CHAPTER - 6
CONCLUSIONS AND SUGGESTIONS

6.1 INTRODUCTION

This sixth Chapter, being the concluding Chapter of the Thesis, brings together the conceptual, theoretical and analytical strands of the preceding Chapters and presents the conclusions of this investigation and the suggestions emanating therefrom.

6.2 MAJOR CONCLUSIONS

The conclusions of this research work are mainly based on the analysis and interpretation of the primary data collected through a structured interview schedule, from a sample of 100 coffee grower-respondents - 50 each growers of Arabica and Robusta coffee varieties, from Chikmagalure District of Karnataka State. An explanation of the process adopted for selecting these 100 respondents from the respective grower categories has already been given in Chapter-1.

6.2.1 Personal and Family Information

The representative coffee grower in Chikmagalure district is between 36 to 60 years old, mostly senior aged among Arabica growers (42%) and younger aged among Robusta growers (62%).

He is educated either between upto 7th and 10th standard or upto degree and graduation. Around one-fifth (20-22%) of both Arabica and Robusta growers are graduates.

He mostly belongs to the advanced castes in the Hindu community and has Kannada as his mother tongue. He mostly belongs to a nuclear family comprising only upto 4 members. Interestingly, more than half (52%) growers have a coffee plantation-trained person in the family. More than four-fifths (84%) growers’ families have only one family member wholly engaged in coffee farming, the remaining 16% families have two or more such persons.

The main source of his family income is his coffee plantation, providing him an annual family income between Rs.25,000 to above Rs.2.0 lakh - around one-third (36%) Arabica growers’ income is between Rs.1.0 to 2.0 lakh, while around one-third (36%) Robusta growers’ income is between Rs.0.25 to 0.50 lakh.

6.2.2 Agricultural Information

The representative coffee grower in Chikmagalure district has
raised his coffee plantation on the ancestral land, admeasuring below 2.5 acres (marginal - 24%), 2.51 to 5 acres (small - 22%) to 5.01 to 10 acres (medium - 37%). There also are some big land holders in both the Arabica (18%) and Robusta (16%) growers. Some of the growers are cultivating coffee on the tenancy land (6%), while 15% growers have recently cash purchased their lands/plantation. Light lateritic is the type of soil in all the plantations, because it highly suits coffee crop.

All the plantations grow only coffee as the primary crops, but 82% growers also take foodgrains and some growers also take green vegetables and fruits (mostly for home consumption) as the secondary crops.

Rainfall is the only source of water for majority (93%) coffee plantation. While all the Arabica growers are entirely dependent on the rainfall, one-fifth (20%) each Robusta growers also use well water and the water lifted from river/canal. Only about 32% plantations have sufficient availability of water, while nearly two-thirds (65%) plantations survive on insufficient water, i.e. all the (100%) Arabica and 30% Robusta. As such, all the plantations begin their cropping season with the onset of monsoon.

More than half (57%) plantations do not own a diesel/electric pumpset. Only two-fifths (39%) plantations own a tractor and trailer and only about one-half plantations own modern farm equipment like power tiller/ridger, etc. While 86% coffee growers have not undertaken any agro-ancillary activity, the remaining 14% growers, depending on the availability of spareable manpower, have undertaken such activities as milk production, flori/horticulture and poultry-keeping.

6.2.3 Coffee Plantation Information

Among the individual coffee growers, the area under coffee plantation varies from below 2.5 acres to above 10.1 acres; around one-third (35%) plantations are of medium size (5-10 acres) and around one-fifth (17%) are of big size (above 10.1 acres). Around one-third (37%) plantations are standing on irrigated land - 24% Arabica and 50% Robusta; the rest have been raised on rainfed land. Being standing on rainfed lands, majority (89%) plantations use the natural gradient to manage the water flows, but around one-fifth (18%) of Robusta plantations also have installed modern water management systems like sprinkler and drip irrigation. At the same time, nearly two-thirds (64%) plantations suffer from insufficiency of irrigation water, while the remaining 36% plantations have it available in sufficient to abundant quantities.

Majority (82%) coffee growers use improved plantation techniques, but 18% are still clinging to the traditional techniques. For the adopters of the modern techniques, Coffee Board’s publications and discussions with its officials/experts is one of the major sources of
information (88%), followed by the State Government’s village-level agricultural extension workers (55%) and agricultural journals (20%). Among the assorted information sources are television (9%), circle agricultural officer (7%), radio programmes (4%), newspapers/periodicals and State agriculture department (2% each).

An overwhelming majority (90%) of the growers use both organic and chemical fertilizers on their plantations, depending on the need and suitability.

Nearly half (45%) the plantations, being of substantial size, use a hired tractor for prior and intercultural operations, another one-third (39%) use their own tractor, and the remaining (16%) use bulls. Also, nearly one-third (35%) plantations give out the prior and intercultural operations work on contract basis, about one-fourth (28%) plantations use family members plus hired labour for the purpose, but about one-fifth plantations use family members only (19%) and the remaining use hired labour only (18%). The practice of giving it out as contract work is more prevalent among Arabica growers, while that of using family members and hired labour is more prevalent among Robusta growers.

While more than half (54%) the plantations avail bank loans as a major source of working funds, around one-fourth (26%) use only family funds and the remaining 29% use credit cooperative loans. The tendency to use bank loans is more marked among the Arabica growers, while the Robusta growers use all the three sources nearly equally.

An overwhelming majority of 93% growers take intercrops in their plantations - pepper (65%), Oranges (62%) and banana (32%) being the most popular ones, but there is a sprinkling of ginger (4%) and cardamom, pineapple and vanilla (1%) each also. Pepper is more popular with Arabica growers, while oranges and bananas are more popular with Robusta growers. All the plantations use a mix of wild trees and silver oak trees for obtaining shed in the plantation.

### 6.2.4 Coffee Marketing Information

More than half (56%) the growers harvest their coffee by wet method (for preparing parchment coffee) and only 44% growers use dry method (for preparing cherry coffee). The wet method is used by 86% Arabica growers, while 74% growers use dry method. More than half (54%) growers undertake pre-despatch processes like sorting and grading, the remaining 46% growers leave this job to the curers. Nearly three-fourths (72%) Arabica growers and nearly two-thirds (64%) Robusta growers undertake such pre-despatch processes. Also, around two-thirds (63%) growers store the harvested produce in their own godown, but the remaining 37% growers take resort to rented godowns. Around two-thirds (69%) growers store the produce for less than 2 weeks before offering it for sale; among the rest, the storage period varies between 2-4 weeks to more than 2 months. Majority (55%)
growers use hired vehicles for transporting the produce to the purchasers, where in about three-fourths (72%) instances, the produce is graded by the purchaser himself prior to sale and only in 13% instances, machine-grading is carried out.

More than half (52%) the growers receive advance payment from the purchasers against sales, the remaining half (48%) the growers are not interested in such an advance. Of course, the advance-takers have to pay interest on it until the conclusion of sale -71% growers paying it at the rate of 15% p.a. and the remaining 29% paying it at the rate of 18% p.a. Sixty percent growers receive the payment of sale proceeds as an immediate single payment, the remaining 40%, especially those selling large quantities, receive it in 2 to 3 installments.

Lastly, slightly more than half (57%) growers are only mildly satisfied with the cash realization of their coffee produce, 21% are highly satisfied, 11% each are neither satisfied nor dissatisfied, but another 11% are mildly dissatisfied. None of them, however, are highly dissatisfied.

6.3 Major Suggestions

Against the background of the above inferences, personal discussions with coffee growers and the review of literature presented earlier, the following may be stated as the problems in coffee cultivation.

6.3.1 Production and Productivity Problems

• Lack of, and limited access to, improved coffee varieties (resistant to diseases and insects, with high yields and good quality and taste characteristics)

• Inadequate conservation and use of germplasm materials (collection, storage, evaluation, exchange and patent problems)

• Inadequate recommendations and technologies for pest or disease control Lack of appropriate and sustainable socio-agronomic practices and technologies

  • Ageing coffee trees, plantations and farmers

  • Inadequate technology packages for soil fertility management

• Unstable climatic conditions, civil wars, political disruptions and corrupt administrative structures (lack of accountability and transparency).

6.3.2 Processing and Quality Problems

• Poor technology for post-harvest processing (drying, pulping, hulling, storage), including pest and disease prevention (OTA contamination,
berry borers)

- Poor regulatory frameworks and administrative structures for exports, lack of incentives for good marketable coffee
  - Inadequate equipment for coffee processing, leading to high processing costs
- Lack of magazines and newsletters to spread information about new quality-improvement technologies:

6.3.3 Marketing and Government Policies Problems:

- Unfavourable effects of privatization, liberalization and global, free trade, together with indebtedness to World Bank/international Monetary Fund (IMF) and other banks
- Persistently low prices on international markets (*Robusta* versus *Arabica*)
  - Inadequate promotion of domestic and local consumption, which could reduce surpluses by 25% to 30% (packaging, grinding, labelling, selling, blending)
  - Lack of diversification into niche markets, e.g. organic, speciality and gourmet coffees
- Inadequate marketing strategy at local and international levels
- Mismanagement of limited funds and poor access to micro-funding.

6.3.4 Socio-economic Constraints or Problems

- High production costs compared to those in Asia (Vietnam)
- Lack of access by farmers to agricultural inputs and credit
- Poor land use policies and tenure systems
- Poor level of adoption of new technologies for production
- Gender inequalities in coffee production programmes and systems
- Poor infrastructure development and lack of basic socio-economic services.

6.3.5 Cross-cutting Constraints or Problems

- Lack of effective links between extension and farmers, due to poor facilitation
  - Inadequate training programmes (workshops, seminars, field days, exchange visits, scientific conferences) for farmers, scientists and other

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• Inadequately funded coffee research programmes and projects, and poorly paid scientists, due to lack of cess fees or special government allocations

• Weak links, networking and collaboration with international research institutions, regional organizations, donors and universities

• Inadequate production and exchange of information and technologies by and among member countries, institutions and stakeholders.

6.3.6 Suggestions to improve Coffee’s Prospects

Under these circumstances, the following measures would indeed help to enhance the Coffee’s prospects:

A. Production and Productivity

• Development of a framework for the production and exchange of coffee planting materials (seeds and cuttings)

• Development of germplasm projects (collection, conservation, evaluation and exchange)

• Studies in (or applied research to develop) up-to-date pest and disease control measures, IPM packages, etc

• Coffee rehabilitation to rejuvenate plantations for increased productivity

• Development of varieties resistant to climatic hazards and pests and diseases, with good quality characteristics

• Studies of N-fixing *Phizohium* strains for use in legume - coffee associations

• Information and technology packages on fertilizer and manure use in coffee cropping systems.

B. Processing and Quality

• Improved technology for post-harvest systems (pulping, drying, hulling, storage, transportation and handling), including technology to protect against storage pests and diseases

• Surveys of coffee quality characteristics at farm-gate level in IACO member countries

• Surveys of coffee processing, storage, transportation, packaging and handling systems

• Studies on how to reduce costs in post-harvest processing

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Preliminary studies on environmental degradation (pollution of water by pulping) and enhancement (use of coffee husks and pulps for manure and as a source of energy)

Applied research on biotechnology, including genomics and genetic modification, to improve coffee quality for world markets.

C. Marketing and Government Policies

Studies on causes of low world market prices, including price differentials between Arabica and Robusta coffees and their implications

Studies on unfavourable impacts of privatization, liberalization and global free trade on national coffee sectors in India

Surveys and studies at regional level to identify the key determinants of increased domestic coffee consumption in India

Preliminary studies on how to establish organic, speciality and gourmet coffees for niche markets.

D. Socio-economic Constraints

Studies on how to reduce production costs in India

Studies on appropriate land tenure systems for coffee production

Scoping studies on technology adoption and the empowerment of women in coffee production systems.

6.3.7 Specific Suggestions

1. The Coffee Board must come to purchase coffee directly from the growers.

2. The Coffee Board should give finance to the producers as usual in last decades.

3. Production pattern should be scientifically organized and the Government should take demonstrations and seminars in each Panchayath level.

4. The Government should supply directly to Coffee producers the Fertilizers and payment due on this should be deducted at the time of purchase of coffee.

5. After soil testing, suitable variety of plants be suggested by the Coffee Research Stations (which is being done very effectively in Balehonnur).

6. The Government should fix the prices, or otherwise should declare the

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support price in advance.

7. Proper training should be given to growers regarding production, because they are found to follow the techniques used by large coffee cultivators.

8. Proper transportation and labour facilities should be provided.

9. Proper storage or warehousing facilities be provided to the coffee growers by the Government.

10. Indian Coffee varieties be standardized and be advertised in the international markets.

11. Coffee should be made in a way so as to compete with other soft drinks.

12. Coffee export procedures be simplified as much as possible.