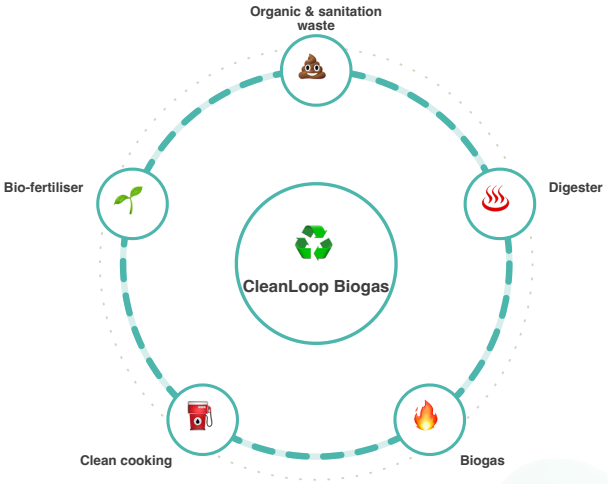
WASTE → VALUE

CleanLoop Biogas

Sanitation → energy

Bangladesh's faecal-sludge gap meets viable, profitable biogas-and-fertilizer resource recovery



Organic & sanitation waste → Digester → Biogas → Clean cooking → Bio-fertiliser

✓ PROVEN PRECEDENT

IDCOL/SNV financed 37,269 digesters; 43% IRR unsubsidised

▲ WHY IT MATTERS

Sanitation gap costs ~6.3% of GDP · ~5M-plant potential, 150k built

THE SITUATION IN BANGLADESH

In urban Bangladesh roughly 42% of residents depend on on-site sanitation, yet faecal sludge is handled mostly by uncoordinated, informal pit-emptying markets rather than formal treatment, leaving a major safety and treatment gap [1]. The cost of that gap is staggering: the World Bank's Water and Sanitation Program estimated inadequate sanitation cost Bangladesh Tk 295.48 billion in 2010, about 6.3% of GDP, with around 40% of people still relying on shared, rudimentary facilities [5]. At the same time the country generates roughly 124 million tonnes of livestock and urban waste each year and could in principle support about 5 million biogas plants, but only around 150,000 have ever been built [6]. The same waste streams that threaten public health are therefore a largely untapped energy and fertilizer resource sitting in plain sight [6].

OUR PITCH

CleanLoop Biogas runs a paid faecal-sludge-management service and pays for itself by selling what it recovers, because faecal sludge and organic waste can be converted by anaerobic digestion into biogas energy, soil-conditioning biofertilizer and feed [2]. The unit economics are proven, not hypothetical: a 2022 Heliyon study of 300 household biogas plants in Bangladesh measured a net annual benefit of about USD 295 per plant and a 43% internal rate of return even without subsidy [3], and decentralized recovery elsewhere has cut household energy costs by up to USD 2.07 per day and fertilizer costs by up to 72.6% [8]. Our real wedge is operations: that same study showed plant survival hinges on follow-up maintenance service (p<0.001) and operator training (p=0.045), so CleanLoop builds the recurring service-and-training layer that informal markets lack [3], and we raise yields by co-digesting cow manure — slightly below the optimal 20–30 C:N ratio on its own — with higher-carbon waste to stabilize digestion [4]. The deployment-and-finance model is already de-risked in-country: under the National Domestic Biogas and Manure Programme, IDCOL with SNV financed roughly 37,269 household digesters between 2006 and 2012 [7]. We are honest that scaling FSM-fed digesters to community scale still needs field validation, but the core economics and the operations gap they expose are well-evidenced [23].

Built so the operator never fails

HelperChain doesn't hand out a loan and walk away. Every operator gets the **full rail** — inputs, training, finance, supervision and a **guaranteed buy-back** of what they produce. We carry the risk so an ordinary person can succeed.

Equipped & trained
We provide the tools, inputs and hands-on training to start — turning **organic & sanitation waste** into a working operation. No prior capital or expertise required.

Funded, not indebted
Pay-as-you-go, **riba-free** finance turns a poor person into a *funded* operator — with **no debt if a cycle fails**. The network carries the downside, not the operator.

Supervised & supported
Ongoing follow-up and quality assurance — the single factor peer-reviewed evidence shows decides whether ventures survive **(p<0.001)**. The operator is never left alone.

Guaranteed buy-back
HelperChain **commits to purchase the output at a fair, pre-agreed price**, so there is always a market — the operator just produces; **we guarantee the offtake**. This is what removes the fear of failure.

Surplus recycles
A thin margin is recycled to fund the next operator — so help compounds and the network grows stronger with every person it lifts.

The promise: we give the operator everything needed to succeed — and we buy back the output at a fair, pre-agreed price. Inputs in, output bought back, risk carried by the network — so they never fail alone.

SOURCES (8)

1. Hasan, M. M. et al. (2022). Assessment of urban sanitation status and management gaps in a metropolitan city, Bangladesh. Frontiers in Water. www.frontiersin.org/journals/water/artic…

2. Diener, S. et al. (2014). A value proposition: Resource recovery from faecal sludge. Resources, Conservation and Recycling, 88, 32-38. www.sciencedirect.com/science/article/pi…

3. Bedana, D. et al. (2022). Financial and functionality analysis of a biogas plant in Bangladesh. Heliyon, 8(9), e10727. pmc.ncbi.nlm.nih.gov/articles/PMC9519478…

4. Wang, X. et al. (2014). Effects of Temperature and C/N Ratio on Anaerobic Co-Digestion of Manure and Rice Straw. IJERPH, 11(8), 8083-8097. pmc.ncbi.nlm.nih.gov/articles/PMC4016299…

5. World Bank (2024). Towards a cleaner Bangladesh (citing WSP, Economic Impacts of Inadequate Sanitation). World Bank Blogs. blogs.worldbank.org/en/endpovertyinsouth…

6. The Business Standard (2024). Bangladesh vastly misses out on biogas, organic fertilizer potential. www.tbsnews.net/supplement/bangladesh-va…

7. van Hessen, M. (2012). Assessment of Small-Scale Biodigester Programmes: the SNV and Hivos Approach. Energypedia. energypedia.info/images/8/82/Van_Hessen_…

8. Mayilla, W. et al. (2026). Biogas and biofertilizer resource recovery from kitchen waste and fecal sludge in decentralized settings. Renewable Energy. www.sciencedirect.com/science/article/ab…