Socio-Economic Impact of Solar Energy: A Case Study of Kharigaira VDC, Dailekh

A Thesis

Submitted to Central Department of Rural Development in

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Recommendation letter

This is to certify that Mr. Rabin Kumar Regmi has prepared the thesis entitled **"Socio-Economic Impact of Solar Energy: A Case Study of Kharigaira VDC, Dailekh** "under my supervision. This thesis is submitted to the department in the prescribed format of the Faculties of Humanities and Social Sciences and is hereby forwarded for its final evaluation and approval.

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Approval Letter

This thesis entitled **"Socio-Economic Impact of Solar Energy: A Case Study of Kharigaira VDC, Dailekh"** submitted by Mr. Rabin Kumar Regmi to the Central Department of Rural Development, for the Award of the Degree of Master of Arts Tribhuvan University , has been approved by the undersigned members of the evaluation committee.

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Rabin Kumar Regmi Date:

ABSTRACT

Solar energy is the energy from sunlight used for the purpose of electricity, heating water, cooking, charging batteries, heating and cooling houses, businesses or industries. Solar energy refers primarily to the use of solar radiation for practical uses. However, all renewable energies, other than geothermal and tidal, derive their energy from the sun. Solar energy is the vital source of energy for developing countries like Nepal. Solar energy is mainly used for lightening, electric machine, charging mobile batteries and so on mainly in the rural parts of our country.

The researcher has analyzed socio-economic impact of solar energy in Kharigaira VDC of Dailekh district. For this research, the objectives are: to study the solar energy as an alternative energy to other energy resources, to study the socio-economic impact of solar energy and to study the benefits of solar energy in development. This research is based on primary and secondary data and collected using both quantitative and qualitative data collection techniques, which include household survey with the help of questionnaire, key informant interview, field visit and observation, focus group discussion, published and unpublished literature, websites, I/NGOs, other offices and related documents to the studies conducted by other researchers and organizations. The study has found many benefits of solar energy, as it not only provides energy for lighting but also helps in improving health, saving time, easy to work at night, listening cassette players and watching TV, saving money, environmental conservation, comfortable for the children's study etc. Kharigaira VDC lies in the middle part of Dailekh district.

In Kharigaira VDC, there are 739 houses. Out of 739 HHs, 25% or 251 HHs were installation to solar home system, which total sample HHs is 15.93%. In the village, the total population is 4607.out of them male population is 2,293 and female population is 2,314. In the village there are 9 wards. I was collected data from all wards of my sample method, where 26 respondents were male and 14 respondent were female person. In the study area, there is found that the average HHs family size is 6.23. 65% of the Chhetries have solar energy which is more than other castes. In ward no.1, using solar energy is very high than other wards of the VDC. Out of total 40 samples HHs, 62.5% HHs have been considering solar energy as more attractive than other renewable energy resources. In the sample HHs, all HHs thought solar energy brighter than other energies. So they used solar energy. When the solar energy was installed, the respondents saved more money. 31 HHs were working in the field of economic activities

out of 40HHs. But all households found were using firewood for cocking fuel. In the field visit, the researcher found that 42.5% responds reported that students were more benefited than other members. All sample households were using solar energy only for lighting purpose. 70% of the total households were satisfied with solar energy and 80% of the households were using the energy for charging mobile phone out of all HHs.

In the village, there is a PCO which provides telephone service. In the study area, 75% households were thinking that it increases life standard and prestige goes high after installation of solar energy. But in the village, some of the sample HHs reported some difficulties. They are; high cost of solar energy installation, they did not get loan from micro-finance, not easy availability of mechanics, there was no any institution for solar energies and batteries' problems. When they used solar energy they thought that solar energy was the most important for their lives.

Solar energy does not affect to our life. It is renewable source of energy. It helps in development too. The researcher is hopeful that these research findings will help to other researchers, policy makers, GOs, I/NGOs and others for the promotion of the solar energy.

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LIST OF ABBREVIATIONS/ACRONYMS

AEPC	Alternative Energy Promotion Centre
AET	Alternative Energy Technology
CBS	Central Bureau Statistics
CRT	Centre for Rural Technology
CRE	Centre for Renewable Energy
DDC	District Development Committee
GW	Giga Watt
Hr.	Hectares
I/NGOs	International Non-Governmental Organization
IEA	International Energy Authority
Km	Kilometer
m	Miter
MoF	Ministry of Finance
MW	Mega Watt
NAST	Nepal Academy of Science and Technology
NEA	Nepal Electricity Authority
NOC	Nepal Oil Corporation
NTC	Nepal Telecom
PCO	Public Call Offices
PV	Photovoltaic
Pvt Ltd	Private Limited
PW	Pet Watts
RECAST	Research Centre for Applied Science and Technology
REP	Renewable Energy Project
RONAST	Royal Nepal Academy of Science and Technology
Rs.	Rupees
S q.	Square
SC	Solar Cookers
SD	Solar Dryers
SE	Solar Energy
SELF	Solar Electricity Light Fund
SWH	Solar Water Heaters
UNDP	United Nation Development Project
VDC	Village Development Committee
WECS	Water and Energy Commission Secretariat