

## Achieving India's Export Potential of Rubber

Nature has not provided any other industrial raw material of plant origin as natural rubber. It forms the back bone of commercial agriculture scenario of the state and rubber plantations have profound influence on the social and economic status of the people.

Rubber, one of the important plantation crop, which is scientifically known as *Hevea brasiliensis-Muel-Arg* belongs to the family Euphorbiaceae. It is a deciduous tree, grown as industrial as well as cash crop. It is originated from Amazon river of South America and introduced into South Asia through Kew garden in United Kingdom (1876). Commercial cultivation of rubber started in India from 1902. Southern part of Asia has wide climatic conditions and huge land area, so that British government during their period imported seedlings and established plantations.

Rubber has huge export potential in international market. India ranked fifth in area, fourth in production and first in productivity, but pushed down in the list of exports. Consumption of rubber is more than what we are producing, so export potential of rubber in India slides downwards automatically.

### REVIEW OF LITERATURE

A.Muthusamy and S.Sundararajan (2019) in their paper entitled "Export – Import Performance of Natural Rubber in India" states that. 'Exports income from Natural Raw Rubber has depicted an increasing trend because the last few years mostly due to low rubber prices in the world market.'

Shahul Hameedu (2014) in his paper entitled "Role of Rubber Producers Societies In Kerala" stated that "India produces and utilizes maximum number of rubber comparing to other countries. Most of the products has its applications".

Kannan. M (2013) in his paper entitled 'The determinants of production and export of natural rubber in India' stated that "In the production of natural rubber, the variables such as export quantity, stock, and domestic price had positive and significant association with the production of natural rubber".

Jiss Tom Palil and Dr. Rajeshwari (2018) in their journal entitled "A study on the nature of foreign trade of Indian Natural Rubber" stated that 'several policies that government once had for the welfare of rubber sector is being reverted back for petty economic benefits and political reasons'.

### IMPORTANCE

Latex, a natural source of isoprene called caoutchouc or Indian Rubber which is produced from exudations of tree has properties like,

- Elasticity
- Resilience over a wider temperature range
- Toughness
- Non – Conduction of Electricity
- Better Ageing and Weathering resistant
- Polymer Blends
- More resistant to oil, certain chemicals and oxygen

Like latex, rubber logs also have economic value, if it is scientifically processed. Because of these properties it is used in automobiles, aircraft, bicycles mechanical parts of mountings, belts, shoes, toys etc... From this we can understand that rubber plays a vital role in our day to day life. How to achieve export potential? To export a product, we must have a production which overflows the consumption.

We have directly contacted farmers and analysed why they are not cultivating rubber. Majority of farmers complained about the low prices of rubber at market.

From this we can understand that import is more than export

### MEASURES TO IMPROVE PRODUCTION WIDENING CLIMATIC ADAPTIBILITY

Rubber grows suitably in tropical climate with weather parameters like annual rainfall of 200-450 cm, temperature of 25-34<sup>o</sup> C and relative humidity 80%. Out of 15 agro climatic zones of India, two zones are with above parameters namely

- Eastern Himalayan Regions
- West Coastal plains and Ghats region

But it is clear with data that rubber is majorly produced only in Kerala, Karnataka, and Tamilnadu. These three states together constitute 98% of total rubber production in India. So we have to create awareness among farmers in places where agro climatic condition suits for rubber cultivation about benefits acquired from rubber. So that we can increase the production to some extent.

Many schemes for rubber plantation have been implemented in non-traditional areas like North Eastern Region considering regions vast resource of

**EXPORT STATISTICS OF INDIA**

YEAR	EXPORT(MT)	IMPORT(MT)
2000-01	13356	8970
2001-02	6995	49769
2002-03	55311	26217
2003-04	75905	44199
2004-05	46150	72835
2005-06	73830	45285
2006-07	56545	89799
2007-08	60353	86394
2008-09	46926	77762
2009-10	25090	177130
2010-11	29851	190692
2011-12	27145	214443
2012-13	30594	260263
2013-14	5398	360263
2014-15	1002	442130
2015-16	865	458374
2016-17	20920	426188
2017-18	5072	469760

(SOURCE: Rubber board, Kottayam)

uncultivated hilly land and favourable agro climatic conditions.

Rubber called as ‘Liquid Gold’ by people of Tripura. The state Tripura has become one of the most thrust areas for rubber growing because of its well acceptance worldwide. Tripura, a north eastern state was declared as “Second Rubber Capital of India” after Kerala, 60% of the potential area under rubber plantations.

An assessment made by rubber board indicates the rubber plantation can be raised in about 4,50,000 hectares of land of North East India, As it is a non-traditional area, many problems affected the cultivators. The problems are

- Rubber plantations are labour intensive, labour management is very sensitive.
- No marketing infrastructure and storage facility for dry rubber content.
- Tapping, a skilled work which needs proper training and guidance
- Labour problem and increased wages for labours is important factors affecting rubber cultivators of north eastern states.
- As it is a dry land, irrigation is most important.

**STATEWISE AREA AND PRODUCTION OF RUBBER**

STATE	AREA (HECTARES)	PRODUCTION (TONNE)			
		2015-16	2016-17	2017-18	2018-19
Kerala	534228	438630	540400	540775	490460
Tamilnadu	19767	19495	21140	21110	21500
Traditional Total	553995	458125	561540	561885	511960
Tripura	59285	44245	50985	50500	53050
Assam	32659	14560	19970	23300	24300
Meghalaya	10584	7360	8950	9050	9100
Nagaland	-	3020	4320	4820	4930
Manipur	-	1660	2090	1790	1850
Mizoram	-	595	742	742	750
Arunachal prades	-	360	478	428	450
Karnataka	38110	29400	38800	38300	38200
A&N Islands	879	240	240	240	275
Goa	1081	640	645	575	625
West Bengal	-	325	335	335	380
Andhra Pradesh	-	230	320	400	400

(Source: Rubber Board)

- Para rubber, require minimum of 150-200cm rainfall annually together with warm temperature and well drained soil in Western Ghats is suitable.

### **CONVERTING BARREN LANDS INTO CULTIVABLE LANDS**

Kerala, which is known as leading rubber producing states in India, has a cultivable area of 822 thousand hectares but only 545 thousand hectares is under cultivation. Government have to initiate land holders of remaining land to start rubber cultivation by offering some subsidies. Uncultivated land will have more natural vegetation and organic matter.

### **POLY CLONAL SEED METHOD**

Polyclonal is sexual progeny of budded clones. Clonal seeds are legitimate seeds may be produced by hand pollination between selected clones. It can be used to establish plantations in non-conventional areas of rubber cultivation subjected to biotic and abiotic stress and also as a superior rootstock material.

### **DEVELOPMENT OF NEW VARIETIES**

Breeding in agriculture and allied sectors is to the development of different varieties and clones. Each variety has its own genetic parent and a character of its own. We can select site specific varieties for cultivation.

New promising varieties can be developed by crossing high yielding hybrids with local varieties and also by crossing foreign hybrids having high latex production with suitable local cultivar.

- Evolving high yielding and stress tolerant clones.
- Evolving rubber based sustainable farming models, through trials with other crop.
- Evolving farm practices resulting in cost reduction and increase in yield.

Planting high yielding varieties and clones, suitable for location leads to increase in production to an extent. High yielding clone RRII – 105 produced an yield of about 1.75 litre/day ie., Double the amount produced by normal variety. Other high yielding varieties are RR430 and RR414 can increase yield upto 15 to 40j.

### **HIGH DENSITY PLANTING**

Density of planting is an important parameter influencing growth and yield of trees. Normal spacing adopted in planting rubber is 4.9×4.9m ie., (420 plants/ha). If we allow high density planting with spacing 3.7×3.7m we can accommodate 749 trees /ha but having some drawbacks. Plants cultivated in high density planting will only have high yield during initial years. Later size and girth will get reduced and automatically latex yield will fall down. High density

has higher percentage of too small trees not suitable for harvest latex. Comparing to all densities, medium density with spacing 4.1×4.1m ie can accommodate 620 plants/ha has higher percentage of yield increase by application of stimulant. Damage due to wind in low density planting can be avoided in high density planting and have high timber value per hectare.

Application of ethrel or ethephon + coconut oil@ 10% a.i can increase the yield of rubber. By increasing the production of rubber with desirable quality we can increase the export potential in international trade of rubber.

Only when a commodity has highest production than what is needed for consumption, they will be exported in the international market.

According to World Trade Organization, a premier organization in determining the nature of foreign trade agreement, natural rubber is considered as an input or raw material used in production of various commodities like dipped gloves, surgical items, tyres, valves etc... But policy makers failed to give special preferences, to natural rubber. Why?. It is clear that there is no significant difference between synthetic rubber and natural rubber mentioning rubber as a non-agricultural commodity and it is removed from the list with limited imports. Rubber board has to take initial steps to limit the import and export of natural rubber as it is an agricultural product.

With the growth of automobile industries, tyre manufacturing industries and rubber based industries in India, the demand for natural rubber increased. Intensified search for new resources and encouraged efforts to cultivate rubber yielding plants.

As per data available from the Directorate General of Commercial Intelligence and Statistics, the volume of exports came down to 4551 tonnes during 2018-2019 from 5072 tonnes a year ago. Unpleasant relative prices prevailing in the international market kept exports of natural rubber unattractive. The main form of rubber exported from the country was block rubber (96%).

From statistical data, it is clear that due to sudden rise in natural rubber prices during 1970's many farmers preferred large scale planting of rubber by replanting standing crop of coconut. Rubber export has reached 30594 tonnes in 2012-2013 but after that it dropped every year because of relative low price in international market. Why low price for our product? To overcome this problem rubber board developed brand name and a price tag.

- Developing a logo for rubber exporters company
- Product with all essential parameters should carry a brand name indicating the quality.
- Brand name should be catchy

- Product should have a label including price, warranty, date of manufacture, whether it is well dried or not, percentage of moisture.

To mark the branded product a new logo for natural rubber has been made. The logo symbolizes a seal of thrust for Indian Natural rubber with a quality assurance from the board. The usage of INR logo exporters are purely voluntary. Quality assurance is based on green book or IS specifications. Only natural rubber processor and exporter who have a genuine commitment on quality will be allowed to register with the board for the use of INR logo on their products for export government have to take initiatives for allowing farmers who produce quality rubber to use INR logo.

Different grades of rubber are exported, ribbed smoked sheets(RSS) shall grade, pack natural rubber for export in confirmation with specifications in International Green Book Standards for CENEX ( Centrifuged latex 60% dry rubber content ) and ISNR grade block latex, the produce proposed for INR logo should be qualified as per BIS standards.

Rubber board ensures quality of product from India by certifying with INR logo and the brand certificate. It will make the buyers to give priority to attributes of product from India at the point of purchase. This improves confidence on the product sourced from India which will pave the way for international acceptance of Indian NR and creates a special 'Indian Brand Image'.

All natural rubber exporters will have a vital registration cum membership certificate to export rubber from India can register the board for using the brand 'Indian Natural Rubber'. We have to promote all the rubber cultivators to get membership from the board.

Rubber board has charged the logo users to remit Rs 0.10/kg as demand draft in favour of Rubber board payable at Kottayam and collect logo stickers from Mark Promotion Department of the board. This will be inconvenient for many of the producers. They can change the system as pay directly to the board and get the logo stickers. This will be more convenient for producers.

Greater importance will be given to quality improvement and cost reduction in the processing sector and technically specified rubber processing factories will be encouraged to modernize so that the cost of production is reduced and quality improved. They will also be provided with assistance for implementing quality management system such as ISO9002.

The manufacturing industry will have to compete with international market in terms of quality and price. When manufactures have to acquire ISO certification, insistence on quality. Because of a captive

market quality of processing including packaging have not received the attention it should have in the domestic sector. Increased attention to this aspect is more relevant, when we are trying to gain entry into the international market.

- Quality assurance given by our company should reach each and every corner of the world.
- Indicate whether it is a sheet rubber or crepe rubber or latex concentrate.
- We have to give a strong assurance to consumers about the properties which it has.

For RSS grade, visual observation of the drawn sample will be done by the technical officers. The sample taken from the ISNR and concentrated latex will be tested in boards laboratory and based on the results the rubber will be branded for export. If in case the rubber is not upto the quality, the board has to take the product at a price which will be in beneficial.

Rubber is being long gestation period of about 7 years to come to yielding the tribal families have to be supported during the immature phases. Rubber has to undergo many process from the beginning till it reaches its yielding stage. Proper upkeep and aftercare will be helpful in enhancing the yielding capacity.

Cost of cultivation of rubber is very high during the initial stages but it will take 7 years for rubber plantation to get yield. Many of us are interested in growing crops which will give instant yield. So that many farmers are not interested in cultivating rubber. Government have to take some steps for creating interest in farmers.

- Giving subsidies for rubber cultivation which will reduce the cost of cultivation to some extent.
- Free seedlings can be supplied to farmers.
- Providing loan for rubber cultivators a very low interest rate which should be affordable by weaker section of people too.
- Supplying all inputs like fertilizers, seedlings of good quality etc... to be given to farmers at free of cost.

Board is providing financial assistance to offset the additional expenses incurred in grading and packing of product for each kilogram of natural rubber for export. We have to take to the knowledge of farmers. Analysing the recent trends, it is clear that several policies the government once had for the welfare of rubber sector is reverted back for petty economic benefits and political reasons. For example suspension of subsidies for replanting the rubber after clearing plantation for recropping. Earlier government had the scheme where one time subsidy amount of Rs 25000/- hectare was distributed to all farmers. This scheme is discontinued citing financial burden incurring from the scheme over government.

The marketing of natural rubber in Kerala is commonly adopted by small holders and estate sectors. Small holders and estate sector sell natural rubber to traders or dealers through a marketing channel. The leading export market of Indian natural rubber are China, Malaysia, Indonesia, Turkey, Srilanka, Spain and Nepal. Marketing of a commodity will depend on factors like size of market, demand, market structure, buying habit market share and overseas market.

Some steps to be taken by government. They can provide financial support to the board for block planting. Support for NGO's and SHG's to start nurseries. This is a viable economic activity especially for women SHG's.

Regulated markets, established for the welfare of farmers where fruits and vegetables are majorly sold. Farmers can take their produce directly to the market and they can sell it for beneficial prices. In rubber, commission payed to middleman is not bearable, because the farmer's can't reach the government organization directly. Private dealers who are in between are cheating farmers, so that government have to take necessary steps for improving the marketing facilities for getting beneficial prices for farmers.

RSS-5 sheet rubber variety used by the tyre industry its cost is dropped nowadays, so farmers are not interest in tapping with falling price and dwindling consumption.

Transportation, a major problem faced by all the farmers. If farmers are taking rubber by hiring a vehicle, transportation cost will be not bearable by weaker sections, so that government have to set vehicles for transporting rubber from farmers to government rubber marketing boards.

For marketing of horticultural crops e-NARM digital marketing app has been launched for welfare of farmers. "Rubber trade info" a new mobile application to collect prices of natural rubber everyday. The board has also launched "rubhelp" a helpdesk to assist stakeholder to acquaint themselves with and utilize various online services. This service is only for updation of prices. An improved version which should update the daily demand of rubber at international trade. Updated version should be useful to farmers too.

NGO's and KVK's can give free orientation classes on cultivation of rubber and its value at international level. They provide training for growers, tappers, workers and other stake holders and labour

welfare activities. equipment training centres and expansion of office space and residential buibing. They can provide demonstration to growers in tapping, it will be a sort of employment generation to them. They can give classes on simple processing of crop into RSS tapping, Protection and rain guard. At the end put to a test and issue a course completion certificate.

### CONCLUSION

Apart from production of natural rubber, other factors which impact the rubber export are stock, export quantity and domestic price. Increasing the stock of natural rubber will lead to lowering the export quantity. If population is increased, the demand of automotive industries increased, around the world, hence rubber will be automatically demanded. In order to increase the Indian export the stock of natural rubber should not be maintained over reasonable and prescribed level. The natural rubber sector is one of the principal 'thrust sector' in the economy of the state. It is expected that rubber production will generate substantial revenue for the state in the upcoming years.

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