ROLE OF COMMERCIAL VEGETABLE SEED PRODUCTION IN POVERTY REDUCTION: A CASE STUDY OF RUKUM DISTRICT

Thesis Submitted to: Central Department of Rural Development Faculty of Humanities & Social Sciences In partial fulfillment of the requirements for the Degree of Master of Arts in Rural Development

> By: Kaushal Kumar Poudel Exam Roll No. 3248 Regd. No. 35-015724

Central Department of Rural Development Tribhuvan University, Kirtipur Kathmandu, Nepal July 2011

Recommendation

I hereby recommend the approval of the thesis work entitled **Role of Commercial Vegetable Seed Production in Poverty Reduction: A Case Study of Rukum District** prepared by **Kaushal Kumar Poudel** under my supervision for partial fulfillment of the requirements for the Degree of Master of Arts in Rural Development for the final evaluation.

.....

(Dr.Chandra Lal Shrestha) Supervisor Associate Professor Central Department of Rural Development Faculty of Humanities and Social Sciences Tribhuan University, Nepal

Approval Letter

This thesis work entitled **Role of Commercial Vegetable Seed Production in Poverty Reduction: A Case Study of Rukum District** written and submitted by **Kaushal Kumar Poudel** has been accepted in partial fulfillment of the requirements for the Degree of Master of Arts in Rural Development.

Evaluation Committee

.....

(Dr.Chandra Lal Shrestha) Supervisor Associate Professor

(**Dr. Prem Sharma**) **External Examiner** Associate Professor

(Prof. Dr. Pradeep Kumar Khadka) Head of the Department

.....

Acknowledgements

I would like to express my sincere gratitude to Associate Professor Dr. Chandra Lal Shrestha, Central Department of Rural Development, Faculty of Humanities and Social Science, Central Campus, Tribhuan University for his valuable suggestions, guidance, supervision and criticisms to accomplish this work. My sincere thank goes to Prof. Dr. Pradeep Kumar Khadka, Department Head, Central Department of Rural Development for providing me this opportunity to study of my interested topic and guiding me by valuable suggestions during study period.

I offer my sincere thanks to the farmers and key persons of the Rukum who helped me to fill up the questionnaires. I also express my appreciation to the staff of DADO Mr. Hari P. Pandit, Planning Officer and Ms. Kusum Bhusal, Junior Technician for their help in tabulation and analysis of the data. My thanks go to chief of the SVSPC Mr. Krishna P. Poudel for his cooperation and help to accomplish the survey work.

I would like to extend my sincere thanks to all the staff including chief of the DADO, DDC and other offices in Rukum for their kind cooperation in providing me the reference materials. All the field surveyors Mr. Indal P. Chaudhary, JT; Mr. Seti Ram Babal, JT; Mr. Ram Prasad Adhikari, JTA; are most thankful for their sincere hard working during field survey. I could not forget to express my heartfelt thanks to my wife Sushma and kids Aseem and Aarya for their cooperation and support to complete this thesis work.

At last but not the least, I would like to express my sincere thanks to all the persons and organizations for their direct and indirect cooperation and support to complete this study.

Kaushal Kumar Poudel

Abstract

A study was conducted in the rural remote district Rukum to assess the comparative advantages of commercial vegetable seed production and its impact on poverty reduction of the farmers family during May 2010. Rukum is one of the remotest district of Rapti Zone, Mid-Western Region and it has about three decades of vegetable seed production history. About eight hundreds family from ten VDCs has been engaged in seed production business; out of ten the study covered fifty farmer families of three VDCs. The seed production trend shows the highest production up to one hundred seventy metric tons and the last year production was only forty metric tons. It shows the declined situation of the production. Since the district had earned name as a major vegetable seed producing district in Nepal; in the mean time conflict effect in group strengthening and mobilization and the empowerment of group dynamism could not work to make the business sustainable.

The study assess the benefit cost analysis of two commercial vegetable seed crops radish and onion with the traditional crop wheat to find out the comparative advantages. The benefit cost ratio was 2.10, 1.89 and 1.15 of onion, radish and wheat respectively. The result shows that the vegetable seed crops were comparatively advantageous over wheat. The gross income of Rs. twenty thousands, six thousands and two thousands of onion, radish and wheat respectively from one ropani of land indicates the better income from vegetable seed to support the rural livelihood in terms of food, clothes, education and health.

In assessing the role of vegetable seed in poverty reduction, most of the farmers reported that their food habit; shelter condition; education condition and saving condition has been changed positively after joining the vegetable seed production business. The finding was interesting; out of total respondents 96 percentages reported that they have changed their food habit towards the nutritious food specially the regular use of meat, daily use of milk and green vegetables. Forty two respondents reported they have changed their housing condition after they get surplus income from vegetable seed; out of total 98 percentages reported that they changed in their children education condition after doing seed business; and out of total respondents 62 percentages reported that they have now saving fund for the emergency.

They have repaired their houses; enrolled girls in the school and some reported they transferred their children in private from public school; use of nutritious food like meat and green vegetables and most of them have emergency saving fund and some mentioned that they do not have saving but no need to go to the landlords for daily use expenses of farm.

The major problems reported were marketing, transportation, lack of inputs, lack of technology support and lack of irrigation facility. Marketing has been reported as a number one major problem in vegetable seed business. Due to the weak institutional set up the single farmers are facing marketing problems; so the marketing of seed should be handled either by cooperatives or contract farming. Among these problems some are related with the technical concern and some with the policy concern so considering these problems some recommendations have been made for concern agencies, farmer groups and technicians in the paper.

Since the area has been developing as a commercial vegetable seed pocket; farmers have been adopting it as a high value crop; livelihood has been changed positively; so its sustainability for future should be the major concern of the concerned authorities.

Table of Contents

Title	Page
Acknowledgements	iv
Table of Contents	v
List of Tables	vii
List of Figures	vii
Acronyms / Abbreviations	ix
Abstract	x
Chapter One: Introduction	1
1.1 Background	1
1.2.Objectives	2
1.3 Statement of the problem	3
1.4 Limitation of the study	4
1.5 Organization of the Study	4
Chapter Two: Literature Review	5
2.1 Background	5
2.2 Review of Seed Sector Development by Plan Periods	6
2.3 Government Seed Policy	8
2.4 Seed Legislation	9
2.5 Review of Government Policy on Seed Sector Development	11
2.6 Review of Farmers' Organizations and Institutions	12
2.7 Review of the Seed Program	12
2.8 Government Quality Control Services	12
2.9 The Key Stakeholders of Seed Business	15
2.10 Emergence of Private Seed Sector	17
2.11 Present Status of the Private Seed Sector Development	17
2.12 Government Strategy for Private Seed Sector Development	19
2.13 Private Sector in Seed Exports and Imports	20
2.14 Future Requirements	21
2.14.1 Demand Assessment	23
2.14.2 Foundation Seeds and Quality Control	23
2.14.3 Marketing Organization	24
2.14.4 Seed Pricing	24
2.14.5 Quarantine Facilities	25
2.15 Role of Various Institutions in Nepalese Seed Sector Promotion	26
2.16 Major Problems and Issues in Seed Sector	27
2.16.1 Poor Implementation of Seed Contract	27
2.16.2 Weak Market Information System	28
2.16.3 Non Commercial Seed Production Program	28
2.16.4 Poor Coordination between NGOs and INGOs	29
2.16.5 Poor Post Harvest Activities	29
2.17 Poverty	30
2.18 Poverty Status in Nepal	32
2.19 Role of Horticulture in Income Generation	33
2.19.1 Fresh Vegetable and Seed in Income Generation	34
2.20 Vegetable Seed Production Potentiality in Nepal	35
2.21 Seed Production and Certification Process	37
Chapter Three: Introduction of the study area	39
3.1 Location	39

3.2 Climate and Soil	39
3.3 Population	39
3.4 Social Structure	40
3.5 Main Trade Centers	40
3.6 Tourism Attractions	41
3.7 Major Rivers/Lakes	41
3.8 Development Indicators	41
3.9 Education Situation	42
3.10 Health Situation	42
3.11 Communication Situation	42
3.12 Transportation Situation	42
3.13 Land utilization	42
3.14 Food Availability Situation	43
3.15 Major Crop and Production Situation	43
3.16 Vegetable Seed Production Situation	44
Chapter Four: Research Methodology	46
4.1 Site Selection	46
4.2 Selection of farmers	46
4.3 Collection of Primary Information	47
4.4 Collection of Secondary Information	47
4.5 Data Analysis and Report Preparation	47
Chapter Five: Result and Discussion	48
5.1 Gender	48
5.2 Ethnicity of the Respondents	48
5.3 Family Size of the Respondents	49
5.4 Education of the Respondents	50
5.5 Land Holding Pattern of Respondents	51
5.6 Ownership of Land Holding of Respondents	52
5.7 Occupation of Households Head	53
5.8 Sources of Information of Agricultural Technology	54
5.9 Sources of Information of Vegetable Production	56
5.10 Sources of Information of Vegetable Seed Production	57
5.11 Types of Insect Pest Control Measures	59
5.12 Types of Seed Storage	61
5.13 Input Management	63
5.14 Marketing Channels of Seed production	64
5.15 Major Problems of Vegetable Seed Production	66
5.16 Benefit Cost Analysis of Seed Production	69
5.17 Changes in Livelihood	73
5.17.1 Change in Food Habit	73
5.17.2 Change in Housing Condition	74
5.17.3 Change in Children Education Condition	76
5.17.4 Change in Saving Condition	77
Chapter Six: Summary, Conclusion and Recommendations	79
6.1 Summary	79
6.2 Conclusion	83
6.3 Recommendations	84
References	86
Annex I	88
Annex II	89
Annex III	90

List of Tables

Tables 1. Export of Nepali Vegetable Seeds	Page 21
2. Poverty Incidence by Geographical Areas, Nepal, 1995/96 and 2003/04.	31
3. Poverty Incidence in some Asian Countries	32
4. Percent of Population under Poverty Line in Nepal	33
5. Income from Vegetable Production	34
6. Income from Vegetable Seed Production	35
7. Net Profit from some Vegetables Grown in Off-season	35
8. Crop Production and Productivity Situation of Rukum	43
9. Vegetable Seed Production Record of Fiscal Year 2066/67	45
10. Gender of the Respondents	48
11. Ethnicity of the Respondents	49
12. Family Size of the Respondents	50
13. Education of the Respondents	50
14. Land Holding Pattern of Sampled Households	51
15. Ownership of Land Holding of Households	52
16. Occupation of Household Heads	53
17. Sources of Information of Agricultural Technology	54
18. Sources of Information of Vegetables Technology	56
19. Sources of Information of Vegetable Seed Production	58
20. Types of Insect Pest Control Measures	59
21. Types of Seed Storage	61
22. Input Management of Sampled Households	63
23. Major Problems of Vegetable Seed Production	66
24. Benefit Cost Analysis of Seed Production	69
25. Change in Food Habit of Respondents	73
26. Change in Housing Condition of the Respondents	74
27. Change in Children Education Condition	76
28. Change in Saving Condition of the Respondents	77

List of Figures

Figures	Page
1. Vegetable Seed Production Trend in Rukum	44
2. Marketing Channels of Vegetable Seed	64

Abbreviations/Acronyms

AEC	Agriculture Enterprise Center
AGDP	Agriculture Gross Domestic Product
AIC	Agricultural Input Corporation
APP	Agriculture Perspective Plan
ASC	Agriculture Service Centre
BC	Benefit Cost
CBO	Community Based Organization
CBS	Central Bureau of Statistics
CSTL	Central Seed Testing Lab
DADO DDC	District Agriculture Development Office
DOA	District Development Committee
FAO	Department of Agriculture World Food Organization
FAU FY	World Food Organization Fiscal Year
r i GDP	Gross Domestic Product
HADP	Hill Agriculture Development Project
INGO	International Non Governmental Office
ISTA	International Seed Testing Association
JTA	Junior Technical Assistant
MOAC	Ministry of Agriculture and Cooperatives
NARC	National Agriculture Research Council
NG	Nepal Government
NGO	Non Governmental Organization
NHS	Nepal Horticulture Society
NLSS	Nepal Living Standard Survey
NPC	National Planning Commission
NRB	Nepal Rastra Bank
NSB	National Seed Board
PRA	Participatory Rural Appraisal
PRSP	Poverty Reduction Strategy Paper
RSTL	Regional Seed Testing Lab
SDQCSS	Seed Development and Quality Control Service Section
SEAN	Seed Entrepreneurs' Association of Nepal
SLC	School Leaving Certificate
SQCC	Seed Quality Control Center
SRR	Seed Replication Rate
SSSP	SEAN Seed Support Project
SSSC	SEAN Seed Support Center
SVSPC	Subtropical Vegetable Seed Production Centre
UMN	United Mission to Nepal
UNDP	United Nation Development Program
USAID	United States Agency for International Development
VDC	Vegetable Development Committee
VDD	Vegetable Development Directorate
WB	World Bank
WDR	World Development Report
WTO	World Trade Organization