Rubber

1. Background

a) Brief about the commodity such as sample picture, lifecycle and various varieties/grade of the commodity found in India

2) Natural Rubber (NR) is the most versatile industrial raw material of plant origin. The main source of natural rubber is the rubber tree Hevea brasiliensis, native of the Amazon river basin. It was introduced to tropical Asia and Africa by the efforts of the British Government during the later part of 19th century. The rubber tree grows in a wide range of agro climates and soil conditions, if well- distributed rainfall of about 200 c m is received annually. Latex, the economic produce is harvested by controlled wounding, termed as tapping, on the bark of the tree, from which it flows out and is collected.

Properties and uses of natural rubber

3) The latex contains up to 40% natural rubber, the rest being water and other constituents Natural rubber is a high molecular weight polymeric substance with visco-elastic properties. Structurally it is cis 1,4-polyisoprene. Isoprene is a diene and 1, 4 addition leaves a double bond in each of the isoprene unit in the polymer. Because of this, natural rubber shows all the reactions of an unsaturated polymer. It gives addition compounds with halogens, ozone, hydrogen chloride and several other reactants that react with olefins. An interesting reaction of natural rubber is its combination with sulphur. This is known as vulcanization. This reaction converts the plastic and viscous nature of raw rubber into elastic. Vulcanised rubber will have very high tensile strength and comparatively low elongation. Its hardness and abrasion resistance also will be high when compared to raw rubber. Because of the unique

combination of these properties, natural rubber finds application in the manufacture of a variety of products.

Specific gravity	0.92
Refractive index	1.52
Coefficient of cubical expansion	0.00062/°C
Cohesive energy density	63.7 Cal/cc.
Heat of combustion	10547.084 Cal/g
Thermal conductivity	0.00032 Cal/sec/cm/°C
Dielectric constant	2.37
Power factor (at 1000 cycles)	0.15-0.2
Volume resistivity	1015 ohm.cm
Dielectric strength	3937 V/mm

4) The main use of natural rubber is in automobiles. Nearly 65 % of natural rubber is consumed by automobile industry. Natural rubber is the main component in heavy duty tyres. Besides, NR is used for manufacture of bicycle tyres and tubes, hoses, conveyor belts, foam mattresses, footwear, balloons, toys and several other products of daily use. It also has engineering application in shock absorption, vibration isolation and road surfacing.

a) Commodity fundamentals and balance sheet as per the following format (to be prepared based on publicly available information on best effort basis):

Table - Fundamentals & Balance sheet (quantity)

PERFORMANCE OF NR-INDIA (Tonnes)		
Indicator	**2018-19**	**2019-20**
Production	651000	712000
Consumption	1211940	1134120
Import	582351	457223
Export	4551	12872
Closing stock	308860	331091

Performance Review of Rubber Contract

PRODUCTION OF NATURAL RUBBER IN MAIN PRODUCING COUNTRIES('000 Tonnes)

Country	2018 p	2019 p
Thailand	4973	4852
Indonesia	3630	3301
Vietnam	1138	1185
China	818	813
Côte d'Ivoire	624	808
India	**660**	**702**
Malaysia	603	640
Myanmar	270	293
Cambodia	220	289
Brazil	185	187
World	**13892**	**13695**

p: provisional
Source: Natural Rubber Trends Statistics Annexure, August 2020 of Association of Natural Rubber Producing Countries (ANRPC), Malaysia. Data of all other countries except India from Rubber Statistical Bulletin, Vol. 74, No.10-12, April – June 2020 of International Rubber Study Group (IRSG), Singapore

Consumption of NR in Main Consuming Countries :-

CONSUMPTION OF NR IN MAIN CONSUMING COUNTRIES('000Tones)		
Country	**2018p**	**2019p**
China	5504	5497
India	**1220**	**1144**
U.S.A.	987	1006
Thailand	752	800
Japan	706	714
Indonesia	618	625
Malaysia	515	501
Brazil	398	400
South Korea	367	354
Vietnam	225	230

World	**13764**	**13626**
p: provisional		
Source: Rubber Statistical Bulletin, Vol. 74, No. 10-12, April -June 2020 of International Rubber Study Group(IRSG), Singapore.		

COUNTRY-WISE IMPORT OF NATURAL RUBBER('000 Tones)		
Country	**2018**p	**2019**p
China	5211	4745
Malaysia	**1014**	**1083**
U.S.A.	997	1010
Japan	694	731
India	601	487
Vietnam	583	456
South Korea	368	356
Germany	292	256
Belgium & Luxembourg	218	226
Brazil	214	213
World	**12425**	**11749**
Source: Rubber Statistical Bulletin, Vol. 74, No. 10-12, April -June 2020 of International Rubber Study Group(IRSG), Singapore.		

PRODUCTION OF NR IN DIFFERENT STATES		
State	**2018-19**	**2019-20p**
Kerala	492500	533500
Tamil Nadu	21500	21600
Tripura	52300	61950
Assam	25200	30350
Meghalaya	9300	9350
Karnataka	38900	41550
Other states	11300	13700
Total India	**651000**	**712000**
p: provisional		

b) **Major changes in the policies governing trade in the spot markets of the commodity**

MSP for Rubber farmer ; Kerala Budget 2021

As the farmers across the country are on the streets struggling for their livelihood, the Kerala government, through its 2021 Budget has once again lit farmers' hopes. State Finance Minister Dr Thomas Isaac, on January 15, presented the final budget of the Left Democratic Front (LDF), hiking the Minimum Support Price (MSP) for rubber to Rs 170 w.e.f –April 2021

c) Geo political issues in the commodity and its impact on Indian scenario.

5) The market conditions seem to be challenging for the natural rubber (NR) industry, as demand is caught up in the prevailing disarray in global trade and investments, geopolitics and slowing economy.

6) As China accounts for a staggering 40 per cent of the global consumption of rubber, its trade war with the US and slowing economic activities have greater implications for the NR economy, said a report prepared by the Association of Natural Rubber Producing Countries (ANRPC)

2. Trading related parameter

a) Monthly and Annual traded volume (quantity in appropriate units)

Month	**Volume MT**
April-19	16524
May-19	21202
June-19	19127
July-19	19776
August-19	16944
September-19	11586
October-19	4181
November-19	2634
December-19	3508
January-20	11626
February-20	11021
March-20	8847
Grand Total	**146976**

b) Annual traded volume as proportion of total deliverable supply (quantity in appropriate units)

MT
0.12

c) Annual traded volume as proportion of total annual production (quantity in appropriate units)

MT
0.21

d) Annual average Open interest as proportion of total production

MT
0.001

e) Annual average Open interest as proportion of total deliverable supply

MT
0.36

f) Monthly and Annual value of trade (in Rs. Crores)

Month	**Value in Crores**
April-19	216.07
May-19	294.13
June-19	288.87
July-19	290.60
August-19	237.44
September-19	152.60
October-19	50.88
November-19	34.43
December-19	47.30
January-20	160.72
February-20	149.72
March-20	111.45
Grand Total	**2,034.21**

g) Monthly and Annual quantity of delivery (in appropriate units)

Month	Monthly and Annual quantity of delivery (in appropriate units)
April-19	661.64
May-19	180.76
June-19	0
July-19	963.17
August-19	19.91
September-19	1071.97
October-19	158.39
November-19	521.55
December-19	383.63
January-20	974.64
February-20	1992.54
March-20	676.735
Grand Total	**7604.935**

h) Monthly and Annual value of delivery (in Rs. Crores)

Month	Monthly and Annual value of delivery (in Crores)
April-19	2.26
May-19	0.61
June-19	0.00
July-19	2.91
August-19	0.05
September-19	3.01
October-19	0.44
November-19	1.40
December-19	1.14
January-20	3.11
February-20	6.28
March-20	2.06
Grand Total	**23.29**

i) Monthly and Annual Average Open Interest (OI) (in appropriate units)

Month	Average Open Interest (OI) (in appropriate units)
April-19	5405.5
May-19	5,504.35
June-19	6,876.50
July-19	9,168.26
August-19	10,654.29
September-19	8,985.71
October-19	10,135.22
November-19	10,960.00
December-19	9,255.24
January-20	11,841.30
February-20	9,067.62
March-20	5,548.64
Annual Average Open Interest	**8,616.89**

j) Annual average volume to open interest ratio - 11.60

k) Total number of unique members and clients who have traded during the financial year

Unique members: 41
Unique Clients: 642

l) Ratio of open interest by FPOs/farmers/Hedge/VCP positions to total open interest (Annual average as well as maximum daily value)

Not APPLICABLE

m) Number of unique FPOs / farmers and VCPs/hedgers who traded in the financial year

Not APPLICABLE

n) Algorithmic trading as percentage of total trading

Nil

o) Delivery defaults
   i) Number of instances: No
   ii) Quantity involved : NA
   iii) Value involved : NA

3. Price movements

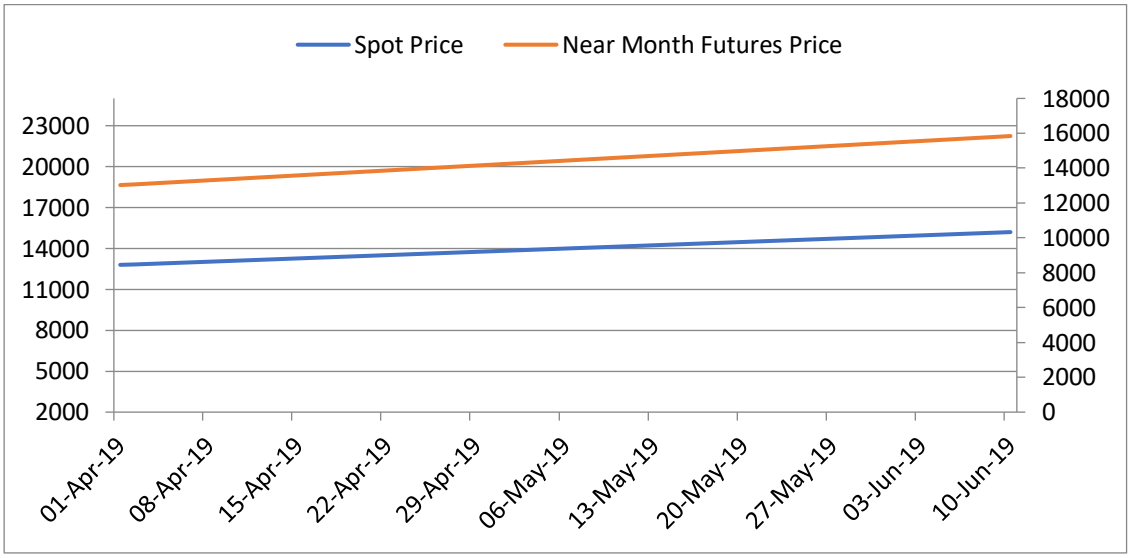
a) Comparison, correlation and ratio of standard deviation of Exchange futures price vis-à-vis international futures price (wherever relevant comparable are available).

NA

b) Comparison, correlation and ratio of standard deviation of Exchange futures price vis – à - vis international spot price (wherever relevant comparable are available) and domestic spot price (exchange polled price).

NA

c) Correlation between exchange futures & domestic spot prices **0.9604** along with ratio of standard deviation **1.9979**



d) Correlation between international futures & international spot prices along with ratio of standard deviation (wherever relevant comparable are available).

Not available

e) Comparison of Exchange polled price and mandi price (in case of agricultural commodities) / other relevant price (in case non - agricultural commodities) at basis centre. NA

f) Maximum & Minimum value of daily futures price volatility and spot price volatility along with disclosure of methodology adopted for computing the volatility.

	Futures Price Volatility	Spot Price Volatility
Maximum	2.67%	4.75%
Minimum	-2.60%	-7.70%

g) Number of times the futures contract was in backwardation/contango by more than 4% for the near month contract in the period under review

Backwardation	11 Times
Contango	1 Times

4. Other parameters

a) Qualitative and quantitative measure for Hedge effectiveness ratio and basis Risk (Volatility of Basis) along with disclosure of methodology adopted for such calculations.

-10.39%

b) Details about major physical markets of the commodity vis – à - vis market reach in terms of availability of delivery centres (information to be provided state – wise and UT - wise).
Major Markets of RUBBER:

Cochin / Ernakulam (basis center), Kottayam, Calicut, Malappuram, Tricur, Kakkanad, Kankijikode , Kunnamthanam, Nagarcoil, Trivandrum.

c) Details about major physical markets of the commodity and average Open Interest for each month generated from those regions.

Not to be disclosed

d) Details, such as number and target audience, of stakeholders' awareness programmes carried out by the exchange.

Not available

e) Steps taken / to be undertaken to improve hedging effectiveness of the contracts as well as to improve the performance of illiquid contracts.

Not to be disclosed.

f) Any other information to be disclosed as deemed important by the exchange or as suggested by the PAC

Not Applicable

Disclaimer: This Report is meant solely for limited purpose . This Report does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of the entities. This Report is based on information that we consider reliable, but we do not represent that it is accurate or complete, and it should not be relied upon as such. This Report is not directed or intended for distribution to, or use by, any person or entity who is a citizen or resident of any locality, state, country or other jurisdiction, where such distribution, publication, availability or use would be contrary to law, regulation or which would subject ICEX to any registration or licensing requirement within such jurisdiction. ICEX, its directors, officers, analysts or employees do not take any responsibility, financial or otherwise, for any losses or damages that may be sustained due to the investments made or any action taken on the basis of this Report. While all efforts have been taken to check the accuracy of the information provided herein, we do not warrant that is free from any technical inaccuracies or typographical errors. ICEX shall not be liable for damages of any kind arising out of or in connection with the use of the information in this publication