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Research Article

PROFITABILITY AND MAJOR PROBLEMS OF COFFEE PRODUCTION IN PALPA DISTRICT, NEPAL

Bibek Acharya[1] and Shiva C. Dhakal[2]

[1]Department of Agricultural Economics, Institute of Agriculture and Animal Science, Rampur, Chitwan, Nepal
[2]Faculty of Agriculture, Agriculture and Forestry University, Rampur, Chitwan, Nepal

Corresponding author's email:

Abstract

The survey was conducted in Palpa district of Nepal in 2013 to assess the profitability and major problems associated with coffee production. Barangdi, Boughapokharathok, Madanpokhara and Khaseauli Village development committees (VDCs) were selected for the survey. A household survey of 110 coffee growers was conducted. Primary data were collected through face to face interview, direct observation; secondary data were collected from different publications. Data was analysed by using SPSS V16, Microsoft Excel and STATA 12. It was found that the coffee contributes about 10 percent to the annual household income. The GM was found NRs. 6637.52 and net profit of NRs. 4783.52 per ropani and the profitability index of 1.47 shows the coffee business as profitable business. The major problems in the coffee production were the high insect pest attack such as red and white borer. About 63 percentage respondents had said that the insect pest (white borer) was the major problem followed by low market price of the fresh cherry. It shows that the coffee business may be the suitable and financially feasible business in the mid hills of Nepal and need to address the major problems associated in production.

Key Words: Coffee; Nepal; GM; Profitability; White Borer

Introduction

Agriculture is the backbone of Nepal. Majority of the people still remained in agriculture and also contributes the major share in the total GDP of the country (CBS, 2012). Nepal has a high potential of the exportable and comparatively advantaged crops. The presence of the Nepalese coffee as the organic is low in the international market due to its low production but it is the major cash crops of the small holder farmers of the mid hills of Nepal. Coffee is one of the important beverages in the world. Coffee which falls under Rubiaceae family and genus *Coffea*, has two major species, *C. arabica* and *C. robusta* and one minor species *C. liberica*. As the climate and soil in the mid and high hills of Nepal are found to be very suitable for *arabica* coffee, the coffee planted in Nepal is all *arabica* (Giri, 2006).

Coffee is high value low volume cash crop which is nearly three times more profitable as compared to cash crops and 5 times than other cereal crops (Bajracharya, 2003; Dhakal, 2004 and Banjara, 2014). Coffee production is being increasing gradually in Nepal (NTCDB, 2014). Among the various cash crops for commercialization, coffee is emerging as a likely agro-enterprise with great potential to provide farm employment and income generation opportunities in the mid hills of Nepal (CoPP, 2007). Some Districts like Gulmi, Palpa, Argakhanchi, Lalitpur, Tanahu, Kavre, Sindhupalchowk, Lamjung, Kaski, Gorkha, Syangja, Parbat, Baglung are successfully growing and producing coffee beans.

Coffee being a new crop in Nepal, coffee production and the technologies are still in a rudimentary stage. Coffee farming has been started since five decades but it has not been able to contribute in the economy of the farmers' as expected. Considering its potential for poverty reduction of rural hill people, both government and non-government organizations have initiated research and development works on coffee (Shrestha *et al.*, 2008). This research survey was conducted to assess the profitability and major problems associated in coffee production in Palpa district.

Materials and methods

Study area and sample size

For the study the coffee growing Village development committees (VDCs) of Palpa district such as Barangdi, Boughapokharathok, Madanpokhara and Khaseauli were purposively selected as the study site. From first three VDCs 30 growers were selected and 20 growers were selected from the Khaseauli VDC, altogether 110 coffee growers were selected for the study. The field survey was conducted in September 2013. Face to face interview was conducted to fill up the semi structured interview schedule. Focus group discussions were conducted and key informant survey was carried out and secondary data were collected from different sources. The final analysis was done with the

help of computer software Statistical Package for Social Science (SPSS V 16), Microsoft Excel 10 and STATA V12. Mean, frequencies count, Gross margin and profitability index analysis was done and severity index was calculated for the major problems associated with the coffee production.

Gross margin and profitability index analysis

Gross margin is the difference between the Gross return (GR) and the Total Variable Cost (TVC). It is a useful planning tool in situations where fixed capital is negligible portion of the farming enterprise in the case of small scale subsistence agriculture (Olukosi and Erhabor, 1988).

Gross margin was calculated as:

Gross Margin (GM) = Gross return (GR) - Total variable cost (TVC)

Net profit=Gross margin (Rs.)-Fixed cost (Rs.)

Where,

Gross return (Rs.) = Price of fresh cherry (Rs./Kg) × total quantity sold (Kg.)

Total variable cost (Rs.) = Summation of cost on all variable inputs.

Profitability index= Net farm Income/ Total variable cost (NFI/ TVC)

Index of severity of coffee production problems

Scaling techniques provides the direction and extremity attitude of the respondent towards any proposition (Miah, 1993; Bastola ,2007 and Kattel, 2009). The problems faced by the farmer identified through FGD were ranked by using scaling technique comparing intensity of severity using scale values 1, (1-1/n), (1-2/n), (1-3/n) and so on where;

n= Number of categories in ranking.

And the calculation was done using formula;

$$I = \sum \frac{S_i . f_i}{N}$$

Where,

I = index $0 \angle I \angle 1$

Si = scale value at ith severity

fi= frequency of the ith severity

N = total number of respondents = ∑fi

Results and Discussion

Share of different enterprises to annual household income

Nepalese farming system is comprised of the different associated enterprises and shares on the total household economy. Off farm and other sources have the major contribution to the annual household economy followed by livestock enterprise. Coffee solely contributes about 10 percent to the household economy and it is the sign of commercialization of any commodity. Similar case was found by Pandit (2008) and Kattel (2009).

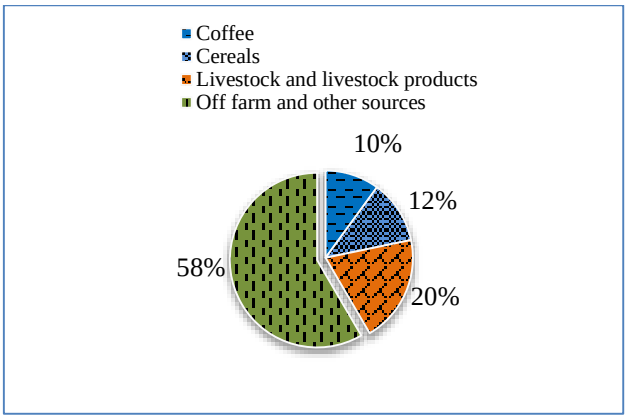

Fig. 1: Share of different enterprises to annual household income

Gross and net margin analysis of coffee production

Gross margin of coffee was calculated by deducting the total variable cost from the gross return per ropani and gross margin per ropani was found NRs 6637.52. By deducting the fixed cost the net profit per ropani was calculated and found NRs. 4783.52.

Table 1: Profitability analysis of coffee production in the study area (2013)

Particulars (NRs.)	Mean	SD
Total variable cost	3260.90	1838.95
Total Fixed Cost	1854.00	1640.88
Total revenue	9898.42	6671.63
Gross margin (Rs./Ropani)	6637.52	5321.23
Net Profit (NRs./Ropani)	4783.52	

Bastola (2007) found that the Gross Return in coffee per ropani was NRs. 13093 and variable cost NRs. 4194. Poudel *et al*. (2009) found the gross margin of NRs. 4119.13 per farm. Pandit (2008) found the GM of NRs. 119129.70 / ha in Palpa District. Jeevarani (2005) in economic analysis of coffee in Karnataka found that the net return per acre was Rs. 15693. Average total cost and variable cost of fresh coffee cherry production per ropani per year were NRs. 6383.36 and NRs.4577.64 respectively while average gross return was NRs. 11535.71(Kattel, 2009).

Profitability of coffee production

The net farm income was estimated using current market price of inputs and output. The analysis revealed that the labour constituted the highest share of the total variable costs of production. Labour requirement after the production starts has been taken as the variable cost. The total variable cost incurred by the farmer surveyed was NRs. 3260.90. The rent on land was NRs. 1500 per ropani per year. Thus the total fixed cost was NRs. 1854.00 and the total cost of production was NRs. 5114.90. The major component of the coffee farmers total farm income is the sales of coffee fresh cherry which accounted for 100%

of the income; the average income realized per ropani was NRs. 9898.42. The estimated annual net farm income which is the difference between the total revenue and the total cost of production was NRs. 4783.52. The result further showed that the profitability index was 1.47. This indicates that coffee farmers in the study area earned NRs. 1.47 on each rupees invested in production.

Table 2: Analysis of the profitability of coffee production in the study area (2013)

Particulars	Nepalese Rupees (NRs.)
Fixed cost	
Land rent(NRs.)	1500.00
Interest(NRs.)	354.00
Total Fixed Cost(A)	1854.00
Variable Cost	
Labour	1805.45
FYM and Nutrients	900.00
Others	555.45
Total Variable Cost(B)	3260.90
Total Cost(A+B)	5114.90
Return	
Income from Fresh cherry sold(NRs.)	9898.42

Net Income=TR-TC= (9892.42-5114.90) = 4783.52 =NFI
Profitability index=NFI/TVC=4783.52 / 3260.90=1.47

Problems of coffee production

Farmers in the study area were asked to rank the major problems of coffee production. The major problems ranked by the farmers were tabulated. The major problems in the coffee production were the high insect pest attack such as red and white borer. About 63 percentage respondents had said that the insect pest was the major problem followed by low market price of the fresh cherry (57.85 percent), lack of plant protection materials (9.09 percent). The plant protection materials and the organic means of coffee insect pest management was also the major challenge of the farmers in the study area.

Table 3: Frequency distribution of field level problems of coffee production

Problems	Frequency	Rank	Index Value
High Insect pest attack (Coffee borer)	70(63.64)	I	0.64
Low market price	16(57.85)	II	0.12
Lack of plant protection organic means	10(9.09)	III	0.05
Low quality seedlings	9(8.26)	IV	0.03
Lack of technical knowledge and extension	5(4.55)	V	0.01

Figures in the parenthesis indicates percentage

Pest was the major problem in Palpa followed by lack of quality seedlings, as reported by Pandit (2008). Epidemic of white stem borer (*Xylotrechus quadripes*) was the major problem reported by Kattel (2009).

Similar case was reported by ABTRACO (2004), that the major problems were lack of quality seedlings and pest attack in Palpa district. Kantharaju (1989) also found the similar case in India. Poudel *et al.* (2008) in their analysis found the major problem of organic coffee production in Gulmi district were unavailability of skilled labour, farm yard manure unavailability, insect pest ranked first, second and third respectively.

Conclusions

Coffee is the newer crop and there was less management of coffee plants and productivity per plant was found also low. Gross margin per ropani, net revenue per ropani and profitability index showed the coffee business profitable. It is advisable to invest in the coffee sector to uplift the household economy and for the better production the major problems associated should be minimized.

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