Present Status and Future Potentiality of Coffee Sector Promotion in Nepal

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Abstract

This study was conducted in 2019 AD purposively selecting coffee super zone districts; Gulmi, Arghakhanchi, Palpa, Syanja and Pyuthan to know the current status of coffee sub-sector.The major objective of this study is to examine coffee production, productivity, practices adopted for value addition, adopted marketing system and prioritized problem of coffee sector. Pre-tested semi-structured questionnaire was used to 160 coffee producers focussing on intended objectives of research. The study revealed that the area covered (220 ha) and average productivity (16 t./ha fresh cherry) was highest in Syanja district. Majority (56.40%) coffee producers were found with sorting and grading fresh cherries as well as dried cherries before selling them. Gulmi district leads in cooperative groups/federation managed organic certification system to maintain its specialty quality. Although there is tremendous scope to improve the quality of coffee to be recognized as specialty coffee in these district for an international niche market, there is declining attraction towards coffee production due to some biotic problems like destruction by coffee white stem borer, coffee rust as well as some plant damage by abiotic problem like frost and hail stone and poor orchard management practices. Despite the problems faced by farmers at these districts, the income generation of the devout coffee producers' has been increased rapidly in recent years due to high demand of coffee in international market with the potentiality of expansion (0.34 ha) of coffee per household in these districts.Therefore, findings of this study underscore need of strengthening research programs and noble technologies.

Keywords: Biotic problems, income generation, technologies, entrepreneurs

Introduction

Coffee is a high value low volume cash generative crops introduced in the Aanpchaur of Gulmi District in Nepal by the Monk Hira Giri in 1938 A.D. (Chaudhary et al., 2008; Poudel et al., 2009; Tiwari, 2010; Aoki and Subedi, 2012;Paudyal, 2012). In the late seventies, expansion of coffee as commercial crop to some extent took place when the government imported coffee seed from India for distribution. The major shift to commercial coffee production took place in mid eighteens when the coffee producers were able to sell coffee after the establishment of Nepal coffee company in Manigram, Rupandehi district in 1983, who collected dry cherry from the coffee producers and processed the coffee for the domestic market. Until early 2000, coffee

producers were not very sure of coffee being a source of income generating commodity due to market problem. However, after the year, 2002, substantial increase in the export and also increase in domestic market consumption to some extent motivated coffee producers to consider coffee as a major source of income. Today's coffee sector promotion linked with a soil erosion project during initial of 2000 that also resulted to spread coffee quickly in Nepal. Nepal has a great potential to produce organic coffee by utilizing its long back production system called as organic by default. Farmers have been producing coffee in the mid-hill from east to mid-region at an altitude upto 850 msl to 1500 msl at sub-tropical and warm temperate climatic zone due to its favourable climate and soil quality (Nepal, 2006). The Nepalese coffee production has very small contribution in the world coffee arena, however, Nepalese highland and organic Arabica coffee has been getting premium price and niche markets since decade long due to sound aroma and high quality cupping, that gradually accelerated the extension of coffee farming in the rural areas of Nepal (Manandhar et al., 2009; Panthi et al., 2008).The Nepalese coffee has also been able to create market demand abroad as well inside the country probably because of aroma, taste, flavor and healthy and suitable environmental conditions (Aoki and Subedi, 2012; Khannaa, 2016). Coffee has been considered economically more (nearly three times) profitable in the present context as compared to cereal crops (Bajracharya, 2003).

Prime Minister Agriculture Modernization Project (PMAMP) was launched in 2016, acclaimed as a game-changer for the development of agriculture in the country seeks to modernize agriculture through concentrated efforts on production, processing and marketing. The vision of the project is to change the traditional agriculture production based economy to industry based modern, commercial, sustainable and self-sufficient agriculture sector. The project envisioned to establish 5000 small commercial agricultural production centers (pockets), each of 10 hectares, 1500 commercial agricultural production centers (blocks), each of 100 hectares, 300 commercial agricultural production and processing centers (zones), each of 500 hectaresand 21 large-scale commercial agricultural production and industrial centers (superzones), each of 1,000 hectares in its 10-year duration period (PMAMP, 2018). Coffee super zone program has been implemented at Gulmi, Arghakhanchi, Pyuthan, Palpa and Syanja under PMAMP with major focus on enhancing coffee production and strengthening the value chain actors and their institutions since 2018/19. It targets on mechanization, infrastructure development, market promotion activities to assist different value chain actors of coffee in these districts especially focusing to establish nursery resource center, develop standard certification mechanism, post harvest center, developing of value chain approach marketing institutionsand extension of coffee plantation areas at a cluster of 7.5 hectares in each ward of the local government of super zone areas. The super zone focus to change the mindset of the growers regarding traditional system of coffee plantation on margin land to make it lucrative business through development of commercial cluster with all the facilities managed by the local group/ cooperatives or companies that would ultimately help to generate employment at the local level and becomes the basis of coffee sector modernization and commercialization. It focus to facilitate the growers to produce the coffe of high quality for international market. The major objective of this paper is to explore the status of the coffee growers and dig out the potentiality of coffee at the super zone areas.

Methodology

Coffee super zone areas located at Gandaki and Lumbini province of the western mid-hill of Nepal have organic coffee producers, collectors and processors. District based cooperative federation are responsible for managing every aspect of production and

marketing management of organic coffee via the farmer's cooperatives at production level. The study area is not adequately endowed with physical infrastructure such as road, electricity and irrigation facilities. The site was selected from the local level of five district with semi-commercial and commercial coffee orchard. The purposive sampling was done to select 8 household from each primary cooperatives or farmers groups with coffee growers of semi-commercial and commercial orchard. A survey was carried by deploying pre-tested semi-structured questionnaires for collecting the field level information. The sample (n=160 semi-commercial and commercial farms) was drawn randomly from the complete enumeration of organic coffee growers of five district. Beside, participatory tools like FGD (Focus Group Discussion) and KIS (Key Informants Survey) were done to draw the general understanding and reaching to the reality. The secondary data were colletcted from the publication of National Tea and Coffee Development Board (NTCDB), MoALD and data recorded by District Coffee Federation and Coffee Cooerative union of surveyed district.The collected data were analyzed using Microsoft Excel.

Results

Family size of coffee grower and gender of household head

The sampled population was categorized into three different groups; household having less than five members, household having in between 6 to 9 members and household having more than 9 members. It was found that the majority (75.09%) of the coffee growing household had less than 5 members followed by 18.86% household with more than nine members and 6.05% household with 6 to 9 members. Among the coffee producers at super zone areas about 61.37% were female household head that primarily involved for coffee production and its management.

Table 1. Average family size and gender of household head at coffee super zone areas (%)

District	Family size (%)			Gender of HH head (%)	
	Less than 5	6 to 9	More than 9	Male	Female
Gulmi	62.5	6.25	31.25	36.88	63.12
Palpa	76.47	9.8	13.73	54.38	45.62
Arghakhanchi	87.93	5.17	6.9	14.6	85.4
Syanja	66.67	3.7	29.63	40.65	59.35
Pyuthan	78.57	5.71	15.71	46.64	53.36
Mean	**75.09**	**6.05**	**18.86**	**38.63**	**61.37**

Age of coffee growers in the coffee super zone areas

The maximum coffee growers are with in the age range between 30 to 50 that indicates the economically active age growers are the major grower in coffee super zone areas. In Gulmi, the growers with age range between 50-70 years are the maximum followed by age range of 30-50 years.

Table 2. Average age of coffee growers in the coffee super zone areas

District	Below 30 yrs	30 to 50 yrs	50-70 yrs	Above 70 yrs
Gulmi	2.08	41.67	45.83	10.42
Palpa	5.88	47.06	35.29	11.76
Arghakhanchi	6.9	60.34	29.31	3.45
Syanja	3.7	48.15	37.04	11.11
Pyuthan	2.86	51.43	41.43	4.29
Mean	**4.27**	**50.18**	**37.72**	**7.83**

Income of coffee growers in the coffee super zone areas

The maximum coffee growers (79.98%) have an average income above Nrs.1,00,000 per annum (p.a.) that indicates the coffee growers in super zone areas are financially well off. The income is not only from the coffee but also from other cash crops like vegetables, fruits and livestocks.The coffee growers with income above 1 lakh per annum is highest at Syanja district followed by Pyuthan and Palpa district respectively.

Table 3. Average income of coffee growers in the coffee super zone areas

District	Below 50,000 p.a	50,000- 1,00,000 p.a.	Above 1,00,000 p.a.
Gulmi	6.25	14.58	79.17
Palpa	3.53	14.76	81.71
Arghakhanchi	12.5	14.8	72.7
Syanja	6.9	8.66	84.44
Pyuthan	2.86	15.25	81.89
Mean	**6.408**	**13.61**	**79.98**

Education status of coffee growers in the super zone areas

The education status of coffee growers was almost lowest in all the super zone district below Secondary Education Examination (SEE). Among the respondents coffe growers education above SEE was highest (31.48%) in Syanja district.

Table 4. Education status of coffee growers in the coffee super zone areas

District	Below S.E.E	S.E.E.	Above S.E.E
Gulmi	60.42	20.83	18.75
Palpa	49.02	29.41	21.57
Arghakhanchi	65.52	29.31	5.172
Syanja	44.44	24.07	31.48
Pyuthan	51.43	25.71	22.86
Mean	**54.16**	**25.86**	**19.96**

Land types of coffee growers in the super zone areas

The land topography of super zone areas are more slopy with an average of 0.35 ha slopy land per household with maxium land in Argakhanchi district followed by Syanja district and lowest in Gulmi dsitrct. Most of the land used for the coffee orchard were slopy, marginal and non-irrigated in the coffee super zone areas.

Area, production and productivity of coffee in the super zone areas

The total area of coffee plantation is 547 hactre in the super zone areas with 375 hactre productive areas till fiscal year 2018/19. The estimated green bean production was 85 t. in FY 2018/19. The productivity of green bean was 0.217 t./ha in super zone areas. Among the super zone districts Syanja leads in total area, productive area and production of green beans followed by Gulmi district. The least area and production was in Pyuthan district followed by Palpa district.

Table 5. Area, production and productivity of coffee in the coffee super zone areas

District	Total area (ha)	Productive area (ha)	Ripe cherry	Productivity of ripe cherry (t/ha)	Estimated green bean production (t)	Productivity of green bean (t/ha)
Gulmi	134	102	1428	14	20.29	0.199
Palpa	65	25	275	11	6.6	0.264
Arghakhanchi	103	52	520	10	9.94	0.191
Syanja	220	169	2704	16	43.52	0.258
Pyuthan	31	27	351	13	4.64	0.172
Total	**547**	**375**	**5278**	**14**	**85**	**0.217**

Coffee growers selling different types of coffee at the super zone areas

The maximum coffee growers (60.74%)were selling ripe cherry in the super zone areas followed by dry cherry (28.98%) and parchment coffee (10.28%). The highest growers (78.2%) of Syanja sold ripe cherry, followed by growers of Gulmi district. The coffee growers sold their ripe cherry to local collecter who operates pulping center and sent the parchment coffee to the marketing agency. The maximum growers (47.4%) of Pyuthan district drid up the ripe cherry at their own farm and sold to the local collector or directly to the marketing agency. The highest grower (11.3%) processed their coffee to parchement in Arghakhanchi district.

Table 6. Coffee growers selling different types of coffee product at the coffee super zone areas

District	Ripe cherry	Dry cherry	Parchment coffee
Gulmi	72.4	17.7	9.9
Palpa	59.8	29.3	10.9
Arghakhanchi	51.5	37.2	11.3
Syanja	78.2	13.3	8.5
Pyuthan	41.8	47.4	10.8
Total	**60.74**	**28.98**	**10.28**

Use of different shades for growing coffee in the super zone areas

Among the growers in super zone areas, the maximum growers (60.72%) uses fodder trees as shade followed by fruit trees (38.44%). The highest growers (39.26%) of Syanja are more aware of growing fruit trees as shade as an additional income in coffee orchard followed by growers of Gulmi district.

Table 7. Farmers using different shade for growing coffee in the coffee super zone areas

District	Fruits trees	Fodder trees	Other
Gulmi	35.42	60.42	4.16
Palpa	31.37	68.63	0.00
Arghakhanchi	26.9	73.1	0.00
Syanja	39.26	60.74	0.00
Pyuthan	29.28	70.72	0.00
Mean	**32.44**	**66.72**	**4.16**

Source of saplings in the coffee super zone areas

The maximum coffee growers (54.89%) at the super zone areas are using the sapling from private nursery, followed by government farms and farms managed nursery (26.08 %) and community/ cooperative managed nursery (16.32%). Government owned farms Coffee Development Center at Aapchaur and Coffee Research Program at Bhandaridanda of Gulmi have also become the nursery resource center of seed/sapling for neighbouring coffee cluster at Gulmi as well as the nursery resource center manged by direct supervison from the area office Bandanda, Pyuthan of National Tea and Coffee Development Board are also supplying seeds/sapling to the coffee growers in Pyuthan and neigbouring district. The coffee growers (14.66%) at super zone areas used their own nursery coffee orchard establishment.

Table 8. Source of seeds/saplings in the coffee super zone areas

District	Own nursery	Government farms/ farms anaged nursery	Community/ cooperative nursery	Private nursery	Others
Gulmi	20.83	33.33	4.17	35.42	6.25
Palpa	5.88	0.00	13.73	50.98	29.41
Arghakhanchi	30.5	0.00	18.4	46.6	4.5
Syanja	0.00	0.00	0.00	90.74	9.26
Pyuthan	1.45	18.84	28.99	50.72	0.00
Total	**14.66**	**26.08**	**16.32**	**54.89**	**12.35**

Source of technical service to coffee growers at super zone areas

Coffee growers at the super zone areas were technically fed with the support from non-government organization. The maxiumum growers (43.81%) at super zone areas received technical service from cooperate federation and NGO's working on coffee sector, followed by private nursery (22.98%) and then government offices and farms.

Table 9. Source of technical service to coffee growers on coffee super zone areas

District	Govt. office and farms center/ reseach center	Cooperative federation and NGO's	Private nursery owner	Other sector
Gulmi	33.53	45.82	14.4	6.25
Palpa	6.38	50.48	13.73	29.41
Arghakhanchi	23.4	48.28	26.6	1.72
Syanja	15.78	23.75	31.2	9.27
Pyuthan	18.84	50.72	28.99	1.45
Mean	**23.58**	**43.81**	**22.98**	**9.62**

Investment on coffee production at super zone areas

The mean investment incurred by coffee grower at super zone areas is about Rs. 1,51,571 per hactre and per plant cost incurred per plant is Rs. 75.78, which is less than the optimum cost required (Rs.110 per plant) for better orchard management. The maximum investement on plant orchard management by Gulmi (Rs.93.50/plant) followed by Syanja (Rs.85.40) and Palpa (Rs.75.50). The investment on coffee orchard is focused on farm yard manure, bordeaux mixture and insect pest management.

Table 10. Mean investment incurred at super zone areas

District	Production cost incurred per hactre (NRs.)	Cost incurred per plant (NRs.)
Gulmi	1,87,012	93.50
Palpa	1,51,006	75.50
Arghakhanchi	1,31,614	65.80
Syanja	1,70,808	85.40
Pyuthan	1,17,416	58.70
Mean investment	**1,51,571**	**75.78**

Institiution involvement on organic certification of coffee at super zone areas

The production of coffee at super zone areas is organic by default, however the organic certification is necessary for export market. The organic certification process has been faciliatated by cofffe cooperative union/federation (58.59%) followed by coffee company (15.26%). Coffee growers (26.4%) are not facilitated by any of the organization. This indicates that there is some part where the coffee grower need facilitation for organic certification.

Table 11. Institution involved on organic certification of coffee super zone areas (%)

District	Coffee cooperative union/federation	Coffee company	None
Gulmi	55.5	15	29.5
Palpa	54.19	19.61	26.2
Arghakhanchi	61	11	28
Syanja	50.3	23.7	26
Pyuthan	72	7	21
Total	**58.598**	**15.26**	**26.14**

Soil test status before at super zone areas

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Gulmi	55.5	15	29.5
Palpa	54.19	19.61	26.2
Arghakhanchi	61	11	28
Syanja	50.3	23.7	26
Pyuthan	72	7	21
Total	**58.598**	**15.26**	**26.14**

Soil test status before at super zone areas

Majority of the coffee growers (90.24%) had not soil test before plantation. This indicates that the coffee orchard have been establishment based on the soil type only that may be the possible cause of coffee decline in most of the super zone areas. Testing of the soil before establishment of the orchard and after the establishment of the orchard for reclamation of soil by lime or gypsum to maintante pH of the soil for better uptake of nutrients from the soil.

Orchard management of coffee at super zone areas

Majority of the coffee growers (69.64%) performed coffee orchard management twice a year in August-September/January-February followd by thrice a year (17.95%). The study revealed that 23.39 % coffee growers do not perfrom coffee orchard management due to lack of knowledge and awareness about coffee orchard management.

Table 12. Orchard management of coffee at super zone areas

District	Once a year (Sep-Oct)	Twice a year (Aug-Sep/Jan-Feb)	Thrice a year (Sep-Oct/ Jun-July/March_April/)	None of the year
Gulmi	4.08	71.43	20.4	4.08
Palpa	5.77	94.23		
Arghakhanchi	0.00	37.29	5.08	57.63
Syanja	0.00	94.55	5.45	0.00
Pyuthan	0.00	50.68	40.85	8.45
Total	**4.93**	**69.64**	**17.95**	**23.39**

Irrigation management of coffee at super zone areas

Majority of the coffee growers (47.24%) provided irrigation twice a year in August-September/ January-February followd by once a year (10.04%). The study revealed that 69.97% coffee growers do not provideirrigation due to lack of irrigation facilities at the orchard areas. The indicates the coffee orchard are drying and highly infested with the pests with no irrigation at the orchard.

Table 13. Irrigation management of coffee at super zone areas

District	Once a year (Sep-Oct)	Twice a year (Aug-Sep/Jan-Feb)	Thrice a Year (Sep-Oct/ Jun-July/March_April/)	No irrigation
Gulmi	20.36	36.73	3.1	39.8
Palpa	4.5	0.00	0.00	95.5
Arghakhanchi	6.6	0.00	0.00	93.4
Syanja	1.82	0.00	2.3	95.8
Pyuthan	16.9	57.75	0.00	25.35
Total	**10.04**	**47.24**	**2.70**	**69.97**

Processing of coffee at super zone areas

Coffee needs the excellent processing for the international market. Maximum coffee growers (56.40%) performs sorting and grading of coffee before marketing. Only 10.28% of coffee growers performs pulping operation. This indicates that these are the local collector and coffee grower with pulping machine working as pulper operator at the super zone areas. About 6.4% of coffee growers performs grading. packing and storage of the coffee before marketing whereas 15.2% of coffee growers do not perform any type of processing operation.

Table 14. Processing of coffee at super zone areas (%)

District	Sorting and grading	Pulping	Grading and storage	Grading, packing and storage	None
Gulmi	65	9.9	10	4.5	10.6
Palpa	54	10.9	7.5	11.5	16.1
Arghakhanchi	47	11.3	8	3.5	30.2
Syanja	68	8.5	14	7	2.5
Pyuthan	48	10.8	19	5.5	16.7
Total	**56.40**	**10.28**	**11.70**	**6.40**	**15.22**

Marketing practice adopted by coffee growers at super zone areas

The coffee growers mostly (45.51%) sell their produce to local traders followed by district coffee federation or union (41.98%). Very few growers (9.30 %) adopts group marketing approach for marketing of their produce. Although small part of coffee production zone has been certified as organic in super zone areas, farmers started to receive remunerative advantage from organic coffee, this forced them to be organized in some functional cooperative initiated by district cooperative federation to introduce their product in the international market, which is playing vital role in marketing of the coffee (Acharya et al.,2016; PACT, 2012).

Table 15. Marketing practice adopted by coffee growers of super zone areas

District	Group marketing	Local traders collection	District federation collection/ coffee cooperative union	Others
Gulmi	2.27	27.12	69.05	1.56
Palpa	11.76	8.4	78.24	1.6
Arghakhanchi	10.45	75.11	12.31	2.13
Syanja	12.21	44.14	40.12	3.53
Pyuthan	9.8	72.79	10.2	7.21
Total	**9.30**	**45.51**	**41.98**	**3.21**

The marketing channel adopted in super zone areas was found very short route that includes producers- village level collector -district level cooperative- exporter andproducers- district level cooperative-exporter only. Although the route was short, in the past years, the producer were not able to receive premium price of their coffee timely, which demotivated them to shift to other ventures and the established coffee orchard were not managed properlt which promoted for other biotic problems like coffee stem borer infestation and low productivity.

Pricing trend in Coffee

The coffee growers at super zone areas are getting premium price in the latest three years. The data shows that the price of ripe cherry, dry cherry and parchment coffee has also been increasing in the super zone areas. The small coffee producer farmers in rural areas of coffee super zone were satisfied with the price they receive from their produce. However, the pricing system and marketing premium and benefit sharing had not been practiced to empower the organic coffee growers in super zone areas as discussed during focal group discussion

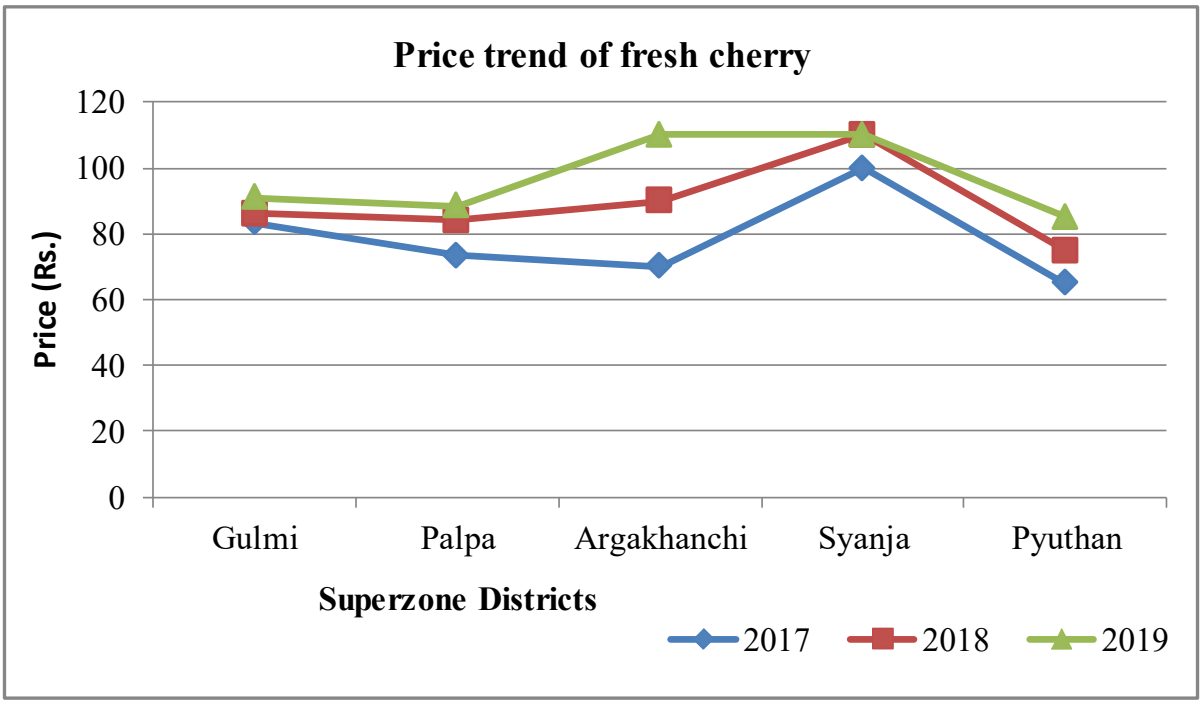

Fig1(a): Trend of pricing of fresh cherry coffee produced at super zone areas produced at super zone areas

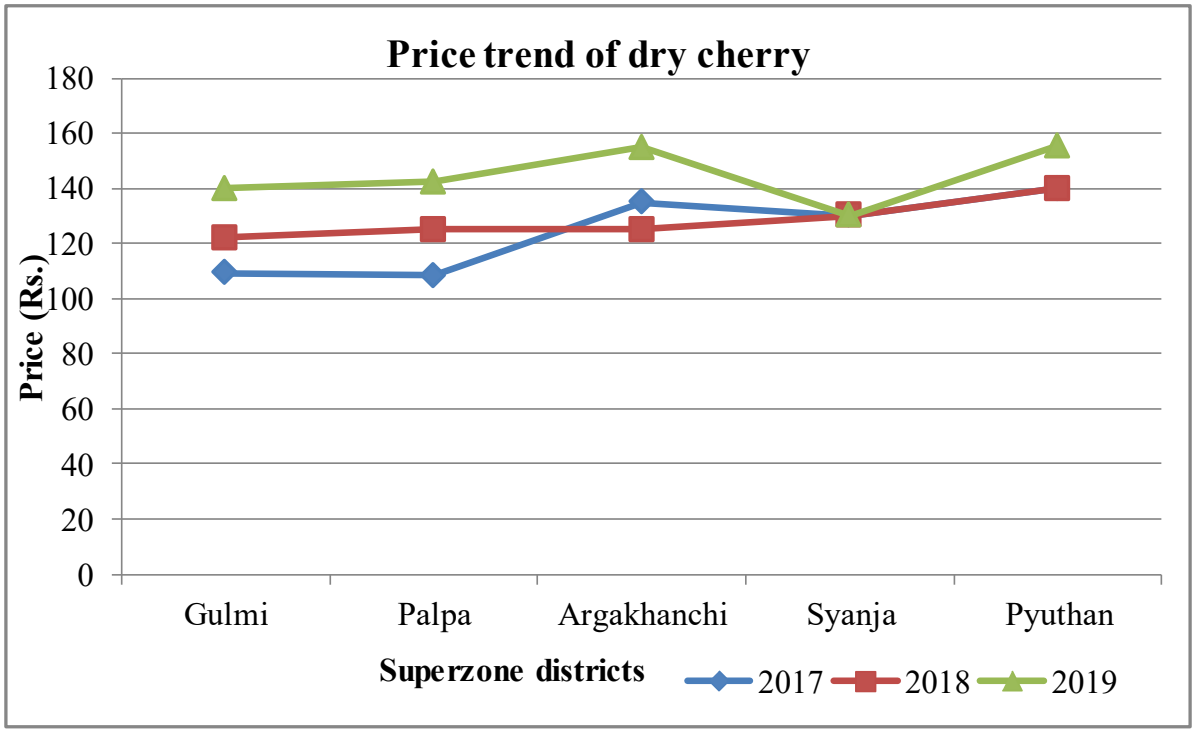

Fig1(b): Trend of pricing of dry cherry coffee

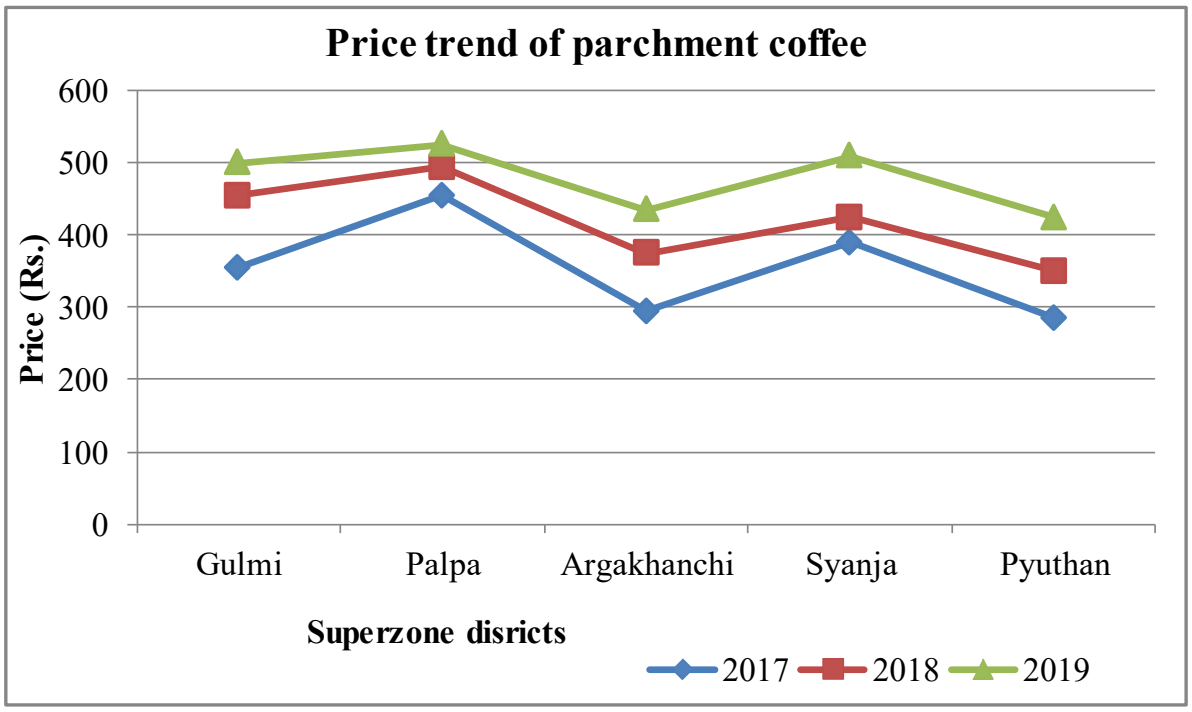

Fig1(c): Trend of pricing of parchment coffee produced at super zone areas

Export import scenario of coffee at super zone areas

Nepalese coffee is mainly produced for export to international market. About 60 % of its total production is exported to different countries. In Nepal coffee is mainly exported mainly in four forms namely coffee, neither roasted nor decaffeinated, coffee, not roasted, decaffeinated, coffee, roasted, not decaffeinated and coffee, roasted and decaffeinated. About 84 t coffee having worth 99 million rupees has been exported to different countries in 2019.It is

a very small share in the global coffee market and production. Nepalese coffee is mainly exported to Jermany, Japan, China, USA, Netherlands, Italy, UAE, Switzerland, UK and Canada (NTCDB, 2019; TEPC, 2019). Nepal's membership with World Trade Organization (WTO) has also increased the export potentiality of coffee in overseas countries.

There is a growing demand for Nepalese coffee, especially the high altitude Arabica coffee in the overseas market. Different forms of coffee especially superior quality of green bean has being exported to overseas countries from super zone areas as there is comparative and competitive advantage of coffee production. District Cooperative Federation, Gulmi has been exporting certified organic coffee (certified from NASA). Likewise District Cooperative Federation has also been exporting on an Mean of 12 t. coffee to differernt countries through export agency. These district are crentlyexporting coffee mainly to Japan and South Korea, Australia. Despite increasing production of coffee in Nepal, import of the coffee has also been increasing at alaraming rate.The record shows that about 162t of coffee in different forms having value 98 million rupees has been imported in Nepal (TEPC, 2019). This may be due to the lack of information and adequate awarness about Nepali coffee and the taste preference for the imported instant coffee.

Export potentiality of coffee from super zone areas

It has been seen that district based cooperative federation and producers association are mainly responsible for marketing of coffee. There has been huge demand of Nepalses organic coffee in the international market, with very minium supply due to low production at production zone. Growers can get very premium price by exporting coffee at the internation with the value chain approach. Nepalese coffee has been priced around 10-15 US$ per kg green beans in the internation market compared to more than half less of Indian coffee (NTCDB, 2019). Despite the great potentiality of coffee production and marketing, farmers faced several constraints regarding organic certification and well equipped post harvest handling, processing and marketing facilities for competitive product.

Issues and problems faced by coffee growers

During the focal group discussion with growers at coffee super zone areas , several problems have been identified faced by coffee growers at coffee super zone areas for production and marketing of their produce. Although district based organization for coffee with support from developing partners and other agriculture offices working at the districts were trying to solve the problems at production point, sustainable solution has not been indentfied till this period so that most of the old growers has been replaced by new coffee growers in this region.

Table 16. Problem ranking faced by coffee growers at coffee super zone areas:

Ranking	Production problem	Processing and storage problem	Marketing problem
I	Infestation of white stem borer	Lack of appropriate storage	Very low market Price
II	Lacking irrigation facilities	Lack of modern processing equipments	Lack of timely transportation
III	Loss from cold waves/frost	Lack of technical skills for product diversification	Discrimination at pricing of coffee
IV	Lack of proper production technology	Lack of efficient manpower	Delayed payment for farmers product
V	Lack of high yielding varities		Marketing fraud by some traders

Discussion

In the coffee super zone areas the study reveals that that there is quite challenging situation for the manpower management in coffee orchard for different cultural practices due to very small size of family and the increased cost of production due to hired labour from outsid the family. The coffee production is mainy based on female household head of the grower, as this has not been developed as commercial ventures and household woman works for the coffee at orchard at her time availability, however in the recent years the youth coffee growers are also involved in coffee production, collection and processing as this has become lucrative business for some of the youth in the coffee super zone areas. The coffee growers have been using slopy bari land for growing coffee as these are not used for growing cereals which are non-irrigated and seem like marginal land that has been decreasing the productivity and quality of the the coffee. Although the total area in super zone district has been increasing for last three years, the productive areas has not been increased so far due to some technical problems faced by coffee growers. The infestation of coffee white stem borer is the major probem in these areas as the grower are forced cut the bearing coffee plant due to its infestation from the top. The maximum growers using fodder trees as shade was suffering from infestation by coffee stem borer as these farmes use fodder for animal feeds and the coffee plants do not get adequate shade which promotes for coffee stem borer. Some of the grower using fruit trees as shade have been generating additional income from these fruit trees which has raise ther farm income too as well as they have been harvesting high quality ripe cherry. Shade is very important for growing coffee to make quality and production and get long run return from this enterprises. The study reveals that there is very few attention from the government sector for providing technical services related to coffee. Coffee production taken as income-generating ventures has been facilitated by Nepalese government with the collaboration of international development agencies during the initial years of its promotion in super zone areas which was lacking in the last decade and growers had to depend completely upon cooperative federation at the district which has been running with poor capacity.

The average investment of about 0.15 millions per hactre per year for coffee orchard at super zone areas is very less for standard orchard management which has reduced the productivity of quality coffee. The cost of production will be increased when the coffee grower follows the recommendation practice like use of oil cakes, agriculture lime, training/pruning and spraying equipments which has been rarely used by the coffee growers at super zone areas. As growers in these areas donot treat coffee sector as profitable and sustainable venture for income generation to them, low priority has been given for orchard management practices in the last decade. If cultivated with standard management practices, it has been reported that coffee cultivation provides 4.33 times higher net return than maize, 3.30 times higher net return than millet and 1.87 times higher net return than maize and millet combined, per unit land. Those figures would be much higher if coffee is intercropped with ginger and with banana as double purpose tree: fruits and shade. Internal rate of return of coffee orchard are estimated at 19 percent, 26.9 percent and 32.5 percent for coffee alone, coffee with ginger and coffee with banana, respectively assuming a 30 years average life of orchard. Another advantage of coffee farming is employment generation. When viewed from employment generation, coffee cherry picking coincides with a season when there is minimal demand of labor for other crops due to which it not only create job to the concerned farmers but also to marginal farmers and land less laborers (PACT, 2013). Coffee growers at the coffee super zone areas have to depend fully upon district cooperative federation for organic certification and marketing of their produce due to low volume of their produce.

The general practice of pricing of produce of coffee growers was that producers receive the value of their ripe cherry after local pulpers get payment of their parchment. Farmers have been selling coffee to local collectors and pulper in their local area. The minimum price of the coffee produce by the grower has been fixed by National Tea and Coffee Development Board in collaboration with the DCPA and other stakeholders.However the premium price has been offered in the superzone areas by the district based organization working for coffee processing and marketing. Pricing mainly depends on the demand and supply situation, quality of coffee and last year's price (Kaphle, 2014).

Conclusion

Coffee is predominately grown by small scale farmers to sustain their livelihood under marginal upland condition in super zone areas, however new youth entrepreneurs has entered to this ventures in the latest year. The most coffee growers in super zone areas are not well educated to catch up the new production technology and better orchard management practices to boost up the quality production. The orchard management of the coffee was found poor in these areas with maximum growers performs only twice a year and majority of the growers was lacking irrigation facility at the orchard. Majortiy of the coffee orchard at super zone areas had fodder trees as shade tree with very few fruits trees included. The major source of sapling for new orchard establishment was distant private nursery in the super zone areas which has increased cost of production due to high transportation cost, lack of quality sapling with poor growth and huge mortality. The finding of the study revealed that district based cooperative federation and producers association was found mainly involved in market and export management of coffee which is not sufficient for promoting this business. Coffee super zone areas have maximum opportunity to capitalize the nature endowed comparative and competitive advantage of geoography for organic coffee production that helps farmers to fetch good revenue.The production involved export company should be established for exploring the highest potentiality of coffee at super zone areas. Several problems has been faced by the growes in these areas, so, government institutions should focus on development of package of practice for quality organic coffee production, introduction, identification, registration and recomendation of disease resistant high yielding varieties, cost effective pest management technology and strengthening value chain market facilities for sharing benefit to the growers. Likewise there is a urgent need to extend Nepalese coffee in internal market for import substitution, so awareness should be created about the benefit of organic coffee produced in Nepal and habit of consuming filter coffee instead of imported instant coffee. Nepalese organic coffee is rapidly gaining importance within the global markets, even though it still accounts for a small proportion of farm production. Due to its immense potentiality for income generation, educated youth should enter for the promotion of this ventures for nations prosperity.

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