C O N T E N T S

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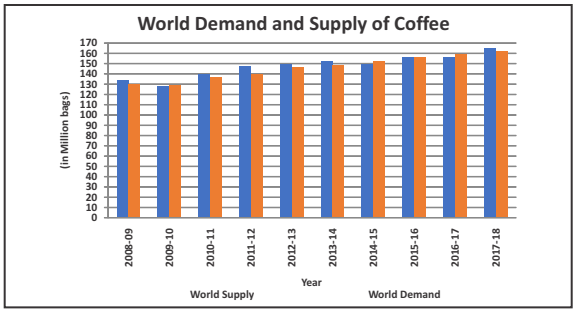
2017–18 - A PERSPECTIVE VIEW

I have pleasure in placing the 78th Annual Report of the Coffee Board for the year 2017-18.

Global Supply and Demand Balance

During the year, the global production of Coffee is estimated at 164.81 million bags which is 5.7% higher compared to 155.96 million bags of the previous year.

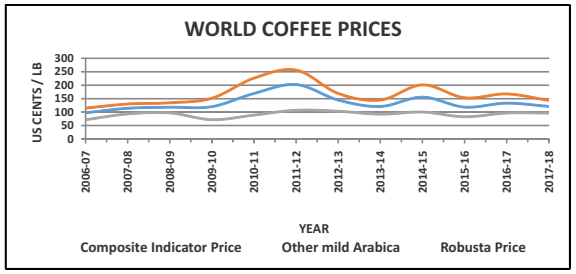
Global consumption during the year was 162.23 million bags as compared to 159.39 million bags during the previous year, which is an increase of 1.8% over the last year's consumption.



International Price

During the year 2017-18, International Coffee prices have shown continuous declining trend due to global surplus supplies, market speculations and currency volatility etc. The prices of other mild Arabicas (the category in which the Indian Arabicas are classified in the International market) ranged from 135.03 US cents/lb to 155.40 US cents/lb with an average of 143.68 US cents/lb, which decreased by 14.24% compared to the previous year's price. Similarly for Robusta, the price ranged from 87.59 US cents/lb to 104.94 US cents/lb with an average of 96.33 US cents/lb which decreased by 0.38 % than the previous year's price.

During the financial year 2017-18, the average ICO composite indicator price was at 121.02 US cents/lb, which has decreased by 9.13% from 133.18 US cents/lb during 2016-17.



Indian Scenario

The blossom and crop setting for 2017-18 season was good as a result of timely and adequate blossom and backing rains received in most parts of the coffee growing tracts during March-April 2017. The rainfall during 2017 monsoon period was in generally more in comparison to the corresponding period of 2016. During

the southwest monsoon, the new pest Giant African Snail reappeared in few coffee plantations of Karnataka. With the concerted efforts of the Board, the pest menace was controlled effectively. The weather conditions and the rainfall during the North-East monsoon periods were favorable for crop development for the year.

Production and Exports

Coffee production during the year was 3,16,000 MT, comprising of 95,000 MT of Arabica and 2,21,000 MT of Robusta, which is an increase of 1.28% than the previous year's (2016-17) production. During the year, India exported 3,94,559 MT to 116 countries which is the highest ever volume so far exported by the country. The quantity comprised of 52,381 MT of Arabica, 2,25,623 MT of Robusta and 1,16,555 MT of instant and R&G Coffee. The export earnings during the year was US $ 962.00 million as against US $ 842 million during the previous year. In terms of Indian Rupees, it was at ₹6,201.96 Crores as against ₹5,642 Crores during 2016-17. Italy, Germany, Russian Federation, Belgium and Turkey were the top five importing countries.

Domestic Price

Like international price, the Domestic Market price also recorded a declining trend. The Arabica (Plantation 'A') price ranged from ₹190.50/Kg to ₹219.67/Kg with an average of ₹205.02/Kg which is about 9.03% lesser than the price that prevailed during the previous year and the Robusta (Cherry 'AB') price ranged from ₹117.50/Kg to ₹136.50/Kg with an average of ₹125.43/Kg which is decreased by 5.82% than the price prevailed during the previous year.

Auction prices- Average prices secured in ICTA (Bengaluru)

Financial Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Plant. A	203.94	270.37	192.02	194.14	278.97	263.96	225.37	205.02
Rob.Chy AB	84.20	113.51	144.78	122.16	144.96	119.19	133.18	125.43

Board Initiatives

The Board continued to implement the activities Viz., Research & Development, Transfer of Technology and Capacity Building Programme. The spill over subsidy claims of the previous years under the sub components development Support for Coffee in Traditional and Non-Traditional Areas were settled for

the improvement of production, productivity and quality of coffee.

The Domestic consumption is witnessing healthy growth at the rate of 4 to 5%. Thanks to the rise in disposal income, proliferation of café culture and promotional efforts by the Board to boost consumption. Presently, the domestic consumption is estimated at 1,15,000 MT. For the long term sustainability of the industry, the graph of the domestic coffee consumption needs to move northward. This will provide a shield to the growers against volatile coffee prices, provide excellent employment opportunities, encouraging entrepreneurship and overall improvement in the value chain. To Support the growing market, the Board has initiated several steps which includes skill development programmes such as Barista Skills and coffee retailing as well as extending support for roasting, grinding and packaging segment to individual units, partnership firms, self-help groups / growers' collectives / cooperatives and corporates under the component 'Support for Value Addition'.

In the research front, three promising Arabica genotypes viz., S.4814, S.4817 and S.5146 possessing high level of tolerance against coffee leaf rust with high yield were released for extended field trials. The Board has given top priority for finding an effective solution to the white stem borer through enhanced research efforts by forging collaboration with ICAR and also by building capacity of growers in combating the pest through a mission mode approach. The Ministry of Commerce has also attached importance to find an effective solution to the steering committee for providing policy direction and thrust to coffee research in this area to find a time bound solution.

The Board in collaboration with National Remote Sensing Agency (NRSC) is pursuing a pilot project in six selected coffee growing taluks of Traditional Areas to create an inventory of coffee plantations using Geospatial Techniques.

The Board participated in 12 overseas exhibitions/trade fairs for promoting the brand image of Indian Coffee in Key export destinations. On the domestic front the Board took part in 37 exhibitions / fairs for promoting coffee consumption in the domestic market.

Technology Initiatives

- **India Coffee Field Force App**-in order to ease the work of field functionaries and to improve the work efficiency, Board in association with National Institute for Smart Government (NISG), has developed a Field Force Mobile App.

- **Coffee Board and Precision Agriculture for Development India Foundation (PADIF) Partnership**- A proposal has been submitted by PADIF, a company started by Professors of Harvard University, USA to provide mobile based digital extension services to coffee growers. They have proposed to cover 30,000 coffee growers during the eight month pilot project.

- **EKA Analytics** - a global leader in the Data Analysis, Artificial Intelligence and Digital Community Management forms for agriculture has initiated the pilot projects on Hyper Local Weather Forecast, Disease Prediction, Pest Identification and Blockchain & Smart Contract for Indian Coffee. Eka analytics will run the pilot upto March 2019.

- **BigHaat -** an online input delivery system and **Samunnati** who offer financial, co-financial and non-financial solutions to marginal, small and medium farmers, agri entrepreneur and wholesale / retailers. Here, Coffee Board is introducing BigHaat and Samunnati to coffee growers with no financial commitments from Coffee Board.

- **Coca Cola Corporation RTD India Coffee Drink -** Coco-cola has come forward to promote Ready to Drink (RTD) India Coffee. Coffee Board has to provide technical support to develop the blend.

- **GI Tag -** Coffee Board has submitted applications for registering GI certification for region specific coffees grown in the regions of Bababudangiris, Chikkamagaluru, Coorg, Wayanad and Araku regions.

Trade Infrastructure for Export Scheme (TIES)

Coffee Board is establishing a state-of-the-art Laboratory Infrastructure for Coffee Quality & Export Certification under TIES of Ministry of Commerce and Industry, Government of India. The total project outlay is ₹ 11.40 Cr in the form of grant-in-aid with 50% equity of total project cost from Coffee Board as an implementing agency.

November 2018
Bengaluru

Srivatsa Krishna, IAS
CEO & Secretary, Coffee Board

CHAPTER – I

EXECUTIVE SUMMARY

Production

- The Final estimates for 2017-18 was placed at 3,16,000 MT comprising of 95,000 MT of Arabica (30.06% of total) and 2,21,000 MT of Robusta (69.94% of total), which is increased by 1.28% than the previous year's production of 3,12,000 MT.
- The overall farm productivity of coffee was 765 Kg/Ha.
- The total area planted with coffee was around 4.55 lakh hectares, of which the total bearing area was around 4.13 lakh hectares.
- There were around 3,66,242 coffee holdings in the country of which, around 3,63,366 were small holdings with holding size of less than 10 hectares which accounted for about 99.21% of the total holdings.

Exports

- As per the export permits issued, a total quantity of 3,94,559 MT of coffee (including 67,622 MT of re-exports) comprising of 52,381 MT of Arabica, 2,25,623 MT of Robusta and 1,16,555 MT of instant and R&G coffee valued at ₹6,202 crores equivalent to US$ 962 million was exported to 116 countries.
- Italy, Germany, Russian Federation, Belgium and Turkey were the top five importing countries.
- The composite unit value of all types of coffee exported was ₹1,57,187 per metric tonne compared to ₹1,58,474 per metric tonne during the previous year.
- The total number of exporters registered with Coffee Board stood at 971 (including 137 new registrations for the year 2017-18) as against 764 during the previous year.
- A total of 12,620 export permits (Indian origin coffee-11,081 and re-exports 1,539) and International Coffee Organization (ICO) Certificate of Origin were issued to 193 registered exporters of Coffee as against 11,416 permits issued during the previous year.

Research

- Evaluation of five F_1 hybrid progenies raised from the cross between

Sln.10 and S.4808 (*Catuai x HDT*) revealed that S.5059 progeny recorded superior performance with respect to yield, bean grade percentage and high field tolerance to Coffee Leaf Rust.

- Among the three semi-dwarf genotypes evaluated at CCRI (S.5149, S.5218 & Chandragiri), the performance of S.5149 (Cavimor) was found to be better in respect of yield and field tolerance to Coffee Leaf Rust.

- At CRSS, Chettalli evaluation of various inter-varietal hybrids indicated S.5146 (Sln.5B x HDT) progeny recorded superior performance with respect to yield and high percentage of “A” grade bean.

- At RCRS, Thandigudi evaluation of three F_2 progenies of the *Colombian catimor* crosses (S.5045, S.5046 &S.5047) indicated S.5046 progeny recorded superior performance with respect to yield, Coffee Leaf Rust incidence and high percent of 'A' grade beans (72%).

- At RCRS, RV Nagar, evaluation of various F_1 progenies derived from the reciprocal crosses Sln.5A x Agaro-1 and Sln.5A x Sln.3-4 revealed that Agaro-1 x S.2971 recorded a maximum projected yield (810 Kg clean coffee / Ha.), as compared to other progenies.

- In order to develop heterotic F_1 hybrid with durable resistance to Coffee Leaf Rust, crosses were made between Chandragiri and S.881 (*Rume Sudan*) as pollen donor during 2018 flowering season.

- Monitoring of the extended trial plots planted with three promising genotypes (S.4814, S.4817, S. 5146) in 12 locations (8 in Karnataka & 4 in Tamil Nadu) revealed that between the two semi-dwarf genotypes, S.4817 recorded superior growth over S.4814 in all the locations. In case of tall varieties, S.5146 recorded superior growth over Sln.5B in all the locations.

- Seed material of 10 new Arabica genotypes (S.5327, S.5328, S.5329, S.5083, S.5084, S.5085, S.5086, S.5188, S.5168 & S.5171) were distributed to nine planters for validating the performance of these genotypes under different agro-climatic zones (Five planters in Karnataka & four planters in Tamil Nadu).

- Field screening of White Stem Borer (WSB) tolerant Arabica lines (S.4595 & S.4596) at CCRI revealed

that both the plant populations manifested tolerance to borer infestation and also noticed the mortality of WSB larvae upon initial feeding.

- Monitoring of the field performance of WSB tolerant Arabica line (S.4595) at RCRS, R.V.Nagar and TEC, Minumuluru revealed that WSB incidence seen only in 2% of total plant population.

- Seed material of S.5355 (bulk progeny of S.4595) was supplied to 33 planters in Karnataka during 2017 season to establish the bulk plots in the white stem borer infested areas.

- In order to establish the heritability of the WSB tolerance, bio-assays were conducted on four progenies derived from S.4595 (S.4696 to S.4699). Out of 109 plants evaluated, 75% of the plants manifested tolerance reaction. In the remaining 25% of the plant population, the rate of multiplication of WSB larvae was less compared to other Arabica genotypes and thus confirming the heritable nature of the WSB tolerance in S.4595.

- Towards developing drought tolerant Robusta, evaluation of seedling grafts raised using high biomass root types as root stocks (S.880, S.1932, S.3399) and station bred selections S.274 and CxR revealed that graft combinations such as S.3399 x S.274 & S.3399 x C x R recorded vigorous growth and superior physiological performance, as compared to other graft combinations.

- Evaluation of compact dwarf C x R variety for growth parameters, yield, out-turn ratio and bean grade percentage indicated the prospects of developing a compact C x R variety requires further selection and exploitation.

- Preliminary field evaluation of Arabica varieties received under the collaborative initiative with World Coffee Research at CCRI (21 semi dwarfs & 10 tall varieties) indicated varieties such as EC -16, Col-1, Col-2, Col-4, Col-5 and Chandragiri (local check variety) have recorded superior growth characters, as compared to other varieties. Majority of the varieties except Chandragiri, EC - 16 and IPR - 107 manifested rust susceptibility under Indian condition.

- During 2017-18 season, a total of 5,070.75 Kg of seed coffee (Arabica-3,546.75 Kg; Robusta- 1,524 Kg) was supplied to planters in the

traditional areas through extension network. Besides, 8,588.5 Kg of Arabica seed coffee was distributed to the planters in the non-traditional areas (NTA). Further, 2,835 Kg of Arabica and 1,329 Kg of Robusta seed coffees were supplied in North-Eastern Region (NER).

✦ As part of a pilot scale programme to assess the suitable areas for coffee cultivation, 21.5 Kg of Arabica seed coffee was supplied to the Horticulture Department in Himachal Pradesh.

✦ During 2017-18 season, a total of 44,461 rooted clones of *Congensis Robusta* (C x R) was supplied to 186 planters for field planting from three Research Stations and three technology evaluation centers.

• To popularize the on-farm production of rooted clones of *Congensis Robusta*, 32 (21 on-station; 11 on-estates) training programme were conducted in Karnataka and Kerala states.

✦ Protocol was developed for high frequency somatic embryogenesis using leaf explant of improved lines of Sarchimor, *Colombian Catimor* hybrids (S.4814 & S.4717) and BBTC x Chandragiri hybrids and 1,200 plantlets obtained from such somatic embryos were kept for hardening.

✦ Presence of Benzyl Amino Purine (BAP) and Phluoroglucinol in callus growth medium found to boost maximum induction of somatic embryogenesis.

✦ Plant regeneration *via* somatic embryogenesis was achieved from leaf explants of S.795, Cauvery and C x R cultivars were multiplied and developed into plantlets.

• Among the 20 F_1 hybrids raised from the cross involving Sln.10 and Chandragiri direct & reciprocal crosses tested for SH_3 gene, 15 were found to contain the gene while two lines did not have the gene.

✦ The genetic fidelity test using SRAP and SCoT markers in tissue cultured plants of Sarchimor and C x R cultivars established in the field indicated high genetic similarities among the tissue cultured plants. The genetic fidelity test using SRAP and SCoT markers in the tissue cultured *Congensis Robusta* (CxR) supplied by Jain Irrigation Pvt. Ltd indicated over 95% homology in G_4 and G_7 generations.

✦ Genetic variations in 42 Arabica and 58 Robusta collections available in the gene bank was

studied using SCoT and SRAP markers.

- Under the project on "Soil fertility appraisal & soil health monitoring in traditional coffee growing regions of Karnataka, Kerala and Tamil Nadu" in collaboration with the National Bureau of Soil Survey & Land Use Planning (NBSS & LUP), Bengaluru, a total of 6,333 Soil Health Cards was distributed to planters in various coffee growing regions of Karnataka, Kerala and Tamil Nadu.

- Under the soil, leaf and agrochemicals analysis & advisory service, a total of 8,192 soil, 87 leaf & 467 agrochemical samples received from a total of 2,665 planters were analyzed and reports were communicated to the growers.

- The results of the recently concluded multi-locational field trial on "Effect of different organic and inorganic nutrient sources on soil properties, yield and quality of Arabica and Robusta coffee" for four consecutive years indicated that, application of 50% RDF + vermi-compost at the rate of 1.25 MT/Ha. recorded significantly higher yield than control. Application of organic nutrient sources has resulted in higher soil enzyme activities of dehydrogenase and acid phosphatase, as compared to control.

- As per the demand from the planting community, the Research Department of Coffee Board has established 5 additional Soil Testing Laboratories in Chikkamagaluru & Hassan (Karnataka) & Technology Evaluation Centers at Gonikoppal (Kodagu district), Yercaud (Tamil Nadu) & Vazhavara (Kerala) and soil testing is being carried out using PUSA Soil Test Fertilizer Recommendation (STFR) meter.

- To popularize the recently launched mobile soil testing facility using PUSA-STFR meter, 50 awareness programme were organized highlighting on the importance of soil-test based nutrient management in Chikkamagaluru & Kodagu regions to a total of 1,296 planters. Besides, a total of 1,523 soil samples was analyzed for pH and rendered on-spot lime recommendation during the awareness campaign.

- Long term field trial on "Planting design & pruning method" in Chandargiri was continued at CCRI and regional stations. Planting at closer spacing (5x5ft) / hedge row planting (6x3ft) / paired row planting

(3x6x7 ft) with rock-n-roll pruning recorded higher productivity per unit area. Labor saving to the extent of 27 to 56% can be achieved by adopting modified pruning methods like cyclic/rock-n-roll methods. Further, significantly lesser incidence of white stem borer was observed in hedge row planting with rock-n-roll pruning.

- The field experiment on "Standardization of fertigation techniques" was continued at CCRI. Fertigation with 100% recommended dose of fertilizer (as water soluble fertilizer) recorded significantly higher clean coffee yield (2,205 kg/Ha.) & on par with fertigation with 75% and 125% recommended dose of fertilizer followed by 100% RDF + sprinkler irrigation.

- Field trial on "Performance of water retaining polymer (Hydrogel) on survival & growth of young Robusta" was initiated at CCRI. Plants received hydrogel at the rate of 30g/plant registered higher soil moisture content (18.65%) and relative water content (78.35%), as compared to control.

- Results of recently initiated trial on effect of Agri-power silica as a source of silicon on yield shown that application of 100% RDF + 200 Kg Agri Power Silica (APS)/Ha. + 0.5% foliar spray @ 3 times/year recorded significantly higher clean coffee yield (757 Kg clean coffee / Ha.), as compared to control (520 Kg clean coffee / Ha.).

- Evaluation of humic acid based substance in Robusta coffee (Ecohume) was initiated at CCRI. Preliminary data on yield indicated that plants received recommended dose of fertilizer + ecohume granules at the rate of 10 Kg/acre + foliar application of nutrient mixture along with Ecohume at the rate of 600 ml 200/Litre (foliar application 25 days after blossom) noticed higher clean coffee yield (1,587Kg /Ha.) and the lowest yield (870 Kg clean coffee/Ha.) recorded with 75% of the recommended dose of fertilizer.

- Under the Plan Project on "Promotion of organic coffee production in North Eastern Region", one training programme on different aspects of organic coffee production & certification was conducted for the benefit of 65 members of organic coffee growers of Changpijang & Khulkon organic coffee grower's associations of Assam.

- Among the various newer Arabica genotypes studied for two seasons, *Colombian Catimor* x Sln.9 and

Colombian Catimor x Sln.5B found to be better drought tolerant genotypes, as compared to other genotypes.

- Monitoring of pre-mature berry drop in Arabica and Robusta coffees was continued. During 2017-18 season, mean pre-mature berry drop was to the tune of 18.8 & 19.6% in Arabica and Robusta coffees respectively in Karnataka (Chikkamagaluru & Hassan). While, the mean pre-mature berry drop was at 9.3 & 12.4% in Arabica and Robusta respectively in Kodagu zone.
- Field incidence of coffee leaf rust recorded in Chikkamagaluru zone (Karnataka) during post-monsoon period ranged from 11 to 23% during 2017-18 season. In North-Eastern states, Coffee Leaf Rust incidence ranged from 44 to 94%.
- Field incidence of coffee leaf rust on six new F_1 Arabica hybrids (S.5168, S.5169, S.5170, S.5171, S.5172 & S.5173) planted in CCRI farm were assessed for their susceptibility studies.
- Four out of 242 Arabica collections and 25 out of 65 Robusta collections available in gene bank collections at CCRI farm were found resistant to coffee leaf rust disease.
- Field evaluation of new fungicide molecule (Hexaconazole 75% WG & Tebuconazole 430 SC) against coffee leaf rust was continued.
- A total of 5,000 cross vane pheromone traps was supplied to a total of 22 planters in Karnataka for the management of coffee White Stem Borer during 2017 -18 season.
- A total of 57,800 Broca traps with lure was supplied to a total of 188 planters in Karnataka and Kerala to manage Coffee Berry Borer. In addition, 1.5 lakh vials of Broca lure (10 ml each) was supplied to a total of 167 planters. Further, 490 Kg of fungal spores was supplied to a total of 44 planters in Karnataka, Kerala and Tamil Nadu for the biological control of Coffee Berry Borer.
- A total of 83 awareness programmes on the management of coffee pests (coffee white stem borer, coffee berry borer & Giant African Snail) was organized in Chikkamagaluru, Hassan & Kodagu in 2017-18 and a total of 2,297 planters was benefitted from these awareness programmes.
- Field evaluation of improved in-organic (CCS-03 plus) & organic (IC- 03 plus) formulations was

continued in collaboration with M/s. Tata Chemicals Innovation Center at CCRI and in few selected private estates of Chikkamagaluru and Kodagu zones in Karnataka.

- New parasitoid & predator were isolated from White Stem Borer infested stems and standardization of mass rearing of these biological control agents are in progress.

- The performance of ecological coffee wet mill (ecopulper) was assessed in 7 estates in Karnataka. The water consumption for coffee processing ranged from 0.4 to 1 litre/Kg Arabica fruit and 0.8 to 1.2 litre/Kg of Robusta fruit compared to conventional pulper which require 3 to 5 litre/Kg fruit. The performance of indigenous ecopulper was on par with imported ecopulper.

- The results of the trials carried out on pollution abatement measures in coffee revealed that natural acidification of effluent (holding the effluent in lagoon for 24 hours) followed by neutralization with agricultural lime and alum treatments found to reduce BOD load to a maximum of 87% in a span of about 5 to 6 days. The effluent thus treated can be re-used for coffee pulping operation.

- Nine coffee effluent samples received from planters community was analyzed for pollution parameters and rendered advisory to the growers.

- A total of 384 coffee samples (365 commercial samples from 65 stakeholders & 19 samples from a research department) were analyzed for physical & cup quality parameters. Quality evaluation reports sent to the concerned.

- Analytical Laboratory has calibrated 114 moisture meters received from 39 stakeholders and issued calibration reports to the concerned. Further, tested 20 coffee samples (17 R&G and 3 soluble coffees) received from 5 traders for moisture content. In addition, 3 coffee: chicory mixture samples received from a trader were analyzed for the parameters notified by Bureau of Indian Standard (BIS). The result indicated that analytical values recorded in these samples were within the requirements prescribed by BIS.

- Four Kaapi Shastra training programme on roasting and brewing were conducted and a total of 111 beneficiaries participated.

- Three Short Term Executive Programme (STEP) on coffee

entrepreneurship were conducted in Jaipur, Bhubaneswar & Indore. 53 participants were trained on setting up of coffee roasting unit and retailing business.

- Twelve students of the 2016 - 17 batch of the PG Diploma in Coffee Quality Management have successfully completed the course. Twelve students of 2017-18 batch have completed 1st trimester at CCRI and 2nd trimester is under progress at Coffee Quality Division in Bengaluru.

- The coffee samples selected for the final round of cupping of "Flavour of India-Fine Cup Award-Cupping Competition 2017" (25 Arabica & 20 Robusta samples) were judged by a panel of nine international jury during the Speciality Coffee Association's World of Coffee Event held from 11th to 15th June 2017 at Budapest, Hungary.

Extension and Development

A. Traditional Areas

- Extension personnel carried out 221 estate visits, conducted 1061 field demonstrations, issued 337 advisory through print / electronic / social media to educate the growers on various aspects of coffee cultivations, formed 189 Farmer Field Schools, conducted 372 group meetings / seminars / village level meetings and 43 vocational training programmes.

- Pending subsidy claims under the component "Development Support for coffee in Traditional Areas" was cleared benefitting a total area of 2,936.01 Ha. under re-plantation /expansion, 4,852 units under water augmentation, 2,591 units under quality up-gradation and 14 units under pollution abatement programme.

- Pending subsidy claims under the sub-component "Support for Mechanization of Coffee Estate Operations" was cleared benefitting 3,787 growers .

B. Non Traditional Areas (Andhra Pradesh & Odissa)

- Extension personnel carried out 1,813 coffee estates holdings visits, 1,061 field demonstrations and 153 group gatherings for the benefits of coffee growers.

- Awareness campaigns conducted in the tribal areas covering 655 tribal growers to educate on various aspects of coffee cultivation.

C. North Eastern Region

- Extension personnel carried out 3,149 coffee holdings visits, 1,840

method demonstrations, 181 group gatherings and 57 quality awareness campaigns to educate the coffee growers on various aspects of coffee cultivation.

- Support was extended to 510.58 Ha. under coffee expansion/ consolidation and construction of 68 drying yards/water augmentation.

Promotion

- The Board participated in 12 overseas exhibitions and organized four special events/buyers-sellers meet/cupping sessions with active involvement of the Indian Coffee exporters.
- The prestigious event of the Coffee Board, Finals of the Cupping Competitions-Flavour of India was held during June 2017 in Budapest, Hungary.
- The Board participated in 18 reputed domestic exhibitions after identifying the potential areas to promote coffee consumption.

Market Research & Intelligence

- Annual crop estimation, analysis of market trends, maintenance of Database on Coffee and periodical research reports were carried.
- Economic and analytical support was rendered on WTO and trade policy matters of Coffee. During the year 2017-18, a total of 230 daily market reports were generated and disseminated.
- The activities of the Export Section were coordinated by the unit. The monthly “market watch” column in 'Indian Coffee' magazine was contributed by the unit. The unit also provided weekly estimated indicator prices for all grades of coffee to domestic auction centre, ICTA.

Administration

- Two Board Meetings were convened during the year.
- The Staff Strength of the Board as on 31.03.2018 was 771 employees comprising of 86 Group 'A' officers 171 Group 'B' Officers and 514 Group 'C' officials.
- No officers / officials were recruited during 2017-18. Seven Officers / officials were promoted during the year.

Vigilance & Legal

- Vigilance Division concluded 6 cases by awarding penalty out of 18 cases.

- Vigilance Awareness week was observed in the Board's offices across the Country between 30th October, 2017 and 4th November, 2017.
- Out of 67 court cases, 3 cases were disposed and 64 court cases are pending.

Right to Information

- 100 applications were disposed-off out of 102 applications received.
- Four appeals were disposed-off out of five appeals received.

Engineering Unit

- The Engineering Unit has taken up the maintenance works of Board's buildings under the Infrastructure development and a sum of ₹2,71,39,039/- has been incurred towards the maintenance works during the financial year.

Official Language Implementation

- The compliance of Section 3(3) of the Official Languages Act 1963 was adhered and all the reports sent to the Central Government were prepared in bilingual form.
- The consolidated Quarterly Progress Report regarding progressive usage of Hindi were submitted online as per rules to the Department of Official Language. Ministry of Home Affairs, New Delhi.
- Inspections regarding Official Language Implementation were conducted in 13 various sub-offices situated in Karnatatka, Kerala and Tamil Nadu States.
- To commemorate the 50th year of Indian Independence one Rolling Shield was instituted by coffee Board and an Inter-organizational Speech Competition is organized every year for all the officers / officials of Central Govt., offices under auspice of TOLIC, Bengaluru. Accordingly, the competition was held on 09.08.2017 wherein 39 participants from 25 Central Govt./PSU took part in competition and Airforce, Jalahalli bagged the Rolling Shield. The Rolling Shield and prizes for the individual winners were given on the Hindi Day celebrations.
- Hindi workshop was organized in each quarter at HO of the Board and in the year under review, the training was imparted in the workshops for a total number of 29 officers/officials.
- Seven one-day Hindi workshops

were conducted in the Extension offices of the Board during the year, in which 90 officers/officials actively participated.

- As per the guidelines of Department of Official Languages, necessary guidelines were issued to the concerned for the effective implementation of official language.
- Senior officials and representatives of Official Language Wing, Head Office attended both the half yearly meetings conducted by Town Official Language Implementation Committee (office-2), Bengaluru.
- Under the Auspicious of TOLIC (office-2), Bengaluru, Joint Hindi Day Celebration, "Oral Quiz Competition" was organized by Coffee Board on 10.10.2017. 36 participants from 12 various organizations participated in this competition.

E-Initiatives

- Online module for obtaining Export Permit and Certificate of Origin was brought in place replacing the manual system.
- Online module for receiving, processing and sanction of the subsidy application for different sub components of component Coffee Development Programme in Traditional Area under the "Integrated Coffee Development Project" was implemented.

Technology Initiatives

- **India Coffee Field Force App**-in order to ease the work of field functionaries and to improve the work efficiency, Board in association with National Institute for Smart Government (NISG), has developed a Field Force Mobile App.
- **Coffee Board and Precision Agriculture for Development India Foundation (PADIF) Partnership**- a proposal has been submitted by PADIF, a company started by Professors of Harvard University, USA to provide mobile based digital extension services to coffee grower. They have proposed to cover 30,000 coffee growers during the eight month pilot project.
- **EKA Analytics** - a global leader in the Data Analysis, Artificial Intelligence and Digital Community Management forms for agriculture has initiated the pilot projects on Hyper Local Weather Forecast, Disease Prediction, Pest Identification and Blockchain & Smart Contract for Indian Coffee. Eka analytics will run the pilot upto

March 2019.

- **BigHaat -** an online input delivery system and **Samunnati** who offer financial, co-financial and non-financial solutions to marginal, small and medium farmers, agri entrepreneur and wholesale / retailers. Here, Coffee Board is introducing BigHaat and Samunnati to coffee growers with no financial commitments from Coffee Board.

- **Coca Cola Corporation RTD India Coffee Drink -** Coco-cola has come forward to promote Ready to Drink (RTD) India Coffee. Coffee Board has to provide technical support to develop the blend.

- **GI Tag -** Coffee Board has submitted applications for registering GI certification for region specific coffees grown in the regions of Bababudangiris, Chikkamagaluru, Coorg, Wayanad and Araku regions.

Trade Infrastructure for Export Scheme (TIES)

Coffee Board is establishing a state-of-the-art Laboratory Infrastructure for Coffee Quality & Export Certification under TIES of Ministry of Commerce and Industry, Government of India. The total project outlay is ₹ 11.40 Cr in the form of grant-in-aid with 50% equity of total project cost from Coffee Board as an implementing agency.

Major Achievements

- Coffee Board launched "Soil Health Cards"and Kaapi Soil Health Monitoring and Management (KSHEMAM) Website for coffee plantations on 21st April 2017 in Bengaluru. 5,336 growers were registered under Kshemam. 6,344 Nos. of soil samples collected and issued equal numbers of Soil Health Cards to the concerned.

- Coffee scented Postage Stamp released in Bengaluru on 23rd April 2017.

- 3,16,000 MT of coffee produced in the country.

- During 2017-18, export permits for export of 3,94,559 MT of coffee (including 67,622 MT of re-exports) were issued which is highest ever volume so far exported by the country.

- An area of 3,163 Ha. has been brought under coffee cultivation expansion in traditional area with improved high yielding, disease resistant varieties.

- An area of 4,449.44 Ha. has been

brought under coffee in Non-Traditional Areas (Andra Pradesh & Odisha).

- An area of 522.54 Ha. has been brought under coffee area and 107 ha coffee area has been consolidated in NER to improve the plant population and yield.
- The total reach achieved through the digital and social media platforms of Facebook and Twitter was 1.40 Cr which engaged a total of 13.79 lakh internet users.

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CHAPTER – II

CONSTITUTION AND FUNCTIONS OF THE BOARD

Coffee Board is a statutory organization under the control of Ministry of Commerce, Govt. of India constituted under the Coffee Act 1942, an Act enacted by the Parliament.

The Board comprises of 33 members, including Chairman and Secretary (who is the Chief Executive Officer of the Coffee Board) and 31 members including members of both the Houses of Parliament, members representing various interests of Coffee Industry appointed by the Government of India.

The Board was reconstituted for a period of three years from 15th December, 2015 by appointing 17 members. Further vide notification dated 9.03.2017, 9 more members were appointed to the Board; vide notification 11.05.2017, Chairman, Coffee Board was appointed; vide notification 16.05.2017, Secretary, Coffee Board was appointed as an Ex-Officio member of the Board; vide notification dated 18.05.2017, two Members of Parliament were appointed as members; vide notification 25.09.2017, One Members of Parliament (RS) and one member to represent Government of Principal coffee growing state, Kerala were appointed as member.

Further, in exercise of the powers conferred by sub-section (2) of Section 48 of the Coffee Act, 1942 (VII of 1942), the Central Government amended certain provisions of the Coffee Rules, 1955 vide notification dated 04.07.2016.

List of members of the Board for the year 2017-18

Sl. No.	Category	Appointed under Coffee Rules, 1955 (Amendment) Coffee Rules, 2016	No.	Name
1.	Chairman	Rule 3 (1)	1	Shri. M.S. Boje Gowda,
2.	Members of Parliament (LS)	Rule 3 (1)	2	Kum. Shobha Karandlaje,
	Members of Parliament (RS)	Rule 3 (1)	1	Smt. Pratyusha Rajeshwari Singh, Shri. K. R. Arjunan

Sl. No.	Category	Appointed under Coffee Rules, 1955 (Amendment) Coffee Rules, 2016	No.	Name
3	Representing Governments of Principal Coffee Growing States	Rule 3 (2)(a)	4	Shri. Gagandeep Singh Bedi,I.A.S. Agricultural Production Commissioner & Secretary to the Government, Govt. of Tamil Nadu, Shri. T.R. Meena, I.A.S. Agriculture Production Commissioner & Principal Secretary, Govt. of Kerala, Shri. M. Maheshwar Rao, I.A.S, Secretary to Govt,, Dept. of Agriculture, Govt. of Karnataka, Shri. Shamsher Singh Rawat, I.A.S., Principal Secretary, Tribal Welfare Dept., Govt. of Andhra Pradesh,
4	Representing Large Coffee Growers	Rule 3 (2)(b)	3	Shri. Aroor Ramesh Rao Shri.Bottangada M. Raju, -*Vacant*-
5	Representing Small Coffee Growers	Rule 3 (2)(b)	7	Shri. M.L. Kallesh, Shri. Lokula Gandhi, Shri. K. Uday Kumar Hegde, Shri. M.B. Abhimanyu Kumar, Shri. N.B. Udaya Kumar, Shri. K. K. Manukumar -*Vacant*-

Sl. No.	Category	Appointed under Coffee Rules, 1955 (Amendment) Coffee Rules, 2016	No.	Name
6	Representing Coffee Trade Interests	Rule 3 (2)(c)	3	Shri. Pradeep Pai B.H.V, Shri. Machamada Dally Chengappa *-Vacant-*
7	Representing Curing Establishment Interest	Rule 3 (2)(c)	2	Shri G.L. Nagaraju Shri B.S. Santhosh,
8	Representing Labour Interests	Rule 3 (2)(c)	3	Shri G. Ramakrisna Reddy, Shri Vishwanath Shetty, *-Vacant-*
9	*Ex-Officio Member*	Rule 3 (2)(c)	1	Shri Srivatsa Krishna, I.A.S. Secretary, Coffee Board, Bengaluru
10	Representing Coffee Growing states other than Principal Coffee Growing States	Rule 3 (2)(c)	2	*-Vacant –* *-Vacant-*
11	Representing Consumers Interests	Rule 3 (2)(c)	2	Dr. Vikram Sharma, Mrs. Reena Prakash, (Vice–Chairperson)
12	Representing Instant Coffee Manufacturers	Rule 3 (2)(c)	1	*-Vacant-*

Sl. No.	Category	Appointed under Coffee Rules, 1955 (Amendment) Coffee Rules, 2016	No.	Name
13	Eminent personality in the field of Research / Marketing / Management / Promotion of Coffee	Rule 3 (2)(a)	1	Shri. G.S. Mahabala,

Functions of the Board

The main functions assigned to the Board are:-

1. Promotion of agricultural and technological research in the interest of the coffee industry.
2. Assistance to Coffee Estates for their development.
3. Promotion of the sale and consumption in India and elsewhere of the coffee produced in India.
4. Management of the other operations as per the provisions of the Coffee Act.

Besides, the Board gathers statistical and other relevant data concerning the industry and disseminates the information to various segments of the industry; acts as a recognized spokesperson on behalf of the coffee industry to the Government, media, trade and general public; and provides guidance for the overall growth and development of the coffee industry in the country.

The Coffee Board represents the Indian coffee industry in the International forum viz., International Coffee Organization, International Science Organizations, Specialty Coffee Associations and work with them for the benefit of coffee industry.

Statutory Committees

The Board functions through six Statutory Committees which are appointed for one year term each and the functions of each committee as per the Coffee Act are:

Sl. No.	Name of the Committee	Functions
1.	Executive Committee	Deals with functions specifically assigned to it under the Coffee Rules. In addition to that deals with matters not specifically assigned to the Propaganda, Marketing, Research, or any other committees constituted by the Board.
2	Propaganda Committee	Deals with matters relating to promotion of sale and increasing the consumption in India and elsewhere of the coffee produced in India.
3	Marketing Committee	Deals with coffee marketing scheme as set forth in the Act and Rules.
4	Research Committee	Deals with promotion of agricultural and technological research in the interest of the coffee industry in India.
5	Development Committee	Deals with the measures that may be undertaken for the development of coffee estates.
6.	Quality Committee	Deals with all issues relating to the improvement in the quality of coffee produced in India.

Non-Statutory Committees

The Board also had one Non-Statutory Committee viz., Audit Committee as detailed below:

Sl. No.	Name of the Committee	Functions
1.	Audit Committee	Deals with the matters relating to Annual Accounts and also studies status of audit report on the accounts.

Details of the Meetings of the Board, Statutory Committees and Non-Statutory Committee held during the period from 01-04-2017 to 31-03-2018.

Board Meeting	(a) 202nd Board Meeting held on 8th June, 2017. (b) 203rd Board Meeting held on 7th February, 2018.
Statutory Committee Meetings	(a) 160th Research Committee Meeting held on 6th February, 2018. (b) 94th Development Committee Meeting held on 6th February, 2018. (c) 164th Propaganda Committee Meeting held on 6th February, 2018. (d) 97th Quality Committee Meeting held on 6th February, 2018
Non-Statutory Committee Meetings	27th Audit Committee Meeting held on 1st August, 2017

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CHAPTER – III

ADMINISTRATION AND ESTABLISHMENT

The Coffee Board is a statutory body constituted under the Coffee Act, 1942 (Act of 1942) having perpetual succession and common seal, with powers to acquire and hold property and to contract and to sue and to be sued.

During the period under report, the recommendations of the 7th CPC were implemented and pay revision of employees of the Board were attended thereon in terms of the CSS (RP) Rules, 2016 in accordance with the order of the Ministry of Commerce and Industry, Department of Commerce (Plantation Division) communicated vide F. No. 5/20/2008-Plant Coord dated 12th July, 2017.

CEO & Secretary

1. Dr. M.K. Shanmuga Sundaram, IAS – Up to 11.04.2017
2. Srivatsa Krishna, IAS – w.e.f. 12.04.2017 till the period under report

Head of the Departments

The following Heads of Departments held the posts shown against their names during the period.

1. Dr. Aarti Dewan Gupta, IDAS – Director of Finance– Up to 20.10.2017. Then onwards Dr. Y. Raghuramulu, Director of Research is holding the additional charge of Director of Finance
2. Dr. Y. Raghuramulu – Director of Research

The responsibilities assigned to different departments and the wings are as under:

1. Secretariat Department

The Secretariat Department is responsible for handling all administrative (staff and office establishment) and vigilance matters, allocation of work among various Divisions / Units of the Board and for monitoring compliance for furnishing information under the Right to Information Act, 2005. The department also deals with convening of meetings of the Board and Statutory Committees apart from monitoring the scheme on Labour Welfare Measures.

The six units attached to the Secretariat Department are:

I) Administration Unit

ii) Official Language Unit

iii) Vigilance Unit

iv) Legal Unit

v) Engineering Unit and

vi) RTI & Grievances Unit

2. Research Department

The Research Department is responsible to carry out research activities on various aspects viz., plant breeding, crop management, plant protection comprising of disease and pest management, post-harvest practices of on-farm processing, pollution abatement etc. The Research Department also renders various advisory services to the planting community besides conducting various training programmes for the benefits of different stakeholders. Analytical Laboratory and Quality Division are the other units of Research Department providing quality evaluation support to the coffee industry.

3. Extension & Development Department

The Extension Department of the Board is responsible for establishing linkage between the research fraternity and the coffee growers for continued transfer of technology with the objective of achieving higher productivity and quality levels of coffee. The department also extends development support to the coffee growers on various activities related to coffee cultivation, production and quality improvement.

4. Market Development and Promotion Department

The Export Unit of the department is responsible for registration of exporters, renewal of registration, issue of export permits and ICO certificate of origin for export of coffee from India, furnishing of periodical reports to the Ministry and ICO on coffee exports from India besides extending incentive support for export of high value coffee to far-off markets and to enhance export of value added coffee as Indian Brand and export awards in recognition of the best performance in coffee exports. The external promotion is responsible for participation in International Conferences, Events, deliberations of the International Coffee Organization and Brand Promotion activities. The promotional activity under domestic promotion includes participation in domestic events, media campaign and providing training to prospective entrepreneurs on setting up of Coffee Roasting, Grinding and Packaging Units. This training compliments the scheme for setting up of processing unit.

The Market Research & Intelligence unit carried out the activities of market information and intelligence as a part of Board's role as a facilitator to the industry in respect of coffee exports. It provides inputs on crop conditions, crop estimates and market data / information, monitors the export and provides useful trade

related data pertaining to the industry on a daily basis.

5. Accounts & Finance Department

The Accounts and Finance Department of the Board is responsible for allocation / administration of funds of the Board, maintenance of accounts and all matters relating to managing finances of the Board. The Internal Audit Party (IAP) of the Board is a part of the department for internal check of finance and accounts of the head office and sub offices to ensure better efficiency in functioning of the office and maintenance of records.

Secretariat Department

Administration Unit

(a) Recruitment

During the year, No officials were recruited in any cadres in the services of the Coffee Board due to austerity measures.

(b) Promotions

During the year, promotion orders were issued to a total of Seven (7) officials to officiate as detailed below:

Sl. No.	Cadre from which promoted	Promoted to the cadre of	No. of officers / officials promoted
1.	Senior Assistant	Asst. Secretary (Ministerial)	1
2.	Junior Assistant	Senior Assistant	6

(a) Modified Assured Career Progression Scheme (MACPS)

During the year no officials were granted financial upgradation under the Modified Assured Career Progression Scheme (MACPS).

(b) Modified Flexible Complementing Scheme (MFCS)

No officials were granted In-situ promotion under the Modified Flexible Complementing Scheme (MFCS) as the approval for extension of 7th CPC benefits to the Board's officials was received only during July 2017.

(c) Career Improvement Scheme (CIS)

No officials in Junior Level Scientific cadre were granted financial upgradation under the Career

Improvement Scheme (CIS) of the Coffee Board.

(d) Transfer and Postings

A total of 184 officials were transferred during the year 2017-18 which were effected based on general transfer guidelines. The details are as under:

Sl. No.	Cadre / Grade	No. of officers /officials transferred
1.	Group 'A'	1
2.	Group 'B'	39
3.	Group 'C'	144
Total		**184**

Employee's Welfare Measures: (01-04-2017 to 31-03-2018)

i) No Conveyance Purchase Advance was granted during the period under report.

ii) No Personal Computer Advance was granted during the period under report.

iii) No House Building advance was granted during the period under report.

iv) The Board has a tie up with the Life Insurance Corporation of India for operating the scheme called "Group Savings Linked Insurance". At the end of March, 2018, the scheme had 647 members on the roll comprising of different categories. An amount of ₹23,67,997/- was settled to 53 members during the financial year 2017-18.

Labour Welfare Measures

a) **Educational Stipends**: The stipends at the rate of ₹2,250/- were granted to those students who have passed SSLC examination in the academic year 2016-17 and who have taken up higher studies after SSLC, viz. 1st year PUC, Polytechnic / Vocational Training during the academic year 2017-18.

b) **Incentive Award:** An Incentive Award of ₹1,500/- and ₹1,000/- each were granted to one girl student and one boy student respectively in each division who have scored highest marks in the SSLC examination in the academic year 2016-17 and continuing further studies.

c) **Financial Assistance:** Financial Assistance were granted to eligible students who pursued graduation and professional courses after XII standard during 2017-18. The details of Financial Assistance granted are as detailed below:-

Financial Assistance

Details	₹ Per Head	
	SC	ST & Others
Financial Assistance		
a. Graduation (Arts, Science, & Commerce)	3,750/-	3,750/-
b. Post-Graduation	7,500/-	7,500/-
Financial Assistance Professional Course		
Medical Science, Agriculture and Allied Science / Animal Husbandry / Engineering / Pharmacy / Nursing / other equivalent degree	7,500/-	7,500/-

Fund Utilization During the Financial Year 2017-18

Particulars	No. of Beneficiaries	Amount (in ₹)
Educational Stipends	1,096	24,66,000/-
Incentive Awards	12	15,000/-
Financial Assistance		
(i) Graduation	1,532	57,45,000/-
(ii) Post-Graduation	210	15,75,000/-
(iii) Professional Course	167	12,52,500/-
GRAND TOTAL	**3,017**	**1,10,53,500/-**
Scheduled Tribe	691	22,97,250/-
Scheduled Caste	2,276	85,77,500/-
NER	50	1,78,750/-
GRAND TOTAL	**3,017**	**1,10,53,500/-**

A Sum of ₹1,10,53,500/- was granted to 3,017 beneficiaries during the year 2017-18 under Labour Welfare Measures.

Staff Strength of Coffee Board as on 31.03.2018

The details of group wise staff strength, number of Scheduled Caste and Scheduled Tribe employees and particulars of female staff strength of the Board as on 31.03.2018 is summarized below:

Sl. No.	Total		SC / ST				Female	
	Classification	No. of Employees	SC	ST	Percentage of SC /ST Representation		No. of Employees	Percentage of Female Representation
(1)	Group 'A'	86	12	7	13.95	8.14	15	17.44
(2)	Group 'B'	171	30	12	17.54	7.02	43	25.15
(3)	Group 'C'	514	95	29	18.48	5.64	122	23.74
Total :		**771**	**137**	**48**	**17.77**	**6.23**	**180**	**23.35**

Official Language Wing

The Official Language Wing adhered to the targets of the Annual programme issued by Ministry of Home Affairs, Govt. of India.

- Total no. of 9,098 documents were issued under section 3 (3) and rule 5 of O/L Act. Target of 60% in original correspondence and between 30-40%in noting were achieved.
- Organization of Workshops and Quarterly meetings, submission of Quarterly progress report through online etc., are done as per rules. Translation of documents related to Annual Report pertaining to Board, Induction Note and Replies in connection with visits of various Parliament Committees and Standing Committees were completed in stipulated time.
- Hindi Workshop was organized in each quarter at HO of the Board and in the year under review, the training was imparted in the Workshops for a total No. of 29 officers/officials. Apart from this, three workshops were conducted for Senior Officials of the Board by inviting well-versed speakers. A one day Hindi Workshop was conducted at CCRI, Balehonnur on 14.06.2017 in which 90 officers / officials were attended. Similarly, Hindi Workshops were organized at O/oDDE, Chikkamagaluru, Tissue Culture and Biotechnology Centre, Mysuru, CRSS Chettalli, O/o DDE, Madikeri, O/o JDE and O/o DDE, Hassan, RCRS Thandigudi, O/o DDE, Coimbatore, and RCRS Chundale on 15.06.2017, 19.07.2017, 20.07.2017, 17.10.2017, 25.10.2017, 26.10.2017, 01.03.2018 respectively.
- The special incentive scheme for doing original work in Hindi was implemented in Board for

Officers/Officials was continued for this year also. As per this scheme, any employee of the Board who writes 5,000 words in Hindi in the course of usual noting & drafting on files is eligible for an amount of ₹.5,000/-. eight Officers/Officials have participated in this incentive scheme and are eligible to be awarded the said amount.

- As per the guidelines of Department of Official Languages, periodic inspections related to Official Language were conducted in various sections of HO and 13 Sub-offices situated at Chundale, Kalpetta, Chettalli, Madikeri, Sunticoppa, Somwarpet, Virajpete, Hassan, Chikkamagaluru, CCRI, Mysuru, Thandigudi, Coimbatore and necessary guidelines was given for effective implementation of Official Language.

- To commemorate the 50th year of Indian Independence one Rolling Shield was instituted by Coffee Board and an Inter-organizational Speech competition is organized every year for all the officers / officials of Central Government offices under auspice of Town Official Language Implementation Committee (TOLIC), Bengaluru. Accordingly, the competition was held on 09.08.2017 wherein 39 participants from 25 Central Govt./PSU took part in competition and Air Force, Jalahalli bagged the Rolling Shield. The Rolling Shield and prizes for the individual winners were given on the Hindi Day Celebrations.

- Hindi Fortnight was conducted at Head Office from 01.09.2017 – 14.09.2017 and various competitions in Hindi were held during the fortnight for all the Officers/Officials of Head office. All the winners were awarded prizes on Hindi Celebration on 14.09.2017.

- Senior Officials and representatives of Official Language Wing, Head Office attended both half yearly meeting conducted by Town Official Language Implementation Committee (office-2), Bengaluru.

- Under the Auspicious of TOLIC (office-2), Bengaluru, Joint Hindi Day Celebration, “Oral Quiz Competition” was organized by Coffee Board on 10.10.2017. 36 participants from 12 organization participated in this competition.

- An officer of Official Language Wing, HO attended Five days Basic Computer Training Course at TAI Infotech, Marthahalli, Bengaluru from 23rd to 27th October 2017.

- Two officers of Official Language Wing attended five days Translation Refresher Course at Central Translation Bureau, Kendriya Sadan, Bengaluru from 19th to 23rd Febraury 2018.
- DD (OL) and three officers of OL Wing, HO participated in the Prize Distribution Ceremony under Joint Hindi Day Award function organized by O/o Chief Postmaster General, TOLIC (O-2) GPO, Bengaluru on 27.11.2017.
- The translation work of "Coffee Guide" in Hindi has been fully completed. Printing work is in progress.
- Half yearly House Magazine in Hindi "ANKUR" has been printed and released.
- "Rajbhasha Keerthi Puraskaar" for the year 2017-18 has been introduced for the best performance in Official Language implementation for Head Office as well as sub-offices of Coffee Board.
- A "Coffee Glossary" has been prepared and the same has been given for printing to smoothen the Official Language implementation of the Board.
- During the year, O/o JD(E), Hassan has bagged the Third Prize from the TOLIC, Hassan for the best performance in the Progressive use of Official Language.

Vigilance Unit

The Vigilance Unit is responsible for carrying out the following

- Receiving complaints and taking action thereof.
- Verification of character and antecedents of persons recruited to the Board's service, preparation and submission of periodical returns to the Ministry of Commerce & Industry.
- Issuance of Vigilance clearance in respect of officers / officials of Coffee Board for various purposes.
- Processing of applications seeking permission for acquiring moveable and immoveable properties of officers / officials of the Board and scrutinizing the immovable property returns filed by the Group 'A' & 'B' officers
- Surprise vigilance check of sub offices and various sections at Head Office.
- Processing of files relating to disciplinary proceedings.

Further, the Vigilance Awareness Week was conducted during 2017-

18, i.e. from 30th October 2017 to 4th November 2017.

Details of Pending Vigilance Cases from 01.04.2017 TO 31.03.2018

1) Pending Disciplinary cases as on 01.04.2017: **17 Cases**

2) Disciplinary Cases Concluded during the year 01.04.2017 to 31.03.2018: **6 Cases**

3) Disciplinary Cases Added during the year 01.04.2017 to 31.03.2018: **1 Case**

4) Disciplinary Cases pending as on 31.03.2018: **12 Cases**

Details of Pending Disciplinary cases as on 31.03.2018 are as under:

Sl. No.	Name of the Officer/Official	Gist of the Case	Status of the cases
1.	K.Chanda Pillai, MTS(Retired)	Unauthorized absence from duty	Final Decision of the DoC, MoC & I is awaited on the findings of the DA/Chairman sent to MoC during 2011
2.	K.Abdulla, Junior Liaison Officer (Retired)	(a)Non recovery of HBA interest dues from the pay blll/misuse of the official position of pay drawing officer (b) acquired immovable properties without the previous knowledge of the competent authority & (C) holding the post of Honorary Secretary, Wayanad Horti-Agriculture Society, Kalpetta without taking permission of the competent Authority.	After completion of the inquiry process, findings of the Disciplinary Authority were submitted to DoC for passing Final Orders.
3.	M.Selvakumar, Deputy Director (R) (Retired & Expired)	Serious financial irregularities caused loss of ₹24,97,017/- to the Board	After completion of Inquiry process, findings of Disciplinary Authority were forwarded to the Department of Commerce for orders.
4.	M.R.Ramaswamy, Junior Liaison Officer, (Retired)	Irregularities in the processing of subsidy claims while working at Srimangala recommended for inflated subsidy causing loss to the Board/Govt and permitted to demolish portion of office building taken on rent without the knowledge of competent authority.	After completion of the inquiry process, findings of the Disciplinary Authority were submitted to DoC for passing final orders.

Sl. No.	Name of the Officer/Official	Gist of the Case	Status of the cases
5.	H.Hanume Gowda, Asst. Secretary (Retired)	False Retirement TA Claim, failure to submit immovable property returns.	After completion of Inquiry process, findings of Disciplinary Authority was submitted to DoC for passing final orders.
6.	R.Madhavan, Junior Liaison Officer, (Retired)	Irregularities in the processing of subsidy files / manipulation of subsidy bills.	After completion of Inquiry process, findings of Disciplinary Authority was submitted to DoC for passing final orders.
7.	Ramesh Kumar Sharma, Asst. Secretary (Retired)	Defalcation of 470.5 Kgs of Coffee and siphoned of ₹2,11,725/- and attempted to defalcate 67.8 Kgs of coffee worth ₹27,000/-and insubordination.	After completion of Inquiry process, findings of Disciplinary Authority was submitted to DoC for passing final orders.
8.	M.Venkatagiriappa, Asst. Secretary (Retired)	(i)failed to safe guard Government records, (ii)responsible for non-furnishing replies to outstanding audit enquiries (ii)willful insubordination and caused loss of ₹2,16,098/-to the Board / Government	After completion of the Inquiry process findings of the Disciplinary Authority forwarded to the Ministry for passing final orders.
9.	P.T.Jayan, Extension Inspector	Manipulated entries in the mechanization register dealing with subsidy applications of the coffee growers under various schemes of the Board.	Inquiry process under progress.
10.	S.Pradeep Kumar, Extension Inspector	Unauthorized absence from duty	Inquiry process completed and final orders to be passed
11.	V.S.Amaravenmathy, Subject Matter Specialist	Drawn HRA while in occupation of Govt accommodation by playing fraud evaded payment of income tax by furnishing fake rental receipts, attempted to siphon off pensionary benefits of her late father by filing fake affidavit.	After hearing the Charged Officer, the Disciplinary Authority has directed to refund the HRA drawn & imposed a penalty of ₹10,000/-. Final orders to be passed by the Disciplinary Authority.
12.	Kishori Mohan Jana, Multi Tasking Staff	Unauthorized absence from duty	The Charged officer was permitted to rejoin duty as per medical certificate produced by him and a final order to be passed.

Legal Unit

The Legal cell is responsible for carrying out the following functions:-

- Attending to all the Board's Legal matters pertaining to Marketing / Tax and Labour etc.,
- Attending litigations pending before various courts viz., Supreme Court, High Courts, Labour Courts, Lower Courts and Sales Tax Appellate Forum etc., of respective states.
- Co-ordinating and assisting the Board's advocates with relevant records to enable the advocates in preparing the plaints/counter and for arguments.
- Attending to correspondences connected with Tax (both Sales Tax / Purchase Tax and Service Tax), Service matters, Amendments to Coffee Act and correspondence with the Ministry of Commerce relating to above matters.
- Advising the concerned section connected with filing of periodical returns under VAT, Service Tax, Professional Tax, GST etc., and pay the tax due wherever payable.
- Furnishing of opinion on files being referred by various sections, viz., Export, Pension, Engineering, Administration etc.

Status of Court Cases

62 cases were pending at the beginning of the year and 5 new cases were added. Out of this 67 cases after disposal of 3 cases 64 cases are still pending at the end of the year. In this, 34 cases pertain to Service Matters [including SLP matters], 8 cases pertain to Marketing and 22 matters pertain to others.

Status of Tax Disputes

The Coffee Board has challenged the order dated 8.5.2015 confirming the Levy of Service Tax of ₹86,59,746/- for the years 2008-09 to 2012-13 on the income received towards rent. For obtaining stay of the Impugned Demand, in terms of the provisions of the act, the Board has remitted ₹6,49,481/- being the 7.5% of the Impugned Tax. The appeal is admitted and pending for further hearing and disposal.

Government of Tamil Nadu

The Board availed the Samadhan Scheme for settlement of arrears of tax/penalty/interest and paid ₹6.80 crores in full and final settlement against the demand of ₹12 crores and interest/ penalty. The Board has taken up the matter with the concerned Authorities of the Government of Tamil Nadu to obtain

confirmation certificate on the waiver of remaining tax and interest dues after settling the reduced tax for the assessment years 1983/84, 1987/88 to 1996/97. The necessary clarification sought by the Department was furnished. The receipt of the confirmation certificate is awaited.

Government of Kerala

The High Court of Kerala vide its order dated 29/8/2008 set aside the orders passed by the STAT confirming the levy of CST for the years 1984/85 to 1990/91, 1994/95 to 1996/97 and remanded the matter to the Assessing Officer to re-examine the issue in accordance with the law. Similarly, in respect of the Appeals for the year 1991/92 to 1993/94 and 2000/01 under CST and for the year 1991/92 to 1993/94, 1996-97 and 1997-98 under KGST, the STAT vide its order dated 26/9/2012 remanded the matter to the Assessing Officer. The Board produced the available relevant records to drop the demand. However, the assessing officer vide order dated 14.3.2014 confirmed the levy of CST and raised demand of ₹34.53 crores and interest of ₹174.09 crores aggregating to ₹208.62 crores for the years 1984/85 to 1990/91, 1994/95 and 1995/1996. The Board filed first appeal and 2nd appeal before the STAT, Palakkad, Kerala. The STAT after hearing the matter in detail passed an order dated 20.5.2016 directing the Assessing Officer to give opportunity to Board to produce the records and hear in person. However, the State of Kerala filed Revision petitions before the High Court of Kerala which are pending for disposal.

ENGINEERING UNIT

Coffee Board owns office buildings at various places spread across the country viz., Bengaluru, Mysuru, Chikkamagalur & Hassan (Karnataka); Chennai & Bodinayakanur (Tamil Nadu); Guwahati& Silchar (Assam); Chinthapalli& Arakuvalley (Andhra Pradesh) and also owns Residential flats in New Delhi, Bengaluru & Hassan (Karnataka); Bodinayakanur (Tamil Nadu) Guwahati & Silchar (Assam) and Chinthapalli & Arakuvalley (Andhra Pradesh).

Besides, there are Research Stations and Residential quarters at Central Coffee Research Institute in Chikkamagaluru district; Coffee Research Sub Stations at Chettalli (Near Madikeri) in Karnataka; Regional Coffee Research Stations at Chundale in Kerala; Thandigudi in Tamil Nadu; R.V.Nagar in Andhra Pradesh and Diphu in Assam. The Technology Evaluation Centres maintained by the Extension Department in the states of Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Odisha, Assam, Arunachal Pradesh, Tripura & Mizoram. India Coffee House in Bengaluru and India Coffee Centre at Bhopal are also owned and maintained by the Coffee Board.

The Engineering Unit has taken up the maintenance works of Board's buildings under the Infrastructure development and a sum of ₹ 2,71,39,039/- has been incurred towards the maintenance works during the financial year.

Right to Information

Under the Right to Information Act - 2005, the Board has received a total number of 99 applications from the citizens of India seeking information/documents during the year 2017-18 and including a backlog of 03 applications from the previous year, there were 102 applications for disposal. A total number of 100 applications have been disposed during the year leaving behind 02 applications pending.

A total number 05 appeals were received during the year 2017-18 and 04 appeals have been disposed leaving behind 01 appeal pending.

Details of RTI application for the year 2017-18

1.	Opening Balance	03
2.	Receipts during the year	99
3.	Total	102
4.	Disposal during the year	100
5.	Pending during the year	02

The details of the pending RTI applications are as under:-

Sl. No.	Name of the applicant S/s	Date of receipt of application	Information Sought
1	L. Nagabhushana Rao	28.3.2018	Information on Officers/Staffs appointed on contract basis/on deputation basis from the year 2011 onwards and monthly remuneration paid to them.
2	B.K. Doddanke Gowda	28.3.2018	Information on purchase / selling of Cars-Head Office / Sub-Office / Field Units.

E-office

To improve efficiency, consistency and effectiveness apart from transparency and accountability, the Coffee Board in association with NIC is in the process of implementing E-office. The implementation is under trial at Head Office of the Board. Initially, the E-office will be implemented in a full-fledged manner at Head Office and subsequently it will be implemented in all the sub offices of the Board.

CHAPTER – III (A)

DETAILS OF STAFF WITH DISABILITY

During the reporting period, a total of 17 persons with disabilities are working in the Coffee Board. The cadre wise details are as under:

Sl. No.	Cadre	Group	Personnel Existing	No. of Persons with Disability		Category-wise Persons with Disability		
				No.	Percentage of PwD representation	UR	SC	ST
1.	Dy. Director (Research)	A	5	1	20.00	1	--	--
2.	Junior Liaison Officer	B	22	1	4.55	1	--	--
3.	Research Assistant Gr. I	B	30	3	10.00	3	--	--
4.	Asst. Secretary (Minis.)	B	44	1	2.27	1	--	--
5.	Junior Hindi Translator	B	4	1	25.00	1	--	--
6.	Extension Inspector	C	121	2	1.65	2	--	--
7.	Senior Assistant	C	88	1	1.14	1	--	--
8.	Junior Assistant	C	20	6	30.00	6	--	--
9.	Multi-Tasking Staff	C	238	1	0.42	1	--	--
		Total:	**572**	**17**	**2.97**	**17**	--	--

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CHAPTER – IV

COFFEE RESEARCH

The Coffee Board Research Department has implemented a number of research studies under the scheme *viz*., "Integrated Coffee Development Project" during the current year 2017-18.

The research projects were implemented through a network of Research Stations of the Central Coffee Research Institute (CCRI) located at Chettalli (Kodagu, Karnataka), Chundale (Wayanad, Kerala), Thandigudi (Pulneys, Tamil Nadu), R.V. Nagar (Vishakapatnam District, Andhra Pradesh) and Diphu (Karbi Anglong District, Assam). Besides these, the research programmes were also implemented in two research divisions *viz*., Plant Tissue Culture & Biotechnology Centre, Mysuru and Coffee Quality Division, Bengaluru.

The salient findings during the year 2017-18 under different research projects are as follows:

Scheme: Integrated Coffee Development Project

Component 1: Research and Development for Sustainable Coffee Production

Sub-component 1.1: Plant Improvement for Durable Resistance and Increased Productivity through Conventional Breeding and Biotechnological Approaches.

Division of Plant Breeding and Genetics

During 2017-18, the major focus on Arabica Coffee improvement has been field establishment of F_1 hybrids effected from crosses between select male sterile lines and distant pollinator parents, field planting & monitoring of advanced breeding lines, field evaluation of promising genotypes in different agro-climatic zones and breeding for durable rust resistance & White Stem Borer tolerance.

A total of eight F_1 hybrid progenies comprising of 5 progenies raised from crosses between two male sterile plants (S.2660 & S.2678) & four different pollinators *viz*., Cavimor, S.2577, S.2593, S.4595, performed during 2015 season and three progenies raised from crosses between male sterile plants & S.2577 (S.333 x HDT- 832/2) & Kawisari hybrid as pollinators, performed during 2016 season were field planted during 2017 season.

Monitoring of the extended trial plots established with the three promising Arabica genotypes (S.4814, S.4817 & S.5146) has been continued.

Observations on growth parameters recorded from eight plots in Karnataka & four plots in Tamil Nadu revealed between the two semi-dwarf genotypes, S.4817 recorded superior growth over S.4814. However, the vegetative vigour was on par with Chandragiri planted as check variety in all the locations. Among the tall varieties, S.5146 recorded superior growth over Sln.5B in all the observed plots planted with these two tall varieties.

Seed material of promising Arabica genotypes *viz*., S.5149, S.5327 S.5328, S.5329 S.5146 and S.4932 was supplied to 24 growers (15 in Karnataka, 7 in Tamil Nadu & 2 in Kerala) during 2016 season to establish observation plots. Of these, the plots were established in three plantations in Karnataka during 2017 season and in all other remaining locations, the plants are going to be planted during 2018 season. Further, during 2017-18, 10 new Arabica genotypes (S.5327, S.5328, S.5329, S.5083, S.5084, S.5085, S.5086, S.5188, S.5168, & S.5171) were distributed to 9 planters (5 in Karnataka & 4 in Tamil Nadu).

Field evaluation of five reciprocal F_1 hybrid progenies (S.5052, S.5053, S.5057 S.5058 & S.5059) raised from crosses between Sln.10 x S.4808 (Catuai x HDT) has been continued at CCRI. Among the hybrids, S.5059 (HDT x Catuai- 4/5 x Sln.10 - 1/8) recorded consistent performance with maximum projected yield of 828 Kg clean coffee / Ha. during 2017 season and mean yield of 923.5 Kg clean coffee / Ha. for the last two years. The progeny also recorded maximum 'A' grade beans, 72.6% and 71.4% during 2016 & 2017 crop seasons, respectively and manifested high tolerance to leaf rust with 2.2% susceptible population. Considering the consistent performance, five elite plants in S.5059 progeny were selfed and bulk progeny has been raised for planting during 2018 planting season.

As part of germplasm conservation programme, 1,260 plants covering 63 Ethiopian Arabica collections were planted at CCRI during 2017 season. In order to establish duplicate gene bank at CRSS, Chettalli, topee seedlings of 48 Ethiopian collections were supplied that are going to be planted in field during 2018 season. Additionally, selfed seedlings have been raised from 237 accessions covering World collections, Abyssinian collections, Costa Rican collections, Portugal hybrids and Ethiopian collections during 2017-18 season for consolidation of germplasm block at CCRI and also for supplying to RCRS, R.V.Nagar to establish a new gene bank.

Field performance of F_2 progenies of *Colombian catimor* crosses (S.5039,

S.5040 & S.5044) have been monitored at CCRI. Among the progenies, S.5039 (S.4817 2/9) recorded superior yield performance (962 Kg clean coffee / Ha.) and bean grades (67.4% 'A' grade). Observations on Coffee Leaf Rust indicated 15% of the population manifested mild susceptibility. Five elite plants with superior agronomic characters were marked and bulked F_3 progeny has been raised for field planting during 2018 season. Two individual F_3 progenies raised from S.5039 2/8 and S.5039 4/8 were planted in field during 2017 season for further evaluation.

Further, among the three bulk F_2 progenies of the same crosses (S.5045, S.5046 & S.5047) under observation at RCRS, Thandigudi, the progeny S.5046 recorded superior performance with projected yield of 703.2 Kg clean coffee / Ha., low rust incidence and high percent of 'A' grade beans (72.14%).

The F_1 progenies, S.5081 & S.5082 derived from reciprocal crosses between a spontaneous tree coffee hybrid (TCH) & Chandragiri planted at CCRI during 2012 continue to exhibit variable performance with respect to plant phenotype, fertility status, yield potential and bean quality traits. Both the progenies recorded high proportion of pea berry bean grade (over 60%) for the last two consecutive seasons. With an objective of improving the fertility, selected F_1s were back crossed to Chandragiri in reciprocal manner during 2016 season and eight backcross progenies were planted in field during 2017 planting season.

Evaluation of three progenies, S.5327 (S.4889-23/11), S.5328 (S.4889-24/2), and S.5329 (S.4890 25/1) derived from crosses between Sln.7.4 x S.3822 established at M/s. Kathlekhan Estate, Chikkamagaluru zone has been continued. These progenies recorded consistent performance and the fruit yield ranged from 2 to 3 Kg/plant with projected yields of 1474 Kg clean coffee / Ha. (S.5327), 1,891 Kg clean coffee / Ha. (S.5328) and 1,517 Kg clean coffee / Ha. (S.5329) during 2017-18 season. A total of 13 individual plant progenies covering all the three genotypes were planted at CCRI during 2017 season. Bulk progenies have been raised at CRSS, Chettalli for establishing field plots during 2018 planting season.

In order to improve the rust resistance in S 4889 and S 4890 progenies (Sln.7.4 x S.3822) by integrating SH_3 genes, reciprocal crosses were performed between these genotypes and Sln.10 as donor for SH_3 gene. Four F_1 progenies (S.5117 – S.5119) established in field at CCRI during 2013 have been evaluated for growth parameters and yield component characters. The progeny,

S.5119 (S.4890 25/1 x Sln.10 12th plant) recorded superior values over other progenies. The progenies yielded first crops during the current year and the preliminary analysis for bean grades revealed that the 'A' grade beans are over 60% in all the progenies

At CRSS Chettalli, evaluation of different inter-varietal hybrids have been continued and among the different progenies, S.5146 (Sln.5B x HDT) recorded superior performance with maximum projected yield of 1,083 Kg clean coffee / Ha. and high per cent of 'A' grade beans (78.6 %).

Four F_1 progenies (S.5083 to S.5086) developed from reciprocal crosses between Chandragiri (S.4202) x Sln.10 with an objective of pyramiding *SH*$_3$ rust resistance gene with other resistance genes have been continuously monitored for field tolerance to rust in order to assess the durability of rust resistance. The rust susceptibility was 2.5% in S.5086 (Chandragiri x Sln.10), 5% in S.5085 (Sln.10 x Chandragiri), 12.5% in S.5084 and 17.49% in S.5083. With respect to progeny yields, S.5086 recorded the maximum projected yield of 1,199 Kg clean coffee/Ha. followed by S.5085(1,102 Kg/Ha.). The performance of S.5086 is found consistent with mean yield of 1,101 Kg clean coffee / Ha. and 68.5% 'A' grade beans for the last two years.

At RCRS, Thandigudi crosses were made between selected plants of S.3822 & Sln.10 and 11 F_1 progenies were established in field at RCRS Thandigudi during 2011. Among these 11 progenies, maximum projected yield 1,995 Kg clean coffee/Ha. was recorded in S.5323 followed by 1,973 Kg clean coffee/Ha. in S.5318 and 1,967 Kg clean coffee/Ha. in S.5319. The rust susceptible population varied between nil (S.5319) to 22.4% (S.5323). All the progenies except S.5324 recorded bold bean size with 'A' grade beans ranging from 65 to 80% (S.5315). Based on overall performance, the progeny S.5319 (S.3822 (15/11) x Sln.10 (2/5) was found to be superior with mean yield of 1,491 Kg clean coffee / Ha. and 75% 'A' grade beans for the last two years and the entire progeny was free from Leaf Rust.

With an objective of integrating *SH*$_3$ gene for rust resistance in Cavimor (S.5149) to improve the durability, rust resistance, reciprocal F_1 hybrids (S.5168 & S.5171) were developed from crosses between Cavimor and Sln10 and field established at CCRI. Similarly, two other F_1 progenies were generated from crosses involving Chandragiri, Cavimor and Kawisari hybrid as donor for resistance and planted at CCRI during 2014. Evaluation of these progenies revealed progeny S.5168 (Cavimor x Sln.10) recorded maximum yield of 1,189 Kg clean coffee/Ha. as against 868 Kg clean

coffee / Ha. in its reciprocal progeny. Both the progenies were free from the rust. The progenies developed from Kawisari as donor (S.5169 & S.5170) though found free from rust, recorded very low yields.

Marker assays with SCAR markers linked to SH_3 gene have been performed jointly with Biotechnology centre, for parental selection and also for tracking SH_3 gene in F_1 and F_2 progenies derived from crosses between different semi-dwarf genotypes and Sln.10 (used as donor for SH_3 gene). Based on the amplification profiles, the plants homozygous to SH_3 gene have been identified and used for raising advanced breeding lines.

In order to develop heterotic F_1 hybrid with durable rust resistance crosses were made between Chandragiri and S.881 (*Rume Sudan*) as pollen donor during 2018 flowering season.

Comparative evaluation of three semi-dwarf genotypes, S.5149 (Cavimor), S.5218 (Costa Rican line) and Chandragiri planted at CCRI during 2014 revealed promising performance with S.5149 (Cavimor) with a projected yield of 1,043 Kg clean coffee / Ha. as against 874 Kg clean coffee / Ha. in Chandragiri and 709 Kg/Ha. clean coffee in S.5218. Further, S.5218 manifested high susceptibility to leaf rust while S.5149 and Chandragiri were free from the rust. However, Chandragiri recorded 70.5% 'A' grade beans while S.5149 and S.5218 recorded 60% and 50% 'A' grade beans, respectively. Selfed seed of S.5149 has been distributed to 10 growers in traditional areas during 2017 season to establish bulk plots for further monitoring and evaluation.

At RCRS, R.V.Nagar, evaluation of the F_1 progenies derived from reciprocal crosses Sln.5A x Agaro and Sln.5A x Sln. 3-4 has been continued. Among the progenies, Agaro 1 x S.2971 & its reciprocal recorded promising performance with average yield of 785.5 Kg clean coffee / Ha. and 781.5 Kg clean coffee / Ha., respectively for the last four years. The progeny, Agaro 1 x S.2971 recorded 57% 'A' grade beans. In reciprocal crosses between Sln.5A and Sln.3-4, the progeny Sln.3-4 x Sln.5A (S.2831) recorded the maximum projected yield of 724 Kg clean coffee / Ha. with three year's average of 855 Kg clean coffee / Ha. During 2017, 481 F_2 seedlings of S.2831 x Sln.3-4 and 453 F_2 seedlings of Sln. 3-4 x S.2831 were planted in RCRS farm, for further monitoring and evaluation.

Performance of Chandragiri has been monitored in seven different plantations in Koraput region of Odisha, established during 2009. The coffee Leaf Rust incidence ranged from 0 to 1.3%. In general, the crop yields were low during

2017-18 that ranged from 378 Kg to 643 Kg clean coffee / Ha. Stability for bean size has been observed and A grade beans ranged from 73 to 80%.

Breeding for White Stem Borer (WSB) tolerance has been pursued with highest priority. Field monitoring the WSB tolerant line, S.4595 has been continued at RCRS, R.V.Nagar and TEC, Minumuluru. At RCRS, R.V.Nagar out of 860 plants observed, exit holes were recorded in 1.15% plants and in 3.3% plants, though ridges were noticed, exit holes were not seen that might be because of the larval mortality after feeding. At TEC, Minumuluru, out of the total population of 1,220 plants, WSB incidence was noticed in 1.47% plants. Further, ridges were noticed on 0.6% plants, but without any exit holes. Interestingly, the variety has unique character of quick callus formation and tissue regeneration at the damaged portions of the stem.

In order to validate the manifestation of tolerance/susceptibility in S.4595 and S.4596 populations, systematic bioassays have been continued jointly with the Entomology Division, CCRI. A total of 43 plants of S.4595 and 11 plants of S. 4596 were screened during 2017 flight period and all the plants manifested tolerance reaction and larval mortality was noticed after initial feeding.

In order to establish the heritability of the WSB tolerance in S.4595, bio assays were conducted on 109 plants from four progenies (S.4696 to S.4699) derived from S.4595. Interestingly, about 75% of the plants manifested tolerance reaction while nearly 25% of the plants recorded the survival of larvae. However, the damage and rate of multiplication is less compared to other Arabica genotypes. Thus, the bioassay results confirmed the heritable nature of the WSB tolerance in S.4595.

For large scale validation in field conditions across the locations, seed material of S.5355 (bulk progeny of S.4595) was supplied to 33 growers in Karnataka during 2017 season to establish the bulk plots in WSB infested areas.

In Robusta, as the main focus is on development of drought tolerant lines, efforts have been continued to exploit high root biomass types. In addition to the identification of high root biomass Robusta plants from recurrently drought prone areas, exploitation of grafting strategy has been contemplated to validate for drought tolerant traits. As part of this programme, seedling grafts have been raised (50 each) during 2017 season by using the high root biomass types as root stocks (S.880, S.1932, S.3399) & station bred selections S.274 and C x R as scion material and maintained for planting during 2018

planting season. The grafts were evaluated for growth parameters and also the physiological efficiency. Among the various graft combinations, the graft combinations, S.3399 and S.274/C x R recorded vigorous growth over other combinations. Screening for physiological parameters *viz.* relative water content, epicuticular wax content, SPAD chlorophyll and chlorophyll content before and after imposing stress, revealed that the graft combinations such as S.1932, S.3399 (as root stocks) recorded superior performance irrespective of scion material. Validation of the results is being pursued for one more season.

In addition, development of compact Robusta from *'Angustifolia'* variant identified in sib mated C x R population has been pursued. Observations on the open pollinated seed progenies raised from desirable plants with compact bush types revealed 60% heritability for compact bush shape after four generations of selection and advancement. The agronomic performance of the compact bush types has been assessed in the plots raised at CRSS, Chettalli and two other private holdings in Coorg Region. Data on growth parameters of compact bush types revealed that the number of primaries & bearing nodes per plant ranged from 14 to 17 and 223 to 287, respectively while number of fruits per node ranged from 18 to 34. The fruit yield ranged from 4.5 Kg to 10 Kg/plant. The out turn ratio of fruit to clean coffee was 5.5:1 and 'A' & 'B' grade bean percentages were 34% & 27%, respectively. Data indicated the prospects of developing a compact C x R variety by further selection and exploitation.

In the collaborative initiative with World Coffee Research (WCR), Texas, received *in-vitro* raised plantlets of 31 Arabica varieties (21 semi dwarfs & 10 tall varieties). The plantlets were hardened and 28 varieties were planted in field at CCRI along with Chandragiri & Sln.9 as local check varieties and established the International Multi Location Variety Trial plot (18 varieties planted during 2016-17 and 10 varieties during 2017-18), remaining three varieties (two semi dwarf & one tall varieties) are being hardened for field planting during 2018 season. Preliminary data has been collected on growth parameters and provided to WCR for comparative analysis. The varieties, EC -16, Col-1, Col-2, Col-4, Col-5 and Chandragiri have recorded superior growth characters as compared to other varieties. Majority of the varieties except Chandragiri, EC-16 and IPR-107 manifested rust susceptibility in India.

During 2017-18 season, a total of 5,070.75 Kg of seed coffee comprising of

3546.75 Kg Arabica and 1,524 Kg Robusta was supplied to growers in traditional areas, through extension network. Further, 8,587.5 Kg of seed coffee of Arabica was distributed to the stake holders in non-traditional areas. In addition, 2,814.5 Kg of Arabica and 1,329 Kg of Robusta seed was supplied in North Eastern Region. As part of a pilot programme to assess the suitable areas for coffee cultivation, 21.5 Kg of Arabica coffee seed was supplied to Horticulture Dept. in Himachal Pradesh.

In order to meet the seed requirement of NTA and NER regions, new seed blocks of Sln.9 & Chandragiri were planted in an extent of 0.28 Ha. and 0.4 Ha., respectively at RCRS, R.V.Nagar during 2017 planting season.

In the programme on scaling up of clonal propagation, a total of 44,461 rooted clones of C x R were supplied to 186 growers, from three research farms and three TECs, during 2017-18.

With the objective of popularizing the technology and to encourage the growers towards on-farm production of clones, major thrust has been given for capacity building through field demonstrations both on-station and on-estate. A total of 32 (21 on-station and 11 on-estate) training programmes were organized covering Karnataka and Kerala regions.

Division of Tissue Culture and Biotechnology Division, Mysuru

Under the mass multiplication technology through tissue culture technique, 6,000 leaf explants from the improved lines of Sarchimor, *Colombian Catimor* hybrids (S.4814 & S.4817) and BBTC Catimor were cultured and 1,200 plantlets obtained from the somatic embryos are under hardening process.

The result of preliminary experiment carried out with Benzyl Amino Purine (BAP) and Phluoroglucinol on somatic embryogenesis indicated maximum induction of somatic embryos in the culture media containing 2mg/L BAP & 10mg/L of Phuoroglucinol.

Plant regeneration through somatic embryos obtained from leaf explants of S.795, Cauvery & C x R cultivars were multiplied and developed into plantlets.

With an aim to develop coffee varieties with low caffeine content and early ripening behavior, inter-specific hybrid of *C. racemosa* x Sln.3R (*C. congensis x C. canephora)* was evolved at RCRS, Chundale. These plants were regenerated & multiplied by embryo rescue method both by direct germination & indirect method through callus and subsequent somatic embryogenesis.

The result of preliminary experiment

carried out with ZnO nano- particle in coffee tissue culture technique indicated media containing 25mg/Litre ZnO nano-particle exhibited maximum callus recovery (78%), as compared to other treatments tested.

Studies were carried out to test the genetic fidelity of tissue cultured plants of Sarchimor and C x R coffee cultivars established in the field using SRAP marker indicated high genetic similarities among the tissue cultured plants. Similarly, the genetic fidelity of *in-vitro* generated plants of C x R (1st & 6th regeneration cycle) supplied by M/s. Jain Irrigation Pvt. Ltd. tested using *SRAP* and *SCoT* markers indicated over 95% homology.

F_1 hybrid lines involving Sln.10 and Chandragiri direct and reciprocal crosses received from CCRI were tested for SH_3 gene. Among the 20 hybrid plants tested, 15 hybrid plants found to contain the SH_3 gene.

In order to identify resistance for white stem borer (WSB) from different source, *Bacillus thuringiensis (Bt)* was chosen. Among the 100 *Bt* strains screened during 2017-18, thirty strains were found positive for *vip3*, 20 stains for *vip1* and 10 stains for *vip2*. Efforts are being made to characterize the *vip* genes at molecular level.

Molecular characterization of 42 Arabica and 58 Robusta germplasm collections was studied using SCoT and SRAP markers.

Studies were continued to understand the flowering mechanism in different coffee species using *FT* and *TFL* genes using cDNA. The amplified fragments from genomic DNA and cDNA of Arabica and Robusta samples using *TFL*1 and *FT* gene specific primers were eluted and sequenced. Sequence information was used to study the homology between *FT*/*TFL1* gene sequence in coffee and related crops. Homology and *in-silico* studies, *TFL*1 sequence showed 96% sequence similarity with public database and was identified as CEN-like protein.

In order to study the evolutionary relationship of *FT* and *TFL*1 gene, homology studies were carried out between sequences from sol genome and coffee genome databases.

Sub-component 1.2: Improvement of Productivity through Enhanced Soil Health, Crop Husbandry and Mechanization

Division of Agricultural Chemistry

Under the project on “Soil fertility appraisal & soil health monitoring in traditional coffee growing regions of Karnataka, Kerala and Tamil Nadu”

implemented in collaboration with the National Bureau of Soil Survey & Land Use Planning (NBSS & LUP), Bengaluru, a total of 6,333 Soil Health Cards was generated presenting information on soil health indicators like pH, organic carbon, major, secondary and micronutrients content along with recommendations for the better management of soil nutrients for coffee and associated crop like pepper.

A programme was organized for the "Launch of Soil Health Cards" on 21st April 2017 in Bengaluru. Smt. Nirmala Sitharaman, the then Hon'ble Minister of State for Commerce & Industry, Govt. of India distributed the Soil Health Cards to 40 coffee planters from various coffee regions of Karnataka, Kerala & Tamil Nadu, launched the web portal KSHEMAM (Kaapi Soil Health Monitoring & Management; www.indiacoffeesoils.net) and also released two technical publications *viz*., Fertility of Coffee Growing Soils of South India & Soil Quality Monitoring Sites (SQMS) for Traditional Coffee Growing Areas of India.

Multi-location field trial on "Effect of different organic & in-organic nutrient sources on soil properties, yield and quality of Arabica and Robusta coffee" initiated during 2013-14 season was concluded in 2017-18. The results of the study have confirmed that reduction of recommended dose of synthetic fertilizer to the tune of 50% in combination with vermi-compost/farm yard manure/coffee pulp compost (1.25 MT/ Ha.) can be practiced without significant reduction in yield and soil nutrient status.

Under the advisory service support to the growers, a total of 8,192 soil samples were analyzed for soil reaction, organic carbon and available P & K contents. Based on the soil analytical data & field information, lime and fertilizer recommendations were rendered to 2,334 planters. Two hundred and twenty two soil samples received from 37 planters were analyzed for micronutrients contents (Ca, Mg, Cu, Zn, Fe & Mn). Agrochemicals (467 Nos.) comprising of liming materials, spray lime, fertilizers, organic manures & copper sulphate received from 228 planters were analysed for purity and communicated reports to the concerned growers. A total of 87 leaf samples received from 6 growers were analyzed for sufficiency/deficiency of nutrients and suitable remedial measures to correct the observed deficiencies were reported to the concerned growers.

Established five Rapid Soil Testing Units one each in Chikkamagaluru, Hassan, Technology Evaluation Center (TEC) Gonikoppal, TEC, Yercaud, Tamil Nadu and TEC, Vazhavara, Kerala for the benefit of planting community.

To popularize the importance of soil

testing, 50 awareness programmes were organized highlighting the importance of soil-test based nutrient management in Karnataka covering a total of 1,196 planters. Besides, a total of 1,523 soil samples were analyzed for pH and rendered on-spot lime recommendation during the awareness campaigns.

Division of Agronomy

Studies on new planting design & pruning methods in Chandragiri was continued at CCRI and regional stations. At CCRI, closer spacing (5' x 5') with training on single stem and rock-n-roll on alternate rows recorded significantly higher clean coffee yield (1,798 Kg/Ha.), as compared to control (square system of planting (6'x6') + training on single stem + regular light pruning), which recorded 830 Kg/Ha. Further, among the different pruning methods, square system at close spacing (5'x5') + training on multiple stem without topping + cyclic pruning after each harvest demanded less number of man days (28 man days/Ha.), as compared to control (63 man days/Ha.). Overall, about 27 to 56% of labour saving can be achieved by adopting modified pruning methods over the traditional pruning method. At CRSS, Chettalli, significantly higher yield was recorded with hedge row system on single stem (5'x3') on multiple stem without topping and cyclic pruning after each harvest (1,550 Kg clean coffee / Ha.). At RCRS, Thandigudi square system of planting (6'x 6' Quincunx) with training on single stem + multiple stem on middle plant recorded significantly higher clean coffee yield (2,466 Kg clean coffee / Ha.). Further, coffee leaf rust and white stem borer incidences were significantly low in hedge row system of plating with cyclic / rock-n-roll pruning method.

The field trial on "Standardization of fertigation techniques" initiated during 2013-14 with the well established old Robusta coffee at CCRI showed fertigation with 100% recommended dose of fertilizer (as water soluble fertilizer) recorded significantly higher clean coffee yield (2,205 Kg/Ha.) which was statistically on par with fertigation with 75% and 125% recommended dose of fertilizer followed by 100% RDF + sprinkler irrigation. Lowest clean coffee yield was recorded in 100% recommended dose of fertilizer + drip fertigation (1,451 Kg clean coffee / Ha.).

A new field trial on the "Performance of water retaining polymer (hydrogel) on survival and growth" was initiated with 4 month old C x R plants at CCRI during 2016-17 season. Data on water stress parameters indicated that plants received hydrogel at the rate of 30g/plant registered higher soil moisture content (18.65%) and relative water content (78.35%), as compared to control

(moisture content- 8.54%; relative water content - 54.11%).

Another new field trial on "Effect of Agri-power silica as a source of silicon on yield, soil physio-chemical properties and pest & diseases incidences in coffee" was initiated on 12 year old Chandragiri at CCRI during 2017. Data on yield indicated that application of 100% RDF + 200 Kg Agri Power Silica (APS)/Ha. + 0.5% foliar spray at 3 times/year recorded significantly higher clean coffee yield (757 Kg clean coffee / Ha.), as compared to control (520 Kg clean coffee / Ha.).

A new field experiment on "Evaluation of humic acid based substance in coffee (Ecohume)" on C x R clonal plants at CCRI during 2017. Data on yield indicated that plants received recommended dose of fertilizer + ecohume granules at 10 Kg/acre + nutrient mixture spray (1 Kg urea, 1 Kg SSP, 0.75 Kg MoP, 1Kg ZnSO4 + 75 ml Planofix 200/Litre + Ecohume at 600 ml 200/Litre (foliar application 25 days after blossom) registered significantly higher clean coffee yield (1,587 Kg /Ha.) and the lowest yield (870 Kg clean coffee /Ha.) recorded with 75% of the recommended dose of fertilizer.

Under the Plan Project on "Promotion of organic coffee production in North Eastern Region", one training programme on different aspects of organic coffee production & certification was conducted for the benefit of organic coffee growers of Changpijang & Khulkon organic coffee grower's associations of Assam (65 organic planters) during the period under reporting.

Division of Plant Physiology

Field assessment of newer Arabica genotypes for two seasons indicated that *Colombian catimor* x Sln.9 and *Colombian catimor* x Sln.5B found to be better drought tolerant genotypes among the Arabica genotypes evaluated.

Monitoring of pre-mature fruit drop in Arabica and Robusta coffees in different coffee growing zones in Karnataka was continued. The data indicated that pre-mature fruit drop was 18.8 & 19.6% on Arabica and Robusta, respectively in Chikkamagaluru & Hassan zones. While, the pre-mature fruit drop in Kodagu zone was to the tune of 12.4 & 9.3% on Arabica and Robusta, respectively.

Comparison of rainfall data recorded in 2016 and 2017 revealed that no rainfall deficit in 2017, as compared to rainfall data recorded in 2016. However, when compared to the rainfall data recorded in the last seven years, the rainfall deficit in 2017 ranged from 3.2% (Chikkamagaluru zone) to 47.8% (Hanbal zone) in Karnataka.

Trend line analysis of meteorological data recorded in the last 9 decades indicated that the total average rainfall was high during 2006 -15 decade (2,806.5mm) compared to the earlier 8 decades from 1926 -1935 except during 1955-64 decade (3,080 mm). The mean maximum & minimum temperature was increased by 0.6^0 C and 2.2^0 C respectively from 1975-84 decade to 2005-14 decade.

Towards developing drought tolerant Robusta coffee types, studies on seedlings grafting was continued. Among the various combinations of seedlings grafts tried, graft combination such as Sln.9/S.274, Sln.5B/S.274 found to be better drought tolerant amongst the graft combinations studied.

Sub-component 1.3: Development of Ecologically Safe Interventions to Reduce Losses caused by Major Pests and Diseases

Monitoring of coffee leaf rust incidence in Chikkamagaluru coffee zone of Karnataka in 2017-18 season revealed that the incidence ranged from 10.9 to 23.3% on Arabica coffee cultivars. Whereas, the incidence level ranged from 44.1 to 94.6% in North-Eastern region.

Among the six newer F_1 Arabica progenies recorded for the susceptibility to coffee leaf rust incidence at CCRI farm, S.5169, S.5172 & S.5173 genotypes were found to be susceptible to rust and genotypes such as S.5168, S.5170 & S.5171 were found to be free from rust incidence during the period under reporting.

Among the 242 Arabica germplasm collections examined for the susceptibility to coffee leaf rust incidence, only 4 collections were found to be resistant to rust pathogen (S.1567, S.2581, S.2724 & S.2742). While, 25 out of 65 Robusta collections were found to be resistant to rust pathogen.

The coffee rust differentials and “A” types plants established at RCRS, Thandigudi indicated that 41 rust differentials and 26 'A' type plants were free from rust infection.

Multi-location field evaluation of new fungicide molecule Hexaconazole 75% WG (EPIC) at different concentartions indicated lowest mean rust incidence ranging from 0.48% to 1.07% in the treatment of Hexaconazole 75% WG at 0.53g/Litre when compared to the recommended systemic fungicide (Hexaconazole 5EC) which recorded mean rust incidence ranging from 1.57 and 1.26%. Untreated control recorded mean rust incidence ranging from 15.15 to 16.43%.

Multi-location field evaluation of another new fungicide molecule Tebuconazole 430 SC at different concentartions

indicated lowest mean rust incidence ranging from 0.19 to 6.7% in the treatment of Tebuconazole 430 SC at 7.5 ml/Litre when compared to the recommended systemic fungicide (Hexaconazole 5EC) which recorded mean rust incidence ranging from 0.25 to 7.04%. Untreated control recorded mean rust incidence ranging from 3.2 to 29.8%.

Among the eight fungicides molecules evaluated against brown eye spot disease (caused by *Cercospora coffeicola*) under nursery condition, least disease incidence (5.05%) and severity (0.56%) was recorded in the treatment of Tebuconazole 25.9 EC (1ml/Liter) followed by Trifloxystrobin 25%+ Tebuconazole 50%WG at 2g/Litre (5.51% incidence & 0.61% severity) compared to un-treated control which recorded highest incidence (28.56%) and severity (5.46%).

Attempts were made to identify the causal agent for curling and chlorosis diseases on Arabica coffee. The results of the various studies revealed no involvement of fungi, bacteria and virus in chlorosis disease development. Further studies are taken up to ascertain the role of mites and thrips in chlorosis disease development.

Division of Entomology

Case studies on the incidence of White Stem Borrer (WSB) involving 11 estates representing different size holdings, altitudes, and shade pattern in Karnataka and Tamil Nadu indicated the pest incidence was below threshold (less than 10 plants/acre). These estates have adopted recommended package of practices for control of WSB like maintaining good shade, regular tracing & uprooting and timely application of insecticide.

Periodic monitoring of white stem borer in different coffee growing tracts revealed incidence level ranged from 15 to 40 plants/acre in Chikkamagaluru & Hassan zones and 6 to 24 plants/acre in Kodagu zone. The survey data indicated incidence level depends on shade pattern and timely adoption of recommended package of practices.

Data on the tunneling pattern of WSB larvae revealed that there was no specific pattern of tunneling.

Data recorded on the monitoring of flight period of WSB in CCRI and other regional research stations indicated that there were no major change in peak emergence period as maximum number of adults emerged during April to May in summer flight and October to December in winter flight.

The yield data recorded from the trial on crop loss caused by white stem borer infestation in Arabica estates at CRSS, Chettalli and RCRS, Thandigudi

indicated a yield loss of 10 to 12.4% compared to healthy plants.

Field evaluation of improved in-organic (CCS-03 plus) & organic (IC- 03 plus) formulations (supplied by M/s. Tata Chemicals Innovation Center) was continued at CCRI and few selected private estates in Chikkamagaluru and Kodagu zones in Karnataka.

Trials to prevent the emergence of WSB by wrapping of main stem & thick primaries with improved wrapping material impregnated with Chlorpyrifos 50 EC + Cypermethrin 5 EC was continued and results of these trials were found to be promising.

Study involving evaluation of tolerant/ resistant Arabica genotype (S.4595) against WSB attack was continued.

To encourage the use of eco-friendly pest management practices, 5,000 numbers of cross vane pheromone traps were supplied to a total of 22 coffee planters in Karnataka and Tamil Nadu for control of white stem borer during the period under reporting.

Monitoring of Coffee Berry Borrer (CBB) incidence level in the field on different cultivars under different shade levels (low, medium & high) in seven liaison zones of Wayanad (Chundale, Kalpetta, Meenangadi, S. Bathery, Pulpally, Panamaram & Mananthavady) was continued.

Screening of newer insecticide molecules against coffee berry borer was continued.

For the control of coffee berry borer, a total of 57,800 Broca traps with lure supplied to a total of 188 planters and 1.5 lakh vials of Broca lure (10 ml each) to a total of 167 planters in Karnataka & Kerala.

The use of the entomo-pathogenic fungi *viz*., *Beauveria bassiana* as a bio-control agent against coffee berry borer was popularized by supply of ready to use culture. A total of 40 Kg of *B. bassiana* on rice medium & 90 Litre of *B. bassiana* as liquid culture were supplied to a total of 44 planters in Karnataka, Tamil Nadu and Kerala.

A total of 83 awareness programmes on the management of coffee pests (coffee White Stem Borer, Coffee Berry Borer & Giant African Snail) was organized in Chikkamagaluru, Hassan & Kodagu in 2017-18 and a total of 2,297 planters benefitted from these awareness programmes.

Sub-component 1.4: Post Harvest Technology and Quality Improvement

Division of Post Harvest Technology

The Division of Post Harvest Technology

was established in July 2014 at Central Coffee Research Institute in Chikkamagaluru District of Karnataka.

During 2017 - 18 season, the performance of various makes of ecopulper (a new generation pulping cum washing machine which consume less water for processing and generates negligible amount of effluent) was evaluated in 7 coffee estates located at Chikkamagaluru and Hassan districts of Karnataka. The observations indicated water requirement for processing one kg of Arabica & Robusta coffee fruits ranged from 0.4 to 1 and 0.8 to 1.2 litre of water, respectively.

The performance of mechanical coffee dryer was evaluated in 17 coffee estates in Chikkamagaluru and Hassan districts of Karnataka during 2017-18 season. The observations indicated time taken for drying parchment coffee samples in mechanical coffee drier varied from 24 to 48 hours (including the initial sun drying for 24 hours), as compared to conventional sun drying (which usually takes about 6 to 7 days time) and thus reducing the cost of drying to the extent of 50%.

The results of the various trails conducted for the treatment of coffee effluent emanating from wet processing of coffee indicated that natural acidification of effluent (holding effluent in lagoon for 24 hours) followed by neutralization with agricultural lime and alum treatment found to reduce BOD load to a maximum of 87% in a span of 5 to 6 days. The effluent thus treated can be used for pulping of fresh coffee fruits.

A total of 9 coffee effluent samples received from three coffee estates were analyzed for various pollution parameters (pH, electrical conductivity and chemical & biological oxygen demand). Based on the analysis results, advisory was rendered to the growers.

Coffee Quality Division

A total of 384 coffee samples consisting of 19 research samples received from research department and 365 trade samples received from 65 stakeholders were analyzed for physical & cup quality parameters and Quality Evaluation Reports were sent to the concerned.

Analytical Laboratory tested 20 ground coffee samples for moisture content and 3 coffee: chicory blends for BIS/FSSAI parameters from a total of 6 traders. Further, 114 moisture meters received from 39 coffee curers / traders were calibrated.

Four Kaapi Shastra Training Programme on roasting and brewing were conducted where a total of 111 beneficiaries participated.

Three short term executive programme

(STEP) on coffee entrepreneurship were conducted in Jaipur, Bhubaneswar & Indore and a total of 53 beneficiaries were trained on setting up of coffee roasting unit and retailing business.

Twelve students of the 2016 - 17 batch of the PG Diploma in Coffee Quality Management have successfully completed the course. Twelve students who joined during 2017-18 batch have completed 1st trimester at CCRI and 2nd trimester is under progress at Coffee Quality Division in Bengaluru.

The coffee samples selected for the final round of cupping of "Flavour of India-Fine Cup Award - Cupping Competition 2017" (25 Arabica & 20 Robusta samples) were judged by a panel of nine international jury during the World Coffee Event held from 11th to 15th June 2017 at Budapest, Hungary.

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CHAPTER – V

EXTENSION AND DEVELOPMENT

A. Traditional Area

The traditional coffee growing areas consist of three southern states viz., Karnataka, Kerala and Tamil Nadu. The total area under coffee in traditional areas is 3,66,272 Ha., which accounts for 81% of the total area of 4,54,722 Ha. in the country. The number of holdings in Traditional Areas are 1,75,050 which account for around 48% of the total number of 3,66,242 holdings in the country.

Area under Coffee in Traditional Area

The details of planted area, bearing area under coffee and number of holdings for 2017-18 in the 3 traditional coffee growing states are as under:

State	Planted Area (Ha.)			Bearing Area (Ha.)			No. of Holdings		
	Arab.	Rob.	Total	Arab.	Rob.	Total	<10 ha.	>10 ha.	Total
Karnataka	108795	135990	**244785**	49251	38212	**87463**	76971	2212	**79183**
Kerala	4231	81649	**85880**	26889	75174	**102063**	77584	277	**77861**
Tamil Nadu	29513	6094	**35607**	23557	13161	**36718**	17656	350	**18006**
Total for Traditional Areas	**142539**	**223733**	**366272**	**99697**	**126547**	**226244**	**172211**	**2839**	**175050**

Weather Conditions and Crop Production for 2017-18

During the year 2017, the receipt of blossom and backing showers was satisfactory in all the coffee growing tracts of the Traditional Areas. The onset of monsoon was in the first fortnight of June and it was normal in almost all parts of the traditional areas. The monsoon helped in maintaining the soil moisture.

The rainfall during 2017 monsoon period was in generally more in comparison to the corresponding period of 2016 in traditional areas. The post monsoon crop estimates for 2017-18 season in respect of traditional coffee growing areas was placed at 3,05,475 tonnes comprising 84,585 tonnes of Arabica and 2,20,890 tonnes of Robusta. The state-wise details are as under:

State	Production Estimates (In Tonnes)		
	Arabica	Robusta	Total
Karnataka	69025	153275	222300
Kerala	2160	63575	65735
Tamil Nadu	13400	4040	17440
Total for Traditional Area	84585	220890	305475

Pests and Diseases

During the South West monsoon period, a new pest Giant African Snail (GAS) appeared in few coffee plantations of North Kodagu, Chikkamagalur and Hassan posing threat to coffee, pepper and other economic crops. To control the pest, a kit containing 25 Kgs. of rice bran, 3 Kgs. Jaggery, 100 grams of Larvin (Thiodicarb 75 WP) and 100 ml Castor oil per acre was distributed to the growers whose estates were infested with the pest. With the concerted efforts of the Coffee Board, the pest menace was controlled effectively.

The incidence of White Stem Borer, which is a major pest on Arabica, was generally medium to high in low rainfall zones and endemic areas. The incidence of Coffee Berry Borer was low in most of the coffee growing regions. The incidence of other pests like Shot Hole Borer on Robusta and sucking pests was at low level in general. Among the diseases, the incidence of Coffee Leaf Rust, a major disease on Arabica was at low to medium level. The incidence of black rot, stalk rot, die back and root diseases was low. Regular advisories were rendered through all possible means to sensitize the coffee growers on the management practices for effective control of pests and diseases in general and White Stem Borer in particular to keep the problem under check.

Monitoring & Review of Extension and Development Activities

- The Extension Offices are under the administrative control of the Director of Research, Coffee Board.
- The Director of Research, Coffee Board supervises the implementation of Development Support Schemes.
- The Joint Director (Extension) at Hassan supervises the extension / development activities of the four Deputy Directors of Extension, seven Senior Liaison Officers and all the Junior Liaison Officers in Karnataka.

- The Joint Director (Extension), Kalpetta supervises the extension activities of the two Deputy Directors of Extension, eight Senior Liaison Officers and all the Junior Liaison Officers in Kerala and Tamil Nadu.

Extension Activities

The Extension Personnel of the Board continued to build close rapport with the coffee growers for Transfer of Technology and to improve the knowledge and skills on scientific methods of coffee cultivation. Various individual and group extension approaches and tools were employed for Transfer of Technology to the growers in general and small growers in particular, besides providing development support for improving the production, productivity and quality of coffee.

The focused approaches employed and the activities carried out during the period included selection of model estate for conducting method/on-farm demonstrations to improve the skills of carrying out operations effectively, advisory through Print/Electronic/Social media, conducting Farmer Field School, organising village level / group meetings and seminars and other training programmes in order to improve the knowledge and skill levels of coffee growers and workers.

The Extension Personnel also carried out activities viz., periodical assessment of crops, monitoring & management of pest and disease incidence, procurement and distribution of seed coffee. The details of various extension activities carried out during the year 2017-18 are as under:

Sl. No.	Activities	Achievement (Nos.)
1	Selection of Model Estates	221
2	Field Demonstrations	1016
3	Advisory	
	a) Print Media	60
	b) Electronic Media (Radio talks / TV programme)	16
	c) Social media	261
4	Farmer Field School	189
5	Group Meetings/ Seminars/ Village level meetings	372
6	Training Programmes on coffee cultivation at TECs	119
7	Vocational training programme for women workers/ growers	43

Technology Evaluation Centres (TECs)

Ten Technology Evaluation Centers (TECs) of the Board located in different agro climatic zones of traditional areas continued to function for carrying out timely cultural operations as per the annual action plan drawn for each TEC for improving production and productivity. These TECs continued to serve as centers for evaluating the performance of various plant materials by adopting region / location specific agronomic package of practices as training centres and as seed production centres.

Development Support

The physical achievements (spill over claims of 2015-16 and 2016-17) for which support was extended during the year 2017-18 under various activities are as under:

Sl. No.	Component / Activity	No. of Beneficiaries (No. of Units)	Area benefited in Ha.
1	Replantation / Expansion	4165	2936.01
2	Water Augmentation	4852	10516.68
3	Quality Up-gradation	2591	6769.03
4	Pollution Abatement	14	616.88
5	Eco-certification	2	550.4
6	Support for Mechanization of Coffee Estate Operations	3787	7182.42

B. Non-Traditional Area [NTA] - (Andhra Pradesh & Odisha)

Coffee Board conducted a Techno-Feasibility Survey in the early 1950's to identify areas suitable for coffee cultivation in the states of Andhra Pradesh (AP) and Odisha. Based on the recommendation in the survey report, the Forest Department of AP first started commercial coffee cultivation in the Agency areas of Visakhapatnam in 1961. These plantations were later handed over to Andhra Pradesh Forest Development Corporation Ltd., (APFDC) for maintenance. In 1976, the Integrated Tribal Development Agency (ITDA) introduced coffee as a development initiative for tribal groups to stop the practice of 'Podu' or shift cultivation. Realizing the potential of coffee farming in non-traditional area, Coffee Board executed its support for coffee development in Andhra Pradesh and Odisha from IX five year plan onwards.

Distribution of Area in NTA

The details of area under coffee and the number of holdings in Andhra Pradesh and Odisha are as under:

Liaison zone	Planted Area (Ha.)			Bearing Area (Ha.)			No. of Holdings		
ANDHRA PRADESH	**Ar.**	**Rob.**	**Total**	**Ar.**	**Rob.**	**Total**	**< 10**	**>10**	**Total**
Minumuluru	32823.23	0.52	32823.75	26978.23	0.52	26978.75	86412	1	86413
Chintapalli(E)	12621.58	181.40	12802.98	10025.23	181.4	10206.63	26178	2	26180
Chintapalli(W)	17879.31	82.31	17961.62	14269.81	82.31	14352.12	30809	2	30811
Arakuvalley	12567.60	0	12567.6	9790.0	0	9790.00	31213	1	31214
Total	**75891.72**	**264.23**	**76155.95**	**61063.27**	**264.23**	**61327.50**	**174612**	**6**	**174618**
ODISHA	**4282.0**	**0**	**4282.0**	**3935.0**	**0**	**3935.00**	**4077**	**20**	**4097**
Grand Total	**80173.72**	**264.23**	**80437.95**	**64998.27**	**264.23**	**65262.50**	**178689**	**26**	**178715**

Weather Conditions and Crop Production

In Andhra Pradesh, the weather was satisfactory and congenial for development of coffee during 2017-18. Blossom showers received during April 2017 followed by backing showers during May 2017, resulted in satisfactory blossom and fruit set. The South West monsoon was set during June 2017 and was very active. The distribution of rainfall was satisfactory throughout the season facilitating the maintenance of satisfactory soil moisture level.

In Odisha, the weather was hot during the month of April and May 2017. Blossom showers were received during March 2017 and subsequent showers were received during April 2017 in most of the coffee growing areas of Odisha. The monsoon was active during June to September 2017.

Considering the overall situation and the crop realization, the final estimates for 2017-18 for NTA was placed at 10,340 MT comprising 10,320 MT of Arabica and 20 MT of Robusta.

Pest and Diseases

No major outbreak of pests and diseases was reported during the year 2017-18. Partial defoliation, death of twigs was noticed in the rust susceptible selections like Cauvery (Sln.12), Sln. 7, Sln. 4 (A), etc. In Odisha, medium level of incidence of leaf rust was found in susceptible varieties like Cauvery. Regular advisories were rendered through all possible means to sensitize the coffee

growers on the management practices for effective control of pests and diseases.

Extension Activities

The extension activities undertaken by the Extension personnel of Andhra Pradesh and Odisha focused on Transfer of Technology through contact and follow-up visits to coffee holdings, conducting field demonstrations, group discussions, issue of advisory letters etc., for improvement in production, productivity and quality of coffee in the tribal sector.

The details of various extension activities carried out in Non-Traditional Areas during the year 2017-18 are as under:

Sl. No.	Activities	Achievement (Nos.)
1	Estate visits (Nos.)	1813
2	Method demonstration (Nos.)	1061
3	One day training programmes at TEC Minumuluru for resource persons	121
4	Group gatherings (Nos.)	153
5	Quality awareness campaigns (Beneficiaries)	655

Technology Evaluation Centres (TECs)

There are two Technology Evaluation Centres (TECs) functioning in NTA, one at Minumuluru (Andhra Pradesh) and another at Koraput (Odisha). These farms continued to serve as Demonstration cum Training Centres apart from seed production centres for quality seed coffee.

Mini Coffee Curing Works

The Mini Coffee Curing Works established at Chintapalli in Andhra Pradesh during 2004-05 continued to process raw coffee of the tribal growers of Andhra Pradesh.

C. North Eastern Region (NER)

Coffee was introduced in Cachar district of Assam in the year 1953. The coffee expansion programme was initially taken up by the Corporations / Departments of the various states of North Eastern Region. As cultivation of coffee was encouraging, Coffee Board undertook a comprehensive survey during 1982-1990 and identified suitable areas for coffee cultivation in different states of NER. Thereafter, the Board involved directly in the implementation of coffee development programmes from IX Plan period (1997-2002) onwards.

Distribution of Area

The details of area under coffee and number of holdings in North Eastern States are as under:

Sl. No	Liaison Zone/State	Planted Area (Ha)			Bearing Area (Ha)			No. of Holdings		
		Arabica	Robusta	Total	Arabica	Robusta	Total	<10	>10	Total
1	Arunachal Pradesh	13.00	387.20	**400.20**	0.00	153.50	**153.50**	362	2	**364**
2	**Assam**	**830.85**	**417.97**	**1248.82**	**387.75**	**221.00**	**608.75**	**1540**	**3**	**1543**
3	Manipur	236.85	7.00	**243.85**	22.00	0.00	**22.00**	236	0	**236**
4	**Meghalaya**	**422.59**	**668.89**	**1091.48**	**281.65**	**261.95**	**543.60**	**1910**	**0**	**1910**
5	**Mizoram**	**2520.77**	**3.50**	**2524.27**	**716.65**	**3.50**	**720.15**	**4209**	**3**	**4212**
6	Nagaland	1780.65	223.90	**2004.55**	600.00	50.00	**650.00**	2393	3	**2396**
7	Tripura	392.90	106.30	**499.20**	212.85	14.00	**226.85**	1816	0	**1816**
	Grand Total of NER :	**6197.61**	**1814.76**	**8012.37**	**2220.90**	**703.95**	**2924.85**	**12466**	**11**	**12477**

Weather Conditions and Crop Production

The general climate in North Eastern Region is mostly tropical and subtropical with distinct features experiencing long days, high rainfall, change in diurnal temperature etc. However, the rainfall in NER was not a limiting factor for coffee cultivation.

Pest and Diseases

In general, no major incidence of pest and disease was observed in the coffee estates of North East Region except low incidence of White Stem Borer and Coffee Leaf Rust in some pockets.

Extension Activities

Sl. No	Activities	Achievement (Nos.)
1	Estate visits	3149
2	Method demonstration	1840
3	Group gatherings	181
4	Quality awareness campaigns	57

Technology Evaluation Centres (TECs)

Four Technology Evaluation Centers continued to function in North Eastern Region at Deomali (Arunachal Pradesh), Haflong (N.C. Hills, Assam), Bualpui (Mizoram), Tulakona (Agartala, Tripura). The TEC, Bualpui in Mizoram. These TECs continued to serve as

demonstration cum training centre apart from seed production centre.

Support under Coffee Development Programme in North Eastern Region

During the year, the Board extended financial support for various activities viz., Expansion, Consolidation and Quality Up-gradation under Coffee Development Programme in North Eastern Region with an overall objective of improving the production and quality of coffee. The physical achievement with regard to support extended for different activities in NER during the year are furnished below:

Activities	Area / Units
Coffee Expansion/ (in Ha.)	510.58
Consolidation of Coffee (in Ha.)	8.7
Group Nursery Program (Nos.)	31
Quality Up-gradation	
a. Pulpers (No. of Units)	-
b. Drying Yard/ Water Augmentation / Machinery (No. of Units)	68

In addition to financial support extended for activities as indicated above, the Board also supported for raising and supply of coffee seedlings through group nurseries to facilitate the coffee expansion and consolidation activities.

The Board continued to extend necessary financial support to meet the cost of collection of raw coffee from the tribal growers, processing, transportation and disposal of coffee produced in North Eastern Region.

Mini Coffee Curing Works

The Mini Coffee Curing Works established by the Board at Bualpui continued to process the raw coffee pooled by the growers of Mizoram and Tripura states.

D. Capacity Building for Stakeholders

During the period under report, various training programs were conducted as a part of the capacity building for stakeholders of coffee industry as detailed below:

- Training and skill building programmes on various aspects of coffee cultivation for the benefit of 2,490 coffee growers, estate workers and supervisory staff were

conducted at the Technology Evaluation Centres of Coffee Board.

- 43 vocational training programmes for women were conducted for the benefit of 890 women growers / workers in association with Krishi Vigyan Kendras of Agricultural Universities / ICAR.

E. Interest Subsidy to Coffee growers on working capital loans

During the year, spill over claims of 1051 growers amounting to ₹1,45,59,592.00 was settled.

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CHAPTER – VI

MARKET DEVELOPMENT AND SUPPORT FOR PROCESSING

In order to enhance domestic coffee consumption in a robust domestic coffee market and with a view to offer better returns to the growers, especially, the small growers during periods of low international prices and to provide scope for value addition, the following two components were approved by the Government of India:

A. Market Development

B. Support for Value addition

A) Market Development

The Component has three sub-components viz., (i) Market Research & Intelligence; (ii) Domestic coffee promotion and (iii) Support to small grower collectives / SHGs / Cooperatives for coffee marketing.

(i) Market Research and Intelligence

The component focuses on providing analysis of market trends to growers through web and dissemination of same through the Extension network of the Board to enable the growers to achieve better price discovery in the market. The work carried out by the Market Intelligence Unit mainly covers the supply estimation by carrying annual crop estimation, analysis of market, maintenance of Database on Coffee, Domestic Indicator Price Reports, Domestic Consumption and Attitude Surveys and also carrying out periodical research reports.

(ii) Domestic Promotion

During 2017-18, the Board participated regularly in reputed domestic exhibitions which are conducted in various parts of the country by displaying different grades of coffee, coffee samples of all growing regions, special packets containing coffee powder specialty coffees, literature on Indian coffee, making the public aware about the advantages of coffee drinking through publicity materials and also serves the pure coffee to the visitors.

The demand and trends of domestic coffee consumption are analyzed through periodic studies which provide us useful inputs to chalk out the marketing strategies and based on this; the Board identifies the areas and participates in such exhibitions. During the year 2017-18, the Board participated in 18 reputed exhibitions after identifying the potential areas to promote coffee drinking in different parts of Nation such as North, East, West and South India. As part of the sustainability B 2 C campaign

targeting youths and house wives about how brew a good coffee and also making the people aware of career opportunities in the coffee sector.

Details of Domestic Events participation during the year 2017-18 are appended below:

Sl.No.	Name of the event	Place	Period
1	Vibrant North East 2017	Guwahati	04-06 May 2017
2	Agri. Intex& Intl. Trade Fair 2017	Coimbatore	14-17 July 2017
3	13th Food Technology Expo 2017	New Delhi	14-16 July 2017
4	India Hospitality F&B	Goa	03-05 Aug 2017
5	Food & Hospitality World	Bengaluru	09-11 Aug 2017
6	Foodex 2017	Bengaluru	28-30 Aug 2017
7	Wellness India Expo 2017	New Delhi	29-31 Aug 2017
8	UPASI	Coonoor	13-14 Sept 2017
9	Annapurna World of Food India 2017	Mumbai	14-16 Sept 2017
10	KPA	Bengaluru	26-27 Oct 2017
11	3rd International Coffee Day	Guwahati	21st Oct 2017
12	World Food India	New Delhi	03-05 Nov 2017
13	India International Trade Fair	New Delhi	14-27 Nov 2017
14	Global Entrepreneurship Submit	Hyderabad	28-30 Nov 2017
15	Coffee Santhe 2017	Bengaluru	01-03 Dec 2017
16	IICF, Bengaluru	Bengaluru	17-19 Jan 2018
17	Emerging North East 2018	Guwahati	04-06 Mar 2018
18	Krishi Unnati Mela	New Delhi	16-19 Mar 2018

Media Strategy

Coffee consumption can be increased only through spreading awareness about coffee and this is done through generic mass media campaigns like TV campaign and Print media campaign, in the form of booklet, journals etc., and hence these campaigns are done effectively to spread awareness about coffee drinking. The Board has also released advertisements to draw the attention of younger generation for making a career in coffee which has abundant openings to become a cupper, roaster or barista besides educating the consuming public on the positive aspects of coffee such as health messages on coffee being an Antioxidant, effect of coffee on Type 2 diabetes and other

health related messages in reputed magazines. Details of advertisement through the print media are as follows:

Sl. No.	Particulars	No. of magazines	No. of Insertions
1	International Magazines,	04	11
2	National Magazines (English & Regional languages) – Regular/Special Advt.	29	77

Coffee Board Digital Campaign

The total reach achieved through the digital and social media platforms of Facebook and Twitter was 1.40 Cr which engaged a total of 13.79 lakh internet users.

Platform wise- Performance Overview

- ❖ Generated good response on Facebook with 13.18 lakh user engagements & Twitter with 60.23 thousand user engagements.

Platform/ Metrics	Reach*	Engagement**
Twitter	1861057	60226
Facebook	12154720	1318351
Total	**14015777**	**1378577**

*Reach is the number of unique people who saw the content

**Engagement is defined as the action and the reaction on the content posted i.e. as post clicks, likes, re-tweets, shares, replies and comments with respect to social media platform.

Other Events

International Coffee Day 2017

The 3rd International Coffee Day was celebrated at Coffee Board, Head Office and its field offices of both extension and research on 1st October, 2017 to first week of October, 2017. During the occasion, an expo / exhibition was held to commemorate the day, to provide a platform for the Coffee Roasters, Traders, Self Help Groups, Young Coffee Entrepreneurs, Agri Input Supplier, besides coffee exporters to showcase their products. As a part of the event coffee brewing demonstrations and created awareness about Coffee & Health to the public.

Training Programmes Conducted under Quality Control Division

During 2017-18, Coffee Board organized 4 Kaapi Shastra training programmes, 3 Short Term Executive Program (STEP) training in Coffee Entrepreneurship and one day training programme on “Quality control, Export procedure and Product Certification for development of entrepreneurship in the coffee sector.

Kaapi Shastra Training Programmes

Sl.No.	Venue	Particulars	No. of Participants
1	HO, Bengaluru	5 days from 15th to 19th May 2017	26
2	HO, Bengaluru	5 days from 10th to 14th July 2017	26
3	HO, Bengaluru	5 days from 09th to 13th October 2017	31
4	HO, Bengaluru	5 days from 19th to 23rd March 2018	28
Total			**111**

Short Term Executive Program (STEP) in Coffee Entrepreneurship

Sl.No.	Venue	Particulars	No. of Participants
1	CCS National Institute of Agricultural Marketing, Jaipur	3 days STEP training program by IIPM from 7th to 9th April 2017.	09
2	Institute of Entrepreneurship Development Odisha Macheswar Industrial Estate, Bhubaneswar.	3 days STEP training program from 29th June to 1st July 2017.	15
3	Centre for Entrepreneurship Development Madhya Pradesh (CEDMAP) Pardeshipura, Indore	Three days STEP (29th to 31st August 2017)	29
Total			**53**

One day training programme on "Quality control, Export procedure and Product Certification

Sl.No.	Venue	Particulars	No. of Participants
1	HO, Bengaluru	25th January 2018	10
Total			**10**

CHAPTER – VII

EXPORT PROMOTION

Coffee Exports

Exporter Registration and Renewal

The total number of exporters registered with Coffee Board as on 31st March 2018 were 971 as against 764 on 31st March, 2017. This includes 137 new registrations and 70 Renewal of registrations made during the year 2017-18.

Export Permits and ICO Certificate of Origin

Coffee Board is issuing Export Permit under Section 20 of Coffee Act for export of Coffee. As per the norms of the International Coffee Organization, London, Coffee Board also issues Certificate of Origin for export of coffee to the registered exporters of coffee against the requests made by them in the prescribed application format.

Exports: E- permit System

Export permits and ICO Certificates of Origin are being issued against the online applications filed on www.indiacoffee.org/permit. The facility of online filing of export permit and submission of return of confirmation of exports have been extended by providing User-Id and Password to all the registered exporters for both Indian and re-exported coffee. A total of 12,620 export permits and ICO Certificates of Origin have been issued to 193 Registered Exporters of Coffee during the year 2017-18 as against 11,416 permits issued during 2016-17. Out of 12,620 permits, 11,081 permits were issued for export of Indian origin coffee and 1,539 permits were issued for re-export of imported coffee after value addition.

Interactions with Exporters

Meetings with Coffee Exporters and Exporters Association/Specialty Coffee Association were held during the year. The meetings deliberated on the various stakeholders issues relating to the Export Promotion Scheme, participation in the international events, trade fairs, quality issues, financial assistance etc. All the relevant issues were taken up with the Ministry for appropriate intervention and support.

Reports and Returns

Periodical reports and returns on coffee exports were generated and furnished to the Ministry and to the International Coffee Organization apart from dissemination of information to the exporting community to help in their activities. The main reports and returns that were generated during the period are as under:

- Daily report on export performance for Board's website and Board's Officers.
- Monthly reports to Ministry on destination-wise exports.
- Monthly reports to International Coffee Organization (ICO) on volume and value by destinations on preliminary exports of coffee.
- Statistical data to International Coffee Organization on monthly basis regarding the ICO Certificates of Origin issued for coffee exported from India.

Apart from the above, reports on exports -

Exporter wise, Country wise, Type & Grade wise were generated.

Exportable Types & Grades of Coffee

The details of exportable Types & Grades of Coffee identified by the Board according to the Coffee Quality improvement program of International Coffee Organization (ICO) vide the Resolution No.420 and subsequent modification in the existing standards of Monsooned Coffee as circulated vide MAR/EXP/33.B/2010-10/790 dated 18/08/2010 are as under:

EXPORTABLE TYPES AND GRADES OF COFFEE

Type	Premium Grades	Commercial Grades	Specialty Coffee
GREEN COFFEE Arabica Parchment (Plantation) (Washed Arabica)	PB Bold AA	PB, A,B, C* Bulk	Mysore Nuggets EB
Arabica Cherry (Unwashed Arabica)	PB Bold, AA, A.	PB, AB., C** Bulk***	Monsooned Malabar AAA Monsooned Malabar AA Monsooned Malabar A Monsooned Malabar Arabica Triage#
Robusta Parchment (Washed Robusta)	PB Bold, A	PB, AB, C Bulk	Robusta Kaapi Royale
Robusta Cherry (Unwashed Robusta)	PB Bold AAA, AA, A	PB, AB, C, Bulk, Clean Bulk	Monsooned Malabar Robusta AA Monsooned Malabar Robusta Triage#
Miscellaneous grades Liberia Excelsia		 Bulk## Bulk##	
INSTANT COFFEE			
ROASTED COFFEE SEEDS			
ROASTED & GROUND COFFEE			

* Exception is available for Plantation-C as indicated in the description of equivalent given in the footnote of the ICO Resolution 407/420.ICO Resolution 407/420.

** Arabica Cherry 'C' should be free from Blacks, Browns and Bits.

*** Arabica Cherry Bulk should contain less than 10% Blacks, Browns and Bits.

Monsooned Arabica Triage and Monsooned Robusta Triage should be free from Blacks, Browns and Bits.

On same defect count as of Robusta.

Note : Moisture level 13.0 - 14.5% for Monsooned Coffees

Coffee Exports

During 2017-18, export permits for export of 3,94,559 MT of coffee (including 67,622 MT of re-exports) were issued which is highest ever volume so far exported by the country valued at ₹6202 crores equivalent to US$ 962 million with a unit value of ₹1,57,187 per MT. During the year 2016-17, export permits were issued for export of coffee to the tune of 3,56,020 MT valued at ₹5,642 crores equivalent to US$ 842 million with a unit value of ₹1,58,474 per MT.

During 2017-18, export permits were issued for export of coffee to 116 countries as against 113 countries in the previous year, out of which Italy, Germany, Russian Federation, Belgium and Turkey were the top five importing countries.

Types of Coffee Exported 2017-18 (Provisional)

TYPE OF COFFEE	Quantity in Tonnes*	Percentage to Total Exports
ARABICA PARC HMENT	38993	9.88
ARABICA CHERRY	13388	3.39
ROBUSTA PARCHMENT	24968	6.33
ROBUSTA CHERRY	200655	50.86
ROASTED COFFEE BEANS IN GBE	272	0.07
GROUND COFFEE IN GBE	71	0.02
INSTANT / SOLUBLE COFEE IN GBE	116212	29.45
TOTAL	**394559**	**100.00**

GBE-Green Bean Equivalent. *Based on the export permits issued

Grade wise details of Coffee Exports - 2017-18 (Provisional)

SL No	GRADE	Qty. Tonnes	Value in ₹ Lakhs	Value in $ Lakhs	Unit Value ₹ Lakhs/Tonne	Unit Value $ Lakhs/Tonne
1	ARABICA CHERRY-A	171.88	310.79	4.81	180814	2798
2	ARABICA CHERRY-AA	40.41	83.67	1.30	207068	3217
3	ARABICA CHERRY-AB	4118.57	6506.18	100.91	157972	2450
4	ARABICA CHERRY-BULK	15.87	23.60	0.36	148708	2268
5	ARABICA CHERRY-C	947.21	1206.76	18.74	127402	1978
6	ARABICA CHERRY-PB	114.67	167.93	2.62	146444	2285

SL No	GRADE	Qty. Tonnes	Value in ₹ Lakhs	Value in $ Lakhs	Unit Value ₹ Lakhs/Tonne	Unit Value $ Lakhs/Tonne
7	INSTANT COFFEE	116211.67	189165.61	2935.02	162777	2526
8	LIBERIA BULK	271.16	443.26	6.92	163468	2552
9	MON. MALABAR ARABICA-AAA	76.00	205.00	3.16	269737	4158
10	MON. MALABAR AR. TRIAGE	205.40	301.43	4.69	146753	2283
11	MON. MALABAR ARABICA-A	652.05	1497.01	23.25	229585	3566
12	MON. MALABAR ARABICA-AA	7045.98	18443.54	285.95	261760	4058
13	MON.MALABAR ROB-TRIAGE	52.32	67.27	1.04	128574	1988
14	MON.MALABAR ROBUSTA-AA	1327.95	2627.44	40.76	197857	3069
15	MYSORE NUGGETS-EB	2306.33	5446.94	84.49	236173	3663
16	PLANTATION -A	13673.96	30714.07	476.35	224617	3484
17	PLANTATION -AA	10031.33	23200.65	359.72	231282	3586
18	PLANTATION -B	6394.61	11742.38	182.33	183629	2851
19	PLANTATION -BULK	1804.06	4866.93	75.52	269777	4186
20	PLANTATION -C	3477.86	5313.63	82.32	152784	2367
21	PLANTATION -PB	1304.67	2465.59	38.24	188983	2931
22	ROASTED & GROUND COFFEE	272.01	922.38	14.31	339094	5261
23	ROASTED COFFEE SEEDS	71.47	200.49	3.10	280535	4338
24	ROBUSTA CHERRY AAA	5195.18	7143.41	110.83	137501	2133
25	ROBUSTA CHERRY -A	33680.02	46598.34	722.50	138356	2145
26	ROBUSTA CHERRY -AA	31523.90	44483.14	689.47	141109	2187
27	ROBUSTA CHERRY -AB	81609.13	108878.93	1688.76	133415	2069
28	ROBUSTA CHERRY -BULK	14363.44	18933.70	294.16	131819	2048
29	ROBUSTA CHERRY -C	856.16	1137.16	17.64	132821	2060
30	ROBUSTA CHERRY -PB	5008.54	6854.79	106.28	136862	2122
31	ROBUSTA CHY CLEAN BK.	20040.51	25583.17	396.79	127657	1980
32	ROBUSTA KAAPI ROYALE	8107.12	15259.34	236.34	188221	2915
33	ROBUSTA PARCHMENT -A	1012.87	1758.46	27.27	173612	2692
34	ROBUSTA PARCHMENT -AB	13648.56	23504.69	364.53	172214	2671

SL No	GRADE	Qty. Tonnes	Value in ₹ Lakhs	Value in $ Lakhs	Unit Value ₹ Lakhs/Tonne	Unit Value $ Lakhs/Tonne
35	ROBUSTA PARCHMENT -C	1473.87	2075.38	32.18	140812	2183
36	ROBUSTA PARCHMENT -PB	1465.06	2306.83	35.75	157456	2440
37	ROBUSTA PMT. -BULK	5968.19	9716.84	151.01	162811	2530
38	ROBUSTA PMT.PB -BOLD	19.20	39.44	0.61	205417	3177
	TOTAL	**394559.17**	**620196.17**	**9620.03**	**157187**	**2438**

Quantity in Green Bean Equivalent

Country wise details of Coffee Exports during - 2017-18 (Provisional) [Both Indian & Re-exported Coffee]

Sl No	Country	Quantity in Tonnes	Value ₹ in Lakhs
1	ITALY	80099.3	113377.7
2	GERMANY	39231.0	63292.7
3	RUSSIAN FEDERATION	26345.4	45269.0
4	BELGIUM	18125.6	37322.1
5	TURKEY	15951.1	27223.4
6	POLAND	13708.9	21765.8
7	U.S.A.	13398.3	14054.8
8	INDONESIA	12344.3	17029.3
9	JORDAN	11162.5	19546.4
10	LIBYA	10544.5	15274.9
11	SPAIN	9960.4	13763.3
12	SLOVENIA	9004.6	11918.0
13	AUSTRALIA	7896.9	13016.6
14	MALAYSIA	6918.4	9616.7
15	UKRAINE	6843.8	10281.1
16	KUWAIT	6456.6	13051.6

Sl No	Country	Quantity in Tonnes	Value ₹ in Lakhs
17	TUNISIA	5727.5	7628.5
18	GREECE	5663.9	8353.7
19	ISRAEL	5419.6	8050.7
20	SAUDI ARABIA	4872.7	9350.3
21	MEXICO	4512.0	5927.7
22	KOREA,REPUBLIC OF-S	4273.5	6502.1
23	PORTUGAL	3678.7	4937.6
24	FRANCE	3372.0	5530.2
25	SYRIA	3190.4	5390.6
26	VIETNAM	3181.1	4598.8
27	UNITED KINGDOM	3112.9	5684.1
28	TAIWAN	3031.1	4138.2
29	NETHERLANDS	2987.3	5236.5
30	EGYPT	2688.2	3785.5
31	UNITED ARAB EMIRATES	2499.9	5559.8
32	ALGERIA	2434.2	3068.1
33	CROATIA	2380.7	3073.1
34	FINLAND	2267.7	4450.8
35	SWITZERLAND	2264.2	4400.1
36	MOROCCO	2153.4	2921.4
37	IRAN,ISLAMIC R/O	2056.5	3786.9
38	MALI	1747.6	3617.7
39	SENEGAL	1633.0	3228.3
40	SINGAPORE	1612.9	3012.6
41	DENMARK	1485.4	1772.0

Sl No	Country	Quantity in Tonnes	Value ₹ in Lakhs
42	MONTENEGRO	1483.2	1960.4
43	ARGENTINA	1440.0	2028.6
44	BENIN	1425.7	2922.8
45	NIGER	1251.8	1881.9
46	SULTANATE OF OMAN	1244.2	1934.1
47	BANGLADESH	1183.4	2541.7
48	CANADA	1176.4	1786.2
49	TOGO	1098.6	2974.4
50	ROMANIA	1096.0	1636.8
51	BURKINA FASO	1048.9	2311.7
52	NIGERIA	1029.5	1873.7
53	MAURITANIA	787.8	1624.0
54	BELARUS	776.0	1226.0
55	ALBANIA	768.0	1040.1
56	MYANMAR	743.6	999.7
57	LATVIA	731.7	1281.0
58	JAPAN	714.8	1449.4
59	SOUTH AFRICA	673.6	946.2
60	KOREA,PEOPLE'S R/O-N	559.3	824.4
61	CHINA,PEOPLE'S R/O	522.2	822.2
62	LEBANON	513.3	760.9
63	IRAQ	473.7	867.4
64	LITHUANIA	453.4	786.7
65	SWEDEN	435.4	754.5
66	NEPAL	428.8	1616.4

Sl No	Country	Quantity in Tonnes	Value ₹ in Lakhs
67	ESTONIA	422.8	699.8
68	NEW ZEALAND	401.3	699.7
69	UZBEKISTAN	391.8	559.9
70	HUNGARY	383.3	487.4
71	GUINEA	368.4	796.3
72	CAMEROON	346.3	692.5
73	CONGO	329.9	736.6
74	GEORGIA	325.5	518.2
75	QATAR	311.8	651.7
76	BULGARIA	305.9	437.4
77	GHANA	288.8	577.7
78	KAZAKHSTAN	285.5	487.8
79	KENYA	227.8	469.9
80	TURKMENISTAN	216.1	495.6
81	GAMBIA	201.1	441.9
82	NORWAY	144.3	423.3
83	SRI LANKA	123.9	227.4
84	IVORY COAST	113.0	250.9
85	GABON	105.9	230.3
86	ARMENIA	101.9	158.5
87	PHILIPPINES	97.4	141.6
88	MACEDONIA	76.8	101.8
89	DUBAI	58.9	113.3
90	NEW CALEDONIA	57.6	100.1
91	CAPE VERDE	57.3	88.7

Sl No	Country	Quantity in Tonnes	Value ₹ in Lakhs
92	KOSOVO	55.6	95.4
93	MALAWI	46.4	64.3
94	SUDAN	45.5	80.2
95	SLOVAKIA	45.5	58.3
96	TAHITI	44.9	101.8
97	BAHRAIN	34.0	58.6
98	AZERBAIJAN	30.9	46.4
99	FRENCH POLYNESIA	25.9	57.9
100	MOLDOVA	24.3	62.8
101	SWAZILAND	22.6	45.4
102	CHAD	22.4	56.0
103	TAJIKISTAN	20.6	31.5
104	MONACO	19.2	24.2
105	CYPRUS	19.2	25.7
106	PERU	13.0	22.7
107	GUINEA-BISSAU	10.9	16.8
108	PAKISTAN	10.4	20.2
109	MALDIVES	8.4	27.1
110	CZECH REPUBLIC	6.6	12.4
111	FIJI	4.7	19.1
112	THAILAND	3.0	8.1
113	AUSTRIA	2.8	7.8
114	HONG KONG	1.1	3.8
115	SEYCHELLES	0.8	1.8
116	BHUTAN	0.0	0.2
	TOTAL	**394559.2**	**620196.2**

Country wise Details of Coffee Exports during 2017-18
(Re-exported Coffee) (Provisional)

Sl No	Country	Quantity in Tonnes	Value ₹ in Lakhs
1	RUSSIAN FEDERATION	13602.8	23642.8
2	TURKEY	11938.2	20954.1
3	INDONESIA	8616.9	11900.1
4	POLAND	8469.6	13806.5
5	MALAYSIA	4158.5	5697.2
6	U.S.A.	2974.4	4754.7
7	UKRAINE	2778.9	4495.1
8	FINLAND	1001.6	2112.9
9	MALI	816.6	1848.2
10	SINGAPORE	790.1	1304.6
11	FRANCE	748.5	1336.4
12	TAIWAN	730.4	1088.4
13	UNITED KINGDOM	699.2	1271.7
14	BELGIUM	636.5	932.4
15	MAURITANIA	485.6	1069.9
16	SAUDI ARABIA	447.9	745.0
17	BELARUS	439.7	732.9
18	SYRIA	423.3	643.5
19	LATVIA	419.3	737.3
20	VIETNAM	406.6	554.3
21	BENIN	401.0	823.8
22	ITALY	398.4	720.0
23	MYANMAR	379.6	513.8
24	ROMANIA	344.0	535.5

Sl No	Country	Quantity in Tonnes	Value ₹ in Lakhs
25	NETHERLANDS	312.4	487.2
26	IRAQ	307.0	521.3
27	KOREA,REPUBLIC OF-S	283.7	459.3
28	ISRAEL	281.7	430.8
29	UZBEKISTAN	267.9	373.1
30	IRAN,ISLAMIC R/O	264.1	412.8
31	CAMEROON	247.2	492.2
32	NIGERIA	213.5	478.3
33	JAPAN	211.7	381.8
34	SPAIN	208.7	410.3
35	TOGO	189.7	383.8
36	TUNISIA	185.6	380.7
37	BULGARIA	153.2	229.0
38	NIGER	151.9	323.6
39	BURKINA FASO	148.6	286.0
40	SENEGAL	144.4	283.6
41	CONGO	139.3	309.4
42	ESTONIA	139.0	243.7
43	SWITZERLAND	130.6	261.3
44	CHINA,PEOPLE'S R/O	127.9	205.3
45	GUINEA	124.2	290.7
46	GHANA	119.0	243.5
47	KAZAKHSTAN	118.6	196.1
48	GERMANY	113.3	260.1
49	GEORGIA	112.2	171.2
50	LITHUANIA	101.9	181.9

Sl No	Country	Quantity in Tonnes	Value ₹ in Lakhs
51	KENYA	97.2	185.2
52	GABON	58.8	121.4
53	KOSOVO	55.6	95.4
54	GAMBIA	55.4	103.9
55	ARMENIA	50.2	80.6
56	MALAWI	46.4	64.3
57	SUDAN	45.5	80.2
58	BANGLADESH	39.9	133.2
59	GREECE	37.4	68.2
60	TAHITI	33.7	71.5
61	JORDAN	33.5	48.3
62	IVORY COAST	28.6	52.0
63	AUSTRALIA	24.8	52.3
64	KOREA,PEOPLE'S R/O-N	20.0	31.1
65	UNITED ARAB EMIRATES	18.5	37.3
66	ALGERIA	17.9	44.0
67	EGYPT	15.6	25.3
68	LEBANON	15.6	22.0
69	PAKISTAN	10.4	20.2
70	TURKMENISTAN	9.0	16.4
71	SRI LANKA	3.3	5.4
72	HONG KONG	0.7	1.6
	Total	**67622.6**	**112277.1**

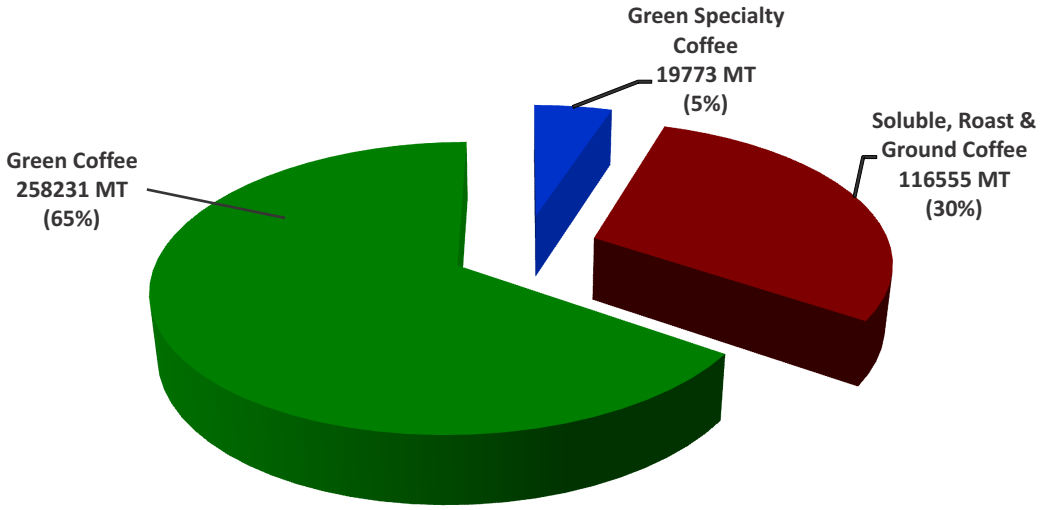
Quantity in Green Bean Equivalent

Export of Specialty and Value Added Coffee 2017-18
[Both Indian and Re-Exported Coffee] [Provisional]

Sl No	Types of Coffee	Quantity in Tonnes	Value ₹ in Lakhs
1	Green Specialty Coffee	19773.15	43847.97
2	Soluble, Roasted & Ground Coffee	116555.15	190288.50
3	Green Coffee	258230.90	386059.70
	TOTAL	**394559.20**	**620196.20**

Quantity in Green Bean Equivalent

Type of coffee exports 2017-18



Export of Coffee by Top 10 Exporters during 2017-18
(Both Indian & Re-Exported Coffee) (Provisional)

Sl No	Name of the Exporter	Quantity in Tonnes	Value (in ₹ Lakhs)	Value (in $ Lakhs)
1	CCL Products India Limited	43345.8	73634.4	1142.5
2	NED Commodities India Private Limited	31661.9	43965.3	682.5
3	Allanasons Private Limited	28235.5	50016.9	775.9
4	NKG India Coffee Private Limited	27422.5	42466.8	658.4
5	OLAM Agro India Private Limited	25504.0	31233.3	484.6
6	Coffee Day Global Limited	25367.1	40230.8	624.1
7	TATA Coffee Limited	21989.2	39268.0	608.9
8	ECOM GILL Coffee Trading Private Limited	14896.4	24499.0	380.1
9	EMIL Traders Private Limited	14739.0	20265.5	314.3
10	Louis Dreyfus Company India Pvt Ltd	14728.5	19576.4	303.5
11	Others	146669.3	235039.9	3645.3
	Total	**394559.2**	**620196.2**	**9620.0**

Quantity in Green Bean Equivalent

Export Incentives

The Govt. of India conveyed vide letter No. 04/01/2013-Plant-B dated 18.12.2014 approval for providing Export Incentives for export of High Value Coffee and Value Added Coffee under the component "Export Promotion Scheme" under the Scheme "Integrated Coffee Development Project" for the XII Plan Period (2012-17). The objective of the scheme is to maximize export earnings by enhancing the market share of value added coffees and high value differentiated coffees in important high value international markets. The Scheme is an ongoing Scheme which commenced from XI Plan period and continued with revised modalities in the XII Plan and is hosted on Board's website.

Scale of Incentives

I) An export incentive of ₹ 3/- per Kg. for export of Value Added Coffees in retail consumer packs exported as 'India Brand', calculated on the Green Coffee utilized for its manufacture / preparation at the

maximum rate of 2.6 kg for Instant/Soluble coffee and 1.19 kgs for Roasted coffee seeds and R&G Coffees.

ii) An export incentive of ₹ 2 per kg for the export of High Value Green Coffees to far off high value markets viz., U.S.A., Canada, Japan, Australia, New Zealand, South Korea, Finland and Norway.

The Export Incentives disbursed during 2017-18 relating to the claims for the exports made during 2016-17 of XII Plan Period are as follows.

Sl. No.	Components	Quantity in Tonnes	Amount in ₹ Lakhs
1	Incentive extended for export of High Value Green Coffee to far off markets at ₹2/Kg	5027.99	100.56
2	Incentive extended for export of Value Added Coffee in retail packs as India Brand at ₹3/Kg	3546.80	106.40
TOTAL		**8574.79**	**206.96**

Logos for Branding of Indian Coffee

Coffee Board of India continued to promote the export of value added coffees as India Brand and continued to strengthen the identity of Indian coffee through *Coffees of India* logos depicting Indian coffee as shade grown, sustainable and scintillating. This symbolically describes the fact that Indian coffee is shade grown and coffee growing regions in India are one of the 25 bio-diversity hotspots of the world and also highlights the diversity of coffees grown in India.

Flavour of India Cupping Competition

The Coffee Board's officers participated in the World of Coffee event held at Budapest, Hungary from 11th - 15th June 2017. The 45 coffee samples selected for the final round of cupping of 'Flavour of India-Fine Cup Award-Cupping Competition 2017' were judged by a panel of Nine International Jury.

National Barista Championship

Mr. Paras Bindra (Travel Food Services, Delhi) winner of NBC 2017, represented India in World Barista Championship – 2017 held at Café Show, Seoul, South Korea.

Geographical Indication tags

GI applications have been submitted by the Coffee Quality Division of the Coffee Board to obtain GI tags for Coorg Arabica Coffee, Wayanad Robusta Coffee, Chikkamagaluru Arabica Coffee, Araku Valley Arabica Coffee and Bababudangiri Arabica Coffee, to Geographical Indications Registry, Intellectual Property Office Building, Chennai for obtaining GI tags for above mentioned coffees.

Global Entrepreneurship Summit (GES) – 2017

Coffee Board got a lucrative opportunity to showcase the Indian Coffee at eighth annual Global Entrepreneurship Summit (GES) held at Hyderabad International Convention Center (HICC), Hyderabad, India on 28-30th November, 2017. The event was jointly organized by United States of America and the Republic of India. The summit highlighted the theme Women First, Prosperity for All, and focused on supporting women entrepreneurs and fostering economic growth globally. Advisor to the President Ivanka Trump headlined the United States delegation to the Summit. The Summit was addressed by The Hon'ble Prime Minister of India, Shri Narendra Modi. Recognizing the role of entrepreneurial coffee businesses in promoting coffee value addition and consumption, GES is the preeminent annual entrepreneurship gathering that convenes emerging entrepreneurs, investors and supporters from around the world. Delegates from more than 150 countries participated in the summit. Coffee Board has participated in this prestigious event and organized a stall that focused on "Coffee Entrepreneurship Theme" where Coffees of India were served to delegates. In addition to that, coffee gift boxes containing Regional and Specialty Coffees were given along with the delegate kit for the promotion of Indian Coffees. There was overwhelming response to Indian coffee and many delegates were exited and curious to know more about Coffees of India. Letters of appreciation for the coffee served, received through emails, likes and tweets made us realize the success of our participation in this prestigious event.

Trade Infrastructure Export Scheme (TIES)

Coffee Board is establishing a state-of-the-art Laboratory Infrastructure for Coffee Quality & Export Certification under Trade Infrastructure for Export Scheme (TIES) of the Ministry of Commerce and Industry, Government of India. The total project outlay is ₹11.40 Cr in the form of grant-in-aid with 50% equity of total project cost from Coffee Board as an implementing agency. The objectives of the Laboratory are as under:

- To provide reliable, consistent and

efficient coffee testing service using state-of-the-art instruments with competent qualified and experienced manpower.

- To perform analysis of coffee for export as per present national requirement and international standards.
- To provide testing services to coffee processing units for monitoring the quality of coffee for export and domestic market.
- To support coffee exporters for clearing custom points by providing testing reports on the quality parameters prescribed by the importing country.
- To strengthen the export certification process.
- To ensure the quality of coffee during its import from other countries.

The state of the art laboratory is under progress and have two components with the following facilities:

1. Sensory and Roasting Laboratory which is comprised of Barista Lab and Coffee Quality Lab.
2. Analytical and Microbiology Laboratory which is comprised of Analytical Lab, Wet Lab and Microbiology Lab.

External Promotion

Under export promotion, the main activities carried out are centered around the following:

1. Regular participation in selected international food & beverages fairs, Coffee Conferences & Exhibitions etc., both directly and through the India Trade Promotion Organization (ITPO).
2. Giving visibility to Coffees of India & Coffee Export Logo in the events to support India Branding.
3. Coffee Board and Coffee industry also participated in India Shows organized with support of Ministry of Commerce to strengthen the international trade presence.
4. Release of advertisements in selected overseas coffee related trade journals.
5. Arranging coffee tasting sessions, buyer-seller meets etc., abroad involving foreign buyers, Indian exporters and Embassy officials.

Circulation of various publicity and promotional literatures, DVDs, Films etc., on coffees of India in overseas events.

The Board participated in the following 12 overseas exhibitions / fairs as part of annual action plan for 2017-18.

Sl. No.	Name and Venue of the Event	Date of the Event
1	SCAA- 28th Annual SCAA Exposition, Seattle, WA, USA – WITH SPECIAL EVENT.	20-24 April 2017
2	SCAE World of Coffee Event, Budapest, Hungary.	13-15 June 2017
3	Summer, Fancy Food Show, New York.	25-27 June-2017
4	HKTDC Expo, Hong Kong.	17-19 Aug-2017
5	World Food, Istanbul, Turkey *	07-10 Sept -2017
6	World Food, Moscow, Russia	11-14 Sept - 2017
7	SCAJ Conference & Exhibition, Tokyo, Japan	20-22 Sept - 2017
8	ANUGA Food Fair, Cologne, Germany	07-11 Oct- 2017
9	HOST, Milan, Italy	20-24 Oct -2017
10	Seoul International, Café Show, Korea	09-12 Nov-2017
11	Janardriyah Festival 2018, Riyadh, Saudi Arabia	17-21 Feb 2018
12	Melbourne International Coffee Expo 2018 (MICE) Melbourne, Australia	March 22-24, 2018

* Only exporters participated.

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CHAPTER – VIII

MARKET RESEARCH & INTELLIGENCE

The Market Research & Intelligence Unit of the Board dealt with the following assignments during 2017-18.

- The Unit continued to collect and compiled daily market information (both global & pertaining to India) related to prices, supply, demand and other fundamental and technical factors that are important for market analysis. The same was disseminated to the industry as well as to the Government. During the year 2017-18, a total of 230 daily market reports were generated and disseminated.
- Daily e-mail information service giving daily market analysis was continued during the period. The facility was extended to the growers via extension department and posted on the website www.indiacoffee.org.
- The Unit published two issues of comprehensive 'Database on Coffee' for the months of July 2017 and November 2017. The Database on Coffee is very useful for policy makers and stakeholders.
- Crop estimations were carried out using stratified random sampling techniques across different category of holdings and coffee zones/regions for the season 2017-18.
- Post-blossom estimate for 2017-18 was placed at 3,50,400 MT (Arabica: 1,03,100 MT and Robusta: 2,47,300MT).
- Final-estimate for 2017-18 was placed at 3,16,000 MT (Arabica: 95,000 MT and Robusta: 221,000 MT).
- Based on the suggestions from the stakeholders of the coffee industry, the crop estimation methodology was refined by increasing the sample size from 2,000 to 2,200 sample estates, geo tagging of the sample estates and increased growers association participation during the crop assessment period.
- The Unit rendered economic and analytical support on WTO and Trade policy matters related to coffee.
- The activities of the Export Section were coordinated by the unit.
- The Unit continued to be involved in the maintenance of the Board's web site www.indiacoffee.org.

- The monthly "market watch" column in 'Indian Coffee' magazine was contributed by the unit.
- The Unit provided weekly estimated indicator prices for all the grades of coffee to domestic auction centre, ICTA.
- In line with the proposed agri-export policy of the Government of India, the Unit organized a training programme on 'Quality Control, Export Procedure and Product Certification for Coffee' to the State Governments officers, in which ten officers from Karnataka, Tamil Nadu and Andhra Pradesh were participated.
- The Unit has undertaken a study on "Economic Analysis of Coffee-based Cropping Systems in Major Coffee Growing Regions". A structured schedule is prepared for the collection of the data pertaining to costs and returns associated with the production of coffee and other intercrops. The data has been collected form the 120 sample farmers in Chikkamagaluru and Hassan districts of Karnataka and the analysis is in progress.
- As per the guidelines received from Department of Commerce, MoC&I, Coffee Board has invited Expression of Interest (EOI) for Empanelment of Insurance Company for Implementation of Revenue Insurance Scheme for Plantation Crops (RISPC) for coffee in the pilot district of Chikkamagaluru, Karnataka. However, none of the insurance companies submitted their proposal for implementation of RISPC due to difference of opinion on the Indemnity level between the coffee grower associations and the insurance companies and apprehensions from the Insurance Companies on the visual method of yield estimation presently adopted by the Board. During the review of the scheme at Ministry level, it was evident that the RISPC could not be operationalized in all the plantation crops due to various reasons and therefore, the Ministry further reviewed the earlier insurance schemes implemented by different Commodity Boards including Rainfall Insurance Scheme for Coffee and suggested Commodity Boards to explore formulating separate crop specific insurance schemes. Accordingly, keeping in view of the Government guidelines and further suggestions offered by the coffee grower associations, Coffee Board has submitted a proposal to the Government for implementation of Rainfall Insurance Scheme for Coffee.

CHAPTER – IX

ACCOUNTS AND FINANCE

The Accounts and Finance Department of the Coffee Board has the following functions:

- Drawing up Budget Estimates and allocation of budget to various departments of the Board.
- Liaison with the Finance Division of the Ministry of Commerce for release of funds etc.
- Compilation and maintenance of accounts of the various departments of the Board
- Exercising effective control over cash and other financial transactions of the Board, so as to ensure cost efficient deployment of resources.
- Rendering advice on all matters having financial implications.
- Conducting Internal Audit of the offices of the Board.
- Dealing with pending issues of Pool Marketing like sales tax, payments etc.

The Board's accounts have been prepared in three sets viz., Receipts and Payments, Income and Expenditure and Balance Sheet. Details of Grants-in-aid received from Government of India during the year 2017-18 and the expenditure under each head of account is given below:

(₹ in Lakh)

HEAD OF GRANT	Grants Received	Expenditure
Grants-in-aid - General (ONER)	4140.00	4597.21
Creation of Capital Assets - Plan (ONER)	200.00	199.88
Plan Subsidies (ONER)	4465.00	4465.01
Plan Subsidies - S.C. Sub-Plan (ONER)	200.00	135.10
Grants-in-aid - General (NER)	679.00	679.13
Creation of Capital Assets - NER	49.00	49.00
Plan Subsidies - NER	400.00	338.15
Grants-in-aid - General	3764.00	7526.54
Grants-in-aid - Salary	3710.00	
Grants-in-aid - General - (SAP)	151.00	151.00
RISPC	7.50	00.00
Trade Infrastructure for Export Scheme (TIES)	285.00*	00.00
TOTAL	18050.50	18141.02**

Refunds - The following funds were refunded to the Govt. of India as it could not be utilized during the year

1.	Subsidy NER	₹ 59.00 lakh
2.	SC Sub Plan	₹ 62.80 lakh
3.	RISPC Subsidies	₹ 7.50 lakh

* The funds received under TIES ₹285 lakh have been carried forward for utilization in 2018-19
** The expenditure in excess of Grants received has been met out from IEBR.

Pension

The Pension Corpus of ₹ 86.27 crore has been invested as of 31.03.2018 in Nationalized Banks for earning interest. Total interest earned during the year was ₹ 6.91 crore. Pension payments to 2,773 pensioners and pensionary benefits to those who have retired during the financial Year 2017-18 have been paid.

There are 209 employees in New Pension Scheme as of 31.03.2018 who joined the services of the Coffee board after 01.01.2004.

Provident Fund

During the year, a sum of ₹ 7.26 crore has been received as Provident Fund Subscription and refund of Provident Fund advances and a sum of ₹ 9.00 crore has been disbursed as advance / partial final withdrawals and final settlement of PF. Surplus fund of ₹ 33.65 crore has been deposited in various nationalized Banks as per Coffee Act, 1942 and earned an interest of ₹2.85 crore during the year.

Pool Fund

During the Coffee Pooling era, Pool Fund was raised from sale of coffee pooled by the planters and the Board was responsible for marketing the pooled coffee and made payment to the planters. This activity involved maintenance of establishment for propaganda for promotion of coffee and for marketing of coffee internal and international consumption. In 1995, the Board decided de-pooling of coffee which necessitated voluntary retirement of surplus staff engaged for pooling activities. Accordingly, the retirement benefits and the ex-gratia was met out of the Pool Fund and amount outstanding was transferred to Corpus Fund for utilization for payment of pension to the retired employees. The surplus pool funds of ₹6.45 crore only is invested in nationalized Bank.

ABBREVIATIONS

AIC	Agriculture Insurance Company of India Ltd
BCRL	Bio-Control Research Laboratories
BIS	Bureau of Indian Standards
BIEC	Bengaluru International Exhibition Centre
BSM	Buyer Seller Meet
Bt	*Bacillus thuringiensis*
CODISSIA	Coimbatore District Small Scale Industries Association
cDNA	complementary DNA
CBB	Coffee Berry Borer
CCRI	Central Coffee Research Institute
CDRP	Coffee Debt Relief Package
CFC	Common Fund for Commodities
CIFC	Centro de Investigacao das Ferrugineus do Cafeeiro (Coffee Rust Research Centre)
CIE	Centre for Innovation and Entrepreneurship
CFU	Colony Forming Unit
CIS	Career Improvement Scheme
CRSS	Coffee Research Sub Station
CxR	Congensis x Robusta
CST	Central Sales Tax
DBT	Department of Biotechnology
DGFT	Director General of Foreign Trade
DNA	De-oxy-ribo Nucleic Acid
DVDs	Digital Video Discs
EU	European Union
EC	Emulsifying Concentration
FSSAI	Food Safety and Standards Authority of India
FYM	Farm Yard Manure
GBE	Green Bean Equivalent
HDT	Hybrido-De-Timor
IAP	Internal Audit Party
IAS	Indian Administrative Service
IARI	Indian Agricultural Research Institute
ICAR	Indian Council of Agricultural Research
ICH	India Coffee House
ICO	International Coffee Organization

ICTA	Indian Coffee Trade Association
IDAS	Indian Defence Accounts Service
INM	Integrated Nutrition Management
IPM	Integrated Pest Management
IICF	India International Coffee Festival
IIHR	Indian Institute of Horticulture Research
IIPM	Indian Institute of Plantation Management
ITDA	Integrated Tribal Development Agency
ITPO	India Trade Promotion Organization
IT	Information Technology
ITS	Indian Telecom Service
IEBR	Internal and Extra Budgetary Resources
JNU	Jawaharlal Nehru University
Kg/Ha.	Kilogram/Hectare
KGST	Kerala General Sales Tax
MACP	Modified Assured Career Progression
MFCS	Modified Flexible Complementary Scheme
MAS	Marker Assisted Selection
MENA	Middle East and North Africa
MPEDA	Marine Products Export Development Authority
MT	Metric Tonne
MTS	Multi Tasking Staff
MUTV	Multi Utility Tractor Vehicle
NBAII	National Bureau of Agriculturally Important Insects
NBC	National Barista Championship
NBSS & LUP	National Bureau of Soil Survey and Land Use Planning
NCA	National Coffee Association
NER	North Eastern Region
NTA	Non-Traditional Areas
NPK	Nitrogen, Phosphorus, Potassium
NRCB	National Research Centre for Banana
PB	Pay Band
PCR	Polymerase Chain Reaction
PF	Provident Fund
PFA	Prevention of Food Adulteration
P & K	Phosphorus & Potassium
PSB	Phosphate Solubilizing Bacteria
PSFT	Price Stabilization Fund Trust

RCRS	Regional Coffee Research Station
RTI	Right to Information
RT PCR	Real Time Polymerase Chain Reaction
SC	Scheduled Caste
SCAA	Speciality Coffee Association of America
SCAE	Speciality Coffee Association of Europe
SCAR	Sequence Characterised Amplified Region
SEC	Socio Economic Class
SHG	Self Help Group
Sln	Selection
SLP	Special Leave Petition
SPAD	Soil Plant Analytical Development
SSP	Single Super Phosphate
ST	Scheduled Tribe
SRAP	Sequence Related Amplified Polymorphism
STAT	Sale Tax Appellate Tribunal
STEP	Short Term Executive Programme
RAPD	Randomly Amplified Polimer Dolymorphic
R&D	Research & Development
RCMC	Registration Cum Membership Certificate
R&G	Roasted & Ground
RISC	Rainfall Insurance Scheme for Coffee
TEC	Technology Evaluation Centre
TVCs	Television Commercials
UAS	University of Agricultural Sciences
UNO	United Nations Organisation
UPASI	The United Planters' Association of Southern India
US cents/lb	US cents/pound
VAM	Vesicular Arbuscular Mycorrhiza
WA	Writ Appeal
WP	Wettable Powder
WSB	White Stem Borer
WBC	World Barista Championship
WTO	World Trade Organisation