Socio-Economic Impact of Biogas Plant in Rural Area:

A Study of Narayanpur VDC, Kailali District, Nepal

A THESIS

SUBMITTED TO
CENTRAL DEPARTMENT OF RURAL DEVELOPMENT
THE FACULTY OF HUMANITIES AND SOCIAL SCIENCES
IN PARTIAL FULFILLMENT OF REQUIREMENT FOR THE MASTER'S DEGREE OF ARTS IN RURAL DEVELOPMENT

By

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Tribhuvan University, Kirtipur
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LETTER OF RECOMMENDATION

This thesis entitled, **Socio-Economic Impact of Biogas Plant in Rural Area: A Study of Narayanpur VDC, Kailali District, Nepal** has been prepared by Sushma Malla under my supervision. I hereby recommend this thesis for evaluation by thesis committee as a partial fulfillment of the requirement for the degree of Master of Arts in Rural Development.

_____

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Date: 2066-02-10

APPROVAL CERTIFICATE

This is to certify that the thesis entitled **Socio-Economic Impacts of Biogas Plant in Rural Area: A Study of Narayanpur VDC, Kailali District** written and submitted by Sushma Malla has been examined. It has been declared successful for the fulfillment of the academic requirements toward the completion of Master of Arts in Rural Development.

THESIS COMMITTEE

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Finally, I am responsible for errors of judgment or of analysis, if exists any.

May, 2009 **Sushma Malla**

ABSTRACT

The thesis entitled "Socio-Economic Impact of Biogas Plant in Rural Area: A Study of Narayanpur VDC, Kailali, Nepali". The general objective of this study is to assess the socio-economic impact of biogas plant installation in Narayanpur VDC, Kailali. The specific objectives of the study area: to study the biogas plant as an appropriate alternative source of energy, to study the impact of biogas plant in relation to the workload, improvement in health and sanitation, time and energy saving, overall energy, environment and economic benefits and to study the potential benefits of biogas plant installation in relation to use of digested slurry as fertilizer and to make recommendations and suggestions to promote biogas plant installation. This study has been chosen as a special topic to address the problem of energy in the study area and to provide the scope for the dissemination of the biogas technology. This study is basically based on both primary and secondary sources of data.

Narayanpur VDC is situated in the far western region of Nepal. In this VDC, there were 1,800 households. In the study area there were 1,800 households. About 60 households have been taken as sampled households out of 1,800 households. Sampled households were those who had installed biogas plant. Simple random sampling technique has been used to select sample. In this study data were collected from field survey by applying household survey questionnaire and observation method.

This study found that majority of the households (50%) out of total interviewed reported that they had adopted agriculture as a main occupation. Average family size of the sampled household was 5.6 per household. About 86.6 percent plant owners out of total interviewed were literate whereas only 13.4 percent were illiterate. Average landholding

size is 17 katthas per household. About 53.3 percent out of total interviewed reported that they were from Brahmin caste.

Out of total sampled biogas plant owners, majority of the households (83.3%) had taken loan from financial institutions. About 80 percent households reported that the main reason behind the installation of biogas plant was easy and smokeless cooking. Around 86.7 percent plant owners had attached toilet with the biogas plant. Average livestock population size of sampled household was 4.3 per household, Average dung production was 24.4 kgs per household. Majority of the respondents (73.3%) reported that the agricultural production had been increased. Total average time saving was 2½ hrs per day per household. Average saving amount of money was Rs.600/- per month per household.

It was found that from the study, majority of the respondents (43.3%) has used saved time on farm activities. This study also revealed that improvement was found in health and sanitation situation. About Rs.310 per year was saved on health treatment by each household. Majority of the respondents (86.7%) out of total interviewed reported that their social status was raised. It was also found that women were highly benefited by the biogas plant (63.3%). About 50 percent households out of total interviewed accepted that the overall energy, environment and economic condition had been improved.

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LIST OF ABBREVIATIONS/ACRONYMS

ADB/N	:	Agricultural Development Bank/Nepal
AEPC	:	Alterative Energy Promotion Center
BSP	:	Biogas Support Programme
DDC	:	District Development Committee
FY	:	Fiscal Year
GDP	:	Gross Domestic Product
GGC	:	Gobar Gas Company
HHs	:	Households
Hrs	:	Hours
Kgs	:	Kilograms
Km	:	Kilometer
LPG	:	Liquefied Petroleum Gas
MA	:	Master of Arts
NBPG	:	Nepal Biogas Promotion Group
NEDA	:	Netherlands Development Agency
No.	:	Number
NPK	:	Nitrogen, Phosphorus, Kalium
Rs	:	Rupees
SNV/N	:	Netherlands Development Cooperation/Nepal
Sq.	:	Square
TU	:	Tribhuvan University
VDC	:	Village Development Committee
WDR	:	World Development Report
WECS	:	Water and Energy Commission Secretariat