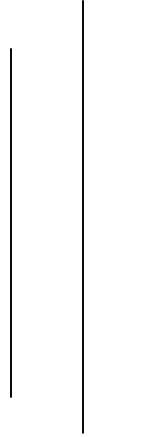


# **GENDER EQUITY IN DECENTRALIZED ENERGY SYSTEM**

*(A Study Of Nayagaun VDC Of Kavrepalanchowk District)*



*A Thesis Report Submitted to Central Department of Rural Development as  
Partial Fulfillment for the Requirements for the Degree of Master's Degree  
in Rural Development*

## **SUBMITTED BY**

*Lumanti Shrestha*  
*Roll No.73 /059-061*  
**Redg. No. 6-1-38-296-96**

## **SUBMITTED IN**

**September, 2006**

## **Letter of recommendation**

This is to certify that this thesis report entitled “**Gender Equity in Decentralized Energy System: A Study of Nayagaun VDC of Kavrepalanchowk District**” has been prepared by **Ms. Lumanti Shrestha** under my supervision and guidance for the partial fulfillment of the requirements for the Degree of Master’s Degree in Rural Development. I forward this project report for the final evaluation.

Dr. Mangala Shrestha

Supervisor

Central Department of Rural Development,  
Tribhuvan University,  
Kirtipur, Kathmandu.

Date: 2062-05-16

## **Approval Letter**

This thesis report submitted by **Ms. Lumanti Shrestha**, entitled “**Gender Equity in Decentralized Energy System: A Study of Nayagaun VDC of Kavrepalanchowk District**” has been approved by this Department as the partial fulfillment of the requirements for the Degree of Master’s Degree in Rural Development.

Prof. Dr. Pradeep K. Khadka  
Head of the Department  
Central Department of Rural Development

Dr. Uma Kant Silwal  
External

Dr. Mangala Shrestha  
Supervisor  
Date: 2063-05-20

## *Acknowledgement*

*This study on "Gender Equity in Decentralized Energy System" has been conducted in Nayagaun VDC of Kavrepalanchowk districts as a partial fulfillment for the requirements of the degree of master's degree in rural development.*

*When it comes to acknowledging the people who have helped me in the preparation of this paper, I inevitably think of all the people and institutions who have influenced my own personal growth throughout my field visit.*

*Firstly, I would like to express my gratitude to Dr. Pradip Kumar Khadka, Head of Department, Rural Development, T.U. and my supervisor, Dr. Mangala Shrestha, Associate professor of Central Department of Rural Development, whose guidelines and valuable suggestions supported me a lot for my study.*

*I owe to offer a special thank to Winrock International, Nepal which has provide me partial financial support for conducting my study. I would like to express my gratitude to Ms. Suntali Tamang for assisting me visit the field area and Ms. Kabita Dhakal for assisting me conducting field work. I am very much grateful to Mr. Krishna Prasad Bajgain and Mrs. Sita Bajgain for providing me accommodation and fooding during my stay in the village.*

*A special thanks too, to all the staff of REDP, Mr. Achyut Man Singh Pradhan of CRT for providing me library facilities and informative materials.*

*My gratitude also goes to people of Nayagaun VDC and all the respondents who made me feel welcome in their community and providing their valuable time sharing all their bitter as well as happier experiences.*

*Lastly, I would like to express my gratitude to my family members and all my colleagues for their suggestions while preparing this report without whose continuous support, I would never been able to complete this study.*

*Lumanti Shrestha*

## Abstract

Women comprises more than 50 percent of the total population who have indigenous knowledge on the traditional fuel. They are the primary producer, user and the manager of the cooking fuel and they are thus vulnerable to health hazards by the smoke produced by fuelwood. Thus the Decentralized Energy System (DES) acts as the catalyst for rural development making the work simple and less time consuming which needs active participation of villagers. This programme launched by Rural Energy Development Programme (REDP) has helped reduced women's work burden with the supportive hands from the male members of their family with the strategies of social mobilization, awareness raising on gender equity basis.

The study is limited at the assessment on the DES implemented in Nayagaun VDC of Kavrepalanchowk district, in terms of gender equity. The VDC is situated at the north-east part of the district with the total population of 5141 of which 2571 are female. It tried to excavate the hindrance of the programme during its implementation while providing equity and opportunity to both the gender. It further tried to find out the achievements and discontents of the beneficiaries, especially women, through survey with structured questionnaire, focus group discussions and observation. Hence, it would be expected to respond the silent question, "*Has DES really benefited the targeted group and has it been successful in achieving its target?*"

The study found that some the biogas and improved cooking stove (ICS) benefited people are dissatisfied with the site selection for the installation of both the energies. Similarly, those using ICS commented that there is neither much reduction in the time of cooking nor reduction in the time for washing dishes. They found the lack of commitment fulfilled by the concerned organization.

The compulsory participation of one male and one female member of each family has played a vital role in making them participate in social gatherings, development activities, forming cooperatives, capacity development, decision making power and others. The group formation to establish cooperatives have helped to develop the habit of saving for future. Women's involvement in decision making is satisfactory which was not possible before the programme. Earning sufficiency is not found to be improved despite various skill

development trainings were provided due to the lack of market facilities, the production cost, the price of the products and their quality. The concerned organization is responsible to some extent in this matter that they could not fulfill the commitment made to the villagers. The two case studies I have presented also proved this fact.

The implementation of programmes with the participation of male and female on an equity base has contributed in changing their role in performing different activities. However, the household chores are still limited in the responsibility of the women. It is no doubt that certain responsibilities have been increased for example in feeding a biogas plant.

No significant change is found in the responsibility of women in cooking, child rearing and washing dishes. However, in an ethnic group like Tamang, involvement of both the male and female is found in all these activities. The involvement of both male and female is found in fuelwood collection, income generation activities and kitchen gardening. Likewise in biogas feeding, female still have a great role. Similarly, in decision making, male have still a dominant role however, the participation of both the male and female is found satisfactory. The most significant aspect of DES is the improvement in the health status of women and children who spend most of their time inside the house. Similarly, savings in fuel wood consumption is significantly high in all households.

Being a male dominant society, they firstly raised voice against the programme which demanded the participation of male and female on an equity basis. Later, they supported it when they were convinced by the chairman of DDC and the community mobilizers for the cost of the development of their village.

The findings of the positive and negative impacts of DES will thus help the concerned organizations to realize their shortcomings that they need to take into consideration in the future for the implementation of any new development programmes. The outcomes of the study will act as a guideline in the future for the replication of such programmes in remote areas with wider potentiality of such energy, with no connection of national grid within five years later.

# Content

Recommendation Letter	ii
Approval Letter	iii
Acknowledgement	iv
Contents	v
List of the figures	vii
Acronyms	viii
Abstract	ix

## **CHAPTER I..... 1-7**

<b>1. Introduction</b>	<b>1</b>
1.1 Background of the Study	1
1.2 Statement of the Problem	3
1.3 Objectives of the Study	5
1.4 Rationale of the Study	6
1.5 Limitation of the Study	7
1.6 Organization of the Report	7

## **CHAPTER II.....8-19**

<b>2. Literature Review</b>	<b>8</b>
2.1 Conceptual Framework	8
2.2 Operational Definition	8
2.3 WID and GAD Issues	10
2.4 Women in Development	11
2.5 Energy Consumption Pattern In Nepal	12
2.6 Gender Issue in Rural Technology	14
2.7 Development Stages of Decentralized Energy System (DES)	15
2.8 Biogas And Improved Cooking Stove(ICS): An Overview Energy Situation	17
2.9 Government Policies and Program for DES	18
2.10 Potential Consequences of ICS/ Biogas	18

## **CHAPTER III.....20-22**

<b>3. Methodology</b>	
3.1 Research Design	20
3.2 Selection of the Study Site	20

3.3	Study Site Description	20
3.4	Nature and Source of Data	21
3.5	Data Collection Techniques/ Instruments	21
3.6	Variables and their Operationalization	22
3.7	Sampling Procedure	22
3.8	Method of Data Analysis	22
<b>CHAPTER IV.....</b>		<b>23</b>

#### **4. General Features of the Study Site**

4.1	Physiological Characteristics	23
4.2	Demographical Characteristics	23
4.3	Socio-cultural Characteristics	23
4.4	Economic Characteristics	23

#### **CHAPTER V.....24-38**

#### **5. Data Analysis and Interpretation**

5.1	Socio-Economic Profile of the Respondents	24
5.1.1	Ethnic/Caste Composition	24
5.1.2	Family Size	25
5.1.3	Education Status	25
5.1.4	Occupation	26
5.1.5	Land Ownership Pattern	27
5.1.6	Area of Resident	27
5.1.7	Households with Livestock and Fowl	28
5.1.8	Kerosene Consumption per Year	28
5.2	Gender Role in DES Installation	29
5.3	Changes Brought By DES	31
5.3.1	Household Activities	31
5.3.2	Particular Activities	33
5.4	Fuelwood Consumption per Year (in Bhari)	37
5.5	Performance of DES	38

#### **CHAPTER VI.....39-41**

#### **6. Findings**

6.1	Dissatisfaction of the DES	39
6.2	Socio-Economic Impact on the Users	40
6.3	Gender Roles Before and After the DES	41
6.4	Constraints Overcome While Providing Equity to the Target Group	42

#### **CHAPTER VII.....43- 45**



## **7. Conclusion and Recommendation**

Conclusion	43
Recommendation	45
<i>Bibliography</i>	46
<i>Annex I Questionnaire</i>	48
<i>Annex II Checklist</i>	51

LIST OF FIGURES AND TABLES..... Page No.

LIST OF FIGURES

Figure 2.1	Conceptual Framework	8
Figure 2.2	Energy Consumption by fuel type	13
Figure 2.3	Energy Consumption by sector	13
Figure 5.1	Gender wise Distribution of the respondents	24
Figure 5.2	Caste Composition in Biogas and ICS Benefited Respondents	25
Figure 5.3	Education status of the respondents	26
Figure 5.4	Occupation of the respondents	26
Figure 5.5	Involvement in Different Activities (ICS)	30
Figure 5.6	Involvement in Different Activities (Biogas)	31
Figure 5.7	Changes brought by DES (ICS installation)	34
Figure 5.8	Changes brought by DES (biogas installation)	35
Figure 5.9	Views about the energy installed in the respondents' home	38

LIST OF TABLES

Table 2.1	System Installed by Number	14
Table 5.1	Family size of the Respondents	25
Table 5.2	Agricultural Land Holding Pattern	27
Table 5.3	Residential Land Holding Size	27
Table 5.4	Households with livestock and fowl	28
Table 5.5	Kerosene Consumption per Year	29
Table 5.6	Work Division among the Family Members (ICS)	32
Table 5.7	Work Division among the Family Members (biogas)	34
Table 5.8	Fuelwood Consumption per Year (in Bhari)	37

## **ACRONYMS**

ADB: Agricultural Development Bank

CBS: Central Bureau of Statistics

CNAS: Centre for Nepalese and Asian Studies

DANIDA: Danish International Development Agency

DDC: District Development Committee

DES: Decentralized Energy System

EU: European Union

GAD: Gender And Development

GJ: Giga Joule

GTZ: German Technical Support

HMG: His Majesty Government

ICIMOD: International Centre for Integrated Mountain Development

ICS: Improved Cooking Stove

MHP: Micro Hydro Power

MOPE: Ministry Of Population and Environment

NESAC: Nepal South Asian Centre

NGO: Non Government Organization

NORAD: Norway Agency of Development

PRA: Participatory Rural Appraisal

REDP: Rural Energy Development Programme

REDS: Rural Energy Development Sector

RET: Renewable Energy Technology

SNV: Netherlands' Development Organization

UNDP: United Nation Development Programme

UNEP: United Nation Environment Programme

VDC: Village Development Committee

WB: World Bank

WECS: Water and Energy Conservation Section

WID: Women in Development