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Empowering Women Entrepreneurs to Drive Rural Clean Energy Solutions



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CONTEXT

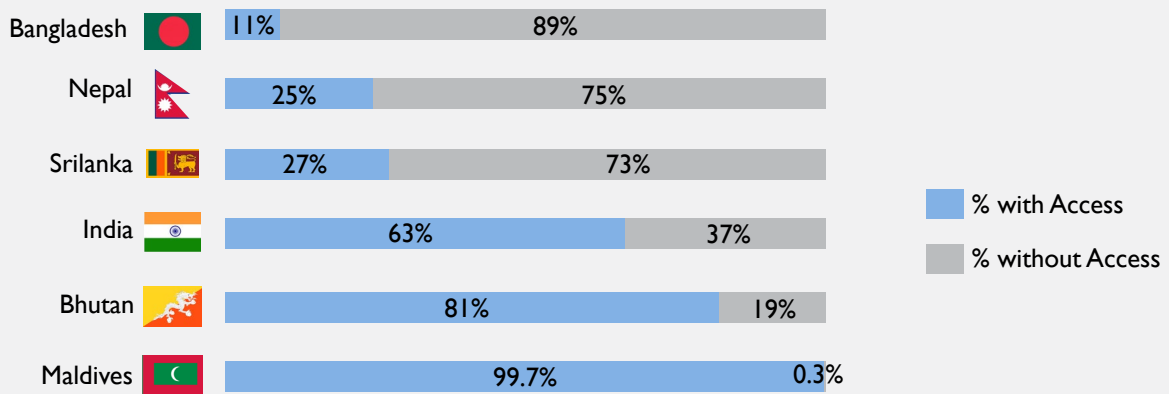
Since 2022, USAID has been supporting a market-driven approach in rural India to increase access to clean energy solutions through a network of grassroots women micro-entrepreneurs. This document captures how the program has unfolded over the last two years, what has it achieved in the process and key learnings it has generated. We believe the document will raise curiosity about the model, encourage partnerships, and inspire the conceptualization of similar programs in South Asia.

South Asia has made significant strides in driving adoption of clean energy; however, there are ample scope for improvement

There is a significant opportunity to impact rural families in South Asia through facilitating access to clean cooking solutions

652 million (32%) out of 2.1 billion people globally **without access to clean cooking fuels and technologies are from South Asia¹**

Access to Clean Fuels and Technologies for Cooking among Rural Populations of SAREP Countries



Note : As per World Bank, South Asian countries are Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. SAREP currently does not focus on Afghanistan and Pakistan.

Access to grid connected electricity in South Asia has steadily improved over the last decade but its affordability and reliability still need to improve



In April 2024, the Bangladesh Rural Electrification Board witnessed a **25% supply shortfall** against demand which led to **5 to 6 hours of loadshedding every day** in rural areas²



Despite near universal rural electrification, rural areas in India continue to face **2.1 hours of power outages** daily on an average³



Sri Lankan households pay **16 to 68 USD per month** for electricity which is **254% to 298%** of its South Asian counterparts⁴

1. Source: World Bank, Access to clean fuels and technologies for cooking, rural (% of rural population) - South Asia, 2022, [Link](#), Internal analysis based on 2022 World Bank data

2. The Daily Star, Power shortage more acute in rural areas, 2024, [Link](#)

3. Press Information Bureau, Power Supply in Rural Areas, 2024, [Link](#)

4. PublicFinance.lk, Electricity Bills in Sri Lanka: Highest in South Asia, 2024, [Link](#)



Case in Point : India

Issues around access to energy in rural India are still prevalent



Decreasing Affordability of Conventional Energy Solutions

01 High LPG costs push families towards regressive cooking fuels



Over the last 5 years, domestic LPG prices in India has increased by 27%¹ on an average while the subsidies have significantly decreased – which has led rural households going back to high-carbon cooking fuels like biomass. This backward transition also adversely affects the family's health. The behaviour is more pronounced for lower income households. 75%² households without an LPG connection earn less than INR 10,000 per month.

02 Share of energy costs on rural per capita consumption expenditure is increasing rapidly



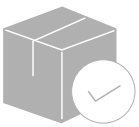
The share of rural monthly per capita consumption expenditure (MPCE) on energy and energy services on the total monthly consumption expenditure grew from 12% in FY 2011-12 to 14% in FY 2022-23³. Although, prima facie the growth may seem marginal but the MPCE for energy and energy services grew by an annualized rate of 10.7 percent in rural areas – the growth being faster than food and non-food commodities.

03 Availability of primarily poor-quality local products lead to mistrust of energy efficient solutions among rural end-users



Predominantly, poor-quality local products like LED bulbs are available in rural areas, often breaking down before serving their full lifespan. This leads to dampened user experience and mistrust around energy efficient products and compel families to continue using low efficiency products like CFL or incandescent bulbs instead. The user experience is further stifled by lack of after-sales services, due to which repair and replacements become difficult in remote rural villages.

Lack of Availability, Awareness and Access to Clean Energy Solutions



04 Lack of last mile focus among private sector to effectively serve rural markets



Reaching rural households with clean energy remains a challenge due to high market access costs and the time needed to build awareness and trust. To overcome these challenges, the Private Sector needs to invest heavily in creating last-mile market access, which often stops them from serving these markets. Hence, private sector innovations in clean energy fail to timely reach potential rural customers.

05 Disproportionate impacts on women and children due to lack of clean energy access



Children and women are highly vulnerable to indoor air pollution caused due to smoke emanating from regressive cooking fuels – leading to chronic respiratory illness and sometimes even death. In 2019 alone, household air pollution from solid fuels contributed to over 0.6 million⁴ deaths in India. Due to prevailing gender norms, women also experience the drudgery of gathering and treating biomass like firewood and dung cakes all year round for cooking.

1. Internal Analysis from Indian Oil Data, [Link](#)

2. CEEV, State of Clean Cooking Energy Access in India, 2021, [Link](#)

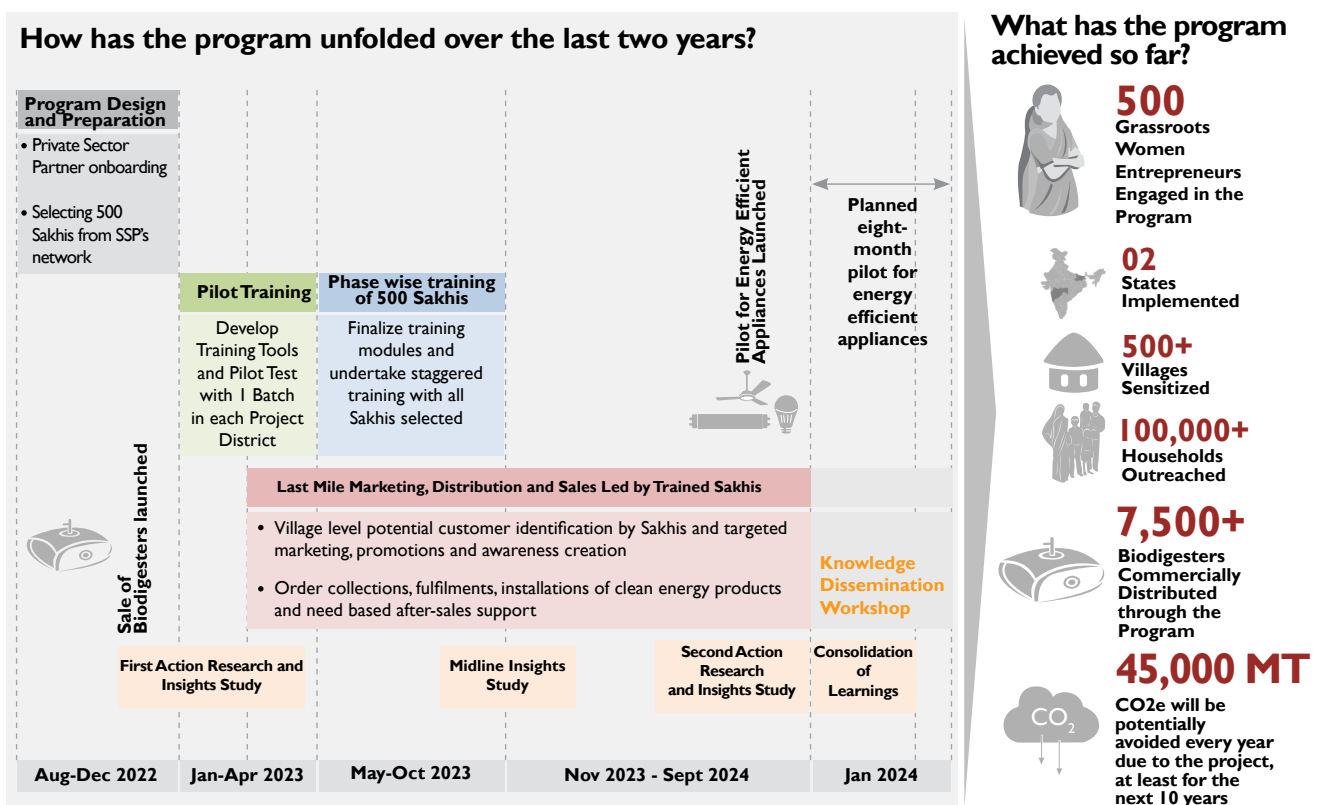
3. Observer Research Foundation, Article, 2024, [Link](#)

4. Statista, Number of deaths attributable to household air pollution from solid fuels across India from 1990 to 2019, [Link](#)

THE USAID SAREP SUPPORTED PROGRAM

Reaching rural households with clean energy remains a challenge due to high market access costs and the time needed to build awareness and trust. To overcome these challenges, the Private Sector needs to invest heavily in creating last-mile market access, which often stops them from serving these markets. However, organised networks of local rural women entrepreneurs are usually seen as trustworthy champions and promoters of clean energy solutions. For the last 15 years, private sector companies have partnered with Swayam Shikshan Prayog (SSP) to introduce clean energy solutions in rural markets through local women entrepreneurs in India through an economically viable market-based model. Since 2022, SAREP has been supporting a market-based model in India to scale access to clean energy solutions for rural households.

Evolution of the Program and Key Achievements



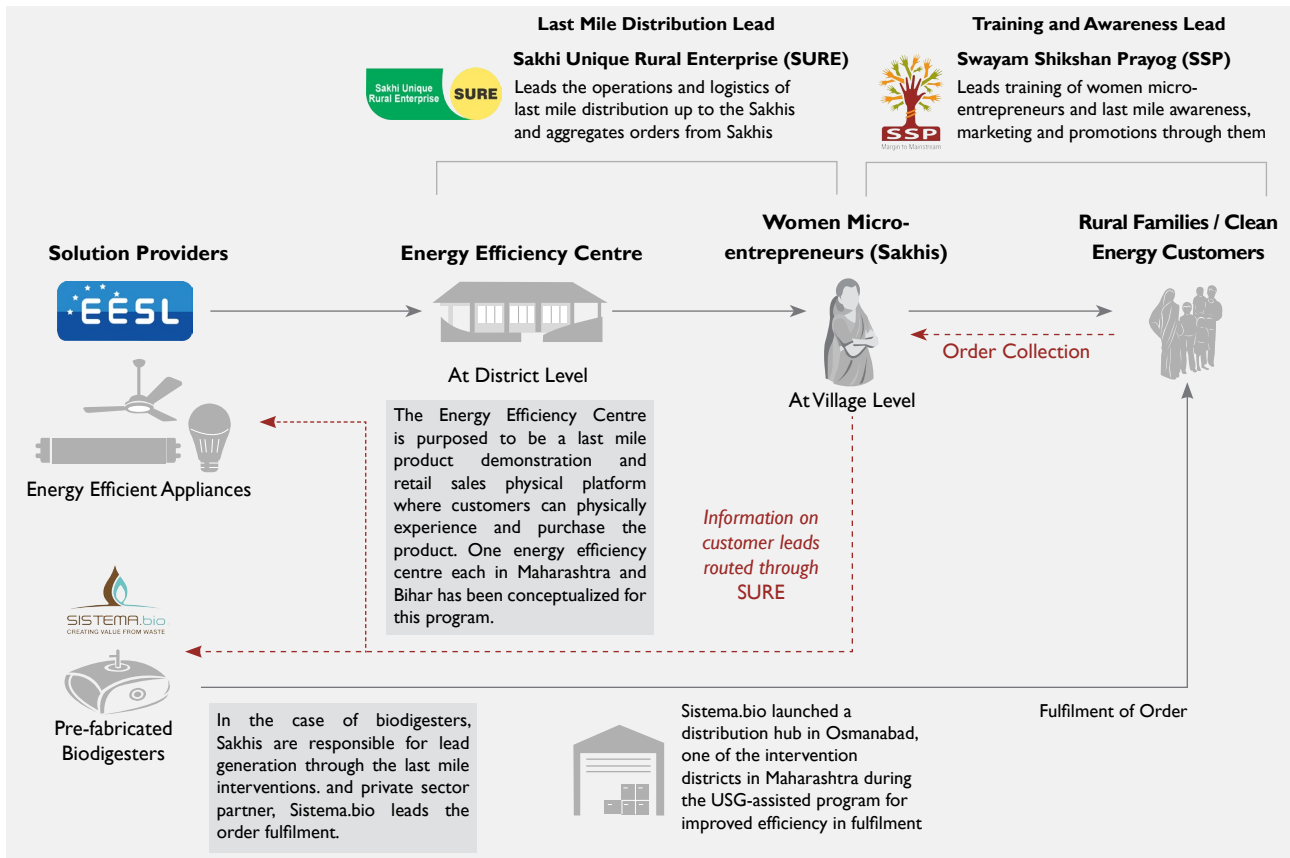
The two-year USG-assisted program executed by Swayam Shikshan Prayog (SSP) was meticulously planned to identify and select the right women micro-entrepreneurs, build their capacities around the promoted clean energy products, and support them in the last-mile interventions they led in their villages. This has driven commercial distribution of over 7,500 biodigesters in Maharashtra and Bihar. Inspired by the success, the program stakeholders have decided to launch a pilot with another product partner to drive adoption of a portfolio of energy efficient products.

Additionally, the program demonstrated immense agility by continuously monitoring progress, consolidating learnings, and iterating the model as needed. For example, after one of the initially selected clean energy products failed to find the right product-market fit after several rounds of testing, the program swiftly shifted focus to increase the commercial adoption of biodigesters, effectively utilizing project resources. The decision not only helped achieve the project's greenhouse gas savings targets but also provided rural consumers with a clean energy product better suited to their needs.

The program adopted a last mile distribution model with grassroots women entrepreneurs at the core of the market ecosystem

The market ecosystem created by Swayam Shikshan Prayog (SSP) bridges the gap between private sector organizations and hard-to-reach rural customers in underserved villages. Without this ecosystem, these customers would remain excluded from private sector clean energy innovations. At the heart of the program is a grassroots woman micro-entrepreneur, known locally as a Sakhi. She leads last-mile awareness efforts, facilitates order collection, oversees order fulfillment, and supports after-sales customer needs at the village level.

Last Mile Distribution Model



For over a decade, Swayam Shikshan Prayog (SSP) has been coaching, mentoring, and launching grassroots women entrepreneurs across multiple sectors, including healthcare, clean energy, and agriculture. This women-led network of last-mile micro-entrepreneurs has enabled organizations, from large multinational corporations to local social enterprises, to effectively market, distribute, and sell their products and solutions to underserved and hard-to-reach rural consumers. In turn, these women gain confidence, enhance their skills, and increase their income, contributing to their families' well-being. This creates a win-win-win scenario for private sector firms, rural clean energy users, and grassroots women micro-entrepreneurs. SSP had in the past collaborated with several private sector companies under USAID's wPOWER India program, creating a network of 1,000 women entrepreneurs and reaching 1 million people.

In the USG-assisted program, SSP selected 500 women micro-entrepreneurs from their existing network and replicated their proven market ecosystem to provide access to a portfolio of locally appropriate clean energy products, such as biogasifiers and energy-efficient electrical appliances, for rural families.

SPEAKING OF IMPACT

The program delivered a multi-stakeholder impact



Clean Energy Customers



The biogas digester helps us cook faster, saves LPG costs, and makes chapaati and bhaakhri taste better

Bhimrao Dadarao Khot



We have been able to double our sugarcane production from half an acre of land from 10Tons earlier to 20Tons now after applying bio slurry

Savita Kale



I invested my earnings from selling biogas digesters to purchase a sewing machine – which is helping me earn INR 150 to 200 now everyday

Bismillah Jabbar Shaikh



I was not very good at handling my emotions after rejections. This project has really taught me how handle rejections – making me a better entrepreneur

Komal Shinde



Women micro-entrepreneurs



Private Sector Partner



Effective uptake of our product needs grassroots awareness creation, trust-building, and handholding – which SSP's women micro-entrepreneurs have done with precision

Atul Mittal

Director Partnerships India, Sistema.bio

Program Sponsor



Gender and inclusivity are at the heart of all USAID-supported programs. We are happy to partner with SSP to build a strong network of women clean energy entrepreneurs for rural markets.

Apurva Chaturvedi

Senior Regional Clean Energy Specialist, USAID/India; COR - SAREP

Implementation Partner



The USAID SAREP Grant has helped us in designing and executing the last mile interventions needed for the success of a project of this scale

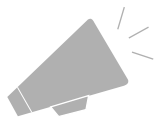
Upmanyu Patil

Director Programs, Swayam Shikshan Prayog

FOUR LESSONS LEARNED

for designing similar market-based programs for driving adoption of clean energy products in rural markets of South Asia

1. Nudge adoption of a new clean energy product category in a new market through field demonstrations and effective communication of product benefits



In the USG-assisted program, the grassroots rural women micro-entrepreneurs (Sakhis) leads locally in their villages an extensive product promotion plan for biodigesters which includes household visits, community-based awareness meetings with farmers and SHGs and WhatsApp-based digital promotions. Additionally, Sakhis leverage early adopters in their villages for demonstration of the product where existing customers share their positive experience, potential customers clarify questions – making them more confident about their decision to purchase the product.

2. Encourage uptake of high-ticket clean energy products by reducing the upfront cost through innovative product financing mechanism



The program, through the support of the private sector partner, Sistema.bio, extended carbon financing benefits to the rural families to reduce the cost of purchasing the products from originally INR 36,000 to INR 8,500 for the first 5,000 biodigesters and to INR 13,500 for the next 2,500 biodigesters – a staggering 60 to 75% discount. This helped the last mile distribution team develop a solid pitch on the cost benefits of adopting biodigesters, which encouraged rural families to invest in the clean energy solution.

3. Sketch the profile of early adopters for targeted and efficient marketing, promotions and sales conversion efforts



In the initial phase of the program, the last mile distribution team thoroughly assessed the technical criteria for adopting biodigesters. A family needs at least 2 to 3 cows or buffalos, space for installing biodigesters, proximity of the installation location to both kitchen and the farm, and availability of water. The assessment helped Sakhis to map potential early adopters and narrow down the total addressable market in their respective villages, with whom they planned to undertake targeted last mile interventions.

4. Select locally embedded women micro-entrepreneurs for effectively reaching potential adopters and building trust for product purchases



In the USG-assisted program, SSP harnessed the power of their existing team of grassroots rural women entrepreneurs who brought in skills of last mile awareness creation, marketing and sales, and leveraged their pre-existing network of farmers, women, customer households for driving adoption of biodigesters. These women micro-entrepreneurs, locally known as Sakhis, are selected from the program intervention villages. Their local presence helped in identifying potential adopters and building trust, crucial for the success of the program.

Women and children disproportionately bear the brunt of lower access to clean energy solutions. This program, by choice, selected women micro-entrepreneurs, who can empathize with the pain points and effectively integrate the social cause of the program through last mile interventions with target households.



About SAREP

The South Asia Regional Energy Partnership (SAREP), a flagship program to advance objectives of the U.S. Government's Clean Asia Enhancing Development and Growth through Energy (Clean EDGE), is a five-year initiative (2021-26) that aims to improve access to affordable, secure, reliable, and sustainable energy across six South Asian countries—Bangladesh, Bhutan, India, Maldives, Nepal, and Sri Lanka—in line with these countries' climate and clean energy priorities.

**Do you have a clean energy innovation in South Asia
which you would like to scale?**

Scan the QR code to know more how the SAREP Grant can support your organization



Or simply log on to: <https://sarepenergy.net/>

To know more about the USG-assisted program by SSP

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