CHAPTER - III

Review of Literature
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CHAPTER III

REVIEW OF LITERATURE

3.1 INTRODUCTION

This chapter presents a review of selected literatures about the coffee industry. The first part presents review of important literatures about Methods and Management of Coffee Industry, the second part emphasizes on Cost of Production, while the third part takes a view of the Price of Coffee, the fourth section presents review of some literatures about Coffee Consumption, fifth part emphasize literatures on Production of Coffee, Sixth section comprises literatures on Problems of Coffee Producers and role of quality in progress, seventh part consists of literatures on financial risk hedging, eight section presents literatures on Opportunities for Coffee in India, Finally some literatures on Integration of Indian Coffee trade with global trends-Issues and challenges have been presented in the last section.

3.2 STUDIES RELEVANT TO PRESENT STUDY

Srivasthava and Vatsya (2011)\(^1\), in their study it is observed that many coffee growers and the employees are enduring a profound economic and humanitarian crisis. For most of the world’s 25 million coffee farmers, prices remain lower than production costs. Within the industry, views vary widely about the causes and solutions. Some believe that market forces should drive out uncompetitive players; others advocate intervention to correct the market’s volatility.

Ranganath (2010), Emphasizes, “Stakeholders” in the coffee industry comprising planters, curers, roasters and exporters have to find out innovative methods to produce, process, cure and market their Arabica and Robusta coffee to enhance their competitive edge in the global market and sustain growth in an environment, impacted by climate change. He observes, though about 70% of the coffee produced in India is exported, the yield per acre continued to be far lower than competing countries such as Brazil and Colombia and late entrants like Vietnam.

Rao (2010), states there is an urgent need to transform the way, coffee is traded in the global markets. On the India International Coffee Festival, Rao said, the event will focus on creating opportunities for small growers to get better price realizations. One such possibility is to promote a ‘Coffee Club Network’ as a platform where small buyers and small roasters across the world can identify each other directly and trade. Coffee Network is an online platform funded by the International Coffee Organization (ICO) one-and-half years ago, and at present it is functioning as “a collaborative community that connects people who love coffee, from around the world.”

Dr. Radhakrishna et al. (2009), have conducted a survey in India and made available the most important data for further researchers. The report shows some interesting facts of coffee consumption in India - coffee consumption has increased over the past few years and the research shows that in 2008 the total coffee consumption is estimated at 97,000 MT with an urban and rural divide of about 74% and 26% respectively.

Ellen Pay (2009), A study on the Market for Organic and Fair-Trade Coffee in order to find out the increasing income and food security of small farmers in west and central Africa through exports of organic and fair trade tropical products.

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4 Radhakrishna et al. (2009). Economic and Market Intelligence Unit, *Coffee Board*, Bangalore.

Friendently and Jordan (2008), state that the Indian coffee is at cross roads. There is a need to invest in new methods of growing the beans not only to increase the volume, but also to prevent damage to the crop from rust and stem-borer.

Purseglove (2007), reports that the current price to the producer ranges between 28 cents/lb to unorganized growers and 41 cents/lb for members of growers cooperatives. Costs of production vary but average around $1.00/lb. Several factors have converged to distort the market; over supply, lack of product differentiation on the global trading level, defective and low quality coffee in the market and high concentration among roasting and branding companies. The report states that the crisis in international prices has also affected the Indian crop and its perspectives for future production. In the past two seasons, many small growers could not afford to harvest their coffee beans.

Baker (2007), in his study states: Climate change already seems to be affecting coffee production. It is difficult to attribute direct causality, but the changes are seeing are entirely consistent with climate modelers’ predictions. Sometimes the effects are slow. For example, 50 years ago, nearly three-quarters of Indian coffee production was the premium bean, Arabica; now it is less than half, with Robusta coffee (a species that withstands hotter conditions) filling the gap.

The Cabinet Committee on Economic Affairs is considering approval the weather-linked insurance scheme for coffee growers. “The weather-linked insurance scheme for coffee growers is proposed, which would accord an effective risk management tool to those coffee growers likely to be affected by adverse conditions”.

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Kalpetta (2005), states that “A sharp fall in coffee production has hit farmers in the coffee growing districts, as the harvesting season is drawing to a close in the State’s major coffee belt. The better prices prevailing in the market for the crop has failed to bring cheer to coffee growers due to the slump in production and high input costs.”

Charles (2005), Jordon and Mohindra observe in their study that, the current crisis in international coffee prices has hit rural Mexico hardest, where people are poorest and living conditions most precarious. On Mexico’s coffee-growing townships, 84% register high or very high levels of poverty. In contrast to the large plantation farming common in other parts of the world, in Mexico most coffee growers are small holders and 65% are indigenous.

Jimmy Aitkin (2004), of Zimbabwe Coffee Growers Association reported that exactly the same problems namely continued low international prices, lack of rainfall in the main producing areas and the Constitutional Amendment in respect of redistribution of commercial farm land that affected the industry last year were still in the forefront of grower’s minds creating a negative attitude. He further stated that the situation was far worse than a year ago. The poor rainfall of the 1991-92 season following the below average 1990-91 season was unprecedented in the history of Zimbabwean coffee industry.

Rao, (2003), Chairman, Coffee Board mentions in his study that, there was an urgent need for the industry professionals, especially in the value chain, to come together and undertake growth activities. He further stated that Coffee Board is addressing the most important challenges impacting on the sustainable production of coffee, appreciation and development of skills for positioning coffee as a desirable beverage.

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Paulina, et al. (2000), in their study address the issues like; farmers’ attitudes, as well as perceptions and knowledge that shape those attitudes, toward the ecological role of vertebrates inhabiting shaded-coffee farms. The study aimed to determine whether differences existed among two groups of farmers; one that had attended environmental education workshops, and one that had not attended the workshops.

M. Indira (1988), made a thesis on “An Economic Analysis of Coffee Marketing in India”. The researcher attempted to find out the performance of the coffee marketing system from the point of view of all the market participants. However, she could not prove the performance of the market participants, because of non-available data for some of the participants.

Shivram Dass et al (1985), the coffee export, both quantity and value show higher fluctuations than general exports during the period 1956-57 to 1982-83. Variation in the coffee exports was higher than the variation in the domestic output and domestic whole sale prices of coffee.

Mutian (1983), found no single solution that probably has any impact on coffee growers. Steering growers of higher-quality beans toward specialty coffees and helping troubled farmers to diversify their produces are some of his recommendation. Both the ideas are inspired by the fact that coffee is and will remain a commodity product whose price, despite cyclical recoveries, is going to fall steadily. Supply-driven by capricious weather, National policies and production lags as growers attempt to deal with changing prices are tremendous factors which influence the production.

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13 Paulina et al. (2000). The Economics of Coffee, Pudoc Wageningen.
14 M. Indira. (1988)., Research Scholar, University of Bangalore.
15 Shivram Dass, et al. (1985). “Quantum, Unit Value and Export Value of Coffee Exports”, Agricultural Situation in India. (pp.751-755)
At the International Coffee Festival (ICF 2009) it was discussed that: Coffee growers have increased their productivity and quality of beans to compete in the global market and sustain the growth momentum achieved after years of cyclical downturn.

**Marshall (1983)**\(^{17}\), identifies in his report that: There is an urgent need for Indian growers to enhance the production from 400kg per acre to one ton or two tons per acre as in Brazil and Colombia. Shift in production from Arabica to Robusta is also a cause for concern as quality and competitive edge will be at stake.

**Dhindsa (1983)**\(^{18}\), year consumption has great influence on present consumption in U.K. unlike in the case of coffee; income variable showed negative co-efficient indicating that with the increase in income, people shift to other superior beverages.

**Prakash B.A. (1980)**\(^{19}\), in his study states that over the last decade, Indian growers have shifted to grow more Robusta than Arabica. As a result, the quantum of Robusta has gone up to 68% in 1999-2000 from 57%, while that of Arabica declined to 32% from 43%. Hence, there is a need to increase Arabica production to produce varieties, which can grow up to two tons per acre for sustainable production.

**Sharma (1969)**\(^{20}\), made a study on area and yield to the production, taking into consideration for the period starting from 1954-55 to 1984-85 and found that the yield effect was more than the area effect in the case of Arabica. Yield effect has increased considerably in Robusta and dominated the area effect.

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3.3 MANAGEMENT AND METHODS OF MANAGEMENT IN COFFEE INDUSTRY

Jodi (2001)\textsuperscript{21}, emphasized that “Cafe culture is emerged as a much needed drive in the Coffee industry as it serves the core purpose of demand promotion, which is also attractive enough to the innovative entrepreneurs. As the Coffee shop (also called cafe culture) operation evolved in a phenomenal growth pace, it is strategic to adopt the most suitable management practices along with an experiment of new concepts for their future success.

The paper threw light on the importance of new management concept in the smooth operation of Coffee shop, by taking Coffee shop as a business model, which is the improved way of running the business.

The very definition of adoption and implementation of sound business practices have changed and they are no longer what they used to be some decades ago, to gain an edge over the rivals in the business. Perhaps, some new ideas also depend on the type of business and organizational structure as one’s success idea may not prove to be successful to others. In this age of cut-throat competition, the organizations are required to stay one step ahead of their rivals by improving their services with the customer oriented approach and offering better quality products than the others”.

Raju (1996)\textsuperscript{22}, the observational trial conducted at Regional Coffee Research Station, Thandigudi, showed that broadcasting to applying the fertilizer under the entire canopy had an edge over drip circle application. Broadcasting of fertilizer for over 7 yeas at RCRS farm, clearly revealed that broadcasting of fertilizer had no adverse or deleterious effect on coffee; in fact, the average yield was found to be substantially higher than that of neighbouring plantations.

\textsuperscript{21} Jodi (2001): “New Management Concept in Coffee Shop Operations”.

Glory Swarupa and Chandra Shekhar (1995)\textsuperscript{23}, This study reveals that the productivity level of majority of the growers was below the national average. The probable reasons may be non-adoption of soil testing, but application of lime, choosing right fertilizer but applying it in low quantities. Most of the soils were acidic with low level of available Potassium.

D’Souza (1973)\textsuperscript{24} As never before, the role of management has assumed a great importance in coffee cultivation in South India and it is the manager’s ingenuity which today is the most decisive and challenging factor determining estate performance, ending mounting pressures of increasing costs. The most important management factors which influence crop response from a given field are variety and age of plants, fertilizer and spray treatments, pruning and liming practices and shade intensity.


3.4 COST OF PRODUCTION

Muir, K.S. (2000)\textsuperscript{25} An analysis has been carried from the review of all available data on cost of production; a calculation of output reactions to varying amount of labour and capital inputs, together with coefficient reflecting land fertility and the condition and density of trees has been made. And from the result of the review 1,000 random out comes were calculated. These out comes were obtained by applying a production function as

\[ Q = A \times L^b \times K^c \]

Where ‘Q’ is an output per unit of land, ‘A’ is a multiplier based on land fertility and the age and condition of tree, L is the labour input, b is the co-efficient of labour, ‘K’ is the capital input and ‘C’ is the coefficient of capital.

The study has revealed a range of total producer costs for Arabica from 21.6 cents/lb to 76.8 cents/lb based on the group which distinguished from level of productivity low, medium and relatively high. It is also observed that the average price for standard Arabicas during the first 8 months of the year 2000 was just over 93 cents/lb, ex-dock. By deducting shipping and associated cost of 10 cents/lb, cost of internal marketing 10 cents/lb from Ex-dock, it is shown growers can expect to receive 70 cents/lb but most of small holders’ receive less than 50 cents/lb...

It is concluded that low prices and uncertainty are prevailing in producing countries and it is a serious matter for countries in general and growers in particular, not only because they are suffering from lower receipts but also from greater difficulty in marketing investment decision. And the same also has a major unsatisfactory implication for importers in the future, at least in the shorter-term. As Coffee market is not characterized by self-correcting in a reasonably short-time span as economic theory and its equilibrium reveals that and these farmers are not immune from the generality of low prices, though they receive a premium for effort and skill”

\textsuperscript{25} Muir, K.S. (2000). “Low Prices, Uncertainty and Output Paths”
Thimma Reddy, et al. (1991)\textsuperscript{26}, The study reveals the present trend in plantations of increased expenditure on chemical fertilizers and spraying materials with consequent beneficial effects on the yield/acre. The increase in labour welfare, upkeep and depreciation costs are no doubt due atleast in part to the planter’s obligations under the Plantation Labour Act to provide increased amenities and housing to the estate labour. Attempts are being made to study the trends in the case of small estates also, but the data available so far are too insufficient to draw useful conclusions and lack in accuracy.

Gopalkrishna Hebbar (1977)\textsuperscript{27}, A study to test the economy of scale in cost of production of coffee on small holdings using functional technical analysis showed that the cost of production of coffee on small holdings of below 25 acres decreased due to increase in productivity levels, which was not influenced by the variation in the size of the holdings.

Iyengar (1959)\textsuperscript{28}, While India area under coffee is about 2.5\% of the world’s area, production is only about 1\%. present area of 2,50,000 acre produces 40,100 tons. International consumption being 25,000 tons, can export only 15,000 tons. Since prices have increased considerably, the ratio between cost of production and prices realized does not seem to have altered materially. present yield is 330 lb/acre for Arabica and 400 lb/acre for Robusta, with 375 lb/acre for two together. The increase in yield can be done to a great extent by good manuring. A balanced mixture containing NPK in 2:3:4 produces more crop than a mixture containing more Nitrogen than Phosphorus and Potassium. The mixture applying 50N, 75P, 100K kg/acre is enough to produce an average crop of 7-8 cwts/acre under normal conditions.


3.5 PRICING OF COFFEE

Chengappa and Muralidharan (1981)\(^{29}\) The analysis of variance of prices secured for all lots of coffee sold at pool waste auction during a month revealed the importance of grading storage locations and auction centres in explaining the price variation. The extent of variation due to the latter two factors is interpreted in terms of differential sales tax in important consuming States. The advantages of conducting auctions at Bangalore and Coimbatore centres are absent at Vijaywada and hence, the need to look in greater detail into the cost economy for its possible elimination in view of mounting marketing costs is pointed out. There is a need for a rational grading based on consumer needs.

Chengappa and Muralidharan (1980)\(^{30}\), The pricing efficiency of Indian coffee markets was interpreted in terms of spatial integration. The bivariate correlations of monthly prices among geographically separated markets at pool sale, whole sale and at retail levels used as indices of market integration showed a high degree of pricing efficiency. The relative efficiency is maximum at pool sale level because of better control by the Board. The efficiency was in the order of declining trend from whole sale to retail for want of adequate control of the Board. The location of distribution points and in situational constraint of differential sales tax were found to influence the movement of prices in unison. The markets located in Karnataka were more efficient than those within Tamil Nadu were. Markets between different States were less integrated than those within the States. The analysis of three principal grades of coffee revealed that plantation-A being relatively more in supply, was less efficient than Arabica cherry-A and Robusta cherry-A grades.

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3.6 CONSUMPTION OF COFFEE

De Sola, Herbert (2000)\textsuperscript{31} “Coffee producing countries are facing a chronic depression in prices due to over production. The concern here is the vicious cycle being experienced by the producing countries, and the widespread use of low quality products resulting in low consumption and this in turn contributes more for the low prices. However, the only one which can stop this complex cycle which is apparently generated by the industry is the producing countries by eliminating the availability of inferior Coffees. It is crucial because of inelasticity of demand, the perennial nature of the Coffee plant and the non-perishable nature of Coffee beans.

This study attempts to explain how this could be attained. In simple numbers producers were supplying 9.5 million bags of Coffee, and about 16 million bags of rejects (triage) i.e. in total it was estimated 111 million bags. While the demand was about 105 million bags and there was a surplus of about 6 million bags for the year. If the 16 million bags of triages were not available, the market would not have been depressed. So it can be concluded that the producing countries ought to get involved in improving the quality of Coffee bean that go to the industry and it necessitates to cooperation among producers and also involvement in promoting domestic consumption.

Indira and Girriappa (1992)\textsuperscript{32} Factors influencing coffee consumption in India are studied in order to suggest measures to increase coffee consumption in India. Multiple regression analysis was used with consumption of coffee as the dependent variable and income, prices of coffee, tea, sugar, taste and lagged consumption as independent variables. Results indicate that previous consumption, which was considered to represent coffee and tea are the factors influencing coffee consumption. Generic promotion, increase of internal release through cooperative sores and propaganda units of Coffee Board are suggested to improve the coffee consumption.


3.7 YIELD OF COFFEE

Indira and Girriappa (1993)\textsuperscript{33} in the this study, an attempt was made to elucidate the trends in coffee production and area and yield effects in increasing the output. The study revealed that though area under coffee is increasing, it is combined with large variations over a period of time. Variation in the productivity did not show significant decrease. Analysis of the area and yield effects indicated that during 1954-55 to 1964-65 period, yields effect was dominant in case of Arabica than in Robusta. During 1964-65 to 1974-75 period, area effect increased considerably in case of Arabica while yield effect in Robusta. During 1974-75 to 1984-85 period, area effect dominated the yield effect in the case of Arabica and yield effected dominated in Robusta. In the case of Robusta, interaction effect also increased considerably.

Nithya Shree and Siddaramaiah (1993)\textsuperscript{34}, The findings of the study showed that the overall yield gap index for coffee among the planters was as high as 62.85%. This implied that there is a scope to increase the coffee yield by more than two times. Further, the yield gap in respect of Robusta was relatively higher than that of Arabica. Hence, there is need to give more emphasis for the education of Robusta growers. The extent of yield gap was related to application of fertilizers and liming in Arabica, while it was the application of fertilizers and use of sprinkler irrigation in Robusta.

Jamsheed Ahmed, et al. (1992)\textsuperscript{35}, Correlations were worked out to determine the relationship between early rainfall, week of occurrence of blossom rain and its amount, quantum of backing showers and its time of occurrence and previous year’s yield on production levels of Arabica and Robusta. Data on rainfall and crop of 20 consecutive years of two farms of research department was statistically analyzed. Analysis showed that no relationship between the


above factors and yield in Arabica, while in Robusta, a significant and positive impact of week of occurrence of blossom rainfall on crop level was found at both locations indicating delayed showers would result in loss of crop. At one farm, March rainfall and previous year’s December rainfall showed a positive impact on Robusta crop level. While, rainless interval between blossom and backing showers had a significant negative effect on yield. The lack of influence of factors on Arabica yields at both locations is attributed to sufficiency of blossom rainfall and its time of arrival for the coffee in most of the years of study.

**Jamsheed Ahmed and Sreenivasan (1990)**\(^{36}\) Five exotic collections of Robusta were assessed for out-turn ratios at different stages of processing under sundry and washed method. Under dry processing, 41.8% cherry, 46.7% green coffee yield was recorded. By wet processing, 21.8% parchment and 86.6% obtained green coffee. Differences in out-turn among the accession were statistically not significant. Correlation tests between crop level and out-turn, ‘A’ grade beans and out-turn and grade ‘A’ beans with yield level were undertaken. Crop level was negatively and significantly correlated with out-turn, bean size was positively and significantly correlated with yield level and finally, out-turn showed positive significant relationship with yield in a two accession (S.1902 and S.1932) only. One accession (S.1977) did not show any relationship between these parameters. Processing methods did not show any consistent and specific effects on out-turn.

**Radhakrishnan and Ramaiah (1990)**\(^ {37}\), The study has proved that there exists a yield gap of more than 700 kg/ha of clean coffee in small holdings of Kodagu district. Yields can be substantially improved and yield gap could be bridged by increased fertilizer use in the case of Robusta and increased fertilizer use coupled with adequate plant protection and soil conservation measures in the case of Arabica. These factors in turn depend upon the availability of capital and technical information.


Radhakrishnan (1988)\textsuperscript{38}, Productivity response surfaces functions are fitted to field survey data of Robusta (Coffea canephora) with yield, nutrient quantity and age of the bushes as variables. The major objectives are to indicate the choice of polynomial functions to study the yield response in different regions. The results bring out the importance of age of the bushes as a variable in the functional analysis. Among the two types of functional forms, the bush-based response function in which the above variables are expressed in kg/ha. The yield maximum of nutrients and age groups are derived for two regions form the respective functions. Given the levels of inputs, yield response varies in the two regions studied. Region-wise bush-based fertilizer recommendations and rationalization of fertilizer nutrient application are the major suggestions emerging out of this study.

Ramaiah and Radhakrishnan (1986)\textsuperscript{39} Growth rates in area and production of Arabica and Robusta in India in the past few decades revealed that Robusta outstripped Arabica in area and production. Analysis of trend yields and co-efficiency of variation brought out the declining rate of marginal productivity and the magnitude of year to year yield of coffee respectively. The above conclusions were found to be valid for the individual coffee growing States.

Awataramani and Mir Azizuddin (1973)\textsuperscript{40}, that green revolution has occurred in coffee is shown by figures of production and yield/ha during past 25 years. A yield index of 685 and a production index of 821 speak for themselves. This great leap forward has become possible due to scientific advances and advisory services of Research Department of Coffee Board.

Satyanarayana (1954)\textsuperscript{41} The average yield/acre of coffee in India varies appreciably from year to year as various factors influence the coffee yield. They may be climatic conditions and the occurrence or sufficiency of rainfall in each season, the location of the estate, the age of the plant, type of coffee grown, the size of the estate and so on. Analyzed according to States, the average yields in Coorg are easily the highest and those of Madras are the lowest, both in respect of Arabica and Robusta. The main reason for such a disparity may probably be the greater attention that is being paid to Coorg for cultivation and larger manuring and spraying up of the coffee estates.

3.8 PROBLEMS OF COFFEE GROWERS AND ROLE OF QUALITY IN PROGRESS

Leblache, P.E. (1999)\textsuperscript{42} “About 75 percent to 80 percent of gourmet Coffee exports originated in central or South America, the Caribbean, and Hawaii, and over one half of the 20-25 percent, remaining are produced in Africa and Asia’s part barely 10 percent. Though the consuming side has become imperative to offer more individual types and varieties with the medium income market discerning in its tastes but also price conscious. Hence, there is a serious imbalance which deprives Asia-the region of the extra prestige and income carried by gourmet Coffee as the regions ratio of Robusta to Arabica is the world’s highest. This is due to the pre-eminence of Arabica in the sector of designer Coffee, the pioneer gourmet origin such as Ethiopia, Kenya, Jamaica, and Colombia, it also because of special Coffee marketing chains of importing countries.

As there are excellent and mediocre Arabica, the same holds true for Robusta, and that rigorous plant selection, good collection habits and careful processing, further more there is no affecting aroma, flavor and other taste components, then when Robusta should be considered inferior to Arabica and


kept away from gourmet Coffee, when the rewards are worth it.

For all Asian Robusta producers, large and small, the opportunity is in gourmet Coffee as there was a time, less than ten years ago, when gourmet Coffee exporter from Costa Rica or Guatemala were a complete novelty and involved no more than a few bags”.

The testing of the hypothesis was based on a majority of the views expressed by the respondents. The prices are falling steadily due to excessive production around the world - accepted by all the respondents. The prices are also falling due to the inadequate tapping of the potential national market. It was accepted at all the levels by concluding that it was one among the many factors. The prices are falling due to quality seeds in India - there was no clear evidence to suggest a relationship between quality and the fall in prices of Coffee. The prices are low due to lack of the presence of voluntary cooperative societies - there was no close connection with cooperatives and the fall in prices. The prices falling due to lack of aggressive marketing- this was one among the factors that lead to fall in prices of Coffee. The prices are falling due to less concentration on specialty Coffees - (the conclusion was not able to be determined at lack of awareness on the topic). The Government should interfere, and should have more involvement, and stabilize prices - this was not related to fall in prices of Coffee. The globalization, liberalization and IT revolution are not being adequately utilized- there is no clear evidence to suggest any relationship with the subject with fall in prices of Coffee.
The Fair Trade Foundation (1997)\textsuperscript{43}, “The image of the small Coffee growers facing up to the mechanizations of the distant international market is similar to that of a man pushing a rock uphill. The grower is powerless against any slight tremor of market forces which can bring the rock tumbling down crushing him and his family.

The report highlights the problems facing Coffee growers as a result of the way trade in Coffee. After examining how the trade operates, the report illustrates with testimonies from the Colombian, Uganda and Indonesian farmers etc., and its impact on the lives of farmers. The most serious of the obstacles of the farmers highlighted are price, access to market land, quality and lack of affordable credit.

In a way to combat these problems, the study focuses on Fair Trade initiative by the grower which meet guaranteed fair terms of trade, and offer supportive recommendation (with making no apology that recommendations have a particular focus as the foundation itself is a player in fair trade) on how relevant players within the UK can take meaningful steps to ensure that the Coffee drink returns a decent deal to the farmers.

The recommendations of the foundations are: consumers demand for product need to find an expression in ways that hold hope for the Coffee farmers; manufacturers need to stabilize the market and improve farmers’ return; retailers need to develop parallel policies with respect to the impact of their trade on the small farmers; and Government needs to be reversed in the lack of support and extend support by all means and particularly for practices involved in fair and ethical trading”.

\textsuperscript{43} The Fair Trade Foundation (1997). “Problems facing the Coffee Growers”.

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3.9 FINANCIAL RISK IN COFFEE INDUSTRY AND METHODS OF HEDGING

Saraf, Abhishek and Rohini Rao, (2010) Coffee trading is unique in many ways. The prices have been subject to manipulation by suppliers, buyers and speculators. The prices are also determined by the region of production as the quality of Coffee depends on it. The volatility in Coffee prices results in a lot of risk for the Coffee traders. The future market provides a hedging mechanism to the Coffee traders all over the world. The COFEI has commenced trading in middle 1998 to provide hedging facilities to exporters who handle about 70 percent of Indian Coffee production.

The main objective of this study was to identify the factors affecting Coffee futures prices in India, and build a Neural network model that will capture the effects of the identified variables. The tool chosen Neural networks is a better technique over the other techniques, as this technique can capture non linearity and are relatively easier to use, and also be trained to identify the relations by feeding them historical data. The general steps followed in developing a Neural network model are as follows : problem identification, choosing an appropriate Neural network model, preparing data for training the network, training the network model, testing and generalization ability of the model by using it on some test data, and optimization of the architecture. The volume is very low. If COFEI gets de-linked from the CSCE, it may not be possible to use the same method to predict prices”

Arzhaeva, Oksana (2002) “Russia which is becoming one of the major markets for Coffee in the world is also the key market for Indian Coffee, not only in terms of quantity but also in its unit value realization. India captured a strong market share where bulk of quantity is sold in this market alone. However, at present the battle for share would be tougher for India as other Coffee producing countries are competing and as the Russian market is

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45 Arzhaeva, Oksana (2002). Coffee in Russia - from Peter, the Great to Present Days”, IICF.
entering a stage of ‘advanced emerging market but not just due to collapse of the Soviet Union and Russia’s financial crisis in 1998.

This paper made a comprehensive presentation on the Russian marker for Coffee. In the recent past- during the Soviet times, Coffee habit was characteristic of Soviet ‘intelligentsia’ or the middle and upper class urban population. The green and roasted Coffee bean were coming primarily from India, there were powder soluble Coffee undergeneric brand ‘soluble Coffee’. In 1980’s Brazilian powdered Coffee entered USSR with the Moscow Olympic and became the next benchmark for Coffee standard. And collapse of the Soviet Union and market economies opened the room for new entrants. In the early 1990s the big multinationals, first Nestle and KJS set foot in the market introducing the first granulated Coffee. These days (at the present) Russia is the most prominent market for Coffee, where instant Coffee hold 90 percent market share and R & G holds 8 percent market share. The magnitude of Russian market reveals 146 million populations and its generally positive economic out look. This century represents the highest long-term potential to become the number 1 Coffee market in the world! Although Russia is a traditional tea-drinking market with Tea/Coffee ratio in cups still 5:1 but there is a great potential for Coffee. The peculiarities of Russian Coffee market are slow in reacting to the world Coffee prices as it is simply an importer market, experiencing an outstanding boom of the local repackaging industry, a great degree of Coffee smuggling across the border due to high import duties, it is yet to be adopted and up graded to the internationally accepted standard for Coffee.

It is concluded that Russia is the market with great potential and key growth market world wide. Price would continue to be a factor in growing the market so Indian Coffee would need to be priced competitive. As Coffee is still perceived to be a luxury item, attracting grey market transactions, the industry would need to counter this threat jointly. The Russian consumer is getting more evolved and choosy and this opens up the market in terms of Coffee quality and variety.”
Kramer, Alf (2002) 46, “You are not dealing with the people that see price as the only criterion they base their buying on. They will be asking you what your Coffee taste like, what the story behind it is, and what exactly it is that make your Coffee so special and different from others. In short quality and personality. Although there is no uniform Coffee in Europe, there is a vast social and economical difference: extremely affluent north, an affluent central, a war stricken south, and recovering from decades of failed economical politics in east, for instance, Russia use to buy a soluble Indian Coffee that few others would touch, but it does not mean that the entire Russian market is like that. Europe has vast differences in the understanding of quality, as reorganization of specialty Coffee in one country may not be so in the next, for instance, Nordic region is a 100 percent Arabica market. And also it has a vast differences in Coffee drinking habits, for instance, soluble Coffee will take some 85 percent to 90 percent of the UK market but in the Nordic market it is less than 5 percent, Italy is a 99 percent espresso market but in Central Europe it is from 5 percent to 35 percent, and in Nordic market drip filter Coffee amounts for 90 percent almost always drunk without cream/sugar but in southern Europe this is almost none existent. This article also has focused on contradictory trend in Europe, what importers are looking for and the answer is quality, traceability and credibility. And how do you find these buyers. One can find them by asking, by testing their Coffees, by talking to them at Coffee bars, at conventions, at your booth when you exhibit.

It is concluded that the author seen no reason for Indian Coffee not to success in Europe as India has some fine Coffees, the advantage of the language, the advantage of technology, the advantage of understanding market and the advantage of being closer to Europe than to the US. But India also has the disadvantage of not using marketing skills and not exactly being up to date on this new trend.”

Kenneth, David (2002)\textsuperscript{[47]} “The American specialty Coffee movement started in the 1960s as a reaction against mass-marketed blends of cheap Coffee sold in supermarket. In 1998, 23 percent of retail unbrewed Coffee sold in the US was specialty and 38 percent of brewed Coffee sold by the cup was specialty which is over all more than mass-marketed commercial Coffee. Typically specialty Coffee consumers are sophisticated and well-off financially, someone who chooses products more on the basis of prestige and pleasure than on the basis of price and someone who defines his identity by his choices as consumer. Thus, typically these consumers are looking for high quality, unique in cup, unique in its story, and story reflect positive environmental/social values based Coffees...

The received wisdom was that on what factors does the specialty green Coffee buyer base his decision which comprises quality, distinction, story, price, consistency, purpose for which the Coffee is purchased, featured single origin Coffee, cause Coffee, regularly offered single origin, premium blended constituents, price blend constituents etc.

The final focus of the study is on how the purpose for which the Coffee is purchased influences the relative importance the buyer places on the aforementioned five factors such as quality, consistency, distinctiveness, story, and price. And how do various categories of Indian Coffees fit into this picture.”

Thimmaiah, T.M. (2000-01)\textsuperscript{[48]} “In the liberalized economy, futures market can give greater transparency to the mechanism of price discovery which is being the free market instrument.

This study was an exploratory research, which seeks to find out what will be the views of the members of Coffee Futures Exchange India ltd. towards


the futures trading of Coffee and reasons for non-participation of existing members in trading. The study aims at assessing the impact of the futures trading on the Coffee industry; analyzing member’s behavior with respect to COFEI; identifying the reasons for disinterest of the members towards Coffee’s futures trading; and to suggest suitable strategies. The research was descriptive. The survey is conducted using questionnaire to respondents such as Grower, Exporters, Domestic traders, Agents, Curers etc. who are the members of COFEI. The sample of 60 is drawn from ordinary members, 18 from trading members and 2 from trading cum clearing members by using random sampling method.

The survey was undertaken for members of COFEI from Bangalore, Coorg, Chikmagalure, and Hassan. The study reveals that only less than 5 percent growers and traders from the Coffee industry were involved; share of ordinary members double than the other category of members; there has been severe drought in the trading in exchange; online trading, information about trading, timing, location etc. play a minor role in making trading cumbersome; only 55 percent of the respondent members are well conversant with futures trading and hedging system; awareness about the futures trading is very low among the members; the price quoted in exchange was less than the price of the physical market; trading members anticipate discount on trading charges on the floor of exchange; there was a need to open some more branches to increase easy accessibility; trading in exchange lack in liquidity; dominance of the few players is one of the important problems for ordinary members for being inactive; contract structure is one of the minor problems; and futures is not useful to small growers who expect immediate reward.

The study suggests that the members should be educated on the concept of futures trading. There is necessity to increase the number of trading centers, minimizing the distance for the growers to deposit the stocks in their warehouses, and the procedures have to be simplified. This will certainly enhance the trading acceptances of the members, it is concluded.”
Ibid. Financial express have developed a number of techniques to manage price volatility in commodities market. One of the most important risk management techniques used world-over to hedge price risk is futures trading. In order to help the players in coffee market, futures trading in coffee is being conducted by Coffee Futures Exchange India Limited (COFEI) rom June, 1998. COFEI acts as a buyer to the seller and seller to the buyer of coffee. The important benefit of futures trading conducted by COFEI is that the exchange ensures guaranteed performance of the contract by the parties. Futures trading in coffee is of recent origin in India and has a lot of potential. This paper examines the *modus operandi* of coffee futures contact and discusses he way COFEI helps in managing price risk.

3.10 OPPORTUNITIES FOR COFFEE INDUSTRY IN INDIA

Barierjee, Bibek and Arindam Banerjee (2002)\(^\text{50}\) “The emerging markets for Coffee in India are varied with strong regional basis and also with the varied attitude and consumption habit and practices as south India is traditionally stronger one while rest of India is virgin Coffee market. The article is based on the findings of market research in urban India. Firstly, this study made an attempt to explore and put in summarized form the consumption habit and practices, and attitude towards Coffee with the Indian Coffee consumers in the traditional as well as virgin market. The attitudes to Coffee, and the consumption habits and practices in the traditional and virgin market are pointed out precisely. With this given background the study all brought a precise profile of opportunity in the market.

Finally, the study explores the imperatives for energizing Coffee consumption in India by focusing on consolidating traditional markets. Need of the day in that line are improving the availability of prepared Coffee

\(^{49}\) Ibid.

\(^{50}\) Barierjee, Bibek and Arindam Banerjee (2002). “Opportunity for Coffee in India”, IICF.
through quality assured Coffee chains; infusing excitement in the category (counter the tea threat); improving the distribution of Coffee; and giving a brighter and more frontage to Coffee retail points. And by focusing on market development in non-traditional markets through leveraging out-of-home occasion to increase penetration, and using experience as a driver to educate customers about the ways of preparing good Coffee. The other-detailed focus on non-traditional markets are: the retail space, consumer education, product form, and reasons to focus on the youth.”

3.11 INTEGRATION OF INDIAN COFFEE TRADE WITH GLOBAL TRENDS-ISSUES AND CHALLENGES.

Monk, Paul (2002)\textsuperscript{51}, “Germany is the second largest market for India’s Coffee during 1990s, also the largest Coffee market in Europe and second largest Coffee consuming country in the world next to USA. But in recent year’s exports of India’s Robusta to Germany is decreasing. It is primarily caused by aggressive marketing out of Vietnam. This study has focused on main themes such as ‘the German Coffee market and the current, position of India’s Coffee in Germany’ which, brought the pros of India’s Coffee in German market such as traditional Coffee country, generally reliable qualities, different varieties of Coffees, good preparation of qualities, top quality Robusta, several varieties of specialty Coffees, shipment in bulk and good statistical material through Indian Coffee Board. The identified cons of India’s Coffee in German market such as Arabica Coffee only available about 6 months, loosing characteristics by longer storage, too high volatility in price, seen as a Brazil substitute in Arabica sector, sometimes only taken if cheap compared to other origins (opportunity Coffees) and some black sheep unreliable exporters.

The author comments with some suggestions that could help India to overcome the current difficult market conditions particularly stiff competition from Vietnam and Brazil. The suggestions are, India should

\textsuperscript{51} Monk, Paul (2002). “The German Coffee Market with a Focus on the Current Market position of Indian Coffee”, IICF.
continue to improve quality and guarantee consistent reliability of each delivery, overall export performance should be maintained, the quest for niche and specialty products, and the potential future needs for serving the consumer markets and particularly Germany and Europe -examine food safety criteria, the question of traceability, and the subject of OTA / Ochratoxin”

Ponte, Stefano (2001)52 “For a variety of reasons, the analysis of the Coffee marketing chain is important. The reasons may be Coffee production (more than 90 percent) and consumption takes place in south and north respectively -the rationale to be an insight on north-south economic relation; Coffee has been the second most traded commodity; it was one of the first regulated commodities; a number of developing countries relay on Coffee for a high portion of their export earnings; and Coffee producing countries Governments have historically treated Coffee as a strategic commodity.

The main methodological instruments used in this paper are drawn from the literature on Global Commodity Chain (GCC) analysis, which analyze the transformation of the structure and the organization of the global Coffee marketing chain. The first section in this paper aims at mapping the general development of the chain from the producer to the retail levels and focus on selected global issues. The next two sections lay out a brief history of Coffee and the fundamental characteristics of Coffee production and trade. In the section four, the role of international regulation of the Coffee market is analyzed. The section five and six deal with the restructuring that has taken place in the organization of the global Coffee market in the last decade and the resulting changes in power relations within the chain. The section seven exploded how Coffee consumption is evolving in the north, section eight with some strategic option that may facilitate Coffee farmers and the governments in regaining a larger share, and the final section assesses the contribution offered by the Coffee case study to wider debates that are taking place in the GCC literature. The paper also suggests some policy directions to address the emerging imbalances.”

WTO (2000)53, “The Agreement on Agriculture (AOA) centers around three issues relating to market access (tariffication), domestic support and export competition. There are several other issues like Intellectual Property Rights (IPRs), Sanitary and Phyto-sanitary Measures (SPS), Food Security and Genetically Modified Organisms (GMOs) that have powerful implications for India’s agriculture. Coffee is classified under agriculture and comes under the purview of AOA. Therefore, implications of WTO in agriculture may have to necessarily encompass the interests of Coffee industry also.

In the background of the likely implications of WTO on Coffee, the workshop of Coffee Board focused on three important issues namely 1. market and trade related issues applicable to Coffee, 2. sanitary and Phyto-sanitary measures applicable to Coffee and 3. intellectual property rights with special reference to plant variety protection on Coffee. The market access is the major market and trade related issue. Owing to potential consumption base for Coffee, in India there is a danger for lower and highly discounted Coffee being imported in larger quantities. Therefore, to safeguard the domestic industry, India has rightly preferred the tariff route which is the bound rate for green Coffee 100 percent and for soluble Coffee 150 percent. Although, WTO calls for member countries to limit supports that distorts the trade, a number of policy instruments as support prices, unit subsides, monopoly procurement operations and restrictions on imports and exports to control domestic prices and cost of production, are used by countries as a domestic support, as, at the same time WTO provides exemption to such of the domestic support policies that do not distort the trade at minimal levels. Further, these Aggregate Measures of Support (AMS) policies are classified in three major groups-boxes such as AMBER BOX policies comprising subsidy and other supportive measures; BLUE BOX policies which are temporary and subject to future reforms; GREEN BOX policies which are not

subject to reduction commitments which include research and extension support, disaster payments, structural adjustment programs etc. Overall, it could be surprised that Coffee sector in India is yet to derive adequate benefits from the domestic support policies. Some of the recommendations on sanitary and phyto-sanitary measures were improved infrastructure, build technical competence, develop data base to fix tolerance level for contaminants in Coffee, Good Agricultural Practices (GAP) and Good Manufacturing Practices (GMP) to meet the requirements of importing countries.

The workshop calls for WTO and related studies to cope with the emerging challenges such as to quantify how far the reduced tariffs has helped in accessing a developed- consuming markets; and to access major competitors cost structure of production and the level of support extended to Coffee industry. And also calls for a separate WTO cell created in Coffee Board for further deliberations on WTO issues with specific reference to Coffee industry, which should be constituted two groups-one group specifically to deal with market, trade related issues, domestic support and the other group to specifically deal with the intellectual property rights, SPS measures and genetically modified Coffee.”

Appanna (1998)⁵⁴ “Indian Coffee is typically mild and not too acidic, and possesses a full bodied taste and a fine aroma. When it comes to comparing quality of Indian Coffee, Indian Robusta was best in the world and Arabica was next only to Colombia and Kenya. In spite of all these positive attributes Indian Coffee still had not received the desired recognition from international buyers. However, there is necessary to see that stringent quality standards are maintained by the Indian Coffee industry so that Indian Coffee will be reputed in the world market, as in the future when the supply exceeds demand, and then only the quality Coffee will sell. Ensure that the quality of Coffee maintained is all the more important because of domestic industry only


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consumer one-third (not it is just about one-fourth) of production and a major share is exported.

Keeping in view these imperatives the present study was designed mainly to exporter’s quality preference in Coffee, decomposition of export growth and growth rate of world’s and India’s production and exports have been analyzed. The ‘hedonic model’ was used to determine the implicit price of the quality characteristics in Coffee and ‘conjoint analysis’ was used to document the quality preference of exporters of Coffee. The ‘growth rates’ were estimated using the exponential growth model. ‘Constant market share model’ was used to decompose the export growth of Coffee. The analysis was carried out based on the data obtained from two successive auctions conducted by the Coffee, Board in August 1997, and other primary data along with data from secondary sources. And the study period was from 1984 to 1996.

The hedonic regression coefficient revealed that blacks, types of Coffee (i.e. cherry or parchment), defects & place (Chikmagalore) factors in Arabica Coffee were the strongest determinants of price. And in case of Robusta Coffee, it was size of the bean, berry borer content, blacks, type of Coffee; defects and place of origin (Coorg) had a significant effect on the prices. However color, size and bleaching of the bean had a smaller influence on prices of Arabica Coffee with parchment commanding better price than Robusta. The revealed results in the pricing behavior of both Arabica & Robusta were that the prices better represented the quality characteristics in Arabica than Robusta Coffee. The exporters’ preference of Coffee for exports shows that a Arabica Coffee origin had the highest relative importance followed by color, appearance, price and defects respectively, and in Robusta Coffee color followed by origins. Prices were ranked last in case of Robusta and second last in Arabica, indicating that the exporters were willing to pay a premium for better quality Coffee having a good color and desired origin. Decomposition of the export growth of Coffee showed that in the first period (1984-87) the competitiveness was low for India, and in the subsequent period it was seen an improvement. With the stagnation in the
world imports when the supply condition increases, India will have to improve its competitiveness in the world market.”

Sharma, Subhash and A.Damodaran, (1997) 55 “The liberalization-globalization policy of Government has led to an overall exports vision of 20 percent growth in exports. However, in several sectors of economy where India enjoys natural strategic advantage, this growth is expected to be much higher. Coffee is one among such sectors with the given strengths such as old tradition of Coffee growing-FAQ; evenly balanced Arabica-Robusta production; reputation for quality adherence; good base for soluble Coffee industry; and high export base.

Taking into consideration all the developments and its vision on the topic, such as Indian Coffee in the world market; vision of Indian Coffee exports is converting Coffee exports vision into action; loss and gain of Indian exports in major markets; commodity-country matrix-an ABC analysis; and export strategy matrix, the article has drawn an operational plan for export target achievement. The action areas for converting Coffee export vision into action, and necessary institutional support for achieving the same, along with the export strategy for Indian Coffee in ninth plan depicted comprehensively.”

Vaswani, L.K. (1996) 56 “It must be borne in mind that in the more of liberalization and globalization, greater is the need for integration with global market. Such integration is not only from the point of likely increase in domestic Coffee production in future but also in the view of the emergence of Vietnam and Indonesia as large producers with large exportable surplus. Taking into consideration all these major developments, this paper

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draws a conceptual framework for 2 stage integration (i.e., primary and secondary level) of Indian Coffee trade with global market.

The preconditions in achieving primary integration and corresponding mechanisms are depicted as under for reliable Supplies: production levels are to be sustained or improved, industry should generate and disseminate vital information, and honor export commitments. Parity between domestic and international prices: minimize competition between domestic buyers and exporter through self regulation or state regulation. Regulatory environment to provide competitive edge and remove bottlenecks: export procedures and taxation laws should not hinder exports, and enforce strict measures to check ‘switch deals’. And for a sustain direction of exports, sustained efforts to develop “dependence” on Indian Coffee. The preconditions in achieving secondary integration and corresponding mechanisms to achieve high level of integration are depicted as under for total quality management: close co-ordination between exporter, curers and growers to upgrade quality, value added export: export of specialty Coffees, and export of soluble Coffees, buyer specific marketing strategy: development of major buyers in the importing countries in tune with the direction of exports. And for business promotion: seller- buyer information exchange and interaction.

The major area of weakness in achieving market integration is lack of representative and effective industry association which needs to be sorted out. The high level market integration requires a much closer co-ordination between the producer, curer, and exporter for quality improvement.

The above pages reveal the glimpses of plethora of literature on coffee and coffee industry around the world most of literatures directly and specifically focusing on eternal problems of coffee prices and coffee growers. These revelations give lot of room to pursue the present study in a dimension of its’ own focusing mainly on three coffee growing districts of Karnataka. Finally, from the above literatures it is evidenced that there is gap in coffee research to study cost and price dynamics impact on coffee industry.