



# From Firewood to Biogas

A Farmer's Journey to Clean Cooking

SEE - Clean Cooking

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Prefarb biodigester

## About ABC Kenya

Funded by the Dutch Ministry of Foreign Affairs (DGIS), the Danish International Development Agency (DANIDA) and the European Union (EU), the African Biodigester Component (ABC) in Kenya aims at facilitating a shift of the biodigester market from its pioneering to the expansion phase where 10,000 small (0 to 23- m<sup>3</sup>) and 100 medium (24 to 500 m<sup>3</sup>) size biodigesters will be installed. The component is implemented by a consortium between GIZ and SNV (the Netherlands Development Organisation) in cooperation with Africa Bioenergy Programs Limited (ABPL - ex-Kenya Biogas Programme).

This multi-donor support has enabled market-based interventions, including results-based financing, flexible payment options (such as the 12-month instalments Peris accessed), and awareness-raising efforts that helped women’s groups like Peris’s chama overcome affordability barriers, scale biodigester adoption, and deliver combined benefits of clean cooking, health improvements, time savings, and enhanced agricultural productivity through bio-slurry utilisation.

## Contents

The late afternoon light fills the slopes of Kiang’atia as Peris Wanjiku returns home, breathing heavily after another long walk for firewood. Her hands ache, her eyes sting from the smoke that fills her kitchen, and her children wait for their evening meal and for help with homework. These moments defined her days for many years as she previously could not afford clean sources of fuel. Yet today her kitchen glows with a clean blue flame and her voice carries new energy as she says, “Cooking is now enjoyable, I no longer inhale smoke or get headaches.”

**“This success story tells the journey of how one smallholder farmer transformed her home, farm, and wellbeing through an 8 cubic meter fixed dome biodigester fed by dung from her three cows. By accessing a table banking loan through her women’s group and flexible instalment plans from the biogas company, Peris overcame financial barriers that had once seemed immovable.”**



Her journey mirrors that of many Kenyan households dependent on wood fuel, while highlighting how women’s leadership, pooled community resources, and clean energy solutions can reduce drudgery, boost farm productivity, and strengthen local resilience.

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# 1. Context and Farmer Profile

Peris Wanjiku is a smallholder farmer living in Kiang'atia village in Murang'a County, a hilly region where households depend heavily on livestock and subsistence farming for food and income. She lives with her children and manages a modest farm with three dairy cows, a small kitchen garden, and milk sales that supplement the household's income.

Peris is also the secretary of a women's group composed of ten members. The group uses table banking to support small loans among members, strengthening financial access and social support. This collective approach would later become central to the adoption of biodigesters in their community.

Her experience represents many rural Kenyan women who shoulder the responsibilities of fuel collection, livestock care, household management, and childcare.

Her story is compelling because she and her group leveraged their existing social structure to overcome the affordability barrier that often limits farmers from adopting clean energy technologies. Through table banking, the group members secured a 12-month loan to purchase a standard 8 m<sup>3</sup> biodigester.

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## Life before biogas

Before installing the biodigester, Peris and her children relied on firewood for cooking, collected late in the afternoon. This involved long walks uphill, taking up 2-3 hours each day. In instances where she was unwell or busy, Peris would have to part with sh.250 delivery to purchase the firewood which

would only last for a day of cooking for her family and farm workers. Using firewood resulted to a smoky kitchen causing teary eyes and chest pains, and long meal preparation times. Sourcing for firewood exposed her to risks of arrests from forest wardens and injuries while running away from them.



Peris cooking using biogas as a source of clean energy

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## Journey to adoption

Peris first learned about biogas during a chama meeting when a visitor from a biogas company presented the technology, its uses and benefits, and explained that payments could be staggered in instalments. The solution presented deeply connected with Peris' pain points. Smoky kitchens, long cooking hours and stinging eyes would be a thing of the past! She would also get an opportunity to rest and connect with her family in the evenings. The company's Pay-As-You-Go (PAYGO) flexibility and chama's table banking addressed her concerns about cost and repayment. She consulted her father (the landowner) about the land required for installation and explained the technology's benefits, which convinced him to agree, while she made the financial decision herself.

She took a loan from the chama's table banking that day, planned with the biogas company, and agreed to spread payments over 12 months after which installation began within a week.



Peris with a GIZ staff inspecting her farm



Peris cooking using biogas

## The transformation

When biogas first flowed, it was exciting; the family was used to cooking with soot and spending hours preparing meals but now enjoy clean cooking. Time savings came from eliminating firewood collection and shortened cooking time.

**“My cooking time has significantly reduced; I no longer have to risk injuries and clashing with the forest guards during firewood collection. Cooking is now an enjoyable experience, as I no longer inhale or get headaches from the smoke that my fireplace would cause.”**

Peris now describes her daily routine with enthusiasm: “Each morning, I clean my cow shed to collect cow dung, which I mix 1 part of cow dung to 2 parts of water, forming a thin porridge-like consistency which I then pour into the mixing chamber of my biodigester. This is then converted into biogas which I use for cooking. She adds, “I also get bioslurry which I use on my crops in place of agro-chemical fertilizers, reducing my farming costs. My harvest and income have tremendously increased over the seasons

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Peris Wanjiku walks happily around her farm, anticipating a bumper harvest thanks to the bioslurry from her biodigester.



**Eight of Peris' chama members adopted biodigesters after seeing hers, and later people outside the chama joined as new members with four more adopting. Group meetings have served as platforms for learning and sharing. She tells others in the community about the ease, health benefits, and income gains. Environmental benefits include improved barn conditions from regular manure collection for using in a biodigester, reduced firewood use, and lower smoke emissions.**

## References

- African Biodigester Component (ABC-K) project documents and case studies (SNV/GIZ/ABPL consortium, 2022–2025).
- Nation Media Group. (2024). Empowering Sub-Saharan Africa: The transformative impact of the African Biodigester Component on the biogas sector. Nation Africa. Available at: <https://nation.africa/kenya/brand-book/transformative-impact-of-african-biodigester-component-4679348>

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