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Value Chain Analysis for Coffee in Karnataka

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***Abstract*- Coffee follows a complex chain from crop to cup wherein a coffee bean goes through various processes which adds value at each stage involving different actors. In this context, the present study was undertaken with objectives, to study the marketing actors involved in coffee value chain and how value added is distributed between the different actors. The study was carried out in Coorg district during 2013-14, 30 famers were randomly selected from two tahsils, three small curing works, five local roasters and exporting company were selected. The study revealed that there existed channels for both domestic and international markets. The different actors from coffee to cup include producers, hullers, agents, curers, exporters, roasters and retailers and finally consumers. Intermediaries had a major role in the chain. Most of the producers (75 per cent) sell their produce to the agents at the farm gate price. Main quality parameters checked were for moisture content, out turn of coffee, berry borers, and for the presence of Blacks and bits. It was also seen that curers directly purchase the produce from the farmers. From the curer level, it is either sold in domestic market or the international markets. Ten percent of the trade also takes place through ICTA auctions after curing stage wherein cured coffee is sold either to domestic roasters or the exporters. The roasters had a huge share in the value addition and their net margins were higher. The marketing problems include price variation, lack of storage and infrastructure facilities. There is a need to improve the livelihood of small producers to make them their position in the global market.**

I. INTRODUCTION

Agricultural sector still dominates the Indian economic scene by providing livelihood to majority of the population. In most of the developing countries including India, agricultural development is a precondition for economic development. A major proportion of agricultural production in India is taken by small farms, which are often found to be efficient in terms of productivity (Singh et al 2002). Indeed, coffee is basically a small farmer's activity where 98.8 per cent of the holdings are less than 10 hectare size. About two thirds of the area is cultivated by small holders contributing about 70 per cent to the total production. Remaining 1.2 per cent of the holdings are cultivated by large farmers accounting for 25 per cent of the area and 30 per cent of the production, as their productivity levels are relatively higher. On an average 4.67 lakh persons are employed in Coffee plantations in Karnataka. Prior to liberalization, coffee was the only commodity to be marketed through a statutory organization viz., the Coffee Board. It was carried under a system in which coffee was often pooled from the producers and auctioned in two separate auctions for the domestic market and the export market. After liberalisation in 1992-93, there was an end of Monopoly behavior of the Coffee Board in supply of coffee. Coffee prices are often influenced by the size and availability of coffee stocks worldwide. India's domestic coffee price moves in tune with the International price of the same. Coffee supply chain works in an international way, the direct link between producers and consumers are not present. Coffee is traded down a complex line of intermediaries, ranging from local traders, exporters, international traders, roasters and retailers, who each capture a percentage of the retail value of coffee. In Karnataka, Coorg district accounts for higher production of coffee with large number of farmers' involvement in its cultivation. Out of total population, more than 52 percent are dependent on coffee cultivation. Coffee cultivation is the main source of income in Coorg. In this context, the study is undertaken with objectives viz;.1). To describe important marketing channels and actors involved for domestic coffee 2). To analyze the coordination between the actors of the coffee value chain. 3). To analyze how value added is distributed between the different actors.

II. METHODOLOGY

The study is conducted in Coorg district of Karnataka state. The Coorg distrct being a major coffee-growing region, occupies the Eastern and Western slopes of the Ghats. Coorg district in Karnataka is selected for the study as it is one of the highest producers of coffee in Karnataka and tahsils Virajpet and Kushalnagar were selected . 30 farmers were randomly selected from different villages in the Virajpet tahsils. Three Small Curing works, five local roasters in the Virajpet taluk were selected , One Exporting Company located in Kushalnagar in Coorg district was selected. The required information was collected during the period of 2013-14. These aspects include the marketing costs and price spread. Marketing cost refers to the cost incurred by the producer-seller from the point of production up to sale. Price spread was worked out by computing the differences between the prices received by the producers and prices paid by the consumer.

Price spread = Pp-Pf

Where,

Pp = prices paid by the consumer

Pf = prices received by the producer

III. RESULTS

In the present study in Virajpet region, out of 30 selected coffee growers, 70 percent of farmers were selling their produce to the agents at farm gate prices. While, 20 per cent of them sell their produce directly to the curing works. The role of Hullers basically is to process cherry coffee from dried cherries to parchment coffee. They are located all over the growing regions and are especially important in Coorg. However, hulling results in a low quality coffee since it results in higher number of damaged beans as the machines used by them are very simple. It was seen from the study that agents are powerful local actors. These agents provide a range of support services including the collection of the coffee from planters, transportation to the curing works and also provide own storage facilities. Additionally, they are also associated with providing financing facilities and information collection. Small growers are largely taken aside of the marketing channels of their coffee. Although, Most of the small and marginal farmers contribute to majority of production, they sell their coffee at the farm gate to purchasing agents. Hence, they do not participate in the marketing of their coffee and do not benefit from the information related to the valuable attributes of their product. This is because when the small farmers sell their coffee in bigger towns or to curing works directly often lose money because of higher transportation costs. The price they get may be higher, but deduction of transportation costs might then make a lower price than agents' ones. Hence they prefer to sell their produce to the agents rather taking the burden of transportation costs. It is clear from the graph that, out of 30 growers selected, 24 (80%) of them were checking the moisture content followed by berry borer infected beans(70%). The cherry with blacks and bits fetched less prices in the market. It is also seen that the growers receive the immediate payments in cash and usually they do not receive any receipts for the transaction. In the recent years the curing works have gained importance as they own storage facilities that often lack in the farms. This gives them flexibility in the time when they sell their coffee, and thus making profits by speculating on the price movements. There are three main channels for clean coffee after secondary processing is done at the curing works. This includes i) Selling either through Indian Coffee traders Associations (ICTA) auction in Bangalore ii) It can be exported iii) Selling to domestic roasters. ICTA auction is held once a week in Bangalore. Very small quantities are sold through this auction where purchasing is done mainly by small or medium domestic roasters. Nearly 70 percent of coffee produced is being exported. Indeed, Exporters play a very important role in the Indian Coffee Industry having a huge control in the supply chain and trade channel. There is another channel in the coffee marketing which includes Local Coffee Shops and Local Roasters. A small amount of the production is marketed through these informal channels. The main actors in the coffee value chain include producers, hullers, agents, curers, exporters, roasters and retailers and finally consumers. Most traded channel was found to be through the local purchasing agents Also, Curers and Local roasters are important players in the chain. Although majority of produce is exported, the direct contact of producers and exporters was less. The co-operative movement has been a failure, while, new forms like Self-help groups have been emerging. Also, in the recent years future trading is becoming more prominent in the value chain helping to widen the market. Trade of coffee was found to be highly influenced by trade since most of the farmers (75%) farmers opined that they sell their produce since they trust the millers (curers) .This was because most of the produce was sold at the farm gate level to the local purchasing agents or curers as they were easily accessible and the growers were more bounded to them.

Co-ordination among actors in the Value chain

A typical example of a buyer-driven chain is the value chain of coffee, specifically a roaster driven chain (Ponte, 2001). The coffee board had lost its control on the marketing of coffee and the roasters have gained control in the supply chain over the years. The strategic choices of coffee roasters have shaped both barriers to entry both at the roaster level and further in upstream segments like traders, exporters and the other processors. Branding plays an important role mainly in the in-home consumption market which needs huge investments. The co-ordination in the value chain is mostly the buyer-driven since roasters being the major actors in the value chain. The trade between the producers and curers is mostly due to the trust gained over the years.

Distribution of Value addition The prices at the farm gate have been fluctuating in each month. Figure shows that the price in a single year varied from Rs.1000 to Rs.2000/50 kg bag. Various factors were influencing the prices of coffee like seasonal variations, rainfall, international market fluctuations etc. Lower prices affect the small farmers to a large extent.

Price Spread and Value Addition

For the analysis of price spread, two marketing channels have been considered.

i) Farmers —Agents—Curers— Local Roasters

ii) Farmers — Curers— Exporters

The study revealed that there is huge difference in the prices obtained from the producer at the farm gate level to the retail prices. The producer share in consumer rupee in

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channel-1 was 59 per cent wherein the total marketing cost incurred by producer accounted for 1.93 per cent of consumer's price. Price spread was found to be Rs.36, 060 per ton (41.42%). It is clear that as the coffee moves from producer to each level of actor, there is certain amount of value added to it, and indeed it has resulted in the higher price of the product. However, at each stage there is cost involved, each actor in the process is found to have a net margin, with roasters having a net margin of 15 percent (Table 1). The price spread in channel-II is shown in the Table 2. It shows that producer share in consumer rupee was 4 % as higher compared to channel –I . However, the marketing cost is also found to be higher. The additional cost incurred towards processing per ton of coffee beans by curers was Rs. 3940 and the additional returns realized were Rs.5280 (6.53%). The price

Table 1: Price spread of marketing in channel-1(Domestic market)

Sr. No	Particulars	Rs./tonne	Percentage
1	Farmers cost	1680	1.93
2	Price received by producer	51000	58.58
3	Agents purchase price	51000	58.58
4	Cost of Agents	1020	1.17
5	Net margin to the agent	2860	3.28
6	Curers purchase price	54880	63.04
7	Cost incurred by curers	3650	4.19
8	Net margin to the curers	5580	6.41
9	Roaster purchase price	64110	73.64
10	Roaster cost	9780	11.23
11	Net margin of roaster	13170	15.13
12	Roaster selling price	87060	100.00
13	Price spread	36060	41.42

Note: Costs incurred by producers include: transportation, bagging charges, commission charges, labour charges for loading and unloading. Costs incurred by other intermediaries include: transportation, rent, labour charges, Packing material cost, tax, license fee, commission charges

spread in this channel was comparatively low (36.91%). It is clear from the table that the price spread is high in both the channels. This might be due to the fact there is less transparency in the flow of information and the small producers are not able to reach the export market directly as they are bounded by the intermediaries. Their weak position in the market has made them to have less bargaining power.

Methods of Coffee processing Quality of coffee is referred in respect to color, size, appearance, and flavor with acidic aroma. The quality of the final product depends upon the pre-harvesting and post harvesting activities. Taste of coffee is affected firstly by altitude, shade, variety and soil at the pre-harvest level. Also, Harvest and post-harvest process has a strong influence on the generic quality of the coffee beans, depending on the maturity of the fruit; the final taste of the product is affected.

Table 2 : Price spread of marketing in channel-2 (including exporters)

Sr. No	Particulars	Rs./ton	Percentage
1	Farmers cost	3380	4.18
2	Price received by producer	51000	63.09
3	Curers purchase price	55180	68.26
4	Cost incurred by curers	3940	4.87
5	Net margin to the curers	5280	6.53
6	Exporter purchase price	64400	79.66
7	Exporters cost	5380	6.65
8	Net margin of exporter	11060	13.68
9	Exporters selling price	80840	100.00
10	Price Spread	29840	36.91

Note: Costs incurred by producers include: transportation, bagging charges, commission charges, labour charges for loading and unloading

Costs incurred by other intermediaries include: transportation, rent, labour charges, Packing material cost, tax, license fee, commission charges

The picking of ripe fruits or slightly over-ripe fruits brings a fruity taste to coffee. At the post harvest level, practices adopted like sorting, pulping, fermentation, washing, drying, storage, packing and processing including hulling and grading activities have a direct bearing on the final quality of coffee. The optimum moisture content in the dry cherry and parchment is up to 12 to 13 per cent, the fermentation process as well as the cut of the beans resulting while pulping of cherries might avoid the coffee with good intrinsic qualities. Indeed, the quality of coffee not only depends on management practices during the production but also on the uniformity in environmental conditions coupled with best practices in the harvesting and post-harvesting process. Processing starts at the farm level itself. Climate and local infrastructure (electricity and water supply) play a crucial role in the quality of the post-harvest process. The small growers in the region lack proper storage facilities.

Coffee Grading practices at farm level

Grading practices are carried at the farm level on the basis of colour and size at the basic level. They practice two kinds of methods

i) Hand sorting: In this method, the harvested cherries are sorted for unripe and overripe cherries. Also, the damaged

cherries are removed during this process. This is made to make cherries free from dirt, leaves. etc.,
ii) Density Grading: In this method the cherries are made to flow through the channel of water. The light weighted cherries float on the water which is then discarded.

The cooperative movement in the Coorg region has lost much of its attractiveness to farmers due to factors of mismanagement, Efforts have to be made to revitalize these associations and initiatives must be taken to rebuild the confidence of the producers for these associations. These associations could act as a pathway to transfer the knowledge and technical skills to the producers.

In the recent years, there is huge demand for certified and specialty coffee including the traceability of the product in the chain. However, this requires meeting of certain standards from the level of production. Value addition to the green coffee involves cost of certification, promotion of quality improvement, raising the reputation of the origin, good marketing skills and also sometimes costly physical investments. This requires a certain level of good organizational development for producers to meet the legal, quality, and volume requirements of the international buyers.

Main quality parameters checked were for moisture content, out turn of coffee, berry borers, and for the presence of Blacks and bits. However, it was also seen that curers directly purchase the produce from the farmers. At the curer level, coffee is further graded according to standards set by the Coffee Board. From the curer level, it is either sold in domestic market or the international markets. Five percent of the trade also takes place through ICTA auctions also take place after curing stage wherein cured coffee is sold either to domestic roasters or the exporters. Domestically, coffee was sold through local roasters and instant coffee manufacturers. The study found that the coffee producers were operating in a market based global value chain. However, trust between them also played a major role in the transaction. The coordination at the international level involving exporters was of modular in nature. There was less transparency between suppliers and buyers. Small producers had less bargaining power in the chain. The Governance structure found in the chain was the buyer-driven mainly the roasters played an important role in the chain. The asymetricity in the information flow was clearly in the chain as the producers were not aware of the end point where their produce reaches and its corresponding price. In regard to the distribution of the value addition among the actors in the chain, the study revealed that the roasters had a huge share in the value addition. However, the costs involved by them were higher. Nevertheless, their net margin was found to be higher. Major entry barriers to the international market were found to be consistence in the quality and Quantity of supply. The study also made an attempt to understand problems associated with the production and marketing of coffee. They include access to credit, irrigation problem, affordability to machine, labor scarcity and pests and diseases, climate. While marketing problems include asymetricity of information, price variation, lack of storage and infrastructure facilities. Further, last objective focused on some policies to improve the livelihood of the small producers. First and foremost measure focuses on the institutional developments in terms of research and extension activities. The role of Coffee Board, in Regaining its role in marketing, will be able to reduce the effect of middlemen to some extent. Further, the study also focuses on the need for the co-operatives and farmers association in the transfer of knowledge and to increase the bargaining power of the producers. The study also throws light on the importance of collective action of producers to obtain easy access to the international markets. Financial support to the producers not only helps them to increase productivity as well as to makes a way to come out of the clutches of the middlemen.

IV. CONCLUSIONS

Coffee undergoes various processing stages up to reaches the consumer. At each stage the value added to it increases and takes a new form. Although, market is the major player, trust between producers and intermediaries play a major role in the transaction. In Indian coffee market, most of the produce is intended to exports. Quality standards play an important in reaching the gaining access to international producers. However, small producers are yet to reach the standards required for the international market and are getting a smaller share in the profit of the value addition process. Hence, there is a need to improve the livelihood the small producers to make them their position in the global market.

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