Assessment of Climate Smart Agriculture:

Study on Rapti Municipality-11,

Korak, Chitwan, Nepal

A Thesis Submitted to

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Submitted By

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LETTER OF RECOMMENDATION

The thesis entitled **ASSESSMENT OF CLIMATE SMART AGRICULTURE: Study on Rapti Municipality-11, Korak, Chitwan, Nepal** has been prepared by **Mr. Bibek Raj Paudel** under my guidance and supervision. I hereby forward this thesis to the evaluation committee for final approval and acceptance.

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Ramesh Neupane

Thesis Supervisor

Date:2075-09-22

(2019-01-06)

APPROVAL LETTER

This thesis entitled **ASSESSMENT OF CLIMATE SMART AGRICULTURE: Study on Rapti Municipality-11, Korak, Chitwan, Nepal** submitted by **Mr. Bibek Raj Paudel** in partial fulfillment of the requirements for the Masters of Arts (M.A.) in Rural Development has been approved by the evaluation committee.

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DECLARATION

I hereby declare that the thesis entitled **ASSESSMENT OF CLIMATE SMART AGRICULTURE: Study on Rapti Municipality-11, Korak, Chitwan, Nepal** 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 from before.

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This study entitled **ASSESSMENT OF CLIMATE SMART AGRICULTURE: Study on Rapti Municipality-11, Korak, Chitwan, Nepal** has been prepared for partial fulfillment of master's degree in rural development.

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Bibek Raj Paudel

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ABSTRACT

The Global warming has struck the agriculture sector the most and has impacted in its production. The agricultural production and productivity have been depleting in the present days. For tackling the changing climatic condition and increase the production of agricultural goods, Climate Smart Agriculture has been introduced. This is a new practice where people try to adapt their pre-existing agriculture practice in the changing environment. The topic Assessment of Climate Smart Agriculture- A study on Rapti Municipality, Korak, Chitwan, Nepal has been prepared to analyze what change does a Climate Smart Agriculture practice brings in livelihood of the people as well as environment. For addressing the basic objective, three specific objectives are developed that include the assessment of socio-economic status of Climate Smart Agriculture practitioners in marginalized people of study area, evaluation of effectiveness of Climate Smart Agriculture practice (leasehold forestry) in the study area and analyze different practices under Climate Smart Agriculture practices in context of study area.

For the conduction of this research, Katlekhola has been considered as the census as all of the population under 10 households living in Katlekhola leased forest user group has been considered as the respondent of this research. Both qualitative and quantitative data has been collected for conduction of this research with the help of both primary as well as secondary source. For the collection of data from primary source, Key Informant Interview, Focused Group Discussion, Interview as well as survey has been taken.

In the study of leased forest user group of Katlekhola, the leasehold forestry has been playing a major role in changing the lifestyle of the people. The people were found to have uncovered a new dimension of economy as well as social development through the use of leasehold forestry. Not only the use of leasehold forestry, the people have been found to be using other CSA techniques that has helped them in making their life easier than before. After the introduction of leasehold forestry, the people had been profited to some extend but the profit that they received was not extra-ordinary. In terms of their socio-economic status, they have new dimension for economic earning as well as they have been able to uplift their social life to some extent. But the upliftment is not too overwhelming.

Talking about the effectiveness in the leasehold forests, the forest area has grown more denser and thicker and greener. The marginalized people with the motive to sustainable management of the forest area has made an impression that if the right to use and care is given at the same time, the sense of parenthood is established in people this managing the property that they are given for use.

Lastly, in terms of application of other Climate Smart Agriculture practice in the study area, plastic pond and multi water use system is more prevalent as these are the best way to adopt to the changing climate. With the change in climate, the scarcity of water has not only impacted in desertification, it has also impacted in day-to-day activities among the peoples. So, the two used methods of climate smart agriculture are suitable in-terms of the study area. Other than the two, vertical farming can be one of the most favorable method that can be followed. With the sloppy terrain and with limited water resource, vertical farming can be a boon for farming to the farmers as well as general population of the area.

So, the idea of climate smart agriculture is a major breakthrough in adapting the changing climate. Despite the fact that the practices don't have a fast and great impact in the livelihood of the people, it has the capacity to make a great deal of impact in the long run. Other than the adaptation, this can also help in mitigation of the climate change. As of leasehold forestry, when the forest area is grown more denser and greener, the capacity to soak up carbon dioxide present in atmosphere greatly increases. This increased capacity of the forest area helps in decreasing the rate of global warming as it helps in carbon sequestration and helps to complete the carbon cycle. The main problem of the present time, global warming, can be solved if the climate smart technique is used appropriately and more smartly (conduction of research to find out what kind of activity can be done and is appropriate in what type of places).

TABLE OF CONTENTS

DECLARATION 4
RECOMMENDATION LETTER 4I
APPROVAL LETTER 3
ACKNOWLEDGEMENTS 5
ABSTRACT 6
TABLE OF CONTENTS 8
TITLE OF FIGURES 11
ACRONYMS/ABBREVIATIONS 12
CHAPTER ONE: INTRODUCTION **Error! Bookmark not defined.-7**
1.1 Background of the Study **Error! Bookmark not defined.**
1.2 Statement of the problem **Error! Bookmark not defined.**
1.3 Objectives **Error! Bookmark not defined.**
1.4 Assumptions **Error! Bookmark not defined.**
1.5 Significance of the study **Error! Bookmark not defined.**
1.6 Limitations of the study **Error! Bookmark not defined.**
1.7 Organization of the study **Error! Bookmark not defined.**
1.8 Operational Terminologies **Error! Bookmark not defined.**
1.9 Justification **Error! Bookmark not defined.**
CHAPTER TWO: LITERATURE REVIEW **Error! Bookmark not defined.**-19
2.1 Background **Error! Bookmark not defined.**
2.2 Historical Review on Climate Smart Agriculture **Error! Bookmark not defined.**
2.3 Theoretical Review on Climate Smart Agriculture **Error! Bookmark not defined.**
2.4 Empirical Review on Climate Smart Agriculture **Error! Bookmark not defined.**
2.5 Policy Review on Climate Smart Agriculture **Error! Bookmark not defined.**
2.6 Analytical Framework **Error! Bookmark not defined.**
2.7 Research Gap **Error! Bookmark not defined.**
CHAPTER THREE: RESEARCH METHODOLOGY **Error! Bookmark not defined.**-23
3.1 Rationale of selection of study area **Error! Bookmark not defined.**
3.2 Research Design **Error! Bookmark not defined.**
3.3 Universe, Sample and Sampling procedure **Error! Bookmark not defined.**
3.3.1 Sampling Procedure **Error! Bookmark not defined.**

3.4 Data Collection techniques and tools **Error! Bookmark not defined.**
3.5 Data analysis techniques and tools **Error! Bookmark not defined.**
CHAPTER FOUR: ANALYSIS AND INTERPRETATION OF FIELD SURVEY DATA Error! Bookmark not defined.-40
4.1 General Information of the sampling frame **Error! Bookmark not defined.**
4.2 Socio Economic Information of the study area **Error! Bookmark not defined.**
4.2.1 Population distribution **Error! Bookmark not defined.**
4.2.2 Observation analysis of socio-economic status:**Error! Bookmark not defined.**
4.2.3 Survey Analysis **Error! Bookmark not defined.**
4.3.4 General Interview analysis **Error! Bookmark not defined.**
4.3 Effectiveness of Climate Smart Agriculture Practice**Error! Bookmark not defined.**
4.3.1 Observation Analysis **Error! Bookmark not defined.**
4.3.2 Survey Analysis **Error! Bookmark not defined.**
4.3.3 Interview Analysis **Error! Bookmark not defined.**
4.3.4 KII analysis **Error! Bookmark not defined.**
4.4 Different CSA practice in study area **Error! Bookmark not defined.**
4.4.1 Analysis **Error! Bookmark not defined.**
CHAPTER FIVE: SUMMARY, CONCLUSION AND SUGGESSTIONSError! Bookmark not defined.-44
5.1 Summary **Error! Bookmark not defined.**
5.2 Conclusion **Error! Bookmark not defined.**
5.3 Suggestion **Error! Bookmark not defined.**
Bibliography **Error! Bookmark not defined.**
Reference **Error! Bookmark not defined.**
Annex- I: Questionnaire of Household Survey **Error! Bookmark not defined.**
Annex II: Interview Questionnaires **Error! Bookmark not defined.**
Annex III: KII guidelines **Error! Bookmark not defined.**
Annex IV: FGD Agendas **Error! Bookmark not defined.**
Annex V: Observation checklist **Error! Bookmark not defined.**
Annex VI: Observation, Interview and Literature reviewError! Bookmark not defined.
Annex VII: Photo Gallery **Error! Bookmark not defined.**

TITLE OF FIGURES

Figure No. Page

Figure 1: Brief description on climate smart agriculture**Error! Bookmark not defined.**

Figure 2: Conceptual Model of Leasehold Forestry ....**Error! Bookmark not defined.**

Figure 3:Population Distribution .....**Error! Bookmark not defined.**

Figure 4: Socio- economic status from observation ....**Error! Bookmark not defined.**

Figure 5: Educational status of people .....**Error! Bookmark not defined.**

Figure 6: Educational attainment.....**Error! Bookmark not defined.**

Figure 7: Economy study .....**Error! Bookmark not defined.**

Figure 8: Effectiveness of Leasehold forestry.....**Error! Bookmark not defined.**

Figure 9: Vertical farming technique .....**Error! Bookmark not defined.**

Figure 10: Plastic Pond .....**Error! Bookmark not defined.**

Figure 11: Plastic Pond for CSA.....**Error! Bookmark not defined.**

ACRONYMS/ABBREVIATIONS

CO_2- Carbon Dioxide

CPRMS- Common Pool Resource Management System

CSA- Climate Smart Agriculture

DoF- Department of Forest

FAO- Food and Agriculture Organization

FGD- Focused Group Discussion

GHG- Green House Gases

HLFFDP - Hills Leasehold Forestry and Forage Development

IFAD- International Fund for Agricultural Development

IPCC- Inter-Governmental Panel on Climate Change

KII- Key Informant Interview

LF- Leasehold Forestry

LFLP- Leasehold Forestry and Livestock Program

LFUG- Leasehold Forest User Groups

LHF- Leasehold Forestry

MPFS - Master Plan for the Forestry Sector

NTFP- Non-Timber Forest Products

PLF- Pro-poor Leasehold Forestry

PRSP - Poverty Reduction Strategy Paper