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6.1 INTRODUCTION:

Coffee is one of the most important plantation crops in India. Coffee cultivation has acquired greater importance in recent years with the combined efforts of scientists, government and the cultivators. Its cultivation is mainly concentrated in southern states, though its consumption is spread over the entire country. In southern India, our study region is an important coffee cultivating area. The economic importance of coffee in the country is underlined by the fact that, it provides employment to million people. Further, it is also processed in the industry and thereby, it is creating industrial employment too. It has contributed to the Gross National Product (GNP). It also fetches to the country’s forex kitty by means of export. The major coffee growing states in the country are Karnataka, Kerala and Tamilnadu. These three states together contribute about 88% of the total area and 98% of the total production in the country. Out of the total production and area of cultivation, Karnataka’s share is around 71% and 58% respectively. The sample districts viz., Chikmagalur, Coorg and Hassan are only three districts cultivate coffee in the state.

Though coffee is considered as a main crop in Coorg and Chikmagalur, the cultivators are not happy as they are not getting steady and remunerative prices for their produce to match with the escalating cost. The researcher addressed an objective for the study to probe into the causes and consequences of the wide fluctuations in prices and analyze cost. As a consequence of the study, the following major findings have been enlisted:
6.2 FINDINGS OF THE STUDY:

Concentration of Coffee Production in 3 Districts in Karnataka:

In Karnataka state, there appears to be concentration of coffee cultivation in only 3 districts. They are Coorg, Chikmagalur and Hassan. the study of cultivation trends reveal the following:

1. In terms of area under coffee cultivation as at the end of 2011-12, Coorg district tops the list with 1,04,780 hectares (46% of the state’s share), in the ratio of 27:73 Arabica and Robusta respectively. This is followed by Chikmagalur with 88,853 hectares (39% of the state’s share), in the ratio of 64:36 Arabica and Robusta respectively. And the rest 36,025 hectares (15% of the state’s share), in the ratio of 67:33 Arabica and Robusta respectively by Hassan district.

2. In terms of production too Coorg dominates the scene with 52% in the ratio of 19:81 of Arabica and Robusta respectively, followed by Chikmagalur district 34% in the ratio of 52:48 Arabica and Robusta respectively and the rest 14% by Hassan district, in the ratio of 61:39 Arabica and Robusta respectively.

3. In terms of productivity, among 3 major coffee producing states - Karnataka, Kerala and Tamilnadu, productivity of coffee in Karnataka is higher and it is higher even than the productivity of coffee of India. In 2011-12 overall productivity of coffee in Karnataka is 1,045 kg. per hectare of which Arabica 801 kg. per hectare, Robusta 1,264 kg. per hectare. For the same period overall productivity of India was 852 kg. per hectare of which Arabica 597 kg. per hectare, Robusta 1,069 kg. per hectare

In 1950-51 overall productivity of coffee in India was 204 kg. per hectare - 229 kg. per hectare Arabica, 136 kg. per hectare Robusta. It indicates that there is a remarkable increase in the productivity of coffee in India since 1950-51, that to in case of Robusta it is much higher.
Since 1950-51, maximum overall productivity of coffee is 972 kg. per hectare in the year 1988-89. Maximum productivity in case of Arabica is 906 kg. per hectare in 1993-94 and Robusta is 1,175 kg. per hectare in the year 2000-01.

4. Sample districts, Coorg, Chikmagalur and Hassan in the state account for a lion’s share in the country both in terms of coffee production and revenue generation.

**Socio-Economic Background of Sample Growers:**

The socio-economic profile of the sample growers has established the following major points:

1. Only 2% of the sample growers are illiterates. About 20% have school level education and 50% have college level education. Education is thus an important issue i.e. keeping the coffee growers in light. However, the primary and school level education is not enough to understand a scientific crop like coffee. It needs at least more number of graduates and post-graduates to understand the various happenings in the process of coffee cultivation which would be the need in the study region.

2. Most of the sample growers (70%) have medium sized families with a size of 5 to 7 members. Interestingly about 20% of them have small families with numbers of members in the family not exceeding 4 persons. Coffee being a labour intensive crop, small and medium families will have to depend heavily on outside labour which increases the cost of cultivation. Further, it was found that even among the large families, most families have more of non-working dependents. Higher cost of cultivation, non-remunerative price and more stomach to fill and feed their education and other requirements has pushed coffee cultivation to a perennial state of indebtedness.

3. The size of plantation income would reflect on the economic status of the cultivators. Income from coffee cultivation is the only main source of income for most of the respondents. Study indicate that 30% have plantation income up to Rs. 5 lakhs. Staggering 40% of the growers have a plantation income in the range of Rs.5 to 10 lakhs. About 15% have a plantation income in the range of Rs. 10 to 20 lakhs and 10% have the range between Rs. 20 to 30 lakhs. Only 05% have a plantation income above Rs.30 lakhs per annum. Relatively these income groups
appears to be higher, but the investment, maintenance and turnover cost is too high to cultivate the coffee crop. About 25% of the cultivators have property worth above Rs. 01 crore, similarly 50% of the growers have a property range between Rs. 50 lakhs and one crore, about 20% of the growers have the property range between Rs. 25 to 50 lakhs. Only 05% have less than Rs. 25 lakhs worth property. These properties like house, land etc., which are mostly inherited and ancestral are used as security while raising loans. Here again the study reveals that majority; of the cultivators borrow money from banks, societies and indigenous money lenders. Lower income groups have borrowed from money lenders at high interest rates and it added to the miseries of the coffee growers.

**Preparation of Coffee for Marketing:**

Coffee passes through harvesting, transporting, grading, pulping, drying, packing and storing before being put out for sale. Findings in this regard are:

**Harvesting is Manual and Labour Intensive:**

In the sample districts, harvesting of coffee normally starts from the mid-November and completes by the end of March every year. The variation in the commencement of harvesting season is due to the varieties of coffee and the onset of blossoming. Normally Arabica comes early for harvest and being completed before January. However harvesting of Robusta commences by mid January and ends by March every year. Harvesting is totally a manual operation and is highly labour intensive. Because this stage induces a sizeable cost into the total operational cost borne by the growers.

Harvesting includes picking of ripped coffee berry from the plant and transporting from the distant plantation to the pulping yard assorted (graded) into ripped and green coffee. The ripped coffee is processed for pulping and transferred to drying yard. In the normal weather condition it takes one week to reach the next final stage of packing. Dried coffee is packed in 50 kgs., gunny/ polythene bags and stored. Again all these processes are manual, except pulping, requires a lot of labour. So the total harvesting requires more labours and demands casual and ad hoc labourers during this season.
Itinerant Traders, Commission Agents and Village Merchants dominate in Assembling Activities:

Coffee is brought into the market by several agencies. The agents assemble the produce at different centres on behalf of the curers before bringing the produce to the curing house. In the sample districts, the important agencies who assemble the coffee are growers, village merchants, commission agents and itinerant traders. During the study researcher noticed that majority of small and marginal growers sell their produce to the itinerant dealers and village merchants at their estates. Majority of the medium and large growers take up assembling by themselves and directly deals with the curers - who are the main dealers.

Transportation:

Transportation cost is generally borned by the dealers, if the produce is sold at the estate level. The purchasing agents take up the responsibility of lifting the coffee to the market place. However, a share of transportation expenditure is passed on to the cultivators by bargaining the prevailing coffee price on the day of purchasing. The growers who directly market the produce may have to bear the transportation cost by themselves.

Grading:

Grading process is undertaken by the growers at the time of harvesting. Based on quality of coffee, grading is made by the growers. Generally parchment and cherry are the two grading process. Very rarely parchment coffee is graded as parchment general and pea berry. According to the quality the price is determined in the market. Pea berry, parchment and cherry get their best claim of their market price respectively.

Storage:

Findings reveal that 50% of the produce is generally sold immediately after harvest at the prevailing market price. Another 25% of the produce is being stored by the planters expecting better price for a month or two and the rest 25% wait beyond 2 months.
Price Behaviour:

Price is a matter of vital importance to both the seller and the buyer in the market place. It denotes the value of a product or service expressed in monetary terms. In a competitive market economy price is determined by fair play of supply and demand. Price stability is what the growers generally look for. Therefore researcher analysed the price trends, price spread and the share of intermediaries etc. Statistical tests are adopted/employed in order to explain these trends.

6.3 SUGGESTIONS:

In the light of the findings of the study, the researcher has offered some suggestions. It is evident that the coffee cultivation system needs a thorough revamping, if it has to benefit the growers. Obviously many measures have to be initiated simultaneously. The following suggestion would serve as a basic guidance to carry out the corrective measures:

1. Education and Training to Coffee Growers:

   It has been established beyond doubt that the cultivators of coffee lack proper education and training in the field of coffee cultivation. It is necessary to train them on use of soil, manuring, water harvesting, and selection of varieties and techniques of cultivation and harvest processing. It is suggested that the Coffee Board and Research Institutions will have to team up to arrange for short term training programmes to all coffee growers region-wise. It is advisable that the local Planters’ Associations should take the lead in this direction.

2. Pest Control Measures:

   It is observed during our study that the coffee crop in the sample districts is often affected by diseases like leaf rust, black rot, anthracnose, berry blotch, brown eye-spot, collar rot, coffee trunk canker, root diseases - brown root disease, red root disease, black root disease, Santa very root disease. Sometimes the growers have lost their entire crop due to these diseases. Not only the crop, but also the plant. If the crop is lost, it is a loss for a year but if the plant is lost, it needs minimum of 5 to 6 years to procure crop after re-plantation. Majority of the growers do not know the right use of
pest control measures. Hence, immediate action should be initiated by the authorities to root out such diseases through proper pests control measures. Here again, the role of Coffee Board, Research Institutions and the government is very important. They have to keep monitoring the situation and educating the growers in the right way of pest and disease control. The local station of All India Radio and T.V. net work are doing a commendable job in this direction. These net works are to be further strengthened.

3. Maintenance of Quality Coffee:

Quality of a produce place an important role in the trade. Quality is never an accident, but the result of intelligent efforts. In coffee, quality of a product can be achieved by doing right things at right time. In recent times, maintaining coffee quality has become an important issue in international trade. Sometimes the consignments sent to international market, returned due to poor quality.

The quality of beverage is governed by various factors viz., variety, climatic factors, soil, agronomic practices, processing condition etc. Inadvertent use of pesticides and manure results in poor quality of coffee. The care taken during cultivation and post-harvest practices could eliminate most of these problems. Once again, the role of Coffee Board and Research Institutions have to play a vital role in educating the growers for maintaining the quality.

4. Need of Training to Plantation Workers:

Coffee cultivation is a highly labour intensive one. It requires the skill to carry out certain process in cultivation. Majority of the plantation work is run by untrained casual workers. The attrition rate is very high and it becomes very difficult for the growers to retain the experienced workers in the line of coffee cultivation. The inevitable use of untrained casual workers in the plantation ends up with poor quality of coffee. It is suggested that the growers needs to reduce the attrition rate of workers by providing good basic facilities for their stay; in the estates and a proper paid on-job training should be made available to improve their efficiency and quality.
5. **Credit Facilities:**

The nationalized banks and co-operative banks undertake financing to the coffee growers both short term and long term. However, the loan facilities are inadequate and delay in sanctioning loans due to cumbersome procedures followed by them. There is ample scope to increase the lending functions, particularly to the growers to provide necessary financial support in their activity. The study has clearly established that some of the coffee cultivators still depend on the local money lenders and traders and commission agents for meeting their urgent financial needs. It is therefore suggested that the institutional credit arrangement should be strengthened to provide comprehensive credit package at a subsidized interest rate, so that coffee growers need not borrow from money lenders at abnormal rate of interest and also it avoids the growers to make distress selling of their produce to the traders.

6. **Proper Storage:**

It is observed during the study most of the growers have not made adequate and quality storage facilities for storing their produce. In most of the cases, it is a general storage where coffee bags, pesticides, manure and plantation equipments are stored side by side in the same godown. It is also noticed that proper ventilation and moisture free arrangements are not followed. Due to this unscientific method of storage, the quality of coffee in the market is being priced less due to moisture and bad odor. Bad odor is due to the contamination of coffee with pest and manure. Hence, it is suggested to maintain a good moisture free storage facilities. Therefore there is a need of subsidized financial assistance by the government for the construction and maintenance of storage facilities.

7. **Crop Insurance Scheme:**

Every year March and April are the two important months for the coffee growers, because the first shower which determines the fate of the year’s coffee crop. If the blossoming shower is adequate and on time with back up shower, the year’s crop is almost assured. It is similar in all the 3 sample districts for Arabica variety. However, for Robusta the growers generally do not depend on rain for blossoming in the month of February and having their own sprinkler facility.
It is learnt from the growers that it do happened in one or the other year or for one or the other reason, blossom shower was not on time or inadequate and caused crop loss either partially or fully. To overcome the agony of the growers of this kind needs crop insurance schemes. But to researchers dismay that the crop insurance scheme is not in vogue. The scheme, crop insurance is not insisted by the authority or the growers themselves have not opted for. It is learnt that the scheme is not scientific enough to cover the risk of crop loss and the premium is not scientifically fixed. The growers have raised their grouse against the very unscientific crop insurance proposals. Hence, it is suggested that the appropriate authority should take up the scheme crop insurance scheme seriously for the betterment of the coffee growers.

8. Enhance Domestic Consumption:

Out of our total coffee production, only ¼ is consumed domestically and ¾ is exported. The per capita domestic consumption is very low, compared to western coffee importing countries. Coffee consumption luxury in northern states. Tea is a competitor for coffee in inland. The cost of preparation of coffee is higher compare to the competitor “Tea”, because it requires good milk and sugar to prepare a good cup of coffee. Hence, tea is preferred more, than coffee in the northern parts of India. It is suggested to enhance the per capita consumption of coffee in India which definitely enhances the domestic demand for coffee.

9. Productivity:

It is understood during our study the cause of concern is productivity of coffee in the study area. The productivity of Robusta coffee is around one ton per hectare whereas, in case of Arabica it is about 0.6 ton per hectare and an average productivity of Arabica and Robusta together is around 0.84 ton per hectare. When we look at the productivity of the country Brazil, which is the leading producer of coffee in the world is around 2 to 3 tons per hectare. Comparatively the rate of productivity of Indian coffee per hectare is not even half of Brazil’s productivity.

It is suggested that to improve the economics of coffee growers, the option is to improve the rate of productivity of coffee per hectare. Therefore, the Coffee Board, Research Institutions should come out with high yielding, long lasting and disease resistant coffee varieties to help the growers and it is the need of the hour.
10. Support Price:

Providing support price is a common practice for many commercial crops in India. Cotton, sugar, oil seeds have all got this benefit. Recently, even aracanut growers have been given this benefit by the government. It is necessary that similar protective measures need to be taken up to protect the interest of coffee growers.

It is suggested that the government should appoint a committee to scientifically estimate the cost of production of the crop. This should form a base for basic price fixation. The growers should have an assurance of the minimum support price. Coffee Board should take initiative in this regard.

11. Flash Market Intelligence System:

At present, market information including the status of prices in various national and international market does not reach the growers on time. It however, said that the Coffee Board broad cast coffee prices of various market centers daily through print media and All India Radio. But the information which the growers really receive is not up to date. There is a need to streamline the market information system. Television has entered even to the interior villages; the information about the market should be telecast through T.V. as flash news regularly while market is working. The flash news should also cover the forward trading and option price data of both national and international market.

12. Estate Level Best Practices:

The Researcher observed different anomalies at different stages of cultivation of coffee during the survey. In order to maintain quality of coffee at estate level, the growers are suggested the following common best practices to adopt at their level. They are,

1. Pick just ripe fruits.
2. Clean bags should be used for collection of harvested fruits.
3. Gunny bags used for fertilizer or cattle feed should not be used for harvesting coffee.
4. If the use of fertilizer or cattle feed bags is inevitable, they should be washed thoroughly in running water many times before use.
5. Over-ripe or green cherries if harvested should be sorted out and dried separately.
6. Avoid contamination with earth and dirt at fruit or parchment stage.
7. Maintain cleanliness in the pulper house. The pulper, washing machines, tank, vat, trays etc., should be kept clean.
8. Grade the fruits into two sizes before pulping.
9. Keep the pulping machine clean and adjust it to the size of graded fruits.
10. Pulp the fruits on the same day of the harvest.
11. Prolonged heaping of fruits and delayed pulping should be avoided.
12. Separate the fruit skin and unpulped fruits from the pulped beans before fermentation.
13. Pulped fruits, left for fermentation in the vats should be covered with clean bags; avoid bags used for fertilizers/pesticides etc.
14. Avoid under or over-Fermentation.
15. Clean water should be used for washing coffee.
16. Recycling of used water for pulping and washing should be avoided.
17. Wash the parchment with clean water as many times as required to have pebble clean parchment.
18. Soak the parchment under water overnight for enhancing the quality.
19. Clean the pulper machine, vats etc., after the day’s work.
20. Avoid carrying wet parchment in cow-dung plastered baskets to the drying yard. Basket may be lined with polythene sheet.
21. Sort out all pulper-cuts, naked beans, blacks and other defective beans during drying of parchment. Drain off the excess water rapidly.
22. Dry the coffee on wire mesh trays initially or on coir mat spread on a table.
23. Dry the coffee on clean, tiled or concrete drying yards.
24. Do not dry coffee on mud or cow dung-plastered drying yards.
25. Avoid hard tools for raking coffee.
26. Dry the coffee to the prescribed test weight standards. Avoid over-drying or under drying.
27. Provide adequate drainage to the drying yard.
28. Heap the coffee and keep it covered during night to avoid any type of direct contact with moisture (mist or rain).
29. Store the coffee in clean gunny bags, in well-ventilated and clean godowns, free from dampness. Line the floor with wooden planks.
30. Do not store coffee along with fertilizers, pesticides and such other materials,
which may contaminate the bean.

31. Do not store coffee along with other plantation products like pepper, cardamom, clove and other Spices.

32. Dispatch the coffee to the curing works at the earliest opportunity.

33. Coffee obtained from greens and floats should be pooled separately.

6.4 CONCLUSION:

Agriculture has been a major contributor to the national economy in India throughout the post independence period. No doubt its share in the national income has, of late, come down. Even the share of population dependent on agriculture has fallen according to the census of 2011. Still, even in this era of high technology and service sector, agriculture has a big say. Agriculture may not facilitate a big jump in GDP. But its status can certainly determine the economic and political stability in the country. Troubled agriculture will nullify the effect of fast growth in industry. Therefore, agriculture certainly remains a significant force in the economy.

India’s dream of becoming a global economic power lies in ensuring a better deal to farmers. Farming community in general, especially small and marginal farmers look deeply disillusioned, since they could not find enough life security in the past decades. Those suffering are not just the ones growing staple crops, but even those growing commercial crops have their share of misery Sugarcane and Areca nut growers stand out as examples in the recent past. The story of coffee growers is just another in the series.

A fast growing economy needs to safeguard the interests of those who do not constitute the part of the mainstream economics. Globalization and liberalization, to be of any meaning, should ensure a part of the cake. If the huge inflow of global capital into the country cannot ensure that a part of that gets invested in agricultural sector, if the market access principle does not ensure that our agriculturists cannot put their market in the global market. If the emergence new financial institutions cannot facilitate easy institutional credit to agriculture and if all the development in the electronic medium cannot improve the marketing network for agricultural produces, then this country will be hard to be called an economy in progress. It is in this backdrop that we need to look at the problems of coffee growers.
The study region selected for our study is geo-physically an ideal geographical terrain. Location, climate, resources and political strength all are favorable in this region. But the growers, especially the coffee growers, have always found themselves pushed to the periphery.

It looks that the entire system related to coffee cultivation is surrounded of ill thought out activities. The inability of the growers to adopt scientific methods of cultivation, the failure of the government machinery to devise mechanisms that support the growers, the inaccessibility of institutional means of credit have all jointly and severally accounted for the present plight of coffee growers.

Among the many needs of the coffee growers in our study region, it is undoubtedly cost escalation which is to be addressed immediately. Mechanization would give a relief to the farmers from their most immediate and pressing problem. Farmers should be kept free of worrying about their economic problems. If this path is streamlined, they can focus more on equipping themselves better and adopt modern methods of cultivation. This would automatically increase overall production efficiency and make the growers more competitive. So, there will have to be two fold approach to realize the potential of coffee economy of the region. As a first step marketing network is to be revamped and farmers should be provided with adequate subsidy for mechanization of their cultivation process. Then as a long term solution, farmers will have to be trained to suitably readjust their varieties of crop and cultivation process. This approach will help realizing the potential of the region in full.

The suggestions given in this treatise will have to be taken up not in isolation but as a package. It has to be an attempt to address the problems simultaneously from all directions. All this can happen only if the policy makers and the farmers themselves believe that they can rework on the set agenda. Confidence in their own potential and correct means to realize this potential is the order of success of agriculture anywhere in the world. Liberalized markets give us enough opportunity for technology transfer. This aspect also is to be learnt by learning from world’s leading coffee producers. Reduction of cost of cultivation, increase of yield and tapping new markets will have to be the ‘mantra’ if the coffee economy is to be strengthened.

“There is no harm in dreaming, so long as it not a day-dream - for every dream opens up ways for moving closer towards realizing such dreams.”