Biogas Plants in Rural Settings

With the biogas plants in their household, these rice farmers now have more time for their kids and are less prone to tiger and elephant attacks. Devirampur, Kotabag, Nainital © myclimate

The project, financed by Coop and implemented in partnership with WWF Switzerland, Helvetas and the local NGO Partners in Prosperity (PnP), involves the construction of totally 3,900 biogas plants in households in rural areas in the state of Uttarakhand in India. By substituting wood as a fuel with biogas, greenhouse gases are being reduced. These biogas plants complement the commitment for regional rice farmers on behalf of Coop, Reismühle Brunnen and Helvetas: a fair, value-added supply chain has been developed for the local rice production, aiming at improved incomes for farmers and adjustments for eco-friendly farming methods.

21,450 persons benefit from better air quality

3,900 biogas plants installed

536 ha of forest saved

The use of biogas plants is adding further local benefits and helping to reduce the consumption of wood as a fuel. But it is not only carbon emissions that are being reduced; it is also expected that there will be a
substantial decrease in deforestation in and around the area and therefore protection of the habitat of endangered tigers, an increase in carbon sequestration in these forests, better health among women and children due to less smoke in kitchens, less time spending on collecting wood, especially women, reduced methane emissions in paddy fields thanks to the application of biogas slurry instead of undecomposed farm yard manure, improved farming productivity due to slurry application (less temporary nitrogen blockage in the soil, more easily available nutrients for top dressing), an opportunity for skilled workers to provide their services for the construction, maintenance, marketing and financing of biogas plants, and increased climate resilience among the population as earnings increase due to savings and income generation grows thanks to skill development.

This project supports the farmers in the fair-trade rice project of COOP with a biogas plant. That means less time for collecting firewood, clean cooking and organic fertiliser for their rice fields.

Annina Böhlen, Sustainability Fund of COOP Switzerland

The use of biogas slurry for the organic production of rice in the area is an important sustainable benefit of the project. This procedure emits less methane into the atmosphere compared to the direct use of manure. The project partner is promoting organic basmati rice production in this area, enabling poor and marginal farmers to earn more from its premium pricing than with rice produced conventionally using chemical fertilisers. This shows that by financing the project, Coop and Reismühle Brunnen will contribute strongly to the sustainable development of the rural population participating in the project. Thanks to all these sustainable benefits, the project is to be implemented as a small-scale project under the Gold Standard.

For WWF, this project is of great importance, as it helps reduce conflict between tigers and people, as the women no longer have to head to the forests to collect firewood.

Bella Roscher, WWF Switzerland

The capacity of the units installed varies and is decided based on the number of people and the number of cattle they own. The cost for a biogas unit is pre-financed by Coop to cover one third. It is likely that subsidies will be received from the Indian government or corporate sources to cover another third. Families are expected to contribute one third of the total biogas digester costs. To secure ownership, households will either provide locally available materials and labour or contribute their share in monetary terms. Carbon finance will be used towards subsidisation of the units, training, operations and maintenance, reaching people in remote areas and other activities pertaining to the project.
Impacts and benefits achieved so far (2018):

- **SDG 1**: The use of slurry (organic fertiliser produced by the farmers themselves) helps to prevent small farmers from becoming dependent on chemical fertilisers, thus improving their families’ financial situation.
- **SDG 2**: The biogas digesters produce organic fertiliser and thus reduce chemical fertiliser, thus contributing to sustainable agriculture.
- **SDG 3**: 21,450 persons have benefited from better air quality since the start of the project.
- **SDG 4**: Because the time-consuming collection of firewood is no longer necessary, children have more time to go to school and do homework.
- **SDG 5**: Only women are entitled to buy and own a biogas plant. This helps to level out the balance of power in the family and to strengthen the position of the women.
- **SDG 7**: 3,900 biogas digesters have been installed since the start of the project.
- **SDG 8**: 7 permanent jobs have been created for the local population and more than 600 people have been trained in the use of biogas plants.
- **SDG 12**: The recycling of organic waste contributes to sustainable waste management.
- **SDG 13**: Each biogas biodigester avoids 5.7 t CO₂ and reduced wood consumption by 3.5 t per year. Since the start of the project, 33,909 tonnes of CO₂ have been saved.
- **SDG 15**: To date, the programme has reduced wood consumption by 39,149 tons and has thus saved 536 hectares of forest from deforestation.
- **SDG 17**: The programme enables the transfer, dissemination and implementation of environmentally friendly technologies in India.

Cow dung is fermented to form biogas, which is fed via a pipe into the kitchen. The organic fertiliser goes onto the rice field and replaces the chemical fertilisers.