

Executive Summary

This report presents a summary of a gap analysis conducted in February 2026 across seven counties in Kenya: Bungoma, Busia, Kakamega, Kericho, Nakuru, Nandi, and Uasin Gishu, under the Power for Food Partnership. The study assesses opportunities to strengthen smallholder productivity, resilience, and sustainability by integrating regenerative agriculture (RA) and the productive use of renewable energy (PURE).

Using data from 320 household farmers, 113 service providers, and 104 input and technology suppliers,

the analysis reviews current adoption patterns, identifies key constraints, and highlights practical, scalable pathways to integrate agriculture and energy systems.

The findings reveal a clear pattern: the foundation for RA-PURE integration is strong, yet adoption is constrained by financial, technical, and structural barriers rather than by a lack of demand. While regenerative practices are widely adopted and energy access is relatively high, integration remains limited.

RA practices are widely adopted but not fully integrated:

Compost/manure (79%), intercropping (74%), and crop rotation (73%) are common, yet applied in fragmented ways.

Energy access is high, but productive use is low:

59% of households use grid electricity and 53% use solar, yet 85% rely on energy mainly for lighting, with only 15% for irrigation.

Demand is strong, but constrained by affordability:

97% of farmers are willing to adopt RA-PURE systems; however, high upfront costs (71%) and limited access to finance (54%) remain the primary barriers.

Supply systems are active but fragmented:

60% of suppliers operate in silos, and only 3% offer integrated RA-PURE solutions.

Awareness is moderate, but adoption is low:

70% of farmers are aware of RA-PURE approaches, but only 17% have adopted them.

Solar irrigation is the most viable entry point:

Preferred by 69% of farmers and aligned with the dominant challenge of drought (83%), making it a critical climate adaptation and productivity solution.

Institutional and delivery gaps persist:

While support for RA exists, only 14% of institutions fund integrated RA-PURE initiatives, and key delivery channels remain underutilised.

Biogas shows strong localised potential:

Overall adoption is low (6%), uptake reaches 26% in livestock-based systems such as Nandi.



The analysis highlights a significant opportunity to accelerate RA-PURE adoption by addressing affordability, strengthening technical capacity, and improving integration across supply chains. Prioritising solar-powered irrigation as an entry point, supporting bundled solutions, and leveraging high-performing counties such as Nandi and Uasin Gishu as learning hubs will be critical for scaling integrated, climate-resilient farming systems.

RA-PURE adoption in Kenya is not limited by demand, but by financing, integration, and delivery systems.



Ethiopia, Kenya, Rwanda, Uganda

Across Africa, the connection between agriculture and energy holds untapped potential for transforming food systems and livelihoods.

Power for Food Partnership

The **Power for Food Partnership** is a multi-country initiative in Eastern Africa led by SNV and funded by the IKEA Foundation aimed at transforming agri-food systems by integrating regenerative agriculture (RA) with the productive use of renewable energy (PURE).

Its core idea is that agriculture and energy systems, which often operate separately, can generate greater social, economic, and environmental benefits when combined.

The partnership seeks to address key challenges facing rural communities—such as low agricultural productivity, limited access to clean energy, and vulnerability to climate change—by promoting sustainable farming practices powered by renewable energy solutions like solar irrigation and energy for processing and storage.

This integrated approach aims to improve livelihoods, strengthen food security, and build climate resilience while reducing environmental pressure.

The partnership operates through three main pathways:

- **Learn** (generating evidence and knowledge sharing),
- **Link** (building partnerships and networks), and
- **Leverage** (influencing policy, investments, and scaling solutions).

Together, these pathways aim to create an enabling environment for widespread adoption of integrated agriculture–energy solutions.

A strong emphasis is placed on inclusion, ensuring women, youth, and marginalized groups benefit from access to resources, technology, and decision-making opportunities.

Overall, the Power for Food Partnership envisions a future where renewable energy-driven, resilient food systems provide equitable and sustainable opportunities for communities across Eastern Africa.

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