

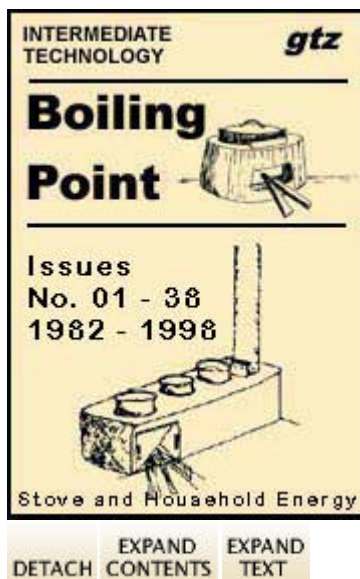
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Boiling Point No. 38 : Household energy in high cold regions



GTZ News: Non-theme articles

*(introductory text)*

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Update on biogas in Nepal



Research and development

Update on biogas in Nepal

Summary from Biogas and natural resources management (BNRM) Nepal'

With the rapid depletion of forest resources in Nepal, alternative sources of energy must be sought. Biogas is one of these sources, which not only saves firewood but also has the potential to increase soil fertility, improve sanitation and reduce the workload of women.

In November 1992, an agreement entitled the 'Biogas Support Programme (BSP)' was signed between His Majesty's Government of Nepal and the Netherlands Development Organization. The long term objectives of the BSP are:

- to reduce the rate of deforestation and environmental deterioration by providing biogas as a substitute for fuelwood and dung cakes in order to meet the energy demands of the rural population;
- to improve health and sanitation of the rural population, especially women. This was to be achieved: by elimination of smoke produced during cooking on firewood; by reduction of the hardship involved in the collection of firewood; and by stimulation of better methods for dealing with dung and night-soil;
- to increase agricultural production by promoting an optimal use of digested dung as organic fertilizer..

The programme was divided into two phases. The short-term objectives, to be reached by July 1994, were:

- to construct 7000 biogas plants;
- to make biogas more attractive to small farmers, and farmers in the hills;

- to formulate recommendations on the privatization **of** the biogas sector **in** Nepal.

The second phase, started **in** July 1994, has the following aims:

- to install 13 000 quality biogas plants using both the implementing agency and private construction companies;
- to support the establishment **of** an apex body to co-ordinate the different actors **in** the biogas sector.

Dung is the main potential source **of** biogas. The production **of** biogas is limited by altitude and access to water. The number **of** households with cattle and or buffalo **in** Nepal **in** 1992 was calculated as about two million. Installation **of** biogas is technically possible for 65 per cent **of** these households (about 1.3 million), with average digester size estimated as about seven cubic metres.

The project to date

Six different sizes **of** digester have been installed ranging from four to twenty cubic metres total capacity (digester plus dome).

These plants work well for households with cattle but have not proved successful for community biogas plants, mainly because **of** social factors.

By providing a subsidy whose value was the same for all sizes **of** plant, small farmers with few cattle were encouraged to take part **in** the scheme. A larger subsidy was given for those living **in** the hill districts as the transportation costs **of** moving the digester on to their farms was perceived to be greater.

At present, twenty-three biogas companies construct and install biogas plants and eight more have been approved to construct them. Recently, the Nepal Biogas Promotion Group has been established. Promotion, training and extension will be taken up by this group **in** the near future. NGOs have entered into agreements with biogas companies to promote biogas **in** their regions. Two banks have recently decided to invest **in** the scheme, and this has helped to finance the programme.

Strong emphasis has been given to the quality **of** construction, maintenance and operation **of** the biogas plants.

Impacts and benefits

Several studies have shown indoor air pollution and smoke exposure **in rural** Nepal, expressed **in** respirable suspended particulates (RSP), carbon monoxide (CO) and formaldehyde (HCHO) to be among the worst **in** the world. Smoke is one **of** the major risk factors for acute respiratory infections **in** infants and children and is a major cause **of** child mortality **in** Nepal. The installation **of** biogas plants has resulted **in** significant health benefits. The main positive effect is on the level **of** indoor air pollution. Eye ailments, commonly associated with smoke-filled rooms have been reduced by the reduction **in** smoke.

It has been estimated that just over three hours a day can be saved by an average household by installing biogas.

Women who **use** biogas express great satisfaction with it. They are able to do other activities as the cooker does not require constant attention. **In** summer, the heat produced is less; however, **in** winter they miss the extra warmth.

Biogas can only be used by farmers who own cattle. The poorest **in** society therefore do not benefit

directly. Nevertheless, by promoting biogas use, pressure on the more traditional fuelwood sources is reduced and if fuelwood is more plentiful, the poorest people may be indirect beneficiaries.



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