TRIBHUVAN UNIVERSITY

SOCIO- ECONOMIC IMPACT OF SURNAYA MICRO HYDRO- POWER PROJECT IN SHANKARPUR V.D.C.

(A case study of Micro- Hydropower of Shankarpur V.D.C of Baitadi District)

A Thesis
SUBMITTED TO THE FACULTY OF HUMANITIES AND SOCIAL SCIENCES
In partial fulfillment of requirements for the
Master's Degree

IN
RURAL DEVELOPMENT

By
Surendra Bahadur Chand
T.U. Regd. No. 6-1-327-529-99
Roll No. 2679

Faculty of Humanities and Social Science
Central Department of Rural Development
Tribhuvan University, Kirtipur
Kathamandu, Nepal
November, 2008.

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LETTER OF RECOMMENDATION

This thesis entitled " Socio-Economic impact of Surnaya micro Hydropower project in Shankarpur V.D.C.: A Case Study of Micro-Hydropower of Shankarpur V.D.C. of Baitadi District" has been prepared by Mr. Surendra Banadur Chand under my supervision as a partial fulfillment of the requirement for the degree of Master of Arts in Rural Development.

To the best of my knowledge the study is original and carries useful information. I recommend it for evaluation to the thesis committee.

……

Associate Professor Dr. Mangala Shrestha

Thesis supervisor

Central Department of Rural Development

Kirtipur

APPROVAL LETTER

This thesis has been evaluated and approved by the following Thesis Evaluation Committee.

Approved by

Head of the Department _____

Internal _____

External _____

ACKNOWLEDGEMENT

First of all, I am grateful to my supervisor Dr. Mangala Shrestha, Associate professor, Central Department of Rural Development, Tribhuvan University, for her valuable suggestion, insightful comments and guidance because of her creative suggestions and supervision, I was able to bring this thesis in this form.

I am also grateful to Prof. Dr. Pradeep Kumar Khadka, Head of the Department, Central Department of Rural Development, Tribhuvan University, for his ingenious encouragement and academic support.

In course of writing this Thesis, I received help and suggestion from various persons, institutions, and friends. I am heartily grateful to all of them individually.

Finally, I am very much thankful to my parents Mr. Jay Bahadur Chand and Mrs. Sakuntola Chand and brother A.P.F. Inspector Mr. Lily Bahadur Chand and sister Jamuna Chand, Krishna Chand, Parwati Chand and grand father Mr. Gumber Bahadur Chand, for their financial as well as moral support in my whole academic life.

November 2008. Surendra Bahadur Chand.

ABSTRACT

Energy plays a vital role in national development because it is essential not only for meeting necessities like cooking and lighting but is also vital for productive sector of the economy. The total energy consumption in Nepal was 8.205 million TOE hi 2002 (about 15 GJ per capita) of which traditional energy provided 85.27 percent, commercial energy provided about 14.24 percent and renewable energy provided only 0.48 percent of the total energy consumption. About 48.5 percent of the total population has benefited from electricity.

It is estimated that in Nepal more than 6,000 rivers flows, whose total length is about 45,000 km. The theoretical and commercial potential of hydropower in Nepal are about 83,000 MW and 42,000 MW respectively. However, only about 560 MW has been generated by the various hydropower stations. Micro-hydropower is the ideal answer to the present energy crisis of Nepal. It is the most proven, most reliable and potentially cost effective. The present study is focused in the socio-economic impact of Surndyagad MHP in Shankapur V.D.C. of Baitadi. It was conducted with following objectives:

- *To identify the role of MHP in rural electrification.*
- *To assess the present energy situation in Shankapur V.D.C. of Baitadi district.*
- *To find out the people's participation for the development and promotion of MHP in Shankapur V.D.C.*

Shankarpur V.D.C. of Baitadi district was selected as the study area. For the fulfilment of the above objectives, the study guided by sample frame from

where the sample population 20 percent and the total sample is to be 46 households. Structured, unstructured questionnaire and focused interview techniques are used for data collection. Survey found that more than 55 percent of the total households benefited from MHP in the study area. After the installation of MHP, more than 36 percent of the sample households-,, utilized their surplus time on households activities. Literacy class was introduced and students could study one hour more every day during evening by using electric bulbs. Only about 21.74 percent of sample households were involved in productive work by using MHP and the income level was increased considerably. It was recommended that, simple and transparent procedures for loan sanctioning should be developed and institutionalized. Capabilities should be built up at village level for operation, maintenance and repairing. There is a need to integrate MHP system promotion with income generating and social development activities in order to justify the subsidy scheme. Community owned and managed micro-hydropower plants should be promoted.

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ABBREVIATIONS/ACRONYMS

ACAP/KMTNC	:	Annapuma Conservation Area Project/King
ADB/N	:	Mahendra Trust for Nature Conservation
		Agriculture Development Bank/Nepal
AEPC	:	Alternative Energy Promotion Centre
AETs	:	Alternative Energy Technologies
AIT	:	Asian Institute of Technology
CBOs	:	Community Based Organizations
CBS	:	Central Bureau of Statistics
CCO	:	Canadian Cooperation Office
CO	:	Community Organization
CRT/N	:	Centre for Rural Technology/Nepal
DCS	:	Development Consultancy Services
DDC	:	District Development Committee
DGO	:	Director General's Office
EIA	:	Energy Information Administration
ESAP	:	Energy Support Assistance Program
FY	:	Fiscal Year
GDP	:	Gross Domestic Product
GHG	:	Green House Gas
GHG	:	Green House Gases
GJ	:	Gigajoule
Ha	:	Hectare
HHs	:	Households
HKH	:	Hindu Kush Himalayan
HMG	:	His Majesty's Government

Hrs	:	Hours
ICIMOD	:	International Centre for Integrated Mountain Development
ICS	:	Improved Cooking Stove
INGOs	:	International Non-Government Organizations
IOC	:	Inter-Organizational Communication
IOE	:	Institute of Engineering
IREF	:	Interim Rural Energy Fund
IREF	:	Interim Rural Energy Fund
ITDG/N	:	Intermediate Technology Development Group/Nepal
Km	:	Kilometre
Kw	:	Kilowatt
Ltrs	:	Litres
M	:	Meter
MHFG	:	Micro-Hydro Functional Group
MHP	:	Micro-Hydro Power
MOF	:	Ministry of Finance
MPPU	:	Multi Purpose Power Unit
MW	:	Megawatt
NEA	:	Nepal Electricity Authority
NGOs	:	Non Government Organizations
NPC	:	National Planning Commission
PHP	:	Pico-Hydro Power
PS	:	Peltric Set
PV	:	Photovoltaic
R and D	:	Research and Development

RADC	:	Remote Area Development Committee
REDP	:	Rural Energy Development Program
REDSM	:	Rural Energy Development Section Myagdi
RET	:	Renewable Energyj Technology
TETRUD	:	Renewable Energy Technology for Rural Development
SATA	:	Swiss Association for Technical Assistance
SHS	:	Solar Home System
SIDA	:	Swedish International Development Cooperation Agency
Sq.Km.	:	Square Kilometre
SSHP	:	Small Scale Hydro-power Solar Water Heater
TCE		Tonne of Coal Equivalent
TOE	:	Tons of Oil Equivalents
TSHPP	:	Tatopani Small-Hydro Power Project
UN	:	United Nations
UNDP	:	United Nations Development Program
UNV	:	United Nations Volunteers
V.D.C.	:	Village Development Committee
WECS	:	Water and Energy Commission Secretariat
WRA	:	Water Resources Act