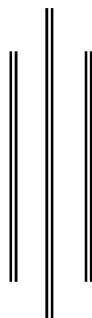


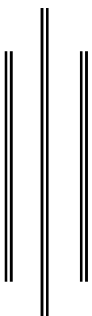
SOCIO-ECONOMIC IMPACT OF BIOGAS IN NEPAL
(A Case Study of Shreepur VDC, Kailali District, Nepal)



A THESIS

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Central Department of Rural Development
Faculty of Humanities and Social Sciences in Partial Fulfillment of
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Rural Development

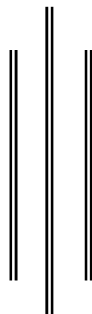


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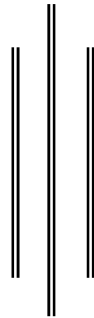
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Central Department of Rural Development
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Kathmandu, Nepal
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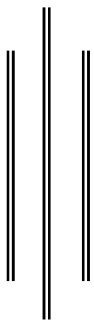
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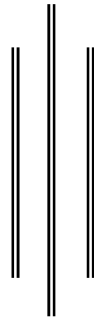


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January, 2010

LETTER OF RECOMMENDATION

This is to certify that Mr. Tirth Raj Bhatta has completed this thesis entitled "Socio-Economic Impact of Biogas in Nepal (A Case Study of Shreepur VDC Kailali district. Nepal) " under my guidance. This is his independent work for the fulfillment of the Master's in Rural Development. I recommend this thesis for final evaluation.

.....
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APPROVAL LETTER

This is to certify that the thesis entitled "Socio-Economic Impact of Biogas in Nepal (A Case Study of Shreepur VDC, Kailali District, Nepal)" submitted by Mr. Tirth Raj Bhatta has been examined . It has been declared successful for the fulfillment of the academic requirements toward the completion of Masters of Arts in Rural Development.

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Tirth Raj Bhatt

ABSTRACT

Firewood has been and still is the major source of fuel daily used by rural area in Nepal. This total dependence on fuel wood as the source of energy for cooking has resulted in deterioration of the quality and quantity of forest and has posed a serious threat in maintaining ecological balance thereby manifesting various problems like deforestation, flood, soil erosion and landslide. The pressure on forest resource for energy fulfillment is considerably increasing due to high population growth in rural areas are burning livestock dung and other agricultural residues. This has been one of the factors in deterioration of soil fertility in the country. Kerosene and other sources of fuel are scarce and costly to avail for small marginal and medium farmers residing in rural area. Further more frequent steep rise in price of imported oil and chemical fertilizer has serious economic threat to rural poor. In this context, to reach the self sufficiency in energy and fertilizer and to minimize the pressure on traditional biomass fuel, bio-gas technology has been a best energy option, which could be achieved through the active mobilization and economic utilization of local indigenous resources available in the country.

The overall objective of this research study was to assess the socio-economic impact of biogas technology on its users. However the specific objectives of the study were;

- a) To enumerate and characterize the socio-economic characteristics of biogas users.*
- b) To examine the impact of biogas in relation to the following aspects*
 -) Gender use*
 -) Environmental health and sanitation*
 -) Agriculture status and sustainable land use*
 -) House hold economy*
- c) Suggest remedies for the implementation and promotion of biogas plantation*
- d) To make relevant recommendation to policy makers.*

The study was carried out in Shreepur VDC of Kailali district. During August to October 2009. The methodology of the study included both the qualitative quantitative method. Data was collected through in household questionnaire with 40 biogas users sampled through simple random sampling method. The major findings of the study were;

-) The biogas users comprise of 5 ethnic groups dominated by Brahmin 35 percent and Chaudhary 27.5 percent followed by Chhetri 25 percent and Thakuri 7.5 percent.*
-) Service and agriculture is the major economic activity for majority of biogas users household.*

-) *Among the sample biogas plants majority (77.5 percent) constructed 6m³ sized plants followed by 8m³ (22.5 percent) biogas household respectively.*
-) *For biogas users cooking facility of biogas was observed to be most useful feature rather than lighting.*
-) *Majority of biogas household (57 percent) had not connected toilet to their biogas plants.*
-) *Most of the biogas users reported insufficiency of gas during winter.*
-) *Majority of biogas users households(62.5 percent) increased in agriculture production (32.5 percent) remained same while only (2 Percent) found decreased.*
-) *About 32.5 percent of biogas users households have reduced the use of chemical fertilizer after biogas installation.*
-) *All biogas users have perceived an increment in mosquito breeding after biogas installation.*

Perception of biogas users towards impacts of biogas technology was found to be both positive and negative, smokeless, improvement in indoor as well as outdoor sanitation, financial saving were positive perception while less tasty food, bad smell were major negative perceptions towards biogas.

Similarly, the researcher had found the problems of biogas technology perceived by biogas users in study area which were; technical problem associated with negligence and of delay in after sales service of concerned company, insufficiency of gas during winter, spare parts not easily available and costly.

It is therefore recommended to formulate a clear-cut policy and program biogas technology through out the country side. The following specific recommendations are sketched:

-) *Concerned biogas companies should carryout supervision, monitoring and evaluation of installed biogas plants regularly.*
-) *The concerned biogas companies should mobilize local NGOs to promote biogas technology so that they can act as bridge between users and the companies.*
-) *There should be introduction of such creative programs which would contribute for women empowerment through the better utilization of gained time.*
-) *It is realized from the study that bio-gas technology is mainly adopted by medium and higher class people at wide scale level. So, government should introduced consistent policy and make possible intervention for promotion so that access of bio-gas technology could reach at rural remote area and penetrate small, marginal and poor people.*

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ABBREVIATIONS

| | |
|-----------------|---------------------------------------|
| ADB/N | Agriculture Development Bank of Nepal |
| AEPC | Alternative Energy Promotion Center |
| BSP | Biogas Support Programme |
| CBS | Center Bureau of Statistics |
| CO ₂ | Carbon Dioxide |
| DDC | District Development Committee |
| FAO | Food and Agriculture Organization |
| INGO | International Government Organization |
| LPG | Liquefied Petroleum Gas |
| Ltd. | Limited |
| NGO | Non-Government Organization |
| No. | Number |
| NPC | National Planning Commission |
| Rs. | Rupees |
| SLC | School Leaving Certificate |
| TV | Television |
| USA | United States of American |
| VDC | Village Development Committee |