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RESEARCH ARTICLE

FINANCIAL APPRAISAL OF COFFEE GROWERS AND TRADERS IN KASKI, GANDAKI PROVINCE, NEPAL

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ABSTRACT

Coffee was introduced in Nepal in 1938 A.D. After that, it has gained popularity day by day. Coffee is considered a High Value Crops from commercial point of view in Mid Hills of Nepal. The production and cultivation have increased in Nepal over the years but not up to the mark though it is profitable. The research was conducted to know about financial appraisal of coffee growers and traders in Kaski District. 40 farmers, 3 primary processors, 1 secondary processor were interviewed by using semi structured questionnaire. The result concluded that coffee business is sound and profitable in the studied area. It was indicated by Gross Margin which was found Rs 74536.25/ha., BCR was found 1.12, NPV Rs 256961.33/ha & FRR was found 29%. The number of productive plants was the main factor affecting coffee production in the study area. Furthermore, the Return to Scale value was found 0.43. As far as the marketing of the coffee majority of farmers used cooperative marketing Channel. There was value addition of Rs 78.88 from producer (Fresh cherry) to primary processor (Dry parchment), value addition of Rs 275 from primary processor (Dry parchment) to secondary processor (Green Bean), value addition of Rs 226.27 from Green Bean of secondary processor to Roasted Bean/Powder of secondary processor and finally value addition of Rs 84.03 from secondary processor (Roasted Bean/Powder) to consumer. Thus, secondary processor was most important actors of value addition condition among other coffee micro actors. The study also ranked "more income compared to cereal" as the main reason to adapt coffee farming by farmers and "infestation of insects and pests" as the major constraints of coffee farming in studied area. Study suggested that proper expansion of Coffee farming is needed in the district with the collaboration of NTCDB and Local / province government.

KEYWORDS

Financial appraisal, micro actors, value addition.

1. INTRODUCTION

1.1 Background

Agriculture subsector has a huge role towards national GDP in Nepal. Agriculture contributes 27.7 % to the total GDP of the nation (CBS, 2019). From terai to the high hills Nepal possess huge potentiality of different vegetables, fruits, cash crops, medicinal and aromatic plants. High value crops such as coffee show great potential in the market. Coffee is one of the important cash generative crops in the mid hill regions of Nepal. 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 and it is suitable from 800-600 metre above sea level. Gulmi, Palpa, Argakhanchi, Lalitpur, Tanahu, Kavre, Sindhupalchowk, Lamjung, Kaski, Gorkha, Syangja, Parbat, Baglung are the major districts successfully growing and producing coffee beans but presently coffee is being cultivated in 41 districts.

In Kaski district, coffee is cultivated in 149 hectares with production of 35 metric ton Green Bean. According to NTCDB (2017/2018) the total plantation area of coffee is 2650 ha and total production is 513 mt green beans. The following table shows plantation area and production of major 8 districts in the year 2017-2018. From the data of NTCDB in year 2017/2078 the import quantity is more than export quantity but the export value is more than input value which shows that Nepalese coffee have high price or premium price in export market. The major exports market of Nepalese coffee was Japan, Germany, USA, Italy, Korea, Taiwan etc. The export quantity of coffee is 84 metric ton Green Bean with export value Rs 93722000 & the import quantity of coffee is 163 metric ton Green Bean with import value Rs 65893000 according to the data of NTCDB. The detailed table is shown below in table:

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Table 1: Coffee import and export coffee status of 2017/2018 of Nepal		
Fiscal Year: 2017/2018		
S.N	**Description**	**Coffee status**
1	Plantation Area(ha)	2650
2	Production (mt)	513
3	Export Quantity (mt)	84
4	Import Quantity (mt)	163
5	Export Value (NRs,000)	93722
6	Import Value (NRs,000)	65893

Source: (NTCDB, 2018)

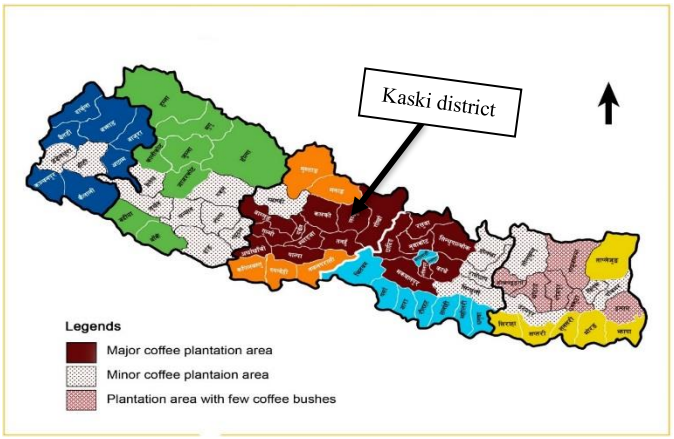
1.2 Objectives

- To study socio economic characteristics with the financial indicators of coffee growers.
- To estimate gross margin, BCR and other appraisal indicators of coffee stakeholders.
- To find factors affecting coffee production.
- To analyze value addition condition of coffee micro actors.
- To rank reasons to adapt and major constraints of coffee farming in Kaski.

2. Materials and Methods

2.1 Study area

To study about production economics and marketing aspects of coffee, Kaski district was selected. Kaski is a mid-hill district of Western Developmental Region of Nepal which lies between 28.2622° North latitudes and 84.0167° East longitudes with total area of 2,017 km^2. The study was conducted mainly on Adhikari Danda, Nirmal Pokhari & Begnas region because of more number of experience farmers there. The map showing the study area is shown below:



Source: (CBS, 2011)

Figure 1: Map of Nepal showing the study area

2.2 Data types

Two types of data were collected: primary data and secondary data. Primary data refers to the raw data collected by the researcher himself. It is collected via different methods like survey, questionnaire, focus group discussion, key informant interview etc. The second one i.e. secondary data refers to the already existing data which are useful for research and which has been collected by sources other than the researcher himself. It includes recorded data and information in journals, book, published papers, proceedings etc.

2.3 Sampling process, sampling frame and sample size

The coffee producers who had experience of 7-8 years and also who do coffee farming commercially with coffee plants no less than 200 were taken as the sampling frame from the whole population. The sampling frame was prepared in consultation with the key informants of NTCDB, regional office and District coffee Cooperative of Kaski District. Researcher used purposive-random sampling. Among the 40 coffee farmers majority coffee farmers were selected mainly in 4 parts of Kaski. Also 3 primary processors (PCC, Pulper operator) and 1 secondary processor were also interviewed.

2.4 Data collection methods

The research used both primary and secondary data. Various sources and technique were used for the gathering relevant information. The methodologies include field survey, key informant interview and review of previous studies.

2.4.1 Sources of information

The primary data was collected on total cost of production, management practices, establishment cost, from the 40 coffee farmers and the marketing aspects and channel were collected by Key informant's interview to Primary processor, secondary processor, DCC. The secondary information was obtained through various published materials like bulletins, book, journal, research articles, reports from several NGOs, INGOs, DCPA, DCC and Coffee Boards, publications of NTCDB, Coffee cooperatives etc.

2.4.2 Preparing questionnaire and its pre testing.

For collection of primary data researcher used semi structured questionnaire consisting of necessary parameters. Researcher used closed and open-ended questionnaire as per objectives. Before the actual survey, the questionnaire was pre tested among 5 coffee farmers. After some modification, the final questionnaire was prepared for producers, primary processors, secondary processor.

2.4.3 Household survey

The household survey was conducted as far as possible. The respondents were interviewed in their homes. All major actors of value chain: Coffee farmer, Primary processor, Secondary processor were interviewed. The survey was done during November, 2019. The questions were in in English but asked in local language to the respondent.

2.4.4 Key Informant interview

Researcher conducted KII with NTCDB, Regional Branch's officer for gaining information about coffee farming scenario in Kaski district and where the coffee farming is done in commercial scale. It was also helpful for selecting suitable area and households for household survey. Another KII was done with representative of District Coffee Cooperative Union (DCCU) to know about how coffee cooperative is running and activities done by it for promoting coffee farming in Kaski District.

2.5 Data tabulation, coding and scaling

The survey data was coded and tabulated in Microsoft Excel. The data was coded in such a way that it would be easier to use descriptive and simple statistical tools.

2.6 Methods and techniques of data analysis

The collected data was analyzed using Statistical Packages for Social Sciences (SPSS) and Ms excel.

2.6.1 Descriptive analysis

Simple statistics such as frequency, mean, maximum and minimum, standard deviation was used for descriptive analysis of socio economic and farm characteristics of respondents like Age, Years of schooling, land holding, economically active population etc.

2.6.2 Conversion factors

Coffee are changed into different products in every step of processing. So, for calculating value addition in each value chain actors Green Bean Equivalent (GBE) was used to bring uniformity in different products. Conversion factors used by given in below (ITC, 2011; FNCC1/AEC, 2006):

CONVERSION FROM	GREEN BEAN EQUIVALENT (GBE)
Fresh cherry**	0.18
Dry cherry*	0.50
Dry parchment*	0.80
Roasted and powder coffee*	1.19

Source: (FNCCI/AEC, 2006; ITC, 2011)

2.6.3 Economics of Coffee production

The total cost of production of coffee was calculated in per hectare including both variable costs and fixed costs. Total production cost is sum of all variable costs and fixed costs. The variable costs consisted of seedling costs, fertilizer costs, labor costs, chemical costs, irrigation costs and other costs. Fixed costs included land rent, equipment costs, depreciated cost of machines. All the costs were converted into per hectare and finally Total production cost of coffee was calculated per hectare.

2.6.4 Gross margin

Gross margin is the difference between Gross return and Total Variable Cost. It is a simple and quick method to analyze the performance of farm business. Gross return means Price of coffee products* Total quantity sold by the farmer. Total Variable costs means sum of all variable costs.

Gross margin (Rs/hectare) = Gross return- Total variable cost (Olukosi and Erhabo,1988)

2.6.5 Investment appraisals

2.6.5.1 Net present value (NPV)

Net present value is the difference between present value of cash inflows and present value of cash outflows over a period of time. It uses time value of money principles through the use of an assumed discount rate. NPV indicates the present value of net-benefit which is the difference between discounted benefit stream and discounted cost stream. An investment is feasible if NPV is positive. It is calculated as follows.

$$NPV=\sum_{t=1}^{n}\frac{Bt-Ct}{(1+r)^t}$$ (Jovanovic, 1999)

Where, Bt = Benefit Stream at time t of i^{th} firm;

Ct = Cost Stream at time t of i^{th} firm

2.6.5.2 Financial rate of return (FRR)

It is the value of discount rate (r) for which NPV of an investment is equal to zero. It makes Net present worth of cash flow equal to zero. An investment is feasible if the FRR of business enterprises is at least equal or higher to opportunity cost of capital, which is the interest rate of the best possible alternative use. The general benchmark of opportunity cost is bank rate or cooperative interest rate. FRR is calculated through a process of successive approximations until the algebraic sum of annual net incremental benefits will be equal or nearer to zero.

$$FRR = LDR + DTDR(\frac{LDR}{Absolute\ sum\ of\ NPV\ at\ LDR\ and\ UDR})$$ (Lumby and Jones ,2003)

where,

LDR = Lower discount rate

UDR = Upper discount rate

DTDR = Difference between two discount rates

NPV = Net Present Value

2.6.5.3 Benefit Cost Ratio

It is the ratio of present worth of discounted benefits to present worth of discounted costs. If the Benefit Cost Ratio of the business is greater than 1 it is considered profitable. It is calculated as:

$$BCR=\frac{\sum_{t=1}^{T}\frac{Bt}{(1+i)^n}}{\sum_{t=1}^{T}\frac{Ct}{(1+i)^n}}$$ (Reddy and Ram,1996)

2.7 Price Spread

It is the difference between the final price paid by consumer and the price initial received by the producer(farmer) for an equivalent quantity of farm produce. It is calculated as:

Price spread = Price paid by consumers (Rs) – Price received by producers (Rs) (Vengoto and Sharma, 2018)

2.8 Producer's share

Producers share is the ratio of price paid by consumer to the price received by farmer expressed in percentage.

Producer's share = $\frac{Price\ paid\ by\ consumer}{Price\ obtained\ by\ farmer} * 100\%$ (Vengoto and Sharma ,2018)

2.9 Indexing

Indexing is a tool to analyze respondents' perception by using scaling technique. Farmers' perception on production was analyzed by using indexing technique. Same technique was used to rank the reason for adopting coffee farming. The index of severity or importance can be computed by using:

$$I = \frac{\sum Si*Fi}{N}$$

Where,

I = Index of importance/ Severity. Its value is between 0 and 1

$\sum$ = Summation

Si = Scale value at ith importance/severity

fi = Frequency of importance/severity given by the respondents

N = Total number of respondents (Σfi)

2.10 Production function analysis

The Cobb-Douglas production function was used in the study as it is the most widely used tools in agricultural research and is convenient for the comparison of the partial elasticity coefficient. The following form of Cobb-Douglas production function was used to determine the contribution of different factors on production and to estimate the efficiency of the variable factors of production of coffee.

$$Y= a\ X_1^{b1}\ X_2^{b2}\ X_3^{b3}\ X_4^{b4}\ X_5^{b5}\ e^u$$

Where,

Y = income (Rs/ha.)

X_1 = Labor Cost (Rs/ha.)

X_2 = Fertilizer Cost (Rs/ha.)

X_3 = Seedling Cost (Rs/ha.)

X_4 = No of productive plants.

X_5 = Coffee cultivated Area(ha.)

u = Random disturbance term

b_1, b_2, b_3, b_4, b_5 are the coefficient to be estimated.

The Cobb-Douglas production function in the form expressed above was linearized in to a logarithmic function with a view to getting a form amenable to practical purposes as expresses below.

$$lnY = lna + b1lnX1 + b2lnX2 + b3lnX3 + b4lnX4 + b5lnX5 + u$$

where,

ln= Natural logarithm,

a= constant,

u= error term

For regression analysis in Cobb Douglas production function from Ms excel:
Null hypothesis = all the factors affecting coffee production are uniform.
Alternate Hypothesis = all factors affecting coffee production are not uniform.

2.11 Return to Scale Analysis

This is the measure of farm success in producing maximum output from a given set of inputs. For the calculation of return to scale from coffee, Cobb-Douglas production function was used and calculated using formula;

RTS= ∑bi,

Where, bi = regression coefficient of i^{th} variables.

Return to Scale decision rule:

RTS< 1: Decreasing return to scale

RTS = 1: Constant return to scale

RTS >1: Increasing return to scale

3. Results and Discussions

The results obtained from the data and information collected are analyzed and discussed below under several sub headings.

3.1 Socio economic and demographic analysis

The data collected in this study regarding socio-economic characteristics of respondents and demographic analysis are:

3.1.1 Gender and Age of Household head

Among all the coffee farmers, Male household heads were 33(82.5%) and female household heads were 7 (17.5) out of total 40 household. The average age of respondent was 56 years varying from 75 years to 36 years. While comparing financial indicators between male and female, we found out that the financial indicators of female were better than that of male. The NPV, B:C Ratio and Gross Margin (Rs/ha.) of female were more than that of male (Table 3). This is because coffee is care intensive crop and majority of the male household heads had other occupations unlike the female heads, so they have time to properly conduct intercultural operations like trainings, pruning, spread of Bordeaux mixture, allocating proper FYM properly.

Table 2: Comparison of financial indicators among genders

Indicators	Male	Female
B:C Ratio	1.11	1.19
Gross Margin (Rs/ha.)	72603	83649
NPV (Rs/ha.)	252298	278945

Source: Field Survey,2019

3.1.2 Education level

The comparison of households falling in different groups of years of schooling with respect to the financial indicators revealed that those households with household heads within 6 to 10 years of schooling had better financial indicators than that of others: NPV, BC Ratio and Gross Margin was higher.

Table 3: Financial indicators among different years of schooling's group.

	Years of schooling (in yrs)			
Indicators	**0**	**1 - 5 years**	**6 - 10 years**	**10+ years**
B:C Ratio	1.03	0.95	1.19	1.17
Gross Margin (Rs/ha.)	48604	38800	92794	83890
NPV (Rs/ha.)	167038	127845	323234	256961

Source: Field survey,2019

3.2 Technical Aspect of coffee farming

3.2.1 Coffee plantation status

The average coffee farming experience for farmers was 15 years where as maximum was 40 years and minimum were 6 years. The increment in % in average no of plants from 2015 A.D to 2019 A.D was 2.9%, 7.6%, 39.2%, 35.6% year wise respectively. The average no of plants in 2015 A.D was 206.875, 2016 A.D was 213, 2017 A.D was 229.25, 2018 A.D was 319.25 & 2019 A.D was 433.125. There was sharp rise in plant after 2017 A.D because of the collaboration project of Good neighbor internationals, ICO, Beautiful Coffee funded by EU according to the farmers.

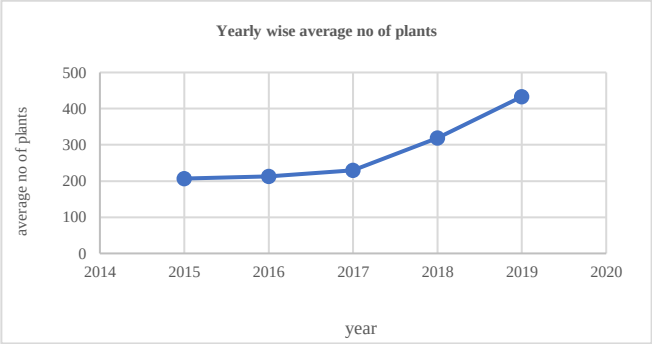


Figure 2: Year wise average no. of coffee plants in surveyed area in last 5 years (Source: Field survey, 2019)

3.2.2 Reason to adapt coffee farming

The reasons for adopting coffee farming was ranked as shown in Table 5. It is clear that the primary reason for adopting coffee farming was "more income compared to cereal". It was followed by "easy to sell" and "high demand and high price". Similarly, "Coffee in alternative land owned" was ranked fourth which is followed by "NGO &INGO support". The index value of "more income compared to cereal" was 0.825. It was followed by "easy to sell" with index value 0.785 and "high demand and high price" with index value 0.76. Similarly, the index value of "Coffee in alternative land owned" was 0.32 which is followed by "NGO &INGO support" with index value 0.315.

Table 4: Reasons to adapt coffee farming

Rank	More income compared to cereal	NGO and INGO support	High demand and high price	Easy to sell	Coffee is only alternative in land owned
1	19	0	12	9	0
0.8	7	0	11	19	3
0.6	14	0	14	12	0
0.4	0	22	3	0	15
0.2	0	18	0	0	22
Index Value	0.82	0.31	0.76	0.78	0.32
Rank	1	5	3	2	4

Source: Field Survey, 2019

3.3 Production economics of coffee

3.3.1 Gross margin, Benefit cost ratio, of coffee production

Average discounted cost per hectare of coffee production of 5 years was Rs 733935.534 and average return per hectare of 5 years was Rs 1106616.775.The average Gross margin was also calculated and was found to be Rs 74536.25 per hectare with benefit cost ratio 1.12. Similar to this gross margin per hectare was found 90205.43 (Sharma et al., 2016). The analysis of gross margin shows that the coffee farming is good. The B:C ratio greater than 1 indicates that coffee business is running in profit. Similar B:C ratio, 1.2 was found in which further supports the result (Luitel, 2017).

Table 5: Financial appraisals of Coffee growers in surveyed area.		
Statistics	**Mean**	**S.D**
Average cost/hectare of 5 year	733935.534	198613.85
Average Total cost/hectare per year	146,787.107	39722.77
Average return/hectare of 5 years	1106616.775	665749.01
Average return/hectare per year	221323.355	133149.8
Gross margin/hectare	74536.25	106031.29
Benefit cost ratio	1.12	0.4

Source: Field survey, 2019

3.3.2 NPV & FRR

The average NPV of coffee farming was Rs 256961.33/ha. which is positive which means the coffee business is in profit. The NPV was found highly positive also in Gulmi which supports our results (Poudel, 2010). However, some researchers have found NPV negative because they have not taken returns into account: coffee plant gives yield only after 3-4 years of planting before which coffees cherries are not produced. The costs incurred in the early years of establishment is greater than the income generated during those years. The average FRR was 29% which means the coffee business is solid profitable because it is more than opportunity cost of capital 12%. Similar FRR 43% was found by in Gulmi district (Poudel, 2010).

3.3.3 Factors affecting the production of coffee

The no of productive plants was the most significant factor affecting production of coffee. The output elasticity of no of productive plants was 0.784 indicating that holding the other explanatory variables constant, one percent increase in no of productive plants contributed 0.784 percent increase in output. The Area cultivated (2019) was also significant but the output elasticity of Area cultivated (2019) was negative which means as the independent variable (area cultivated) increases output (Income per hectare) tends to decrease because significant increase in area from 2018 to 2019 increases the no of plants but not production.

Table 6: Factors affecting the production of coffee				
Variables	**Coefficients**	**Standard Error**	**t Stat**	**P-value**
Intercept (Constant)	2.71	5.33	0.509	0.61
Labor cost	0.37	0.204	1.82	0.076
Fertilizer Cost	0.13	0.183	0.71	0.478
Seedling Cost	-0.14	0.35	-0.39	0.69
No of productive plants	0.78	0.13	5.66	0.000 ***
Area cultivated 2019	-0.71	0.18	-3.83	0.005

Source: Field Survey, 2019

For regression analysis in Cobb Douglas production function our Null hypothesis was all the factors affecting coffee production are uniform. Here, while doing Regression by Ms excel we found out that R^2 was found 0.57 and F (stat) value was found 8.86 which was significant at 1% level of significance which reject our null hypothesis which means all the factors affecting coffee production are not uniform.

3.3.4 Return to Scale Analysis

Return of scale was evaluated by sum of individual production input elasticities. The summation of all the values of parameters (sum of all coefficients of Cobb-Douglas production function) was found 0.43 which indicates there is decreasing return to scale. It means when the output increases less than proportionately as all the inputs increase proportionately, we call it decreasing returns to scale or diminishing returns to scale. Thus, if we double the inputs, the output will increase but by less than double in this case. Our value of RTS has come less because most coffee farming is still not giving full yield because it takes 3-4 years to give full yield and several farmers have increase their plant number 2 years ago. Average no of plants has increased from 229.25 plants to 319.25 two years ago and 319.25 to 433.12 one year ago. In total there has been 88.9% increase in plants in 2 years. There is significant increase in no of plants between 2017 to 2018 and also between 2018 to 2019.

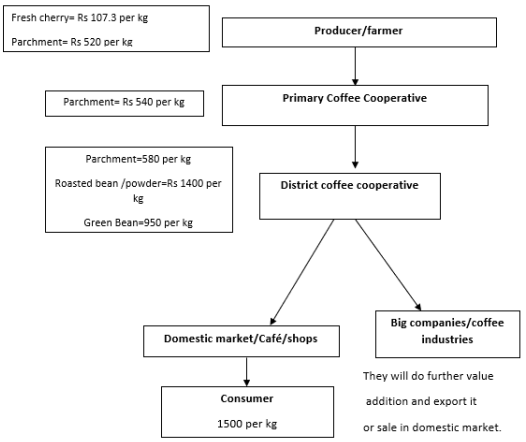
3.4 Marketing Aspects

3.4.1 Product Form

Out of our sampled household majority of farmers sell their product as fresh cherry form.34 out of 40 farmers sell their product as fresh cherry form.4 of them sell in dry parchment form and 2 of them in roasted bean/powder form.

3.4.2 Marketing channel

Majority of farmers are engaged in coffee cooperatives. So, majority of farmers sold their product to Primary Coffee Cooperatives. Some farmers sold their product to Big coffee companies/cafes. In most of the cases, Primary Coffee cooperatives acted as primary processor and District coffee cooperatives act as secondary processor. Simple type of marketing channel with less middle agents was found in Kaski district between producer to consumer. Different marketing channel used is shown below:



Majority of farmers above channel. Some farmers use another channel shown below:

Farmers/Producers → Big companies/Cafes → Consumer

Parchment:540/kg
Roasted bean/powder:1500/kg

Big companies will further work on quality.

3.4.3 Value addition in different level

From the table given below we can find the addition of value in each level. The average price of coffee products at each level is converted to Green Bean Equivalent by using the conversion factors. There was value addition of Rs 78.88 from Fresh cherry to Dry parchment, value addition of Rs 275 from Dry parchment to Green Bean, Rs226.47 from green bean to roasted bean/powder. Similarly, at consumer level in domestic market there was price addition of Rs 84.03 from Powder form of secondary processor to powder for consumers.

Table 7: Value addition condition at different Coffee micro actors.

Level	**Forms**	**price (Rs/ kg)**	**GBE conversion factor**	**GBE price (Rs/ kg)**	**Value addition**
Producer	Fresh cherry	107.3	0.18	596.11	
Primary processor	Dry Parchment	540	0.8	675	78.88
Secondary Processor	Green Beans	950	1	950	275
	Roasted Bean/Powder	1400	1.19	1176.47	226.47
Consumer	Powder in domestic market	1500	1.19	1260.5	84.03

Source: Field survey, 2019

There is major addition of price in secondary processor So, major actor of value chain is Secondary Processor (DCC in majority).

3.4.4 Producers share

The producers share in coffee in domestic market was 47.3%. Similar results were found in Sindupalchowk district in which producers share was found 37% (Shrestha, 2009). In other marketing channel in which Big companies/Coffee industries acted as secondary processor price paid by consumer increases so producers share decreases. The cost of such coffee ranges from Rs 1800-2400 in Super markets and up to 39$ (Rs 4568) in international market according to price listed in amazon. In such cases producers share decreased by a lot.

3.5 Share of different cost

The average labor cost, fertilizer cost, seedling cost, fixed cost, other cost were calculated while establishment of coffee business and it was found that fertilizer costs contributed towards 35% of total cost, labor costs contributed 32 % of total cost, seedling costs contributed 18% of total cost, fixed costs contributed 13 % of total cost & other costs (irrigation costs, chemical costs , pulping costs) contribute 2% of total cost in average. It is shown in pie chart below:

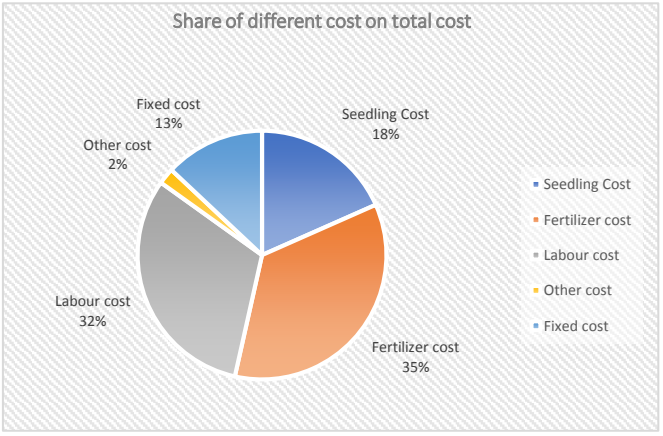


Figure 3: Share of different cost on total cost on coffee farming of farmers (Source: Field Survey, 2019)

3.6 Major Production Problem

Several problems were listed and asked to the farmers and the major problems were raked as shown by Table 9. According to that we found that major problem was "Insect and pest" with index value 0.96. Farmers were concerned about the economic damage caused by white stem borer. The next major problem was "Low technical knowledge" with index value 0.708 followed by "unavailability of proper input and planting material" with index value 0. 637.Similarly other problems were 'low scale of production" with index value 0.57, "low price of coffee" with index value 0.308 and "market" with index value 0.304. Some other problems such as lack of irrigation facilities, lack of crop insurance not mentioned in checklist were also concerned to farmers.

Table 8: Major Constraints of coffee production in surveyed area

reason	unavailability of proper inputs and planting materials	market	insect and pest	low technical knowledge	low scale of production	Low price of coffee
1	0	0	35	5	0	0
0.83	11	2	3	10	13	0
0.667	15	0	0	16	5	5
0.5	10	9	2	8	8	2
0.33	4	7	0	1	14	15
0.167	0	22	0	0	0	18
high index value	0.637	0.304	0.962	0.708	0.57	0.308
Rank	3	6	1	2	4	5

Source: Field Survey, 2019

4. Conclusion and Recomendations

4.1 Conclusion

- Kaski district has favorable climate for coffee farming and positive NPV, high FRR and B:C Ratio more than 1 indicates that it is profitable and has potential to grow.
- In last 6 years in Nepal coffee farming has increased slightly but still not up to the mark.
- Still, the producer share can be increased by proper marketing channel by reducing price spread between micro actors.
- Attack of white stem borer was the main concerned issue for farmers.

4.2 Recommendations

- Based on findings of financial appraisals it was found that coffee business is profitable in Kaski . So, Local government, Province government with collaboration with NTCDB should focus of expansion of coffee farming in large scale by bringing subsidies, low loan rate to the farmers.
- Municipality and rural municipalities in Kaski district should bring programs and suitable policies to attract Large scale private investors.
- Farmers engaged in cooperatives are secured about their products and are gaining more price than minimum price fixed by government so more primary coffee cooperatives should be established in local levels.
- Nepalese coffee are sold up to 39$(Rs 4500) per kg at international market but producers share is very less . Ministry of Industry Commerce and Supply(MoICS), District chamber of commerce should arrange proper international market channel for farmers so that farmers can gain more profit.
- The price spreads can be reduced by establishing quality secondary processor in local levels because there is more price spread in secondary processor level.
- Agricultural Knowledge Centre (AKC) should aware and train farmers in integrated way to control against white stem coffee borer and coffee leaf rust.
- NTCDB, Regional Office should provide favorable environment to researchers who are interested in coffee research within the district.

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