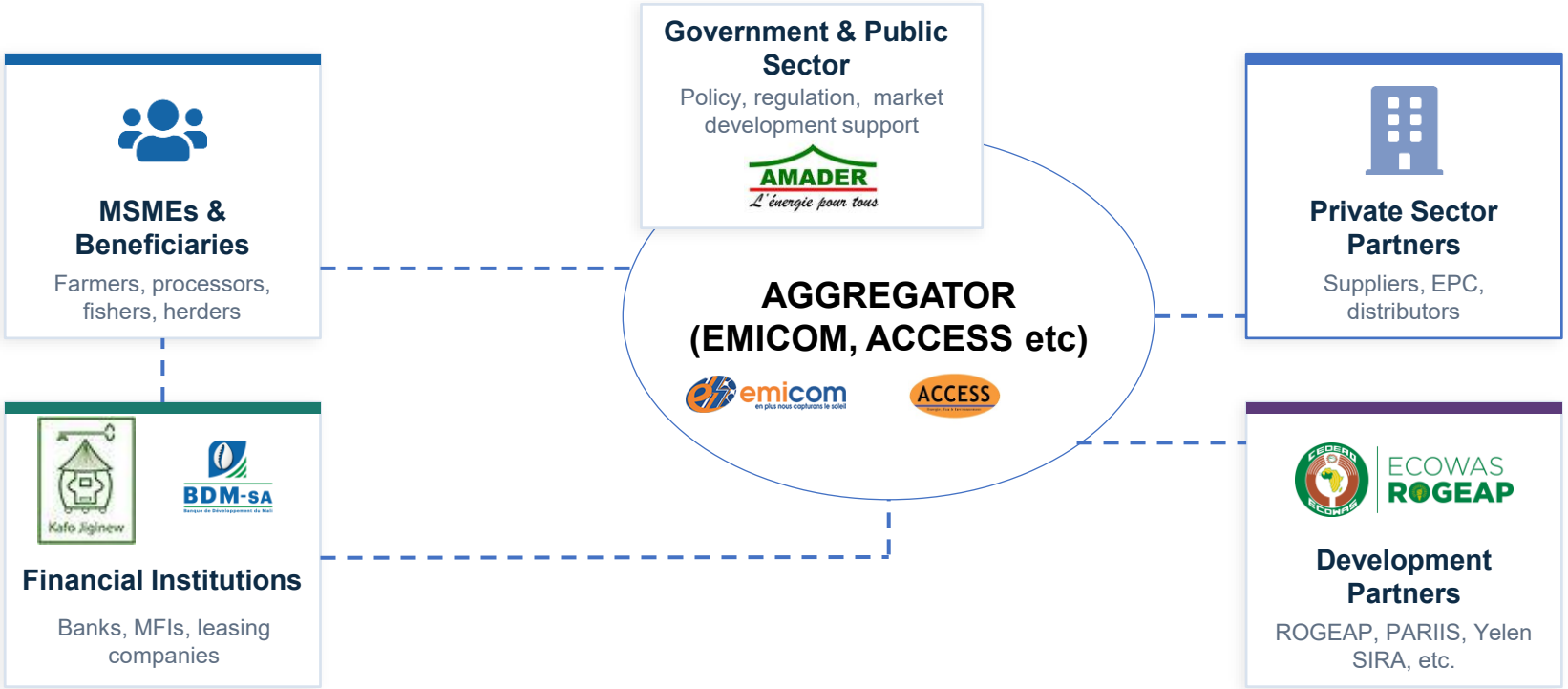
Building the Productive Use Ecosystem



Key activities: Value Chain Assessment · Stakeholder mapping · Capacity building · Linkage facilitation · Market engagement

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How the Aggregator Unlocks Scale & Access

FINAL BENEFICIARIES

- Irrigating farmers
- Market gardeners
- Livestock & dairy
- Agro-processors
- Poultry producers

Grouped by aggregator

AGGREGATOR (Operator)

- Regroups final beneficiaries
- Structures collective projects
- Submits subsidy application to ROGEAP
- Manages financier relationships
- Single interface: MSMEs ↔ banks
- Coordinates equipment deployment
- Manage O&M

ROGEAP

Batch subsidy application

Commercial Banks

Credit for farmers & processors

Self-Financing

For capacitated beneficiaries

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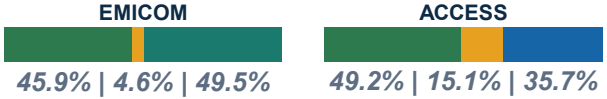
EMICOM & ACCESS: Project Scope & Financing Breakdown

ELEMENT / INDICATOR	EMICOM	ACCESS	TOTAL
Solar Pumping	30	23	53
Solar Incubators	—	17	17
TOTAL PROJECTS	**30**	**40**	**70**
Total Project Cost (USD)	**$326,920**	**$498,116**	**$825,036**
• Solar Pumping	(incl.)	$436,311	—
• Solar Incubators	(incl.)	$61,805	—
ROGEAP Grant Requested (USD)	**$150,000**	**$245,000**	**$395,000**
Operator Own Contribution (USD)	$15,000	$75,000	$90,000
Private Co-Financing (**debt + other sources**)	$161,920	$178,115	$340,035

ROGEAP Grant Operator Contribution Private Co-Financing



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From Business Plan to Long-Term Viability

1. **Needs Assessment**
2. **Technical Design**
3. **Financial Modelling**
4. **Business Plan Draft**
5. **Aggregation & Review**

Revenue Diversification

- Multiple crop cycles enabled by solar irrigation
- Reduced energy cost = higher margins
- New revenue streams: processing & cold chain

Aggregator-Backed Offtake

- Guaranteed purchase channel via aggregator
- Stable prices negotiated in advance
- **Reduces market risk for smallholders**

Risk Mitigation Structure

- Collective risk pooling via aggregator
- **Blended finance reduces debt burden**
- ROGEAP subsidy improves financial viability

Environmental Sustainability

- Diesel replacement → **lower operating costs**
- Solar assets depreciated over 20+ years
- Climate resilience built into production

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What the Mission Taught Us

WHAT WORKED WELL

Aggregator model as pivotal lever
Grouping beneficiaries under a single operator dramatically improved access to financing and reduced transaction costs for banks.

Structured business plans = bankability
Rigorous financial modelling transformed informal activities into credible investment cases, opening doors with formal lenders.

Blended finance reduces barriers
Combining ROGEAP grants with private credit and self-financing made projects viable for a wider range of beneficiaries.

Trust-building with banks is essential
Direct engagement sessions between aggregators and financial institutions were key to unlocking credit appetite.

CHALLENGES & RESPONSES

Low financial literacy among beneficiaries
→ *Intensive coaching integrated into business plan co-design process*

Banks' risk aversion toward agricultural PUE
→ *Aggregator model + structured dossiers + facilitated dialogue sessions*

Hydro component financing gap
→ *Dedicated work stream initiated — ongoing to close the remaining barrier*

Aggregator capacity constraints
→ *Targeted capacity building; simplified reporting tools deployed*

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Sustainability, replicability and scale-up

from a Mali pilot to sustainable, replicable PUE at scale

Sustainability

- Blended viable finance (grants + credit)
- Local aggregators and technicians (O&M, after-sales)
- Strong links to real value chains and markets

Replicability

- Documented **4-step methodology** tested in **4 regions** and 6 value chains
- Same building blocks and tools usable in other Sahel countries
- Three-window structure (grant + bank debt + equity) adaptable to any regional financing mechanism.

Scale-up

- Aggregators can expand to larger MSME portfolios and other regions
- Proven model helps crowd in banks and DFIs
- Replication is relatively fast once the core mechanism is established.

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Thank you

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