



ISSN: 2467-9283

INTERNATIONAL JOURNAL OF GRADUATE RESEARCH AND REVIEW

Indexing & Abstracting

Open Academic Journals Index (OAJI), InfoBase Index, Cosmos, ResearchGate, CiteFactor, Scholar Stear, JourInfo, ISRA: Journal-Impact-Factor (JIF), Root Indexing etc.



Impact Factors*

IBI factor: 3

Impact factor (OAJI): 0.101

*Kindly note that this is not the IF of Journal Citation Report (JCR)

Vol-5, Issue-1

February 2019



Research Article

Marketing Potentiality of Potato at Dailekh district of Nepal

Matilal Dhakal^{1*}

Save the Children, Nepal

Abstract

The present study was undertaken to analyze the marketing potentiality of the potato in Dailekh district of Nepal. The focus of the study was, to analyze the marketing system, effective marketing channels, marketing problems and potentialities of potato. The data were collected from 60 potato producers' households from Gurans Rural Municipality of Dailekh district through semi-structured questionnaire interview. This was supplemented by secondary data collected from different sources. Primary data were collected from 60 respondent households while secondary data collected from internet and reports. The findings revealed that the average potato production in one ropani of land was 602 kg and their cost of production, gross return and net return were Rs. 11596, Rs.24080 and Rs. 12484 respectively. In case of 1 kg of potato production, the study showed that cost of production, gross return and net return were Rs. 19.26, Rs. 40 and Rs. 20.73 respectively. The benefit cost ratio was 2.076 which indicates potato production and marketing is profitable. The prominent constraints of marketing potato among the small-scale farmers were lack of access to credit, lack of access to storage facilities, lack of market information, poorly developed village market structure, poor produces price, inadequate access roads, small size of transport and high transportation cost. This study recommends for improving in storage facilities, road access for transportation and improvement in communication system for better marketing of potato.

Keywords: Potato; marketing; constraints; benefit cost ratio

Introduction

Potato (*Solanum tuberosum* L.) is grown in more than 125 countries of the world and hundreds of millions of people depends on potato for their survival in the developing countries. China with its 70 million tons per year is the biggest potato producer world wide (IYP, 2008). Potato is one of the major food crops for food security, poverty alleviation and economic growth. It is fourth most important food crops after rice, maize and wheat in Nepal. It is cultivated in 197037 ha with production of 2586287 tons and productivity of 13.13 tons /ha (MoAD, 2015). Potato is highly nutritious food and consists of high starch (16.1/100g), protein (2.1/100g), vitamin C (17.1mg/100g), potassium (443mg/100g) and essential amino acids (MoAD, 2015). Potato contributed 6.57% and 2.17% of Agriculture Gross Domestic Product (AGDP) and Gross Domestic Product (GDP) of the country respectively (MoF, 2015). Nepalese farmers have cultivated potato from 200 years and it is one of the major food crops in mid hills and

high hills as an average per capita consumption of 30 Kg/annum (Ojha et. al; 2001).

Potato marketing begins on the farm with planning of production to meet specific demand and market prospect. Market information and market prices guide the farmers in making decision and assist farmers for production planning and selling. Marketing plays a critical role in meeting the overall goals of economic development, food security, poverty alleviation and sustainable agriculture. Farmers cultivated potato in both ways as traditional way and modern way. In traditional way, they planted potato tuber and earthing up one to two times, but in modern way, they focused on plant to plant and line to line planting distance, chemical fertilizer especially potash for tuber formation, irrigation and quality seeds. They also prioritize to protect crop from insect pest and disease attack. Farmers preference on potato crop is varieties also, Cardinal red is more preferred by people of hill region than whole color potato. Present time, majority of youths also adopted potato

Cite this Article as:

M. Dhakal (2019) Int. J. Grad. Res. Rev. Vol 5(1): 27-31.

^{1*}Corresponding author

Matilal Dhakal,
Save the Children, Nepal
Email: matidhakal@gmail.com

Peer reviewed under authority of IJGRR

© 2019 International Journal of Graduate Research and Review



This is an open access article & it is licensed under a Creative Commons Attribution 4.0 International License (<https://creativecommons.org/licenses/by/4.0/>)



cultivation as enterprise for income generation after returning from gulf country and India labor work. Marketing constraints or challenges arise due to many factors such as limited knowledge of market information, high transportation cost, distance from markets, poor quality of products, lack of storage facilities, lack of financial support, lack of access to roads and poor communications. These marketing constraints are the greatest barrier for small holder farmers and overcoming from these barriers is critical for them.

There were not sufficient studies about potato marketing of this study area, thus, this study was intended to conduct in this area. The main objective of this study was to identify and analyze factors affecting potato marketing among small holder farmers. The specific objectives of the study were to identify and analyze cost of production, gross margin, net margin and benefit cost ratio of potato production at Dailekh district.

Methodology

The Study Site and Sample

The present study was conducted in Gurans Rural Municipality of Dailekh district. In the study area, 60 households were selected purposively because potato production and marketing are common in this study area. These 60 households were selected for questionnaire interview and data generation.

Techniques of Data Collection and Analysis

The present study was conducted in Gurans Rural Municipality of Dailekh district. In the study area, 60 households were selected purposively. This study area is representative in all social, economic and cultural variables. Potato producing, and marketing households are the key source of the primary data. Primary data were collected from the sample respondent households by direct interview methods using a pre-tested semi-structured interview schedule during the month of November 2018. Besides, the information obtained through semi-structured interview schedule. The information collected from the field survey is coded first and entered into the computer.

Data entry and analysis is done by using computer software package like Statistical Package for Social Science (SPSS 16 version), Microsoft Excel and descriptive statistics.

Correlation analysis is done to see the relation between variables and their significance level. As analytical tool, tabular technique was used to calculate profitability, gross return, net return and total cost. Simple descriptive statistical measures such as mean, standard deviation, frequency count, average, percentage were used for categorization and calculation of data. Describing the impact of selected independent variables (potato seed cost, land preparation cost, irrigation cost, intercultural operation cost, harvesting cost, grading/packaging cost and transportation/marketing cost) on gross return multiple regression analysis (Cobb Douglass Production function) was employed.

Results and Discussion

It is essential to know the socio-economic characteristics of the potato producers to examine the benefit cost ratio and marketing potentiality of potato crop. The daily life of farmers influenced by their socio-economic characteristics as occupational status discussed in the following sections.

Occupational Status of Potato Producers

The main occupation of the respondents in the study area is agriculture 58 % and business constituted 22 %. Service and others constituted 7 % and 13 % respectively (Table 1). Other occupation means labor work in road construction, fire wood collection and selling in near market. In case of subsidiary occupation, potato production / marketing was chosen by 100% respondents that all the farmers involved in potato production.

Benefit and Cost Analysis

The average potato production was 602 Kg from one ropani of land and total cost of production, gross return and net return were Rs. 11596, Rs. 24080 and Rs.12484 from one ropani of land basis. Table 2 also showed that benefit cost ratio was 2.076. This benefit cost ratio indicated that potato marketing and production was highly profitable enterprise at study area of Dailekh district. It was also observed that land preparation cost was highest 23%, followed by potato seed cost, intercultural operations cost, harvesting cost and grading cost were 18%,16%, 10% and 6% respectively. In this study, depreciation on equipment/tool was 7 % and home consumed was seen 17% of total return. This also indicate that potato production and marketing also contribute on family nutrition and food security.

Table 1: Occupational status of potato producers

Name of the Occupation	Main		Subsidiary	
	Number	Percentage	Number	Percentage
Business	13	22		
Agriculture	35	58		
Potato production/marketing	0	0	60	100
Services	4	7		
Others	8	13		
Total				

Source: Field Survey, 2018

Table 2: Average Annual cost and returns of potato producers per Ropani Area

Cost/Return	Particulars	Amount Rs.	Percentage of Total
Variable Cost	Potato seed cost	2138	18
	Land preparation cost	2603	23
	Irrigation cost	1011	9
	Intercultural Practices cost	1876	16
	Harvesting cost	1200	10
	Grading and packaging	721	6
	Transportation and marketing	1273	11
	Sub total	10822	93
Fixed cost	Depreciation on equipment/tool	774	7
	Sub total	774	7
Total cost		11596	100
Return	Potato sold	16580	69
	Home consumed	4000	17
	Value of present stock	3500	14
	Gross return	24080	100
Gross margin		13258	
Net Return		12484	
Benefit Cost Ratio		2.076	

Source: Field Survey, 2018

Table 3: Factors affecting Potato marketing in details

Constraints	Frequency	Percentage
Product Market Place:		
a. Farm Gate	25	42
b. Local village market	20	33
c. District Head Quarter/nearest city market	5	8
d. All the above	10	17
Distance from production to Market:		
a. 1-3 KMs	20	33
b. 4-6 KMs	25	42
c. 7-10 KMs	10	17
d. More than 10 KMs	5	8
Marketing System adopted:		
a. Individual marketing	42	70
b. Contract Marketing	5	8
c. Group/ Cooperative marketing	10	17
d. All of the above	3	5
Transportation used:		
a. Own transport	5	8
b. Hired transport (individuals)	3	5
c. Hired transport (group)	8	13
d. None of the above	44	73
Problems faced when moving produce to market:		
a. Lack of transport	34	57
b. High transport cost	20	33
c. Damage to produce	4	7
d. All of the above	2	3

Potato Marketing Factors

Table 3 shows the results of factors affecting the potato production and marketing. The results show that about 42% of potato growers sold their produce in farm gate and 33 % sold their produce in local village market. This study also showed that 75% of potato producers located 1-6 KMs area from local village market. 70% potato producers used

individual marketing system for selling their produce. Lack of transport and high transport cost were also problems in the study areas.

Functional Analysis

Cobb-Douglas production function was employed to investigate the factors affecting potato production and

marketing through production function analysis because in the Cobb-Douglas production function, the regression coefficient directly represents production elasticities and as all the sum of the production elasticities indicates whether the production process as an increasing, constant, or decreasing return to scale.

It appears from Table 4 that the estimated coefficients of the Cobb-Douglas model. It also appears from the table that the regression coefficient of potato seed and intercultural operations for production and marketing of potato were positive and significant at 1 percent level of significant. Land preparation cost for potato marketing and production were positive at 5 percent level of significance.

One percent increase in seed cost and intercultural operation cost keeping other factors constant would result in increased the gross return by 0.474 percent in both cost for potato production and marketing indicated by the result of the analysis. Farmers usually have little irrigation cost, harvesting cost and post-harvest handling cost.

The F-value of the equation is significant at 1 percent level of confidence implying that the variation in potato

marketing depends mainly on the key explanatory variables included in the model. The overall performance of the Cobb-Douglas model for potato production and marketing was satisfactory as indicated by the estimated R² and F-values. The value of the coefficient of determination R² was 0.136 and F-values was 42.17 which indicates that the Cobb-Douglas model was good fitted by the independent variables. The sum of estimated coefficient (0.953) implies that the production function exhibited increasing returns to scale.

Potato Marketing Constraints

Table 5 shows that degree of constraints divided into three categories as low, moderate and high. In high degree of constraints, no grading of produce and lack of access to market information were 90% and 50% which indicated these are main constraints of potato production and marketing. Moderate degree of constraints were insect/pest problems, lack of storage facilities, inadequate road access and lack of access to credit facility which informed that these are medium type of constraints and focused for their solution process. Similarly, low degree of constraints was lack of insurance and poor producer price.

Table 4: Estimated values of coefficient and related statistics of Cobb-Douglas production function

Variables	Estimated Coefficient	Std. Err.	t-statistic	Level of Sig.
Potato seed cost	0.474**	0.068	6.88	0.000
Land preparation cost	0.108*	0.047	2.17	0.035
Irrigation cost	0.022	0.015	1.47	0.148
Intercultural practices cost	0.474**	0.041	3.91	0.000
Harvesting cost	0.108	0.084	1.61	0.112
Post-harvest handling cost	0.022	0.056	0.94	0.350
Constant	0.160**	0.556	5.32	0.000
R-squared	0.136			
Adjusted R squared	0.053			
F-value	42.17			
Returns to scale	0.953			

** Significant at 1 percent probability level, * Significant at 5 percent probability level.

Source: Field survey and authors estimation, 2018

Table 5: Major constraints of Potato Marketing faced by potato producers

Major Constraints	Degree of Constraints frequency and percentage		
	Low	Moderate	High
Lack of Access to Credit	22 (37%)	33 (55%)	5 (8%)
Lack of Access to Storage Facilities	3 (5%)	42 (70%)	15 (25%)
Lack of access to market information	6 (10%)	24 (24%)	30 (50%)
Lack of finance for potato production	18 (30%)	34 (57%)	8 (13%)
Lack of insurance for theft, drought and lost	38 (63%)	14 (23%)	8 (13%)
Lack of access to village market	6 (30%)	32 (33%)	22 (37%)
Inadequate access roads	13 (22%)	40 (67%)	7 (11%)
Small size of transport	25 (42%)	24 (40%)	10 (18%)
High transportation cost	20 (33%)	15 (25%)	25 (42%)
No grading of produce	1 (2%)	5 (8%)	53 (90%)
Insect pest problems	5 (8%)	44 (74%)	11 (18%)
Poor producers' prices	35 (58%)	13 (22%)	12 (20%)
High perishable produce	25 (42%)	15 (25%)	20 (33%)



Potato marketing plays a critical role in meeting the overall goals of economic development, food security, poverty alleviation and sustainable agriculture. From this study, it is clear that major people adapt agriculture (58%) and business (22%) while all the farmers adapted potato production and marketing as subsidiary business. In context of cost of production, land preparation (23%) is highest cost and it is due to no access of machines or tractor and high human resource daily basis cost. Potato seed cost is second position as 18% and then followed by intercultural operations (16 %), harvesting (10 %), irrigation (9 %), and grading/packaging (6 %). In per ropani basis, cost of production, Gross return and net return were Rs. 11596, Rs. 24080 and Rs. 12484 respectively. Average potato production per ropani was 602 Kg in the study area. In this way, for 1 kg of potato, cost of production, gross return and net return were Rs. 19.26, Rs. 40 and Rs. 20.73 respectively. The benefit cost ratio was 2.076 which indicates potato production and marketing is profitable.

In this study, 42 percent potato was marketing form production area (farm) where 33 percent were moved to local village market. 70 percent potato producer adapted individual marketing system for their produce. We also found that major constraints of potato marketing were no grading of produce, lack of access to marketing information, lack of access to storage facilities, insect pest problem, inadequate access roads, high transportation cost, poor producers price, lack of access to credit and poorly developed market structure. These marketing constraints are major barrier for potato producers for marketing their produce.

Conclusion

The production and marketing of potato is profitable business. The improvement in communication system are necessary better marketing of potato. Enhancing skills by providing training and education, credit or loan facility for potato growers, facilitate or advocate to government for road constructions and improvement, developed cooperative or group marketing so that transportation cost

and poor producers price will be minimum, and focused on strengthening marketing system through development of better infrastructure in the form of storage facilities, roads for transportation and communication systems.

References

- CBS (2014) Population monograph of Nepal. Government of Nepal, National Planning Commission Secretariat, Central Bureau of Statistics, Ramshah Path, Kathmandu.
- DoA/VDD (Department of Agriculture/Vegetable Development Directorate) (2009) Annual progress report. Government of Nepal/ Ministry of Agriculture and Cooperatives/ Department of Agriculture/Vegetable Development Directorate, Khumaltar, Lalitpur.
- IYP (International Year of Potato) (2008) International year of the potato. Potato world. Retrived on March 28, 2008 from <http://www.potato2008.org/en/world/asia.html> & (http://en.wikipedia.org/wiki/International-Year_of_the_Potato). Downloaded on 24th Dec. 2010.
- Kafle B and Shah P (2012) Adoption of improved potato varieties in Nepal: a case of Bara District. *J Agric Sci* 7(1).
- Mahatha RK. Economics of production and marketing of Potato in Saptari district of Nepal (master's thesis). Institute of Agriculture and Animal Science, Tribhuvan University, Chitwan, Nepal.
- MoAD (2015) Statistical Information on Nepalese Agriculture. Ministry of Agriculture Development. Singh Durbar, Kathmandu, Nepal.
- MoF (2015). Economic Survey Report (2014-2015). Ministry of Finance (MoF), Government of Nepal, Singh Durbar, Kathmandu, Nepal
- Ojha DN, Hidalgo OA and TL Lama (2001) A Report on informal high quality seed-potato production and marketing by seed producer groups in Nepal. From the lab to the land, research for the 21st century, program report, International Potato Center, Lima, Peru. p. 245.
- Timsina KP, Kafle K and Sapkota S (2013) Economics of potato (*Solanum tuberosum* L.) production in Taplejung district of Nepal. *Agron J Nepal* 2:173-181.
- Yadav S, Srivastava A, Bag T, Kumar YO and Kumar SU (2015) Productivity, profitability and resource use efficiency of potato (*Solanum tuberosum*) based cropping systems in eastern Himalayan region. *Indian J Agric Sci* 85(7): 921-925.