AN ECONOMIC ANALYSIS OF MICRO-HYDROPOWER

(A Study of Kholshi Khola Micro-hydropower
Boharigaun VDC, Darchula)

A Thesis
Submitted to the Central Department of Economics,
Tribhuvan University, Kirtipur, Kathmandu, Nepal
In partial fulfillment of the requirements
For the Degree of
MASTER OF ARTS
In
ECONOMICS

Submitted By
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LETTER OF RECOMMENDATION

This thesis entitled Economic Analysis of Micro-hydropower power has been prepared by Mr. Hari Prasad Bist under my supervision. I hereby recommend this thesis for examination by the Thesis Committee as a partial fulfillment of the requirements for the Degree of Master of Arts in Economics.

Date: 2071/9/27

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Thesis Supervisor

APPROVAL SHEET

We certify that this thesis entitled Economic Analysis of Micro-hydropower: A study of Kholshi Khola Micro-hydropower Boharigaun VDC, Darchula submitted by Mr. Hari Prasad Bist to the Central Department of Economics, Faculty of Humanities and Social Sciences, Tribhuvan University, in partial fulfillment of the requirements for the Degree of Master of Arts in Economics has been found satisfactory in scope and quality. Therefore, we accept this thesis as a part of the master degree.

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The present study is prepared for the partial fulfillment of the requirement for the Degree of Master of Arts in Economics, submitted to the Central Department of the Economics faculty of Humanities and Social Science, Tribhuvan University. It focuses mainly on the economic analysis of Micro-hydropower.

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- Hari Prasad Bist

ABSTRACT

Micro hydropower is an indigenous and source of energy for which the potential exist in the almost all the Hindu-Kush Himalayan region, which includes Afgastanistion, Bhutan, china, India, Myanmar, Nepal and Pakistan. Micro-hydropower is generally defined as decentralized small scale water power plant less than 100kw. Micro-hydropower projects have gained enormous popularly in developing countries during the four decade. Micro-hydropower plants are installed in Nepal's remote hilly and mountainous areas. These are useful to provide electricity mainly for lighting facility, Agro-processing like grinding, hulling and operating radio, TV, computers and some other end uses are its benefits. The plants up to 100 Kilo Watt capacity are to be known as micro hydropower but the schemes of 5 Kilo Watt or less, now, have to be known as Pico-hydropower. Micro hydro power can fulfill the demand of electricity in backward and isolated areas. The marginalized people are living in remote rural areas which lack balance of regional development. To some extent the development can't be promoted in rural areas in the absence of the electricity. So Micro-hydropower plant may fulfill the energy demand to some extent by providing electricity.

The thesis work entitled "Economic analysis of Micro-hydropower: A Study of Kholshi Khola Micro-hydropower Boharigaun VDC Darchula district" has attempted to fulfill the following objectives: to find out the Socio-economic impact of Micro-hydropower plant, current status of Micro-hydropower development in Nepal, electrical goods consumed by sample households and their technological improvement. In the study area, there were total 538 households affected by the Micro-hydropower project (MHP). In the field survey out of 538 households only 54 households were selected by using simple random sampling method. The sample is about 10% of the population and lottery method were applied to select households and to fulfill the objectives of the study.

The present study shows the following result and recommendations: The main castes in the study area are Chhetri (64.81%), Brahmin (11.11%) and Dalit 24.07 percent peoples practice Hindu religion. Agriculture, foreign employment services and business are the main income sources of sample households.

After MHP project people installed industries such as furniture, agro-milling, saw mill computer institute, poultry firms etc. and create the employment opportunities whereas 35 (64.81%) sample households has raided their income. Agro-mill make the especially women life easy and the living standard of the respondent has changed after electricity. Agricultural production has increased after MHP project by getting irrigation and other facilities. Possession of various electric instruments has increased after MHP, which make the villagers life easy and help to change the life of the people. The study habits of the children have been increased. 87.03 percent (44) households Said their children's performance in the school has improved in holistic ways. The entire households (100%) is ready to pay more amount than prevailing rate tomaintain the project and make it sustain.

The main recommendations of the present study are: the participation of women in planning and implementation of micro-hydropower plant needs to be ensured.MHP project should be developed timely to meet the present growing needs in remote rural areas of the country. The sustainability of MHP is another issue. The dam constructed is located at the week area as well as 'Kulo' is built on supply areas so there is fear of landslide. So the dam and 'Kulo' should be required for more securely.

TABLE OFCONTENTS

ABBREVIATIONS/ACRONYMS

ADB/N	:	Agriculture Development Bank/Nepal
AEPC	:	Alternative Energy Promotion Centre
CBS	:	Central Bureau of Statistics
ESAP	:	Energy Support Assistance Program
GDP	:	Gross Domestic Product
GIS	:	Geographic Information System
GJ	:	Giga joule
GOV/N	:	Government of Nepal
HHs	:	Households
HMG/N	:	His Majestic the Government of Nepal
Hrs.	:	Hours
ICS	:	Improved Cooking Stove
INGOs	:	International Non-Government Organization
Km	:	Kilometer
Kw	:	Kilowatt
MHP	:	Micro-Hydro Power
MPPU	:	Multi-Purpose Power Unit
MW	:	Megawatt
NEA	:	Nepal Electricity Authority
NGOs	:	Non-Government Organizations
NPC	:	National Planning Commission
PHP	:	Pico-Hydro Power
PKPH	:	Piluwa Khola hydropower project
RADC	:	Remote Area Development Committee
REDP	:	Rural Energy Development Program
RET	:	Renewable Energy Techno
SATA	:	Swiss Association of Technical Assistance
VDC’s	:	Village Development Committee or program
WECS	:	Water and Energy Commission Secretary