National Research Programme on
Plantation Development

Annual Report
2012-13

Centre for Development Studies
Thiruvananthapuram, Kerala
National Research Programme on Plantation Development

Report on the Activities undertaken during 2012-13

The National Research Programme on Plantation Development (NRPPD) was initiated in 2009 by the Ministry of Commerce. The programme is funded by the earnings from a corpus of Rs 500 Lakhs provided by the ministry. Working under the overall guidance of a Steering Committee chaired by Dr Bimal Jalan, Chairman of CDS and a Research Advisory Committee, Chaired by Professor Pulapre Balakrishnan, Director of CDS, the program is expected to undertake policy oriented research on all aspects of plantation sector in India. During the reporting period the programme has undertaken research on various issues and initiated different activities aimed at capacity building and dissemination in line with the objectives of the programme and as suggestions the Steering Committee.

1. Research

The National Research Programme on plantation Development at CDS is expected to undertake policy oriented research on all aspects of plantation sector in India. Further, it is expected to generate interest on issues relating to plantation sector among researchers and help capacity building to enhance research in future and to act as a depositary of knowledge and help its dissemination among different stakeholders to facilitate informed decision making.

Research on Labour shortage

The Steering Committee in its third meeting proposed that the issue of labour shortage confronted by the plantation sector shall attract the attention of research at NRPPD. Accordingly four discussion papers dealing with different crops have been brought out. Here it may be noted that the report prepared by the training programme participants in 2010-11 had dealt with labour shortage and the coping strategies by cardamom growers. The discussion papers of relevance are

1. Regional Dimensions of Emerging Labour Shortage in Rubber Plantation Sector in Kerala: An Exploratory analysis, Viswanathan P. K., Discussion paper No. 27
2. Labour Shortage in Coffee Plantation Areas – Coping Strategies of Small Growers in Kodagu District; Upendranadh C and C A Subbaiah, Discussion paper No. 30,

Please see annexure 1 for the highlights of all the discussion papers

Research on other issues
The other issues dealt with during the reporting year included the bearing of commodity futures, price formation in tea auctions, organization innovations in tea plantation sector, bearing plantation infrastructure on the performance, international competitiveness of plantation crops vis-à-vis non plantation crops, innovation and development in natural rubber and the sustainability issues in plantations sector. The titles dealing with these issues are given below and their highlights and policy implications are presented in Annexure 2.

1. Impact of Futures Markets on the Prices of Indian Plantation Crops; M Sivakumar, Discussion paper No. 24.
2. Trends and price formation mechanism in Indian tea auctions, Kingshuk Sarkar, Discussion paper No.23.
4. Organizational Innovations and Small Tea Growers (STGs) in India, Abdul Hannan, Discussion paper No. 25
5. Plantation infrastructure and the performance of Assam’s tea sector: An analysis on the smallholding tea plantation sector, Kalyan Das, Discussion paper No. 29
6. Towards a Sustainable System of Innovation: The Case of Plantation Sector, K J Joseph Discussion paper No. 28
8. Innovation and Development: The Case of Natural Rubber, (Report prepared by the participants of the training programme jointly organised with the Rubber Board and Indialics)

Research by Ph D & M Phil Scholars

Currently two Ph D scholars are working on plantation related issues and one M Phil dissertation was submitted.

Namratha Thappa is undertaking research leading to Ph D on Institutions, innovations and performance: A comparative study of plantation crops.

Sajitha M is undertaking research leading to Ph D on Innovation and livelihood strategies: A study of small growers in plantation sector.

Vijaya Suryan C K has submitted M Phil Dissertation on Agricultural Exports from India: A Comparative analysis of plantation crops and non plantation crops.

2. Training Programmes

During the reporting period two training programmes were organized.

a. Executive Training Programme on Commodity Futures for Commodity Board Officials 5-7 December 2012
Futures market is increasingly considered as a means of efficient price discovery of the respective commodities and ensuring stability in prices. As of now in India 113 commodities are permitted for trading in the commodity futures market of which about 50 commodities are actively traded. The volume of trade, through six national and 17 regional exchanges, has grown from Rs. 66000 crores in 2002-2003 to Rs.181 lakh crores in 2011-12. In case of plantation crops, except tea, all the other crops like natural rubber, tea, coffee, black pepper and cardamom are traded through futures market. In this context, as suggested by the Steering committee, NRPPD at CDS, as part of its capacity building initiatives, organized an executive training programme on commodity futures for the officials of commodity boards. The programme aimed at providing an understanding of the relevance of commodity futures in the current context, its functioning and the operational aspects including the regulatory role of state and the institutional arrangements needed to enable the growers to take advantage of commodity futures. In addition to the coordinator, the instructors included, Shri Paul Joseph, former Principal Economic Advisor, Planning Commission, Dr M Mathisekharan, Member FMC, Prof A Damodaran, IIM, Bangalore and Shri Anil Mishra, Managing Director, National Multi Commodity Exchange.

b. Refresher course cum-Research Training Programme in Economics: Theme-Innovation and Development, jointly organized with the Rubber Board and Indialics (India Chapter of Globelics) 4-25 January 2013

This 21 days training programme for the University-College teachers and research scholars, aimed at exposing the participants (17 from 7 states) to various issues in innovation and development with a case study of Natural Rubber. During the first 10 days of class room lectures in CDS the participants were exposed to different theoretical paradigms in innovation and development. Thereafter, the participants were taken to the Rubber Board wherein the Chair Person addressed the participants and all the division heads took classes on the rubber plantation sector in general and various innovations undertaken in the rubber sector in particular. The training in the Rubber board was coordinated by Dr Kuruvila Jacob, Director Rubber Training Institute. Drawing from these classes and the field visit, the participants prepared a report on Innovation and Development: Experience of Natural rubber, with special focus on R&D, extension, rubber producers’ societies and the rubber based industries. The draft report was presented before the rubber board officials in a workshop organized in CDS on 25 January. Apart from the CDS faculty and Rubber Board officials, the resource persons included the experts with in the country and Prof Olav Wicken from University of Oslo and Dr Vandana Ujjual from Sussex.

3. Publication

By consolidating the research output of NRPPD a manuscript titled sustainable competitiveness under globalization: Case of India’s plantation sector is under review with Routledge (Taylor & Francis).

With the approval of the Committee in its 3rd meeting four dummy issues of global plantation monitor was prepared. Since the person in charge left CDS, we shall continue this work after appointing a suitable person.
4. **Data base on plantation sector**

With a view to promote research on plantation sector one of the mandates of the Program is to build up a consolidated data base covering different plantation crops. A time series data base on tea and coffee, covering different aspects of area, production, marketing and exports have been compiled and uploaded in the NRPPD website with acknowledgement to the commodity board concerned.

5. **Towards 2013-14**

   a. **Research**

   In the forthcoming year we intend to continue research productivity performance, export competitiveness, livelihood issues of small growers, geographic indications for export competitiveness, changing role of research and extension and other issues that the Committee would like to propose.

   b. **Towards restructuring the training programme**

   One of the objectives of the training programmes organized for the research scholars and lecturers has been to attract new scholars to the issues related to plantation sector. Though we have been able to attract scholars from different states, we understand that in a context wherein hardly any research scholars in the country are working on plantation related issues, the scholars who attended the programme are the ones who have already working on other issues. Hence with a view to attract new generation of scholars to research on plantation sector we propose to organize short term training programmes/workshops for the students of post graduate departments in the colleges/universities located in plantation areas in the country. Such a training programme is likely to be useful to students because in most of the universities, the students are expected to prepare a project report as part of the post graduate study. It is also expected to link the text book to reality which is currently missing in the syllabus of the universities.

   Such training programmes will be organized by ensuring the involvement of commodity boards and the scholars from other research institutes concerned with plantation sector as a first step towards evolving synergy between NRPPD and other research institutes.

   We have received encouraging response from MG University, Central university of Kerala and few other colleges to collaborate in this programme.
Annexure 1
Policy Oriented Research: An Overview and Policy Pointers

a. Research on labour shortage

5. Regional Dimensions of Emerging Labour Shortage in Rubber Plantation Sector in Kerala: An Exploratory analysis; Viswanathan P. K., Discussion paper No. 27

The unparalleled dynamism of the smallholders in rubber sector has been challenged especially since the late 1990s by the paucity of skilled rubber tappers. In this context this paper dealt with (a) examination of the nature, magnitude and causes of tapping labour scarcity in rubber sector across the three rubber growing regions of Kerala; (b) the strategies and actions adopted by the rubber producers (large planters and small holders) and other stakeholders in the rubber sector, and (c) policy measures and institutional strategies.

The study, based on surveys among rubber growers, tappers, RPSs as well as discussions with the key officials in the production department of the Rubber Board, argued that the observed trend has been an outcome of (a) rise in area under rubber operated by smallholders along with a corresponding rise in rubber tapped area; (b) the inertia among younger generations to take up rubber tapping as an economic activity; (c) almost negligible presence of women in rubber tapping and related activities; (d) ageing of the existing labour force engaged in tapping job and e) the growing syndrome of ‘multiple grower dependence of tappers’ in the traditional rubber growing regions of Kerala. Based on the evidence of limited success of efforts by the Rubber Board as well as RPSs and individual growers, the study argues that sourcing of migrant tappers from outside Kerala may not be a sustainable solution to the labour/tapper shortage. There are also issues relating to social acceptance of the migrant tappers among the rubber growers, huge transaction costs in terms of: (a) search and recruitment costs; and (b) supervision and retention costs. It would also entail more state level initiatives for providing adequate social protection for the workers. Hence, the feasible solutions to tapper shortage in the state lies in strengthening the domestic labour market are through: (a) effectively retaining the existing labour force, (b) promotion of technological innovations in rubber tapping, along with provision of incentives for the adoption of LFTs; and (c) attracting younger generations as well as women towards tapping. Further the study underlines the need for exploring ways to attract younger generations to the tapping labour market in Kerala. Primarily, this calls for devising strategies and technological innovations for processing and product development programmes based on a better understanding of the preferences of the youth in and around rubber growing regions in the state. The study comes up with following policy pointers for the consideration of the Rubber Board.

1. Forming a Rubber Tappers’ Society (RTS) to be based at the RPSs;
2. Establishment of eco-friendly group processing centres with a potential of employing a minimum of 8-10 tappers;
3. Creating locally feasible job opportunities at the RPSs for young tappers to engage in after doing tapping as in the case of the GPCs;
4. Providing partial financial assistances to younger tappers to start self-employment, small business, purchase of auto rickshaws;

5. Reserving job opportunities available at the Regional/ Field Offices to the young tappers;

6. Organising or offering support for skill development programmes in other activities with increased upward occupational mobility;

7. Introducing a monthly pension scheme to old/ experienced tappers and new tappers who have a minimum of five years experience in tapping;

8. Creating a specific fund (realized through collection of rubber cess), called, ‘Tapper Welfare Fund’ based at the RPSs, which is to be given to the needy workers/ tappers for medical expenses and other contingencies. A fixed amount can be distributed per annum to the registered tappers without seeking for certifications or proof of the expenses incurred;

9. Scaling up and increasing capacities of the existing group processing centres (attached with the RPSs) with the scope for providing employment to a minimum of five young tappers from the local areas, etc;

10. Setting up of rubber wood primary processing factories in few more locations, which could potentially employ a minimum of 15-20 tappers.


Given that plantation operations are labour intensive and time bound, there appears to be severe shortage of labour in particular time-periods and for particular operations in coffee plantations. Absentee-planters also contribute to the situation as they offer more wages in order to complete operations in short time. On the labour side, with younger generation of plantation labour families migrating to cities, aged labourers and women are the only available labour. Hence most planters depend on day-migrants from outside. Systems of jeep-drivers acting as ‘maistries’ in ensuring supply of labour from villages within and adjoining districts has evolved as a coping mechanism, which resulted in rising cost of labour, low labour productivity and exploitative intermediation between planters and labourers. Some planters also resort to migrant labour from other states. However presence of outside labourers in large numbers is perceived as a potential disturbance to the social milieu of Coorg. The study calls for pro-active role of different stakeholders (Coffee Board, planters’ associations and NGOs) to address the complex issues involved. This includes the regulation of the exploitative activities of ‘maistries’ or jeep drivers and the introduction of mechanical devices that reduce manual labour. Extension services and demonstration sites can be established and arrangement of easier credit facility for purchase of machines. Encouragement of Joint liability groups (JLGs) for procuring some of the machines can be explored by the state government and the coffee board in order to encourage small growers to procure them collectively. Similarly, the practice of exchange labour could be encouraged with incentives through SHGs and other forms of group organizations. There is a strong demand from the small growers to link up MGNREGS with some of the plantation operations (to begin with for tiny and small growers) as a way to cushion the cost of labour. Gram sabhas and village panchayats can take a lead role in ensuring a fair and transparent linkage between MGNREGS and plantation operations. Government and the Coffee Board may take up such pilot project in selected villages in order
to identify modalities of such a convergence. Another innovative way of supporting small growers would be creating incentive structure for conservation of the environment and adopting sustainable practices. Subsidizing at the input level for conservation would ease the burden of rising cost of production.

7. **Assessing Risk and Risk Mitigation Strategies of Small Coffee Growers: A Study in Kodagu District in Karnataka; Deepika M G and Amalendu Jyotishi, Discussion Paper No. 21**

Small holder cultivation with greater reliance on markets has made coffee cultivators susceptible to risks at different levels. In this context, this paper analysed the various risks among the small coffee growers in India through the study conducted in the Kodagu district of Karnataka, the largest coffee growing district in India. The risks analysed are classified into: farm risk arising due to lower yield, rising cost of inputs, lack of irrigation and extension services; marketing risks arising due to volatility of prices and the buyer driven supply chain; policy risks arising due to taxation and other regulatory barriers. Among these, the risks arising from threat of diseases, and rising labour cost due to shortage of labour, exploitative marketing situations arising due to lack of co-operatives are of high severity. These calls for urgent policy interventions, which if properly addressed might help in mitigating some of the risks faced by the farmers. To mention some of them, there is an urgent need to enhance the R&D efforts of Coffee and Spices Board to address diseases that affect coffee and other crops in the region. There is a need for transferring the technology at the field level through more efficient extension services. Intervention by forest officials in addressing the problem of wild animals is an immediate requirement. Shortage of labour being the most crucial of the input problems, there is an urgent need to move towards cost effective and crop specific mechanisation. Linking of MNREGS for plantation labour could provide some relief to the problem of labour shortage. A revisit into the Plantation Labour Act to make it advantageous to both the farmers and the labourers is called upon to lead to more organized labour market. To address the marketing risks, a seller driven supply chain would be useful in resisting the price related risks associated with the growers. Exploring the possible alternatives in terms of coffee marketing co-operative or local auction market can help creating a seller led supply chain process. From the analysis of diversification at the regional level using secondary information on price and yield, it is visible that coffee and other intercropped commodities have different price and yield cycles, therefore, diversification of crops would act as hedge against price and yield risks. It is therefore, important to promote diversification of crops at farm level. Attempts made to address crop related issues by Coffee Board, Spice Board and horticulture department hardly encourages diversification. It is essential that these Boards work in tandem to promote diversification of crops in the region looking into the problems of farmers in totality.

8. **Plantation Labour Act 1951 and Social Cost: The Case of Tea Industry; J John and Pallavi Mansingh, Discussion paper No. 26**

The PLA, 1951 applies to those agricultural crops which are cultivated on an extensive scale in a large contiguous area, owned and managed by an individual or a company for commercial purposes. The PLA gives certain social and economic rights to unskilled/ manual workers in these plantations, who are descendants of indentured workers transported to these plantation
areas from far off places. The benefits that are part of the PLA - for instance housing, health, maternity benefits, supply of drinking water and monetary incentives - were not entirely a new concept, but were given to workers as enticements to workers with the objective of retaining them in the plantations and ensuring a regular supply of labour. PLA has made these benefits statutory rights of workers in contrast to a situation where laws applicable to the plantation were to augment supply of productive labour to the plantations. The study assumes importance because despite the pioneering legislation to safeguard the welfare of workers the plantation sector has not been able to retain the labour force and is currently confronted with severe labour shortage.

The PLA gave the onus of the delivery of these rights to the employers. The study argues that the implementation of the provisions of the Act, however, did not lead either to the empowerment of the workers or to the structural transformation of the colonial plantations. The PLA has its constraints in the articulation of the rights, definition of plantation, definition of worker and its failure to break the logic of division of labour within plantations, the highly restrictive logic of determination of wage and in the limited valuation of women's labour. This point to the fact that PLA contributes to institutional exclusion. The most vociferous argument has been that the observance of the provisions of the PLA increases the cost of production of tea making the industry inefficient. While it is acknowledged that the provision of rights will necessarily involve cost, it cannot be a justification for maintaining subsistence wages for workers in plantations.

The proposal by the Tea Board to create a Trust and to manage housing facilities under Indira awas yojana; sanitation facility under total sanitation campaign; safe drinking water under swajaldhara; health under national rural health mission; and educational facilities under sarva siksha abhiyan must be re-evaluated in this context. The main concern here is that none of the schemes are statutory rights. These are schemes which does not have the solidity of entitlements; denial of these cannot be challenged before a court of law. Essentially, these schemes will take away statutory social and economic rights already enjoyed by the workers. O. P. Arya committee's strong view that all the social security measures provided in the PLA need to be retained shall guide the policy option. Government shall also seriously consider the Inter-ministerial Committee's recommendation of sharing of the social responsibilities between the central government, the employer and the State Governments.

b. Research on other issues

9. Impact of Futures Markets on the Prices of Indian Plantation Crops; M Sivakumar, Discussion paper No. 24

Futures market is one of the interventions by the government with the objective of delivering efficient price discovery and price risk management. However, the impact of futures trading on the price realized by the growers in general and its bearing on increasing price instability did not receive adequate attention of scholars. Beyond domestic fundamentals (supply and demand conditions) a host of other factors do influence the price level and the change therein (instability). These include global demand and supply, exchange rates, food price inflation and WTO commitments and others. This paper attempts to analyse the price trends in the
plantation crops before and after the commencement of futures trading at national level during 2003-04. The performance of these crops (pepper, cardamom, coffee, rubber) Vs non exchange traded commodity like tea has also been compared using statistical and econometric tools.

Findings of the study indicates that in case of exchange traded plantation crops, except natural rubber, the observed price instability and volatility were higher before commencement of futures as compared to the period since futures trading was introduced. In case of non exchange traded commodity (tea), the level of price volatility was much lower as compared to other crops. The impact of futures markets by the way of price discovery and price risk management made the spot prices of these commodities to realign their path to have a co-movement. Policy suggestions from the study are the following.

Market participants need to closely monitor the futures prices of these crops traded in the exchange platform. Through Price Dissemination project (PDP), the Forward Markets Commission has installed information kiosks at various places to help the market participants to take appropriate marketing decisions to mitigate price risks.

Futures markets serves as an indicator for the quality preferred by the market participants for these crops. Hence, better awareness about post harvest practices, supply chain management, distribution of better clones, advanced R&D in plantation crops etc should be strengthened.

In the case of any adverse situations, the regulator is empowered to correct the commodity market ecosystem with plenty of regulatory tools to put the system in order. Hence the regulator should be given more powers to regulate the markets and at the same time, it should keenly watch the domestic and global fundamentals for these crops.

Since physical delivery is made compulsory at the maturity of the contract for these commodities, stocks lying in the warehouses, planted area and expected output should be made known to the market players periodically through newsletters, websites, SMS alerts etc.

Futures markets should be developed along with spot markets and integrated effectively to bring about greater participation from the producers and consumers of the underlying assets.

Tea being a different class of plantation crop which exhibits high heterogeneity would not lend itself to classic commodity futures trading. The only alternative would be to set up a financial future based on a tea price index which would also serve as an effective hedge for tea growers against non-seasonal price declines.

10. Trends and price formation mechanism in Indian tea auctions, Kingshuk Sircar, Discussion paper No.23

Tea auctions have played a key role as the main vehicle for primary marketing of tea in India for over a century ever since the first Indian auction centre was set up in Kolkata in 1891. Price formation in Indian tea auction is itself a complex process and the outcome is a result of complex interplay of various factors. Present study tries to find out factors which play important role in price formation mechanism. For India as whole more than 50 per cent of
sales are made through auctions. Auction buying in India is much more fragmented and there exists a sizable gap between wholesale and retail prices. Southern producers are relatively more dependent on auctions as a mode of primary marketing of tea. There is also a clear seasonality in prices of tea within a year. One of the variables explaining the variance in auction price is unit export price. Higher export price raises the bargaining position of sellers at auctions. Export volume has also an influence on the price formation at auctions as higher export reduces domestic availability and hikes up domestic price. Further number of lots offered and quantity sold are inversely related with average price realization at auction whereas the number of lots sold is positively related with average price realization.

11. Changing Land Utilisation Patterns in Tea Plantation Sector in West Bengal: Some Policy Imperatives; Rinju Rasaily, Discussion paper No.22

Land related issues have been a deeply contested across all the tea growing states in India. The present study, based on secondary data from government sources and a systematic review of literature along with insights from interviews with different stakeholders, clearly points out that the change in land utilisation within the tea plantation sector has been made possible with state facilitation and legislative amendments. An astounding shift in the area under tea cultivation from 2004-2008 was noted with an annual average growth of 7.76 per cent in the small holder sector and a negative growth rate of – 2.01 percent in the traditional estate sector. However, the absence of title deeds of land among the small growers affected accessibility to various governmental subsidies and the issues of entitlements and right to shelter remains for tea estate workers. The paper notes a decrease in the land man ratio that could be linked to the shrinkage in cultivable area and therefore a reduction in days of employment available for the workforce along with an increase in casualisation and family labour. It is suggested that legislative amendments such as those permitting other economic activity or through aspects such as tea tourism, eco-tourism must ensure securing employment and residence to the tea workers community. Stakeholders must initiate discussions towards pragmatic policy formulations for addressing issues of conversions, its socio-economic viabilities, impact on employment and livelihood to avert disengagement of labour.

12. Organizational Innovations and Small Tea Growers (STGs) in India; Abdul Hannan, Discussion paper No.25

Small tea plantations were in vogue in India since early 1960s. They were mainly concentrated in Tamil Nadu, Kerala and Karnataka. It was only during the late 1980s or early 1990s they started spreading to North-Eastern states such as Assam and West Bengal. The smallholders are unorganized and operate in fragmented landholdings. They face challenges of landownership regulations and related procedural problems. Technical know-how on tea cultivation is very low and the integration of this unorganised sector with the plantation industry seems to be a challenging task. At present various agencies such as Smallholders Associations, Primary Producing Societies (SHGs), Bought-Leaf Factories (BLFs), and Co-operative Factories (CPF)s exist in the 15 small tea growing states. However, most of these agencies are found to be ineffective due to the lack of proper co-ordination and collective action in an integrated manner. By analysing organisational innovations like BLFs, CPFs, SHGs, Federations-Associations-Confederations against the back drop of the emergence of
Small Tea Growers (STGs) and their national and regional growth pattern, the present study try to identify the gaps in the existing policies and suggests new areas of research.

**13. Plantation infrastructure and the performance of Assam’s tea sector: An analysis on the smallholding tea plantation sector;** Kalyan Das, *Discussion paper No.29*

It is observed that there is mismatch in the production of green tea leaves by the small holders and the processing capacity of the factories. The limit set by the factories on the supply of tea leaves produced by the smallholders has few repercussions. In addition to the possibility that a proportion of tea leaves remain un-plucked, a fair price for tea leaves is not ensured to the smallholders in an unregulated environment of price fixation. This limits margin of profit, which finally affects investment in maintenance in the smallholdings. Moreover, an assessment of the operational hours lost by the tea factories due to erratic electricity supply reveal additional constraints in the tea sector. Though the arrangement of alternative power has prevented the wastage, it raises operational costs of the factories. The decision to acquire a backup power is however considered a rational decision on the part of the factories as the cost of not having backup is higher in frequent power cut situation. This paper consolidates the argument that adequate provisioning of public infrastructure help to reduce the cost of production and thus raise competitiveness and inclusiveness of a production sector. While the bearing of low productivity and high labour cost on competitiveness has attracted the attention of policy makers, the influence infrastructure constraints in production, processing and marketing seems to have not received much attention.


Plantation sector in India, historically dominated by the large estates has been promoted intensively by the state given its significant contribution towards foreign exchange on the one hand its developmental role and livelihood of workers on the other. However, there has been a growing concern over the environmental implications of plantations sector on account of the deforestation, sedimentation in the reservoirs of hydroelectric projects, environmentally hostile cultural practices, waste generation in case of certain plantations and others. Hence economic sustainability of plantation sector is considered as inimical to environmental sustainability. At the same time, the changes in environment do adversely affect yield of plantation crops and therefore their economic viability. In this paper, drawing insight from the literature on innovation systems, we examined the evolving nature of interaction between economy, ecology, innovation and finds that the emerging trajectory appears to be one that promotes sustainability notwithstanding instances of institutional inertia within the sector towards evolving a sustainability oriented innovation system.


Competitiveness of agricultural commodities is a major topic of discussion in the age of WTO. In the literature on agricultural export competitiveness the role played by different institutions in the export performance of the agricultural commodities seems to have not received adequate
attention. In India, plantation and non-plantation commodities are supported by entirely different institutional arrangements which determine the schemes and activities of production and export of these commodity groups. This study takes a point of departure from the existing literature by recognizing the role of the differential institutional mechanisms in the export performance of the plantation and non-plantation commodities. It tries to look at the export competitiveness of plantation and non-plantation commodities in a comparative perspective.

The analysis shows that there is significant difference in the export performance of plantation and non plantation commodities with the former performing far better in competitiveness, export intensity and world market shares. Plantation commodities are exceedingly export oriented with major production of these commodities being sold in the international market. But, the recent trends suggest that the export orientation of all crops in the non-plantation group is on the rise while export orientation of major plantation commodities such as tea, pepper, and small cardamom is on the decline. Though plantation commodities are competitive compared with non-plantation commodities, the former group witnessed a gradual erosion of competitiveness over the years. This is a point of concern given the elaborate institutional arrangements for the export promotion of these commodities. This calls for more intervention from the government and various commodity boards by way of devising price and non-price export promotion policies.

16. Innovation and Development: The Case of Natural Rubber, (Report prepared by the participants of the training programme jointly organised with the Rubber Board and Indials)

The remarkable performance of natural rubber in India has attracted much attention. The observed performance, the present study argued, could be attributed to a great extent to the vibrant system of innovation that evolved over time. Innovation in the natural rubber sector has gone beyond the narrow confines of R&D to varied organizational and institutional innovations with a view to address varied issues confronted by the sector. What characterized the innovation system is its social embeddedness and interactive learning process that enabled the system to coevolves fairly effectively to the challenges that emerged from time to time. Within this broader context the study dealt with the R&D sub system, Extension and training subsystem, Organisational innovation in the form of RPS and present state of rubber based industries.

The farmer centric R&D sub system has been at the core of the vibrant innovation system in natural rubber and is found to be highly interactive within the sub system and also with different actors within and outside the country. This learning and knowledge intensive sub-system, is found coevolving as it has been found responding proactively with the challenges that arise from within and outside the system. This is manifested *inter alia*, in the new innovations with a view to bring down cost of production, through reduced input use, including labour input and other innovations in post harvest operations along with the development of new clones. Further the R&D sub system has also been contributing towards help evolving a diversified output structure, leading to better price realization by the growers. Notwithstanding the increased need for R&D efforts in the context of heightened competition, share of R&D in total budget of Rubber Board seems to have not kept pace with the growing demand. There is also an emerging challenge on account of growing concerns with mono crop based planting system due to its high susceptibility to market risk and implications on environment. While this issue has already drawn the attention of the subsystem, the riddle of increasing production while addressing environmental concerns is likely to continue. In a
context wherein the need for generating a diversified demand base is more than ever before there is the need for evolving a Research and Development strategy of “walking on two legs” involving both farm-centric R&D and firm-centric R&D.

The extension and training sub-system evolved over time has been successful in terms of transferring knowledge from lab to field and gave rich dividends to the farmers and other stakeholders. An effective training system has also been evolved wherein hardly any stakeholder has been left out of the capacity building process. Here the study noted the manifold ways in which the existing system responded to the challenges as illustrated by the formation of Rubber Producers’ societies. However, it was noted that extension intensity (expenditure per 100 ha) has declined in the recent years as compared to the past. This coincided with an increase in the area under old aged plants indicating the less remarkable success of the extension system to induce growers to undertake timely replanting. Subsidy based promotion system has been effectively used in the past towards inducing farmers to adopt new innovations. However, replanting decision by growers is shaped by a host of factors wherein the role of subsidy appears to be not as important as it used to be. Hence it appears that there is the need for revisiting the subsidy system as it exists today. In a context wherein the financial sector in the country is much developed today as compared to the context wherein subsidy based development system has been conceived, there appears to be the scope for harnessing the financial sector for promoting replanting and new planning. It might be worthwhile to examine carefully social marginal product of a rupee spent on subsidy vis a vis other alternative uses like ensuring price stability or promoting research. There are other issues like ensuring the supply of quality planting material which is essential to ensure steady growth in yield also deserve the attention.

The formation of RPSs indicates the responsiveness of the system to the challenges confronted especially by the small holders. It was observed that certain regions that responded intensively towards forming RPS also turns out to be the regions wherein defunct RPS are concentrated. RPS as an innovation, however, seems to have not adapted itself to the changing context and that we have today a kind of dualistic system. While a small proportion of the farmers are actively involved in RPS, a large majority are out of the ambit of RPSs. Most of the growers who are out of the RPSs are having other sources of income and many are “absentee growers”. The inertia of RPS to change is evident from the fact that the bylaws of RPS have not been subjected to any change over the years. Hence, there is the need to revisit the relevance carrying with RPS in the current form. In the organizational innovation that evolved (RPS) market had a very limited role and that there is evidence to suggest that market based systems are being evolved (private consultants) and they might create serious challenges to the extension system that has been evolved over time. Hence there appears to be the need for bringing these actors into the innovation system sooner than later along with appropriate changes in RPS to make them more relevant to the current realities.

The varied innovations have contributed to the emergence of a relatively vibrant rubber based industries in the country. The emergence of a processing and manufacturing sector with diversified product structure has been helpful in ensuring not only higher prices for the growers but also ensuring a much higher share of consumers’ rupee as compared to other agricultural crops in India. The recent initiatives towards setting up rubber parks jointly with the state government deserve much appreciation. However, given the open economy context wherein the units in this sector are exposed to heightened international competition, there is hardly any shortcut to survival other than being innovative. Moreover, Kerala being labour scarce and high cost economy there is the need for focusing on high value products using high technology and capital intensive methods. Such a development strategy calls for more knowledge input and the R&D sub sector needs to network
with other stakeholders to help evolving a highly knowledge intensive and high value rubber based industrial sector. Here the role of the state government and the Rubber Board cannot be over emphasized.

On the whole, the natural rubber sector while having a highly vibrant innovation system needs further strengthening given the new challenges. In a context wherein the current decade is designated as the “decade of innovation” and the process of innovation is quintessentially rooted in specific sectors, the Rubber Board shall consider evolving an innovation policy which could serve as a model not only for other plantation crops but also for the other sectors in the economy in general.
## Annexure 2

National Research Programme on Plantation Development (NRPPD)

**Expenditure Statement**

2012-2013

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Head of Expenditure</th>
<th>Amount (₹)</th>
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<tbody>
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<td>Support Staff</td>
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<td><strong>Unspent balance transferred to Corpus</strong></td>
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<td><strong>Fund value as on 31.03.2013</strong></td>
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Finance Officer       Registrar

*(Signed hard copies are sent by post and the audited statement will be presented in the meeting)*
Annexure 3

National Research Programme on Plantation Development (NRPPD)
Provisional budget: 2013-2014

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<td>Research Papers/Visiting Faculty</td>
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<td>Surplus (savings to the Corpus)</td>
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