A STUDY ON HOME APPLICATION OF SOLAR PHOTOVOLTAIC SYSTEM

(A Case Study of Dhapa VDC of Jumla District,Nepal)

A Thesis

Submitted to

Central Department of Rural Development

Faculty of Humanities and Social Sciences in Partial

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Rural Development

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A STUDY ON HOME APPLICATION OF SOLAR PHOTOVOLTAIC SYSTEM SadanandaJaishi 2016

DECLARATION

I hereby declare that the thesis entitled **A Study On Home Application Of Solar Photovoltaic System**submitted to the Central Department of Rural Development, Tribhuvan University, is entirely my original work prepared under the guidance and supervision of my supervisor. I have made due acknowledgements to all ideas and information borrowed from different sources in the course of preparing this thesis. The results of this thesis have not been presented or submitted anywhere else for the award of any degree or for any other purposes. I assure that no part of the content of this thesis has been published in any form before.

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RECOMMENDATION LETTER

This thesis entitled **A study On Home Application Of Solar Photovoltaic System** has been prepared by **SadanandaJaishi**under my guidance and supervision. I hereby forward this thesis to the evaluation committee for final evaluation and approval.

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APPROVAL LETTER

This thesis entitled **A study On Home Application Of Solar Photovoltaic System** submitted by **SadanandaJaishi**in partial fulfillment of the requirements for the Master's Degree (M.A) in Rural Development has been approved by the evaluation committee.

Evaluation Committee

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ABSTRACT

This Study entitled A study On Home Application Of Solar Photovoltaic System was conducted with the objectives of assessing SHS problem, technical aspect, finding socio-economic and other impact of SHS to the users and assess the knowledge and attitude towards SHS in Dhapa VDC of jumla District. This study is mainly based on the primary information and the data were collected using the techniques of field survey with the help of questionnaire, field visit and observation.

There were 675 households in the VDC. Of the total households, there were 90 HHs in Dhapa VDC who have installed and still using Solar Home System and 10 Solar Home System users were selected from every ward the sample for the study. During the study it is found that Brahmin (57.78 %) were the main beneficiaries of SHS, Agriculture (66.67%) was the main occupation among 90HHs, the average family size of the sample Households were 7.56 persons per family, average literacy rate 42.23 percent, Among 90 HHs, 100% percent sample HHs can support health and environmental sanitation, 16.67 percent sample HHs noticed increased study hour of their children by at least three hour after installing SHS.

The objectivity of this study is to explain the socio-economic status of people in the study area, find out the status of solar energy uses and explore the problems of SHS.

The researcher has under gone in literature review through many literatures such as journal, dissertation, books and reports. It was found that socio-economic and demographic characteristic i.e. family income, occupation, age, culture, gender, education and ethnicity affect directly or indirectly on Application of Solar-Home Photo Voltaic System, but there is no any definite energy level which measure the actual requirement of energy for human requirement, It depend up on life style and human needs. The study is descriptive type mainly based on primary data. Questionnaire for the interview schedule was the main tool used to generate the required information. Similarly, key informants, interview, group discussion and spot observation methods were also carried out for generating the information for the research work. Total 30 respondents were randomly selected for interview, three key informants and one group discussions has been scheduled.

However the education status of country is very poor, nearly 42.23 of the people are literate on Dhapa VDC. The study concluded that the majority of the population was from medium class of family in respect of income, education and occupation; people are fully involved on agricultural for their livelihood. The study topic is related to solar home system, thus researcher select those house-hold using solar PV technology as a majority carriers but few of minority people are also containing the households without solar PV panel but the view of those people are taken as a group discussion.

Since, the overall social setting of the community shows says that the cast majority on study area is Brahmin.. The average family size of household shows a quite higher than that of normal Nepalese standard i.e. more than 5 members in a family and most of household depends up on agriculture for their economic progression but the respondent who are involving on other activities rather than agriculture also found about equal numbers.

The more significant role played by the installation of solar photovoltaic System on Home carried on lighten purpose i.e. about 50% of households similarly, for listening radio people used 50% of house hold and rest 36.67% carry mobile phone. The households who are using the solar technological system getting constraints due to non viable of technician on the sport at the time of requirements similarly they do not have simple technological knowledge for solve normal problems associate SPS.

In near future more and more PV system is used for various types of Services. There is a plan under consideration to install more solar home systems in area where national grid is not reached at the end of 14th five years plan. These facts indicate that time has come to play special attention for PV power systems for income activities. Last but not the least, people and government should play significant roles on achieving the goal of development however the roles differ from one another. For the utilization of solar energy through solar PV system, the main role of the government to make accessibility of the equipment provides sufficient amount of technocrats, making adjustable policy for interested private sectors and making subsidy for SPVS. It is undoubting fact that, the solution of energy demand for coming generation is not be solve on ignoring the role of SPVS.

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ABBREVIATIONS / ACRONYMS

AEPC	=	Alternative Energy Promotion Center
AET	=	Alternative Energy Technology
CBS	=	Central Bureau of Statistics
CDM	=	Clean Development Mechanism
CFL		Chlorofloro Lamp
CRT	=	Center for Renewable Technology
DDC	=	District Development Committee
ESAP	=	Energy Sector Assistance Program
HHs	=	Households
IEA		International Energy Agency
IEC		International Economic Department
i.e.	=	That is
NEA	=	Nepal Electricity Authority
NGOs	=	Non Governmental Organization
No.	=	Number
NPC	=	National Planning Commission
NTC	=	Nepal Telecom
PV	=	Photovoltaic
Pvt.	=	Private
RECAST	=	Research Center for Applied Science and Technology
REDP	=	Rural Energy Development Program
REF	=	Rural Energy Fund
RET	=	Renewable Energy Technology
SHS	=	Solar Home System
SPV	=	Solar Photovoltaic
TV	=	Television
VDC	=	Village Development Committee
W	=	Watt
WECS	=	Water and Energy Commission Secretariat
WP	=	Watt Peak