

## **SESSION 5.2 (PLANTATION AGRICULTURE)**

### **Demand Driven Approach in the Systems of Innovation in agriculture: A Case of Natural Rubber**

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**Abstract:** The contemporary agricultural sector in India dominated by small and marginal holdings appears to be complex and highly influenced by various price and non-price related challenges. These challenges are identified to be highly uncertain and unpredictable with multiple dimensions (biophysical, technological, socio-cultural, economic, institutional, and political) and the involvement of multiple actors. In this context, many studies have questioned the inability of exiting models in agriculture which focused only on the creation of new knowledge and its conversion into technologies that can directly be used by farmers. Hence, to cope up, compete and survive the rapidly evolving challenges in the contemporary agriculture, it becomes necessary the sector to innovate continually if it is to contribute towards sustainable economic development. In this regard, the agricultural innovation system (AIS) gained importance as an analytical framework which follows a demand driven approach to generate learning, innovations and competence building among different stakeholders. At this juncture, this paper have chosen the case of natural rubber (NR), a small grower dominated sector which is highly vulnerable towards risks and uncertainties, to explore whether the system involved in the NR sector follows demand driven approach to address the real challenges in the sector.

### **Forms of Exclusion/Inclusion in the Innovation System – A Comparative Analysis of Access of Small Growers to Formal Institutional Arrangements in Tea and Natural Rubber**

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Historically, both tea and Natural Rubber (NR) has had an elaborate institutional mechanism in place for the generation and dissemination of knowledge. It is well known that invention unless applied cannot be termed as innovation - the solutions that the

researcher comes up with in their research stations has to reach out to the growers in the field. In this context, taking the case of two plantation crops- tea and natural rubber, the paper explores the issue of exclusion/inclusion faced by small growers in the process of dissemination of knowledge. Drawing insights from the literature on agricultural innovation system and the concept of exclusion as used in the development discourse, the paper particularly attempts to identify various forms of exclusion/inclusion in terms of the growers' access to formal institutional arrangements. The study is based on fieldwork conducted in the tea growing regions of Assam and NR growing regions of Kerala. The analysis helps in providing an understanding of the reasons for the exclusion of growers. This might enable to undertake proper institutional intervention to ensure effective dissemination of knowledge to the growers.

## **Policy and Institutional Regimes for Rubber Plantation Development in Diverse Social and Agro-Ecological Environments: A Study in the Indian context**

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**Abstract:** Policies and institutional interventions for agricultural development of the backward Northeastern region of India continue to be a prerogative for the national government and the respective state governments in India since long. Various national and state agricultural development agencies, especially the commodity boards have been constantly engaged in the development of commercial agriculture in the region. Among the commodity boards, the interventions by the Rubber Board have been quite significant in terms of social and economic impacts and the entire NER is emerging as the 'Hub of rubber production' in the country accounting for 18 percent of the total area and 6 percent of the total production during 2013. The process of rubber expansion has been quite dramatic, even surpassing the growth observed in the traditional rubber growing states in south India, including Kerala, Tamilnadu and Karnataka. The phenomenal growth of rubber plantation areas in the NE region is also a matter of serious concern, as rubber is highly promoted as a monoculture system in the otherwise diverse agro-ecological environments of the NER. Rubber expansion in the NER has been justified on the grounds of: (a) ever increasing domestic demand for natural rubber from the manufacturing sector (dominated by tyre industry); and (b) the saturation of agro-climatically suitable lands in the traditional regions, especially, Kerala. Moreover, promotion of rubber cultivation in the NER has been considered to have greater social impacts in terms of rehabilitating the erstwhile shifting cultivators in the region and thereby leading to their social and economic empowerment. However, it emerges that the specific policy and institutional interventions have been oriented towards promoting rubber as a monoculture system in the NE region, which seem to pose potential threats to the co-existing land use and resource management

as well as integrated livelihood systems followed by the rural households, dominated by tribal communities in the region.

In this backdrop, the Chapter makes a critical analysis of the compatibility of the policies and institutional interventions historically followed by the Indian Rubber Board in the wide-scale promotion of rubber monoculture in the North Eastern region in India in a comparative perspective of the traditional rubber growing regions in South India, with particular reference to Kerala. If we examine the trajectory of development of rubber plantations in Kerala under the institutional interventions spearheaded by the Rubber Board, it emerges that the Board had promoted a system of rubber production that was highly oriented towards monoculture without considering the crop promotion from an integrated farming system perspective. The paper further argues that given the agro-ecological diversity and the specific socioeconomic, ethnic and institutional settings as well as the pattern of livelihoods followed, the policies and institutional interventions for rubber development in the NER invariably requires an integrated and holistic approach, so as to minimise the damages caused to the fragile agro-ecosystems of the region and thereby not disturbing the inland fishery, livestock and forestry integrated livelihood systems in the region. Replication of the rubber monoculture as had been widely promoted in the traditional regions, especially, Kerala to the NER, can be a cause of conflict with the pre-existing as well as coexisting agricultural production (including food crops) practices/ farm integrated livelihood systems. Moreover, the institutional makeover, including infrastructure support of the Rubber Board in the region also require major restructuring to evolve an integrated approach towards rubber development along with promotion of other livelihood and rubber integrated agro-forestry systems.

## **India's Trade Liberalisation Initiatives and Trends in Balance of Trade under the Regional Trade Agreements: The case of Rubber and Rubber Products**

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**Abstract:** India's rubber sector has been endowed with the unique feature of a well-developed natural rubber (NR) production and rubber products manufacturing segments since the 1940s. A remarkable degree of domestic market orientation of both the segments had been protected from external competition till the early 1990s. India's Regional Trade Agreements (RTAs) assume importance for the trade sensitivity arising from higher shares in the total value of external trade in rubber and rubber products (47.17 %) and in the negative balance of trade (278.6 %) during 2014-15. Among the total 24 trade agreements signed by India, tariff reduction/elimination commitments for rubber and rubber products are covered only under 11 agreements. This paper is concerned with (i) India's tariff policies on rubber and rubber products under the RTAs; and (ii) the impact of the same on India's balance of trade in rubber and rubber products. Analysis of time series external trade data for the past 15 year period from 2000-01 to 2014-15 revealed that India provided ample protection to its NR production segment under various RTAs except Asia Pacific Trade Agreement (APTA) and less developed countries under the South Asian Free Trade Area (SAFTA). However, the total value of imports of NR under RTAs grew at a rate of 39.54 per cent and the negative balance of trade during 2014-15 was US \$ 785.35 million. At the aggregate level, India's exports and imports of rubber and rubber products under the RTAs grew at the rates of 16.84 per cent and 26.34 per cent respectively during the period under review. The magnitude of the emerging trends is evident from a higher negative balance of trade with the RTAs (US \$ 1469 million) than with the world during 2014-15. The results of the study underlined the need for a comprehensive policy package for India's rubber sector rather than segmented ad-hoc measures from a long-term policy perspective.