

## THE NEED TO EXPAND CULTIVATION OF RUBBER INTO ALTERNATE AREAS OF THE COUNTRY: A TECHNOLOGICAL PERSPECTIVE

A Nugawela

The Natural Rubber (NR) extent and production shows a declining trend in the country (Table 1). This scenario will have serious implications on economic and social development of the country whilst having adverse ecological impacts as well.

**Table 1.** *Cultivated extent (ha) and total production of rubber in Sri Lanka*

Year	Extent (1000 Ha)	Production (Million kg)
1982	171	125
1992	161	106
2001	151	87

### Rubber in traditional areas

Traditionally, NR is planted in the South West of the country where the annual rainfall is above 3000 mm. In this area it is restricted to elevations below 300m to minimize the incidence of leaf diseases.

Commercial planting of rubber in Sri Lanka commenced in the early 1890s during the British Colonial period and it is being maintained through re-planting of the original planted areas and also by planting of new extents. Therefore, the current rubber plantations and smallholdings in these areas are about the 3<sup>rd</sup> or 4<sup>th</sup> generation. Continuous planting of a particular crop may deplete the soil chemical and physical properties if related agronomic practices are not correctly adopted. Replanting rubber successfully in such eroded land can incur very high costs threatening the economic viability of the investment. Land use for village expansion, industrialization and urbanization further limits its availability for growing rubber in traditional areas.

Labour requirement for rubber is ca. 0.75/ha. Due to competition for labour from other sectors capable of a better wage structure plantations and smallholdings in traditional areas are finding it difficult to obtain the requirement. The magnitude of this problem is increasing each day.

The high annual rainfall prevalent in traditional rubber growing areas though ideal for field establishment and early growth of rubber plants is a hindrance for exploiting the rubber tree for its latex. Depending on the area ca 80 - 110 tapping days are lost each year in traditional areas significantly lowering the income levels of both landowners and tappers (Table 2). This is considered a serious constraint to enhance national rubber production as well.

**Table 2.** Late and no tapping days per annum due to rain interference on tapping (Note: a late tapping day results in a 20 - 25% loss in crop)

	Area	Days of	
		No tapping	Late tapping
1.	Avissawella	76	64
2.	Kegalle	81	37
3.	Kalutara	91	55
4.	Ratnapura	96	65
5.	Galle	108	48

### The need for alternate rubber growing areas:

The scenario discussed above suggests that the conditions found in the traditional rubber growing areas today may limit to some extent the replanting and new planting of rubber. Therefore, to arrest the rapidly declining rubber extents and production in the country it is mandatory that alternate areas are looked into.

### Alternate areas available for growing rubber

Agro-climatic regions marginal with regard to elevation and rainfall for growing rubber have been tested to find out the possibility expanding rubber cultivation in to such areas in the country. In the process technology developed for traditional areas too have been modified to suite the agro-climatic conditions prevailing in such areas. With these developments rubber could be successfully established and harvested in the relatively drier areas, such as Moneragala, Bibile and Hambantota of the Southern Province with very high yield potentials.

### Relative advantages in drier areas

Southern Province of the country has large extents of land with the potential for growing rubber. Since the land in these areas are not extensively cultivated the soils are relatively fertile than in the traditional rubber growing areas. The flat or slightly undulating terrain and relatively low rainfall experienced in these areas will also enhance fertilizer use efficiency by lowering wash offs and leaching of nutrients. People living in these areas are predominantly farmers and alternate sources of employment are relatively less than in traditional areas. Therefore, the labour requirement for rubber, *i.e.* 0.75/ha, could easily be found in these areas.

The relatively lower number of wet days per year than in the traditional rubber growing areas will result in more number of tapping days. Further, the relatively low humidity will help in quick drying of wet panels which could increase the number of normal tapping days and to reduce the number of late tapping days. These attributes can have significant positive impacts on productivity.

The incidence of common leaf diseases such as *Oidium*, *Gleosporium* and *Phytophthora* are more in the relatively wet areas. Such leaf diseases and the

resultant productivity losses will be less in the relatively drier areas of the Southern Province.

Cash crops are widely grown by the farmers in the Moneragla, Bibile and Hambanthota areas. Such crops can successfully be intercropped with rubber. Studies have shown that this practice whilst providing the land owner an income during the immature phase of rubber can promote the growth of rubber trees as well. The complementary effect of intercrops on the growth of rubber is more prominent in the drier areas.

The pod set and hence the seed-fall is poor in traditional rubber growing areas due to wet weather conditions. Further, the few seeds available are of inferior quality due to the same reasons. This is a serious limitation to the production of quality planting material which could adversely effect productivity and profitability. With the very high pod set the availability of seeds will be very high in the drier areas enabling to produce high quality planting material.

The above facts reveal that in the current context expansion of rubber into non-traditional areas in Southern Province can be relatively more advantageous than growing rubber in marginal lands in the traditional areas. Furthermore rubber plantations in these areas can be considered as an adequate substitution for the fast depleting natural forest cover in addition to its inherent social and economic advantages.

#### **Important technological considerations**

It should be emphasized that relatively low rainfall and number of wet days prevalent in drier areas could have adverse effects on field establishment and early growth of rubber plants. Therefore, technology modifications already made to minimize these adverse effects should be correctly adopted. Use of poly-bagged plants, appropriate methods of planting, mulching and use of specific fertilizer mixtures are some of the relevant techniques. The RRISL can offer effective technical assistance in this regard.