

BOLIVIA. BIODIGESTERS FOR REDUCING ENERGY POVERTY AND INCREASING SUSTAINABLE AGRICULTURAL AND LIVESTOCK PRODUCTION



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In Bolivia the impact of biodigesters is widening both at national and local level, thanks to the Center of Research on Biodigesters, Biogas and Biol (*Centro de Investigación de Biodigestores, Biogás y Biol*), sponsored by the *Mayor de San Andrés* University in La Paz, CIPCA and CPTS NGOs and the public Spanish research center CIMNE.

In 2012 a [Feasibility Study for a national program of biogas in Bolivia](#) was published, realized by Hivos, SNV, CIMNE and *Soluciones Prácticas*.

In Bolivia biodigesters constitute a multiple opportunity of improving the life quality of families involved in the agricultural and livestock production, thanks to the fertilizer produced in the process of anaerobic digestion and called biol. Biol has a great potential because it improves crop yields; permits to collect and burn biogas (mostly methane, that when burned turns into CO₂ with 23 times less impact on climate change); can be used as fuel, replacing wood consumption and the work associated with wood collection; reduces environmental impact because it creates an alternative to deforestation; allows a smoke-free way of cooking, thus preserving human health.

In the Country more than 100 biodigesters are currently active, mainly in small dairy farms based in the high plateau and Cochabamba, thanks to a 4.5 years project implemented by EnDev-Bolivia Programme (GIZ) in collaboration with the public Spanish research center CIMNE.

Small dairy farmers (owning 3-6 cows or more) easily add biodigesters to their producing system, since biodigesters generate biol that increases their production of alfalfa by 30-50%, guaranteeing better alimentation for the cows that produce more milk, which turns into higher family income and a sustainable consolidation of milk chain production. Biogas can be used in the kitchen or for sterilizing the equipment used for milking, therefore closing the productive cycle.

The case of *quinua* production cycle is also remarkable. In the pilot experience of Rodeo (Oruro), 4 biodigesters are being powered with llama manure, being the producers interested in the generated biol used for their *quinua* cultivation. Testimonies of those producers report that cultivation losses due to frosts are reduced by 20-30% by the previous application of biol. This means there are great opportunities of dissemination of the biodigester technology that permits to support sustainable production and to reduce the widening of agricultural surface in the high plateau, since biodigesters make possible to produce 3 times more in the same space.



Technology usually used in Bolivia is the one of tubular biodigesters, created for correctly working even in the cold climate of the high plateau. That is the cheapest model of biodigester implemented in the world and in Latin America, easy to install and to transport to isolated communities. All the needed materials are present in Bolivian markets. Nevertheless, that technology requires initial technical assistance to the users, since the use and the maintenance of biodigesters, the utilization of biogas. The application of biogas, even if easy, requires a change of habits and a support to the entrepreneur for him to fully understand the system.

In some cases grant aids are needed too, for buying materials and installing the biodigester when economically disadvantaged agro-food producers are involved, with a special attention to assigning not more than the minimum subsidy for them to overcome the economic barrier and access the technology. In the first phase a clear information for biodigester users is also fundamental, and it has to refer not only to the benefits of biodigesters, but also to their functioning, care, maintenance and weak points.

In Bolivia the cooperation between Hivos (Dutch cooperation) and CIMNE permits to provide technical assistance to the organizations that need it, and moreover encourages I+D in this field. Other institutions as PROSUCO, *Sembrar*, SID and IRG-Prolago already have experience in managing projects related to the dissemination of biodigesters, and others as *Energética* and *Fundación Valles* have shown their interest in working with that technology. Moreover, a group of small agro-food producers from all over the Country has already learnt how to install and use the technology and how to transfer it to other small entrepreneurs.

The national situation offers a great potential for the dissemination of biodigesters in Bolivia as an appropriate tool for helping in reducing energetic poverty, incrementing sustainable agriculture, strengthening food sovereignty, lessening the impact of climate change and improving family health. A biodigester is a versatile device that cannot solve all the problems, but contributes to their resolution promoting a new, more integrated agricultural and livestock production method.



To know more

[RedBioLAC](#)

[Workshop Biogas Bolivia](#)

[National program of biogas in Bolivia](#)

[Brochure IDEASS Biodigesters](#)

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