

Socio Economic Impact of  
**Biogas Technology in Nepal**  
A Case Study of  
**Ghorahi Municipality of Dang District**

**A Thesis**

*Submitted to:*

Central Department of Rural Development  
Faculty of Humanities and Social Sciences  
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Development

*By:*

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## RECOMMENDATION

This Thesis entitled "**Socio-economic Impact of Biogas Technology In Nepal: A case study of Ghorahi Municipality of Dang District**" has been prepared by Madhab Bhattarai under my guidance and Supervision for the partial requirement of Degree of Master of Art's in Rural Development. Therefore this Thesis is recommended the Evaluation committee for approval.

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## APPROVAL SHEET

This is certified that this Thesis submitted by Madhab Bhattarai entitled "**Socio-economic Impact of Biogas Technology in Nepal**": A Case Study of Ghorahi Municipality of Dang District" has been approved by the evaluation committee of the Central Department of Rural Development in the Prescribed format of the Faculty of Humanities and Social Sciences.

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Madhab Bhattarai

## ABSTRACT

Nepal has one of the lowest per capita energy consumption in the world of just 15GJ, in which the traditional sources of energy shared the largest proportion of the total energy consumption in the country. The residential sector is the largest consumer sector consuming about 89 percent of the total energy. The rural residential sector highly depends on the fuel wood energy which is the major cause of deforestation. The deforestation rate can be minimized if the dependency on fuel wood energy is reduced. For, this biogas technology has become an important alternative.

This study entitled "**Socio-economic Impact of Biogas Technology (A Case Study of Ghorahi Municipality of Dang District)**" was conducted with the objectives of findings, capacity utilization of biogas plants, socio-economic impact on work load of men and women, health, sanitation, time saving, fire wood saved, biogas production, social activities and gender involvement, slurry management, agriculture land management, environmental, perception in biogas technology and benefit of biogas plants at Tirbhuvan Nagar Municipality of Dang District. In this study area the energy consumptions pattern for cooking is 17.55% were used biogas and 60% were dependent on fuel wood. This study is mainly based on the primary information and the data were collected using the techniques of field survey with the help of questionnaire, field visit, observation and focus group discussions.

Majority of the households, 63%, have 5-7 members in their family whereas the number of households engaged in agriculture and service sector are 63% and 20% respectively.

During the study, it was found that Brahmins (50%) were the main beneficiaries of the biogas technology. The economic condition of the biogas user households was found good and most of the biogas plants (86.67%) were toilet connected. Even though the plants were found underfed, the gas production was sufficient in summer but it was much less in the winter biogas energy was used only for cooking foods.

The majority people had annual income Rs. 20,000-60,000 of 63% of total population in this study area. The land holding size on this study areas population have 11-20 Ropanis which is the 40% of the total population the people of this study area most rear cow study as the more source of raw material for biggest production economic support.

All the surveyed biogas plants were in good condition and well functioning. Biogas user households were satisfied with the performance of biogas plants because it had positive impact on economic, environmental, social, educational and health aspects for them.

Both male and female were found coughing much less and they had fewer incidences of headache, eye infection and dizziness. But comparatively, women had experienced much improvement in their health status after the installation of biogas plants than men.

*People's perceptions about the biogas plant were found positive. Biogas had made easy for cooking and maintaining clean environment. The biogas plant made the provision of toilet and also reduced the workload of people. Also biogas technology raised the living standard and social prestige of them. Thus, both male and female were equally happy with biogas technology.*

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## ABBREVIATIONS/ ACRONYMS

ADB/N	:	Agriculture Development Bank of Nepal
AEPC	:	Alternative Energy Promotion Centre
BDC	:	Biogas Development Committee
BSP	:	Biogas Support Program
CBS	:	Central Bureau of Statistics
CDM	:	Clean Development Mechanism
CEN	:	Clean Energy Nepal
CES	:	Center for Energy
ERDG	:	Energy Research and Development Committee
FY	:	Fiscal Year
FYM	:	Farm Yard Manure
GGC	:	Gobar Gas Company
GJ	:	Giga Joule
HH	:	House hold
HHH	:	Head of Household
INGO	:	International Governmental Organization
MJ	:	Mega Joule
MOA	:	Ministry of Agriculture
MOF	:	Ministry of Finance
MOPE	:	Ministry of Population and Environment
MOST	:	Ministry of Science and Technology
MT	:	Metric Ton
NBPG	:	Nepal Biogas Promotion Group
NEA	:	Nepal Electricity Authority
No.	:	Number
NTFP	:	Non-Timber Forest Product
RET	:	Renewable Energy Technology
SNV	:	Netherlands Development Organization
TUCL	:	Tribhuvan University Central Library
UN	:	United Nation