HOW MUCH NATURAL RUBBER CAN INDIA PRODUCE IN THE COMING YEARS?

James Jacob, T. Siju and Binni Chandy

Rubber Research Institute of India Kottayam-686 009, Kerala, India

Received: 19 November 2020 Accepted: 01 December 2020

Jacob, J., Siju, T. and Chandy, B. (2020). How much natural rubber can India produce in the coming years? *Rubber Science*, **33**(3): 229-241.

In the context of rising demand for natural rubber (NR) and fall in its domestic production, it is important to assess the country's capacity to produce NR in the coming years. Since productivity is highly dependent on the age of rubber trees, age composition of the NR holdings is a major determinant of production capacity. By analysing the demographic trends using historic data of new/replanting in the country between 1956-57 and 2018-19, it was evident that the rate of annual replanting was highly inadequate to replace all the old holdings existing at any point of time. We adopted a scientifically precise and robust method to estimate the fraction of the older holdings getting added to the less productive senile category every year after replanting. Share of the senile holdings consistently increased over the years. As of 2020-21, 35 per cent of the holdings was 25 years or older (which was as high as 41% of the mature area) and this share will increase in the coming years if the present low planting tempo continued. Given that most growers in India adopt alternate daily tapping, holdings that are 25 years or older are likely to be highly unproductive and therefore unprofitable to tap when NR price is low.

We modelled the past and future trajectories of NR production capacity, defined as the sum of the product of mature area in different ages and the corresponding productivity. Our analysis revealed two peaks in production capacity, one reaching a high in 2001-02 (8.7 to 9.0 lakh tonnes yr^{-1}) and the other in 2024-25 (10.9 to 11.5 lakh tonnes yr^{-1}). The first peak reflected the planting boom during the decade of the 1980s, catalysed by the release of the first indigenously developed high yielding hybrid rubber clone, RRII 105 and supported by proactive extension efforts by the Rubber Board. The second peak reflected the massive planting activity for several years that was seen around the world from the middle of the decade of 2000 triggered by a steep rise in NR price. Presently the planting rate in the country is at a historic low. Our model predicts that NR production capacity which is presently on the rise will steadily decline in direct proportion to an increasing share of senile holdings from as early as the middle of the current decade which will be hard to reverse for several years to come even if aggressive re/new planting is done now; thanks to the long gestation period of the crop.

Our model forecasts that NR deficit is likely to increase drastically, warranting more imports in the coming years which will be incongruous with the vision envisaged in the National Rubber Policy and may not be the best desirable option for the NR consuming industry in India. Alternatively, and more likely, the industry may increase the share of consumption of synthetic rubbers which is not in the best interest of the NR grower community or environmental sustainability. Yet another eventuality might be migration of the industry to those countries that produce surplus quantities of NR, but this will be contradictory to the spirit of *Aatma Nirbhar Bharat Abhiyaan.*

Key words: Age composition, Natural rubber, New planting, Production capacity, Replanting, Replanting age, Senile area

Correspondence: James Jacob (Email: james@rubberboard.org.in)