

VI. Special Topic

Focus on Socio-Economic and Ecological Aspects in the Development of Rubber Plantations in the Non-Traditional Regions in India¹

Rubber plantation history in India is now almost a century old. During the last 95 years the growth and development in this sector in the country has been commendable. Rubber industry in the country has also been on a fast development trend. The country consumes the entire rubber produced and has to import, though not substantially, to bridge the gap between production and consumption.

Need for larger quantity of natural rubber for domestic consumption has been felt long before. Since 1950-51 when planned development activities were taken up by the Government of India under Five Year Plans, the consumption has always outstripped domestic production necessitating imports. With the estimated consumption likely to touch 700,000 tonnes during 2000-01 and 1.3 million tonnes during 2011-12 the country has to gear itself for increasing the production of natural rubber. The area available for rubber cultivation in the traditional rubber growing region of the country i.e. State of Kerala and Kanyakumari district of Tamilnadu is limited. Hence, exploratory surveys were conducted by the Rubber Board of India during 1960s itself for identifying suitable other areas for rubber cultivation in the country. The Board's survey indicated that about 1.2 million ha land would be suitable for cultivation in the country outside the traditional region.

Hevea tree is far more adaptable to diverse agro-climatic conditions than what one thought a few decades ago. In India trial plantations were started in various parts of the country in the North-east region of the country during 1960s. Results of the earlier trial plantings have been encouraging. The trial plantations were followed up with R&D efforts and then expansion of the crop on a commercial scale. At present the north-east region alone accounts for about 40,000 ha under rubber.

The constraints in expansion of rubber cultivation in non-traditional regions in general where land has been identified as suitable can be summarised as below:

1. Low temperature during November to February (Minimum temperature around 10°C and occasional dropping down to 4° to 5°C, in north-eastern region);
2. Higher temperature i.e. temperature touching as high as 40°C during April to June in parts of Western India, Orissa, Parts of Madhya Pradesh;
3. Occasional occurrence of hail storm;
4. Degraded soils in north-east as a result of slash and burn system of cultivation;
5. Prolonged drought.

The Board initiated location specific and need based research programmes as a result of which it has been able to evolve appropriate technologies to mitigate these stress factors making rubber plantations economically viable. Sustainable farming systems with rubber as the main crop also are being evolved. With appropriate agro-technologies evolved by Research it has been possible to obtain yield of 16-19 tonnes per hectare in NT region.

Apart from the above agro-climatic constraints the development programmes in this region are adversely affected by social constraints such as poor economic status and low literacy among the potential growers.

One area where significant progress has been made by Rubber Board in its efforts in NT region of India has been in the rehabilitation of shifting cultivators in rubber based settlement projects. The ecological balance in NE Region, Orissa, and parts of Andhra Pradesh have been disturbed to a great extent by indiscriminate destruction of humid forests for slash and burn system of cultivation by the nomadic tribals. This system has led to conversion of large tracks of forest as degraded lands. The State Governments have initiated programmes way back in 1950s itself to settle them by offering various rehabilitation packages. None of the programmes achieved the desired results. The Board took up economic settlement of tribals with rubber as the main component in the 90's. It realised the need for adopting an integrated approach aiming at overall

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development. The Board took the lead role of an implementing agency and ensured dovetailing of funds earmarked for various rural development and tribal development programmes by the Government and by harnessing all the sources, an overall development package was evolved. In 1992 for the first time a Rubber Plantation Development Scheme for the economic settlement of tribal shifting cultivators adopting the integrated approach mentioned above was implemented. This Rehabilitation project in which about 1200 tribal families of shifting cultivators are being permanently settled is considered as a great success judging from the results during the initial period itself. The project has incorporated non-rubber components aimed at providing additional income generation which have various agriculture, horticulture and agro-forestry components besides health care, adult literacy and constant motivation of the beneficiaries by the extension personnel of Rubber Board to sustain their interest in the plantation activity.

The initial success of this project inspired the World Bank Missions to pay special attention to this aspect and the World Bank project being implemented now in India has a special component for Tripura (a major rubber growing State in North East India with about 30% of the population being tribals) in which a special Tribal Development Plan (TDP) has been formulated. The TDP includes social activities such as health camps, adult literacy, special nutrition programme, gender sensitisation programmes, savings programme for women, formation of self-help groups besides building up infrastructure facilities. The involvement of non-Government organisations and the self-help groups of growers themselves in the rubber development programme also is ensured. The World Bank assisted project has already covered about 4,000 tribal families in Tripura during the last 3 years. Rubber being a crop with long economic lifespan, if the interests of the tribals can be sustained up to yielding phase, it will ensure the complete economic settlement for a generation. Moreover, this will help to wean away the tribals from their traditional ecologically damaging slash and burn cultivation habit and also will elevate their social and economic status. The State Governments in the Region have taken note of the social relevance of this and has taken up rubber as one of the main components for the rehabilitation of the tribal shifting cultivators and other weaker sections of the society.

The Rubber Board's success in this venture has paved the way for many other organisations to take up perennial crop based settlement programmes adopting the above approach in the country. On an average each tribal family holds 1 - 1.5 ha of land and this will ensure an average annual gross income of Rs 75,000 per year (US\$2100).

Yet another significant relevance of the above package is the ecological benefits. The traditional system of slash and burn cultivation destroys the forest and leads to denuded lands with surface soil washed off and infested with noxious weeds. Using these lands for usual agricultural operations require heavy investment taking into consideration the agro-climatic conditions in the region. Rubber is a rainfed crop and various studies conducted in the North East Region has already proved that the rubber plantation with eco-friendly agro-management practice like growing leguminous cover helps ecology in many ways such as improvement of soil organic matter status, soil physical properties, increased infiltration of water, reducing soil erosion and moderating the micro-climate. Studies conducted in NE India by the Board comparing fields under shifting cultivation and under rubber have indicated that in 15 years the soil moisture retention capacity of the soil under plantation increased by more than 5%. Rubber plantation helps in providing the much needed tree cover in these denuded areas. Rubber timber and other products such as honey, oil and oil cake make rubber plantation more ecologically desirable and economically viable and acceptable in the fragile eco-zones. One hectare of rubber not only ensures afforestation of one ha of barren land but indirectly saves destruction of forest may be many times more than this because of shifting cultivation. Deforestation for timber extraction also could be checked as rubberwood could supplement the timber needs in the years to come.

The Rubber Board of India has gained the expertise to handle the complex issue of socio-economic rehabilitation of one of the most sensitive target groups and eco-restoration in one of the most ecologically fragile zones in the country and the Organisation is in a position to offer consultancy in the development of rubber plantation in non-traditional regions and on rubber-based rehabilitation programmes.