African Biogas Partnership Programme II: overcoming the affordability energy challenge

SNV

The ABPP II targets

Construct 13,000 bio-digesters

providing clean energy to 78,000 people

for cooking and lighting by 2017

March 2016

Biomass is used in all sectors of the economy. Poorer households, living on less than $1 a day, depend on biomass and kerosene for cooking and lighting. These are dirty energy sources that negatively affect the environment and household health. Wood or charcoal is used in non-efficient stoves which emit a lot of smoke. This causes indoor air pollution that aggravates respiratory and eye infections, especially among women and children who spend long hours in the kitchen.

Dependence on biomass energy has led to deforestation, with negative consequences to the environment. Forest degradation leads to lower agricultural yields, resulting in reduced incomes and poor nutrition for families.

The second phase of the African Biogas Partnership Programme (ABPP II) is a four-year initiative implemented by Biogas Solutions Uganda (BSU) [*www.biogassolutions.co.ug*] with technical assistance from SNV Uganda. ABPP II is managed by **SNV** and Hivos and funded by the Netherlands Ministry of Development Cooperation. The programme is being implemented in Uganda, Kenya, Tanzania, Ethiopia and Burkina Faso.

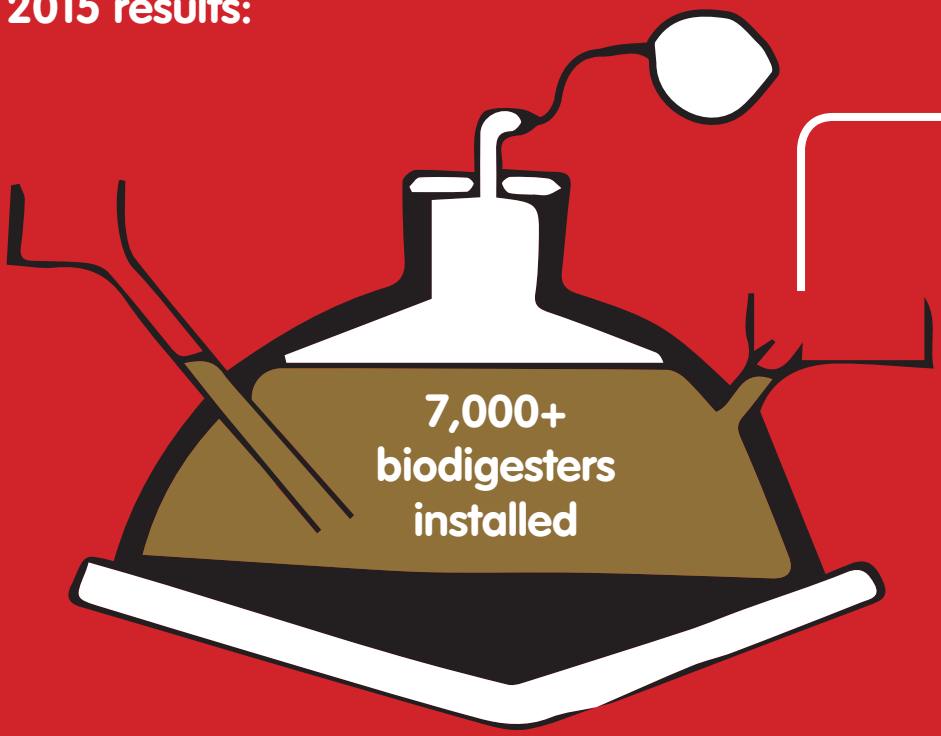
The programme is developing the biogas sector by promoting quality standards, results-based financial solutions, awareness campaigns, and advocating for appropriate government support and policy.

Biogas provides clean, high-quality energy for cooking and lighting. The waste products from a bio-digester also produce organic fertiliser (bio-slurry) that can be used to improve household agricultural production.

The challenge for most households is the initial cost of installing the bio-digester. A bio-digester that provides four hours of cooking and lighting a day costs UGX 1.8-2.2 million (€500-€600), an amount that is out of reach for most rural families in Uganda. In 2015, **SNV** partnered with BSU to design the BSU-2015, a new bio-digester model that costs 25% less.

The BSU-2015 is smaller and more compact. This however does not reduce the quality of the bio-digester or increase the amount of cooking time. The BSU-2015 costs approximately UGX 1.6 million (€450). Masons from partner biogas construction enterprises (BCEs) were trained to construct the low cost bio-digesters and they in turn will train other BCE masons in the new technology. The BSU-2015 will be promoted and distributed in all districts in Uganda as demand increases.

2015 results:



Providing clean energy

to 42,000 people in rural communities

SNV also addressed the challenge of affordable energy by introducing credit-sanctioning incentives to promote end-user biogas lending at financial institutions. The results-based credit incentive supports the sector to develop affordable energy lending facilities for households to purchase biogas solutions.

The Biogas Business Boost Benefiting Farmers (4B-F) programme, funded by EnDev, provides resources for the credit incentive and another quality production incentive. The quality production incentive encourages BCEs to build high-quality biogas plants and provide operation guides for the plants. This increases consumer confidence and reduces the risk for lending institutions. These incentives are paving the way for sustainable and long-lasting solutions for the biogas sector.

Many families in Uganda are still not aware that biogas is available as a clean energy. **SNV**, in partnership with BSU, instituted a 'foot soldier' programme to increase awareness of the available biogas technology. The programme was launched in south-western Uganda, a region with high potential but with the lowest production of bio-digesters in the country.

The foot soldier concept is a grassroots, word-of-mouth awareness campaign that targets farmers directly. 168 foot soldiers are promoting biogas technology from house to house. They collect data about the farmers and pass on the information to BSU and BCEs for follow up. Over 4,000 farmers were reached within a period of three months by this programme.

New study shows

Bio-slurry

increases

Revenue by up to 65%.

and

farmer crop productivity by up to 70%

Bio-slurry
in a vegetable garden

SNV and the Mbarara Zonal Agriculture Research and Development Institute (MBAZARDI) carried out controlled trials to test the effect of applying bio-slurry in three forms (liquid, dried and compost). Three test crops were selected: maize to represent cereals, coffee to represent perennial crops and cabbage to represent vegetable crops.The results of the study showed that:

- Compost bio-slurry applied at a rate of 10 tonnes/hectare is the most effective form of bio-slurry and increased yields of cabbage by 70% and yields of maize by 59%
- Compost bio-slurry applied at rate of 10 tonnes/hectare increased crop revenue per hectare of maize and cabbage by 18% and 65% respectively.

They also studied the effect of bio-slurry on soil fertility. Applying bio-slurry improved soil nitrogen content (one of the major limiting nutrients for most crops), soil aggregation, water-holding capacity and stabilisation of humus content. It also prevented the leaching of nutrients from the soil. Ongoing research on bio-slurry will finalise the results of its application on coffee yields, clarify its effect on soil microorganisms, and determine how it might be helpful in pest control. Additional study will also explore better ways to process, package and deliver the compost bio-slurry, as well as identify additional sources of income for farmers.

SMART DEVELOPMENT WORKS

SNV Uganda

Country Office
Plot 36, Luthuli Rise, Bugolobi
P.O. Box 8339, Kampala, Uganda
Tel: +256 (0) 414 563 200
+256 (0) 312 260 058
Email: Uganda@snvworld.org
www.snvworld.org/country/uganda

Lira Office
Plot 3 Kabalega Road,
Yodev Plaza, Lira
Tel: +256 (0) 758 260 050

Fort Portal Office
Plot 2/4 Rwenzori Road,
P.O. Box 78, Fort Portal
Tel: +256 (0) 758 200778 / 392 200778

Arua Office
Plot 10A Bwana Volla Road, Arua
Tel: +256 (0) 758 200781 /476 420623

Mbarara Office
Plot 10 Haji Kasaka Road,
P.O.Box 1653, Mbarara
Tel: +256 (0) 758 200781 /476 420623