

BUILDING EVIDENCE TO UNLOCK IMPACT FINANCE

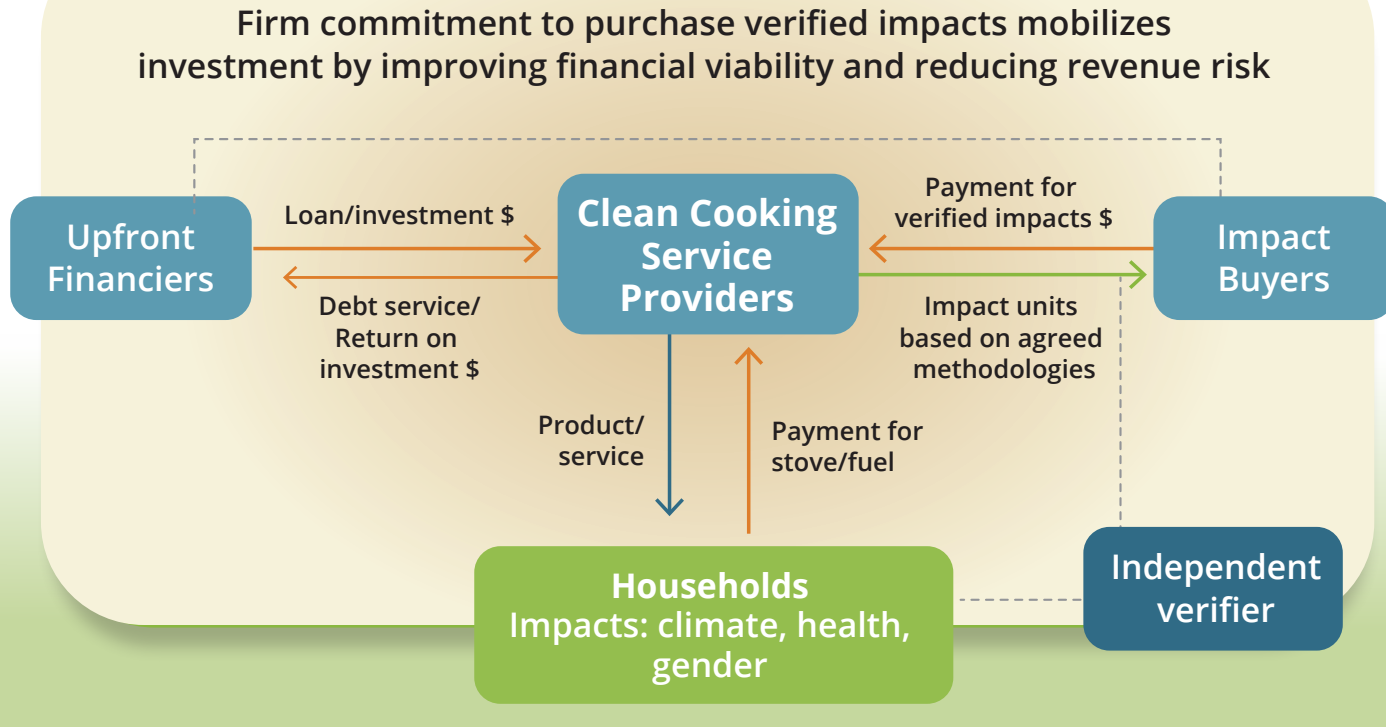
A Field Assessment of Clean Cooking Co-Benefits for Climate, Health, and Gender

INFOGRAPHIC

Achieving universal access to clean cooking requires a dramatic scale-up in investments. Carbon finance is gaining ground to pay for the climate impact of averted greenhouse gas (GHG) emissions from clean cooking. This study builds field experience and evidence to unlock additional impact finance to pay for the verified add-on climate, health, and gender co-benefits.

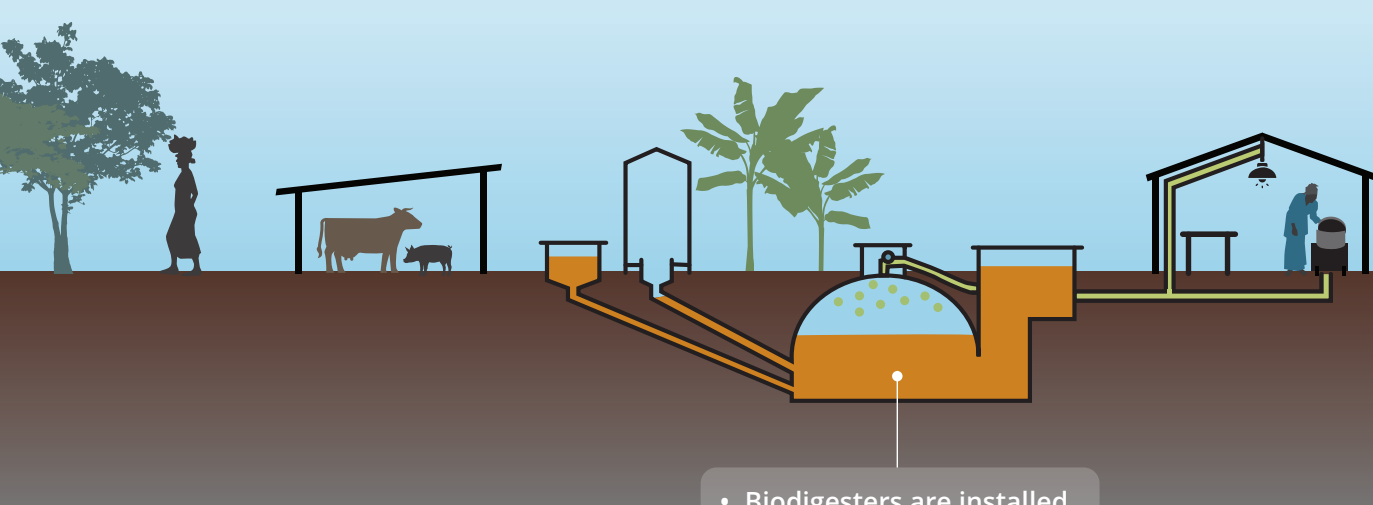
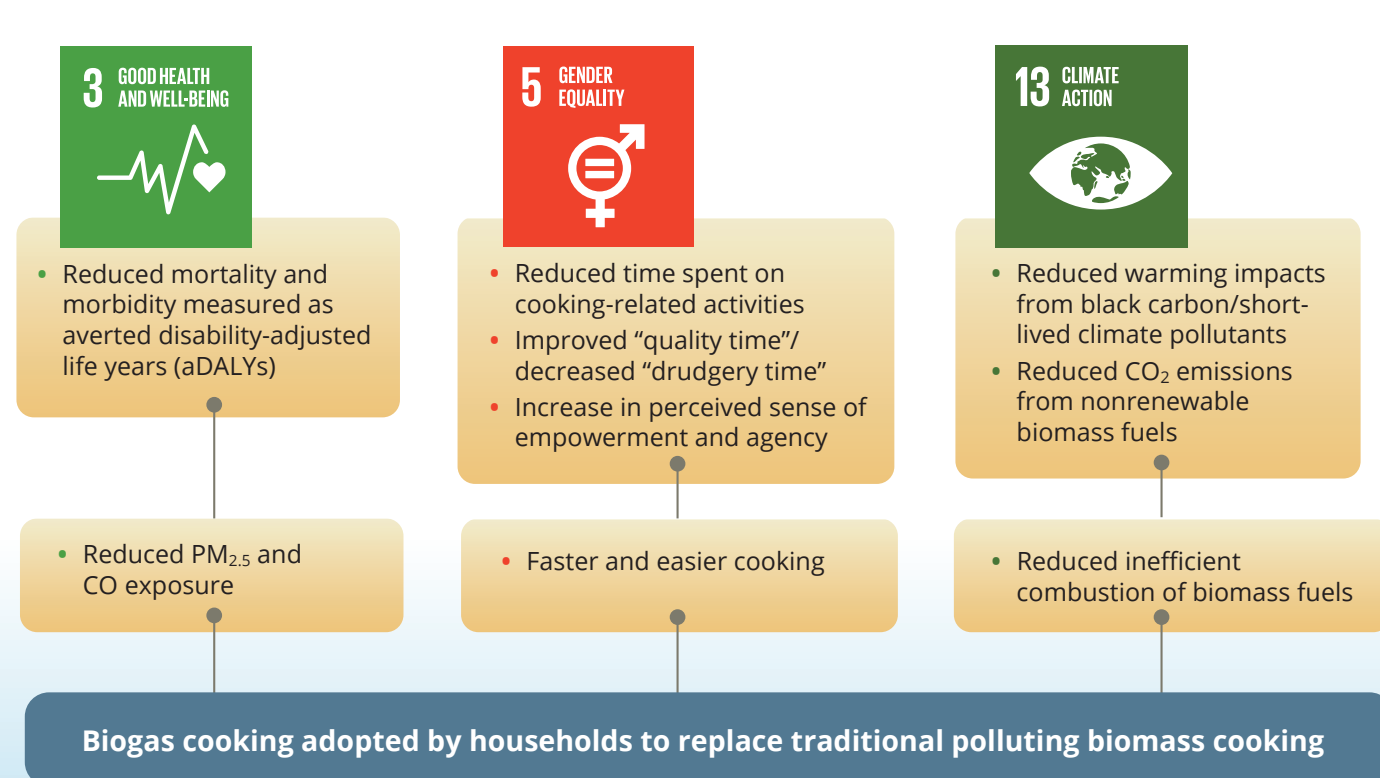
A VISION

Developing an Impact Finance Market for Clean Cooking



BUILDING EVIDENCE

Field Assessment of a Biogas Intervention, Showing Pathways of Impact



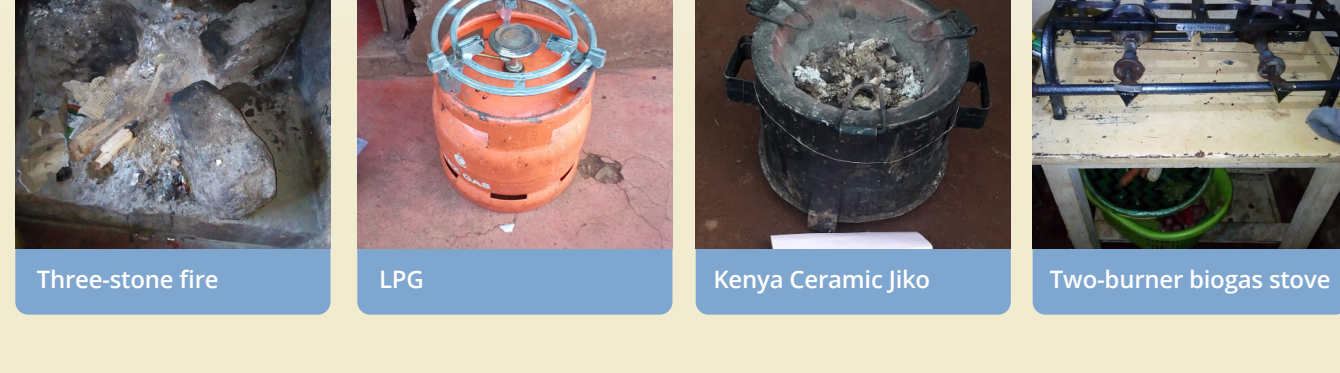
The Value Proposition

- Biodigesters are installed
- Households are trained in manure management

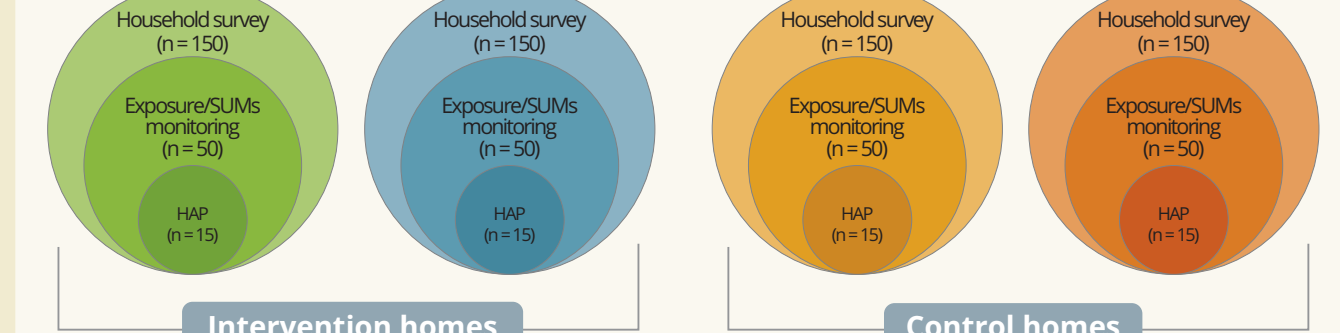
Study Method

An existing biogas intervention in rural Kenya was competitively selected for the study and data was collected in two counties: Kiambu and Nyandarua.

Commonly Used Stoves in Rural Kenya



Sampling and Data Collection Schematic



Note: The study sample comprised 300 homes equally split between the intervention and control groups. SUMs = Stove Use Monitors; HAP = Household Air Pollution.

Key Findings

CO-BENEFITS—Significant Impacts Associated with Household Biogas Adoption

CO-BENEFIT	KEY IMPACTS	UNIT	VALUE
CLIMATE	Reduction in BC equivalents	Tonnes per 10,000 homes per year	22.9
	Reduction CO ₂ equivalents ^a	tCO ₂ e per 10,000 homes per year	57,500
HEALTH	Reduction in particulate matter (PM _{2.5}) exposure	µg per m ³ over the 48-hour monitoring period	32
	Averted disability-adjusted life years (aDALYs)	per 10,000 homes per year	323
GENDER	Time savings on cooking activities	Minutes per day	35
	Reduction in activities considered drudgery	Hours per week	7.7

a. Based on 2018–19 issuance of carbon credits to the developer (the biogas intervention was already registered for carbon credits)

METHODOLOGIES

- CLIMATE AND HEALTH.** Overall, the existing methodologies to assess short-lived climate pollutants (SLCPs) and health benefits warrant promotion. *Opportunities for improvement*—SLCP benefit estimation can be simplified using recently published emission factors from field-based studies.
- GENDER.** The methodology to assess the gender impact requires further development. *Opportunities for improvement*—New instruments are required for measuring time-use agency. Also, a rating system using letters and/or symbols (AA, B+) could be considered to effectively reflect the range of confidence levels in the co-benefit measurements and qualitative and temporal aspects.

Co-Benefits Monitoring

RECOMMENDED ACTIONS

FOR IMPROVED FEASIBILITY

- Before the start of co-benefits monitoring, diagnostic research should be conducted to characterize the customer group, develop the screening criteria for a matched control group, and pre-qualify potential participants for the research.
- In regions where cookstove programs are anticipated or under way, donors should build monitoring capacity and relationships with institutional review boards and filter-weighting facilities for household air pollution (HAP).

FOR GREATER COST-EFFECTIVENESS

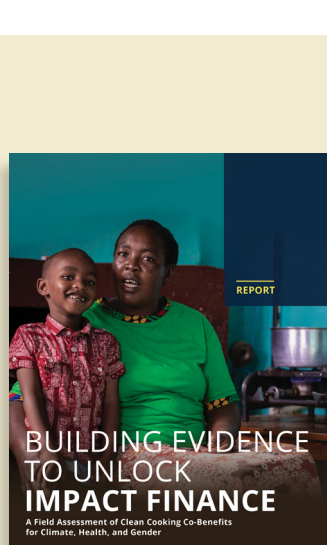
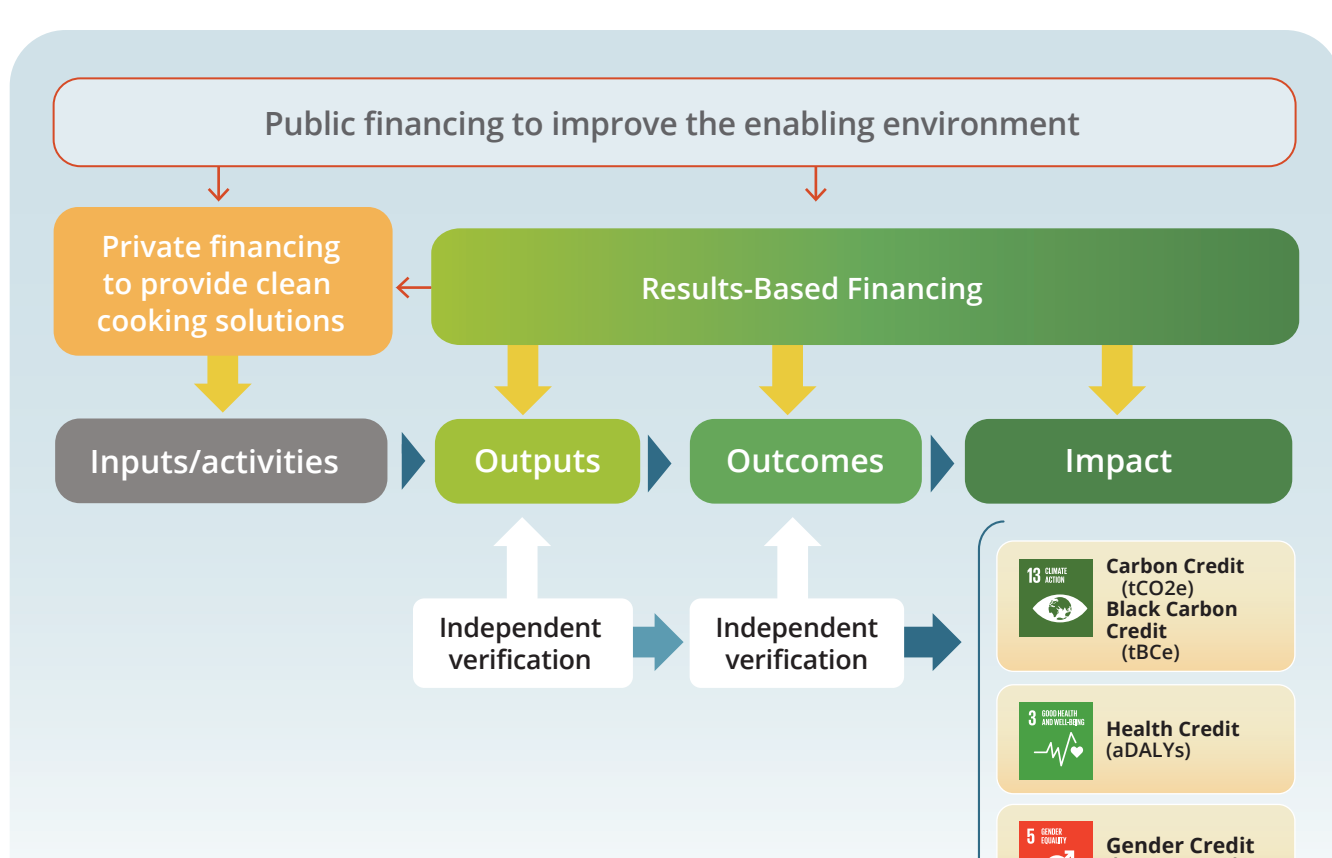
- Concurrent measurements of SLCP, health, and gender co-benefits should be considered for larger-scale, results-based carbon finance projects, given the strong synergies found among these measurements.
- Stove use monitors (SUMs) should only be required for larger-scale projects.
- Self-embedded meters offer smaller-scale projects opportunities for better and more cost-effective measurements.

How to Unlock Impact Finance to Accelerate Clean Cooking Access

The first Clean Impact Bond transaction—based on similar co-benefit outcomes from a separate IFC-supported biogas study in rural Kenya—has been signed, demonstrating stakeholder demand for innovations in co-benefits monitoring advanced by the present study.

Moving forward, the World Bank will leverage the Clean Cooking Fund to continue supporting the evolving clean cooking ecosystem through

- TECHNICAL ASSISTANCE** to improve the enabling environment, including support to impact investing market development;
- RESULTS-BASED FINANCING GRANTS** to pay for public goods associated with clean cooking while addressing end-user affordability to unlock private financing; and
- SUPPORT ACCESS TO FINANCE FACILITY** to meet the private sector's up-front financing needs.



Building Evidence to Unlock Impact Finance offers practical lessons and guidance for stakeholders across the clean cooking industry who want to explore the potential of impact financing. The report's findings and recommendations will be of interest to impact buyers and project developers and implementers, as well as researchers and verification agents, technology suppliers, multilateral and bilateral donors and governments, and other cadres of investors.