

**SOCIO-ECONOMIC IMPACT OF BIOGAS PLANT  
(A Case Study of Tupche VDC, Nuwakot)**

**A thesis**

**Submitted to the Central Department of Rural Development  
Faculty of Humanities and Social Science, Tribhuvan University  
in the partial Fulfillment of Requirement for the  
Degree of Master's of Arts  
in Rural Development**

**By**

**BAIKUNTHA NEPAL  
Exam Roll No. 3067(2060-62)**

**Central Department of Rural Development  
Tribhuvan University  
Kirtipur, Kathmandu  
August, 2006**

## **RECOMMENDATION LETTER**

The thesis entitled" **Socio Economic Impact of Biogas Plant, A Case Study of Tupche VDC, Nuwakot**" has been prepared by Baikuntha Nepal under my supervision in partial fulfillment of the requirement for the Degree of Master of Arts in Rural Development.

I hereby recommend this report for its evaluation and acceptance.

.....

**Dr. Uma Kant Silwal**

**Associate Professor**

**Supervisor**

**Date:**

## **APPROVAL LETTER**

This is to certify that the thesis submitted by Baikuntha Nepal entitled "**Socio-Economic Impact of Biogas Plant**" has been approved as a partial fulfillment of the requirement for the Degree of Master of Arts in Rural Development in the prescribed format of the Faculty of Humanities and Social Science.

### **Evaluation Committee**

.....

**Prof. Dr. Pradeep Kumar Khadka**

Head of the Department

.....

**Dr. Chandral Lal Shrestha**

(Associated Professor)

External Examiner

.....

**Dr. Uma Kanta Silwal**

(Associated Professor)

Supervisor

## ACKNOWLEDGEMENTS

This Project Work entitled "**Socio-Economic Impact of Biogas Plant: A Case Study of Tupche VDC, Nuwakot**" has been prepared for the partial fulfillment of the requirement for Master's Degree in Rural Development. It reveals socio-economic impact of biogas plant on its users.

I take this opportunity to acknowledge my deep sense of gratitude to my supervisor Dr. Uma Kant Silwal. His valuable guidance and encouragement through out the research project has made possible to shape my project work in this form.

I am grateful to Prof. Dr. Pradep Kumar Khanda, Head of the Central Department of Rural Development whose valuable suggestion and comments on this research project is crucial.

I am also very much thankful to all the respondents and other people of Tupche VDC, Nuwakot who provided their valuable time for interview with me or in focused group discussion and in informal discussions.

Bimal Poudel deserves an appreciation who sat for hours of informal discussion on my research project. My friend Kamala Kandel has given me her valuable time in typing this report on the computer.

Many people have helped me directly or indirectly in the process of preparing this research project. It is not possible to name them all, I am thankful to all of them.

I remain, however, solely responsible for any shortcomings and errors that may have crept in this undertaking.

## **EXECUTIVE SUMMARY**

*This research is conducted into Tupche VDC of Nuwakot District. Here, the researcher had conducted the research on "Socio-Economic Impact of Biogas Plant'.*

*The overall objective of the study is to access the Socio-Economic Impact of Biogas on users in study area. The specific objective*

- ) To analyze the socio-economic characteristics of biogas households.*
- ) To access the impact of biogas on family- economy including agriculture production,*
- ) To examine the impact of biogas plant on daily time saving and pattern of use of save time on the biogas households.*
- ) To study the impact of biogas on health and sanitation of the households, members, and environmental impacts.*
- ) To find out impacts of biogas on the workloads of women*

*The study is exploratory as well as descriptive in nature. It is based on a sample of 30 households who were selected by using simple random sampling techniques. The data related to socio-economic condition such as Caste, Households, Family size, Occupation, Landholding, number of livestock, time to clean utensils before and after use of biogas and plant size were collected through observation FGD and Interview. Analysis of the data is made with numbers, Percentage and tables. Data has shown how the biogas plant helped to save firewood, time, reduce work loads and improvement on health and sanitation.*

*Most of the biogas users are Brahmins followed by Chhetris and Tamangs respectively. Data has shown that size of six m<sup>3</sup> biogas plant is more popular in the study area. Biogas has been flourishing there as an appropriate energy source which has significant impacts on its users. As their expectation, they have gained easy and smoke-free environment for cooking. Shortage of firewood and workload is also managed through its use. After installation, there is sufficient time saved in firewood collection, cooking and washing the utensils. 57% HHs have used gained time in household works and 30% in agricultural works. Most of the users have utilized their*

*saved time by involving themselves on care of children, income generating activities and others essentials. The installation of biogas plant has also influenced them towards better health and sanitation 67% HHs felt decrease in respiratory problem, 73% HHs realized decreased eye burning problem but 10% were indifferent in this regard. 83% households have realized that agricultural productivity has increased after use of biogas slurry.*

*In general, biogas plant has found to have very positive impacts on the users, which is found to be well appreciated. The outcome of the study shows that most of the sampled planned owners are very much satisfied with the performance of biogas plant because of positive economic, social, health, hygiene and sanitation, environment and time saving impacts. Many of the surveyed biogas plant are in good running conditions. Most of the plant owners are realizing increasing mosquito intensity after installation of biogas. More people are attracted towards biogas by seeing neighbor's plant. Hence, biogas has been flourishing as social acceptable, technically feasible, financial viable, economically profitable, and environmentally preferable technology.*

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## ABBREVIATION

ADB/N	Agricultural Development Bank of Nepal
AEPC	Alternative Energy Promotion Center
CBS	Central Bureau of Statistics
CO <sub>2</sub>	Carbon dioxide
DoA	Department of Agriculture
GGC	Gobar Gas Company
GJ	Giga Joule
hrs.	Hours
i.e.	that is
KM	Kilometer
LPG	Liquidified Petroleum Gas
Ltd.	Limited
MoST	Ministry of Science and Technology
MT	Metric Ton
MW	Mega Watt
NGO	Non Governmental Organization
No.	Number
Pvt.	Private
SNV	Netherlands Development Organization
UMN	United Mission to Nepal
UNICEF	United Nations International Children's Emergency Fund
USA	United States of America
VDC	Village Development Committee