

Report from Honduras for MD19 Lions

Biodigesters: Transforming Lives through Clean Energy

Thanks to CARE's partnership with Multiple District 19 Lions, 10 rural families in Honduras have transformed livestock waste into biogas and organic fertilizer, gaining access to clean energy for the first time. The women involved have reduced their domestic workload, improved their health, and strengthened their leadership in their homes and communities.



PROJECT DETAILS

Location: Municipalities of Villanueva, Santa Cruz de Yojoa, and Siguatepeque

Project Duration: November 2024 – May 2025

Reporting Period: November 2024 – May 2025

Grant Amount: \$38,182

Amount Spent: 100%

Reach to Date: 615 people (123 direct)

PROJECT PURPOSE

The **Biodigesters in the Circular Economy** project helped small farmers in three Honduran municipalities turn livestock waste into biogas and organic fertilizer (biol). This improved food security, reduced environmental impact, and supported the health and independence of rural families—especially women. The project used CARE's proven Farmer Field and Business Schools (FFBS) model to deliver training and strengthen community ties.

In partnership with MD19 and the Prosperous and Resilient Communities program, CARE supported biodigester installation with technical, educational, and social support. The model was a finalist in FAO's innovation competition, showing its potential to scale across rural Latin America.

PROGRESS UPDATE

The project achieved strong technical, social, and environmental results, demonstrating the model's potential to transform rural communities:

- Ten System 8 biodigesters were installed, each with the capacity to process 65 kg (143 pounds) of livestock waste per day, generating 2.4 m³ of biogas and 200 liters of biol, used in family gardens and crops like beans, corn, coffee, and bananas.
- 123 people participated in the installation, training, and use of the systems; 296 women were indirectly reached through agricultural extension, biol distribution, and clean cooking practices.

- The FFBS served as the core training platform, using a *learning-by-doing* methodology and supported by 10 peer exchanges to share results and strengthen community learning.
- Community SAA sessions with 123 people (81 women) helped shift social norms and promote shared responsibility in the use of new technologies.
- 100% of participating households now use biogas for cooking, reducing the use of firewood and improving women's health.

These actions have reduced monthly CO₂ emissions from 10.1 to 1.8 tons, creating local employment, improving soil fertility, and strengthening the resilience of families.

Success Highlights:

- **Transforming women's lives through clean energy:**

In the 10 participating households, biogas fully replaced firewood, eliminating kitchen smoke and reducing respiratory illness. Women now spend less time on housework and more on their well-being and productivity. This shift prevents an estimated 8.3 tons of CO₂ per month and saved households L120,000 (US\$4,800) in just six months.



Biodigesters in Santa Cruz de Tojua

- **Unprecedented rural adoption of technology:** 100% of families adopted and continue using biodigesters. Success was driven by a socially transformative approach—including community sessions with 123 people (81 women)—and the FFBS model as a platform for ownership and technical assistance.
- **More resilient, sustainable production systems:** Each biodigester produces 200 liters of biogas per day, fertilizing up to 5.2 hectares per year and boosting yields in bean, corn, banana, and vegetables. This reduced reliance on chemical fertilizers and improved family self-sufficiency.
- **Strategic alliances that strengthen local capacities:** BIO provided technical support from installation to operation of equipment, creating 20 temporary local jobs. Collaboration with the private sector enabled training for women and youth, who now apply these skills at home.
- **Forward-thinking institutional scaling:** CARE has adopted biodigesters as our flagship technology in Honduras. The project was named a finalist in FAO's Global Innovation Competition. Advocacy is underway to scale the model to 1,000 biodigesters nationwide.

Challenge Highlights:

- **Sustained support essential for adoption:** While biodigester adoption was achieved, families required at least six months of technical and social follow-up to fully integrate them into daily life. This included adjusting routines, managing waste input, and maintaining systems—made possible through technical support and regular community sessions.
- **Structural barriers to rural financing:** Many smallholders lack credit history or formal collateral, limiting their access to loans and hindering independent scaling. This highlights the need for partnerships with rural banks, state programs, and subsidy schemes, especially for women and youth without access to capital.
- **High upfront cost remains a barrier without external support:** Despite clear medium-term economic benefits, the cost of installation (\$1,655 per unit) is high for most rural families. This reinforces CARE's commitment to a progressive co-financing model involving public, private, and international partners.

Lessons Learned:



- **A social lens is critical:** Addressing harmful social norms facilitates women's adoption of technology and improves household equality.
- **"Learning by doing" strengthens learning:** Involving families in construction and installation fosters ownership, deepens knowledge, and reduces costs.
- **Peer exchanges foster replication:** Hands-on peer-to-peer learning built trust and encouraged adoption and replication of the model in 10 communities.
- **Sustainability requires local partnerships:** Municipal governments play a key role in integrating clean technologies into environmental planning.
- **Training local youth was a strategic investment:** Engaging young people in system installation empowered them as community promoters, creating transferable knowledge.
- **Scaling requires leadership and vision:** CARE's commitment to biodigesters—backed by high-level engagement and a goal of scaling to 1,000 units—shows that innovation thrives on institutional leadership and strategic vision.

PARTICIPANT TESTIMONIAL

Lesly and her husband, Roberto, 49, started their pig production with the support of CARE three years ago and were selected to receive a biodigester through their participation in FFBS.

"I always wanted to have a stove inside my house and I achieved it thanks to the biodigester," Lesly states. "Now I no longer have to go out to look for firewood; I just light it and the fire is ready." Thanks to the biodigester, they now have a family garden, better nutrition, fewer expenses, and more time for productive activities.



EXPENDITURE REPORT

The funds donated by MD19 Lions clubs – a total of \$38,182 - have been fully spent and utilized.

Line-Item	Budget (in USD)	Total Expenses (in USD)	Balance	Utilization Rate
Personnel/Staff	6,037	6,372	(335)	106%
Staff support	2,596	2,251	345	87%
Transportation to field projects	848	848	0	100%
Construction of Biodigesters	16,556	16,556	0	100%
Communications	333	344	(11)	103%
Motorcycle maintenance/staff travel	751	750	1	100%
Field Schools	444	444	0	100%
Project signage and materials	1,347	1,347	0	100%
CARE Honduras office running cost	4,306	4,306	0	100%
CARE USA Administrative Support	4,964	4,964	0	100%
Total	38,182	38,182	0	100%

THANK YOU! We are grateful for the generous support of Multiple District 19 Lions clubs. The money you donated has improved the lives of hundreds of rural families in Honduras.

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