

IMPACT SHEET • SWITCH-ASIA PROJECT
**PROMOTING RENEWABLE ENERGY AS A DRIVER
FOR SUSTAINABLE DEVELOPMENT AND MITIGATION
OF CLIMATE CHANGE IN SRI LANKA**

Up-scaling biogas technology for sustainable development and mitigating climate change in Sri Lanka



**Reducing organic waste by 10 000 tonnes per year and
GHG emissions by 2 895 tonnes CO₂e per year**



The Challenge

The availability of sustainable, clean and reliable energy sources is the essential driver for development. In Sri Lanka's growing economy there is an opportunity to reduce poverty by realising the use of renewable energy where there is limited access to conventional sources of energy. The Sri Lankan tourism industry is also booming with an increasing number of tourists annually. Hotel and restaurant facilities need to deal with the growing amount of waste and energy costs. Biogas production is a sustainable win-win solution to manage waste while contributing to energy needs and reducing energy costs. However, development of biogas technology requires strong technical capacity of biogas units' constructors. The lack of after-sale service and maintenance of biogas units, as well as lack of SME appropriate entrepreneurial capacities, has hampered sustainability of past projects.

Objective

The project *Sri Lankan Renewable Energy* aims to create an enabling environment for large-scale dissemination of biogas technology for SMEs in the tourism industry and in households. To achieve it, the project targets both the demand side and the supply side by mobilising the manufacturing and construction private sector, micro finance institutions (MFIs), tourism industry and the society as a whole. The specific objectives include:

- to have a Provincial Biogas Programme (PBP) operational in 5 provinces;
- to advocate an improved regulatory framework at the provincial level;
- to increase the total accumulated funds loaned/granted for biogas system installation;
- to increase the level of involvement and awareness of sustainability issues among hotels and households;
- to reduce waste further;
- at least 200 professionals from public and private sector to have increased knowledge and skills and to have a role in the installation and promotion of biogas.

Activities / Strategy



Building Capacity through Training

The project conducts 'training of trainers' (ToT) in construction of biogas systems, as well as training for SMEs in operations & maintenance (O&M) and repair of biogas systems, and in manufacture of biogas systems and appliances. Workshops are held to strengthen the entrepreneurial capacity of SMEs (management, marketing, finance).



Engaging with Households as Consumers

The project increases households' awareness of sustainability issues, builds consumer confidence for the biogas technology and stimulates / creates market demand for sustainable products. This is done through market-based channels with the development and production of posters, brochures, leaflets, DVDs and broadcasting of messages in the national media.



Identifying Financing Schemes for Biogas

To increase access to green finance, workshops for banks and financial institutions are held to identify mechanisms to provide credits/loans for biogas system installation. Successful biogas systems, especially medium to large size biogas systems, are showcased, showing their contribution to lowering the costs of LPG and solid organic waste management. Fast investment recovery (around 3 years) is explained together with identification of sufficient SMEs capable of installing and providing services for biogas systems. Together, these arguments convince financial institutions to create loan schemes targeting the biogas sector.



Creating a Supportive Policy Framework

The project targets policymakers of governmental institutions (under the auspices of SEA) and enhances their awareness and understanding of SCP in general and biogas technology in particular. This contributes to policy dialogue at national and sub-national levels (provincial and district) in order to support the adoption of biogas technology. Capacity building and technical support are also provided to define appropriate economic instruments.



TARGET GROUPS

- Micro, small and medium-sized enterprises (MSMEs) from the construction sector – at least 35 companies
- Financial institutions
- Small and medium-sized enterprises (SMEs) from the tourism industry – approximately 35-50 hotels
- Public (households) as energy consumers
- Public bodies: Provincial Councils (PC) – directly targeting five PCs, and the Ministry of Livestock and Rural Community Development, Sri Lanka Sustainable Energy Authority (SEA), and the Central Environment Authority

Scaling-up Strategy



Establishing Vocational Training Institutes

On a technical level, the project enhances the capacity of 35 to 50 MSMEs in the technical aspects of biogas technology, in business management, outreach and marketing as well as in access to finance. The project also helps upgrade/revise technical norms and standards of small to medium biogas systems in Sri Lanka, builds mechanism for continuous training of biogas practitioners through ToT via the provincial governmental vocational training institutes who are expected to become responsible for the biogas technology training scheme, and development of training materials, establishing a certification accreditation scheme and providing professional internships.



Ensuring Micro- and Macro-level Changes

On an economic level, the project targets micro- and macro-level changes. At the micro (household, MSME) level, the biogas technology will create savings in energy costs, solid waste disposal, and fertilizer (or higher yields from home-gardens). Another economic benefit will be for those MSMEs who diversify their production, creating new job opportunities and increasing their turnover and profits. At the macro level, the project contributes to economic development, poverty reduction and decreased environmental cost.



I came to know the project through a workshop for constructors and was interested in the technology. So I built one at home, to test its feasibility and benefits, before I decided whether to promote it to my future clients. An 8 m³ Chinese-type biogas unit is installed in my backyard and connected to two toilets and also used to dispose of kitchen waste. On average, my wife cooks for four household members and occasionally four to ten construction workers that resulted in the replacement of 12.5 kg LPG cylinders every month. Now, with the biogas unit, much cooking is done using the gas generated from the unit. I believe there is huge potential for biogas technology, especially in hotels where wastewater treatment is a common cause for concern.”



*Mr. Milroy Lanza,
a reputable SME house
constructor in Chilaw area,
Sri Lanka*



Encouraging Relevant Legislation Changes

On a social level, the project raises awareness about SCP issues, especially in relation to the efficient use of energy, climate change and environmental sustainability, among policymakers, the population at large and within the construction sector. On a policy level, the project encourages relevant legislation changes (of a technical nature such as norms, building codes and standards to create enabling environment for biogas technology dissemination as well as encouraging legislation change in favour of SCP and renewable energy) by engaging various policymakers in capacity building and awareness-raising activities.



Creating Incentives Favouring Biogas Technology

The project engages policymakers and financial institutions to create an appropriate legal framework and financial mechanisms for MSMEs in construction and manufacturing sectors and their customers – small and medium-sized hotels and households – to encourage the move towards biogas technology as a sustainable practice.

Results



Constituted Policy and Financial Instruments

Three Provincial Biogas Programmes (PBPs) are already functional in Sri Lanka's North-Western, Southern and Eastern Provinces, soon followed by the Western and Central Provinces. Each PBP has an appointed committee, with representatives from different provincial departments (Health, Agriculture, Energy, Environment, Education, etc.) and chaired by the Chief Minister or the Commissioner of local governments. PBPs define objectives regarding the up-scale of biogas technology in their province, and a strategy and action plan (aligned with the provincial energy plan). At the provincial level, the PBP committees create a regulatory framework that includes by-laws and action plans regarding renewable energies and waste management, supported by biogas technology, with a five-year horizon. The next steps will be the creation of a PBP association that will advocate towards the up-scaling of biogas technologies in Sri Lanka, by showcasing case studies, experience and lessons learned.



Created Demand and Market for Biogas

The project facilitates two loans provided by the government-owned Regional Development Bank (RDB) and a commercial bank totalling LKR 850 000 (EUR 5 150), which is equivalent to installing seven biogas systems with a 10 m³ capacity and processing 60 kg of organic waste per biogas system per day. The loans support the increasing demand of biogas systems, especially by farmers, who require medium-sized installations and thus a higher capital expenditure that is generally loaned by banks and micro-financial institutions. Currently, the Regional Development Bank has



a loan scheme at 6% interest rate, with payment period of three years, for livestock farmers from the North-western Province and the SANASA Bank offers a loan scheme for industries at the national level (such as tourism industries) at an 8% interest rate, also with three-year payment period. The increasing number of biogas systems installed, influenced by this project, is an indicator of increasing awareness of sustainability issues, which will be analysed after the final data collection and compared to the baseline reports.



Our action suits Sri Lanka's needs in terms of a waste management solution rather than an energy solution, since 96% of the country is grid connected to electricity. Waste is one of the burdens of the nation, and biogas technology can help to tackle the management of organic waste, which is calculated at 60% of the total amount of waste collected by the authorities (municipal, urban and rural councils).

*Mr. Hugo Agostinho,
Project Manager,
People In Need (PIN)*












Established a Solid Supply Chain

Professionals from the public sector (54) and the private sector (66) have increased their knowledge and ability, having been trained in different skills such as:

- design of biogas systems (private sector professionals and public engineering departments);
- installation of biogas systems (private sector professionals and public engineering departments);
- promotion of biogas (public sector professionals, especially from livestock, agriculture and health departments);
- business development (private sector professionals);
- sales & promotion of biogas technology (private sector professionals).

Impact in Numbers

<p>Economic Impact</p> 	<ul style="list-style-type: none"> Achieved monetary savings of LKR 6 200 000/year (EUR 37 500/year). Savings were made by hotels, households, and farmers by reducing expenses in LPG gas purchase and in waste management. Created new business opportunities through biogas by installing 475 new biogas units done by 40 MSMEs trained by the project Introduced green products of biogas and bio-slurry organic fertilizer for private use, replacing and reducing expenses spent on chemical fertilizers 		<ul style="list-style-type: none"> Engaged 128 heads of provincial department in the Provincial Biogas Programme Committees (5 committees)
<p>Environmental Impact</p> 	<ul style="list-style-type: none"> Reduced household firewood consumption of 263 tonnes per year Reduced organic waste of 10 000 tonnes per year through 12 biogas systems built in hotels, 225 built at the farmer/household level, and 250 small systems installed in schools 	<p>Women's Empowerment</p> 	<ul style="list-style-type: none"> Involved 191 women in capacity-building programmes for fibre-glass biogas constructors, domestic biogas users, designers, promoters, policy-level decision-makers. Encouraged 200 households to be involved in the initiative where women can save nearly 1.5 hours a day on cooking-related activities. Out of 200 households, 150 shifted to clean cooking fuel, that is from firewood to biogas, and 50 shifted from LPG to biogas, with an overall cost saving of LKR 1 000 per month per household (EUR 6/month).
<p>Social Impact</p> 	<ul style="list-style-type: none"> Provided new skills in biogas technology for 110 professionals, that could contribute in the creation of self-employment and new start-ups 	<p>Policy Development</p> 	<ul style="list-style-type: none"> Engaged with policymakers through 15 policy events Contributed to the development of the North-western Province's action plan to upscale biogas technology for the next 5 years, aligned with the provincial energy plan, including creating a by-law on solid waste management including biogas technology as one possible solution for solid waste management, and developing a code of practice for new buildings where biogas systems will be mandatory to replace septic tanks Contributed to developing the Eastern Province's action plan to upscale biogas technology for the next 5 years, aligned with the provincial energy plan and created a by-law on solid waste management including biogas technology as one possible solution for solid waste management Contributed to developing actions plans for the Southern and Western Provinces to upscale biogas technology for the next 5 years, aligned with the provincial energy plan
<p>Climate Benefits</p> 	<ul style="list-style-type: none"> Reduced GHG emissions of 2 895 tonnes CO₂e/year by installing biogas systems Created wider awareness among the general public as well as in the private sector, financial institutions and consumers regarding climate change risks through promotion campaigns to increase the biogas technology uptake 	<p>Europe-Asia Cooperation</p> 	<ul style="list-style-type: none"> Contributed to EU-Asia partnerships by organising an international biogas conference gathering 80 participants from various countries (November 2015) Participated in two EU-Asia exposure visits to the national biogas programme in Cambodia
<p>Green Finance</p> 	<ul style="list-style-type: none"> Engaged with banks and financial institutions through awareness and networking sessions that brought together construction MSMEs, banks and provincial councils Facilitated the creation of especially low interest rates (6% - 8%) for biogas loans developed by two banks 		
<p>Target Group Engagement</p> 	<ul style="list-style-type: none"> Engaged 40 MSMEs in technical training to strengthen the quality and quantity of biogas service providers Engaged 1 200 people from different provincial departments in awareness sessions to promote biogas technology Engaged 40 hoteliers through eight exposure visits to hotels and other industries using biogas systems 		



Legend

- Eligible countries for the SWITCH-Asia Programme
- Non-eligible Asian countries for the SWITCH-Asia Programme

Project implementation area

- City
- Region
- Country

The boundaries shown on this map do not imply on the part of the European Union any judgment on the legal status of any territory or the endorsement or acceptance of such boundaries.

OBJECTIVES

The project aims to create an enabling environment for large-scale dissemination of biogas technology for SMEs in the tourism industry and in households. To achieve it, the project targets both the demand side and the supply side by mobilising the manufacturing and construction private sector, micro finance institutions (MFIs), the tourism industry and society as a whole.

DURATION



PROJECT TOTAL BUDGET

EUR 831 931
(EU contribution: 80%)

PROJECT CONTACT

People in Need – Sri Lanka Mission
72 ½ Temple Road
Nawala
Sri Lanka

Mr. Hugo Agostinho
Tel.: +94 77 210 2229
Email: hugo.agostinho@peopleinneed.cz

Website: www.lankabiogas.com

PARTNERS



People In Need
(Clovek v tísni, o.p.s),
Czech Republic



Janathakshan

Janathakshan, Sri Lanka