“Global Supply and Demand of Natural Rubber”

11th Shanghai Derivatives Market Forum 2013

29th May 2014

Grand Tower, Shangri-La, Pudong
Shanghai, China

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Secretary General, ANRPC
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Overview of Presentation;

1. Production and Supply of NR by ANRPC MGs
2. Challenges and Strategies in NR Production
3. Consumptions of
4. Trends in NR Prices
5. Outlooks of Future Demand of NR
6. Conclusions
Production and Supply of NR by ANRPC Member Countries
Association of Natural Rubber Producing Countries (ANRPC) - www.anrpc.org

ANRPC - www.anrpc.org

Inter-governmental organizations of countries producing natural rubber.
Establish 1970, HQ - Kuala Lumpur, MALAYSIA
Currently - 11 member governments
NR Supply by Members of ANRPC in 2013

- **Production** – 11.157 mil ton (Global 93%)
- **Yield area** - 7.833 mil ha
- **Total area planted** – 11.588 mil ha
- **Average yield** - 1,424 kg/ha/yr
- **90% production by smallholdings**
2013: Production 11.157 mil tons

- Thailand: 37.38%
- Indonesia: 28.50%
- Vietnam: 8.51%
- China: 7.67%
- India: 7.60%
- Malaysia: 7.40%
- Sri Lanka: 1.17%
- Philippines: 0.99%
- Cambodia: 0.76%
Annual Rate of Growth in NR Supply (%)
### Monthly Trends in Production of NR from ANRPC

<table>
<thead>
<tr>
<th>Month</th>
<th>Production in 2011 ('000 tons)</th>
<th>Production in 2012 ('000 tons)</th>
<th>% change on year</th>
<th>Production in 2013(1) ('000 tons)</th>
<th>% change on year</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>945</td>
<td>869</td>
<td>-8.1</td>
<td>936</td>
<td>7.7</td>
</tr>
<tr>
<td>February</td>
<td>775</td>
<td>789</td>
<td>1.8</td>
<td>685</td>
<td>-13.2</td>
</tr>
<tr>
<td>March</td>
<td>631</td>
<td>708</td>
<td>12.2</td>
<td>798</td>
<td>12.7</td>
</tr>
<tr>
<td>Q1 Total</td>
<td>2,351</td>
<td>2,366</td>
<td>0.6</td>
<td>2,419</td>
<td>2.2</td>
</tr>
<tr>
<td>April</td>
<td>599</td>
<td>721</td>
<td>20.4</td>
<td>735</td>
<td>1.9</td>
</tr>
<tr>
<td>May</td>
<td>762</td>
<td>882</td>
<td>15.8</td>
<td>779</td>
<td>-11.7</td>
</tr>
<tr>
<td>June</td>
<td>928</td>
<td>898</td>
<td>-3.2</td>
<td>928</td>
<td>3.4</td>
</tr>
<tr>
<td>Q2 Total</td>
<td>2,289</td>
<td>2,501</td>
<td>9.3</td>
<td>2,442</td>
<td>-2.4</td>
</tr>
<tr>
<td>July</td>
<td>939</td>
<td>952</td>
<td>1.3</td>
<td>1001</td>
<td>5.2</td>
</tr>
<tr>
<td>August</td>
<td>937</td>
<td>968</td>
<td>3.4</td>
<td>1019</td>
<td>5.2</td>
</tr>
<tr>
<td>September</td>
<td>895</td>
<td>1017</td>
<td>13.7</td>
<td>1051</td>
<td>3.4</td>
</tr>
<tr>
<td>Q3 Total</td>
<td>2,771</td>
<td>2,937</td>
<td>6.0</td>
<td>3,071</td>
<td>4.6</td>
</tr>
<tr>
<td>October</td>
<td>922</td>
<td>966</td>
<td>4.7</td>
<td>1008</td>
<td>4.4</td>
</tr>
<tr>
<td>November</td>
<td>994</td>
<td>1005</td>
<td>1.2</td>
<td>1048</td>
<td>4.3</td>
</tr>
<tr>
<td>December</td>
<td>998</td>
<td>870</td>
<td>-12.8</td>
<td>998</td>
<td>14.6</td>
</tr>
<tr>
<td>Q4 Total</td>
<td>2,914</td>
<td>2,841</td>
<td>-2.5</td>
<td>3,054</td>
<td>7.5</td>
</tr>
<tr>
<td>Year Total</td>
<td>10,280</td>
<td>10,653</td>
<td>3.8</td>
<td>11,157</td>
<td>4.7</td>
</tr>
</tbody>
</table>
## Sources of Rise in NR Production

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tapped Area (‘000 ha)</td>
<td>7,013</td>
<td>7,255</td>
<td>7,526</td>
<td>7,833</td>
</tr>
<tr>
<td>Average yield (kg/ha)</td>
<td>1,356</td>
<td>1,423</td>
<td>1,414</td>
<td>1,424</td>
</tr>
<tr>
<td>Production (‘000 tons)</td>
<td>9,510</td>
<td>10,280</td>
<td>10,653</td>
<td>11,157</td>
</tr>
</tbody>
</table>
SEASONALITY IN MONTHLY NR PRODUCTION

AVERAGE MONTHLY PRODUCTION IN ANRPC MEMBER COUNTRIES (2010 – 2012)
# Seasonality in Monthly NR Production by Countries

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak</td>
<td>Thailand Malaysia</td>
<td>Sri Lanka</td>
<td></td>
<td></td>
<td>Indonesia</td>
<td></td>
<td></td>
<td>China</td>
<td></td>
<td></td>
<td>Vietnam</td>
<td>India Cambodia Philippines</td>
</tr>
<tr>
<td>Dip</td>
<td>Indonesia</td>
<td>China Cambodia</td>
<td>Vietnam</td>
<td>India Philippines</td>
<td>Thailand Malaysia</td>
<td>Sri Lanka</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

29/5/2014

11th Shanghai Derivative Forum 2014, China
### Global NR Production (‘000 tons)

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANRPC</td>
<td>9,510</td>
<td>10,280</td>
<td>10,653</td>
<td>11,157</td>
<td>4.7</td>
</tr>
<tr>
<td>Non - ANRPC</td>
<td>698</td>
<td>742</td>
<td>775</td>
<td>817</td>
<td>5.4</td>
</tr>
<tr>
<td>Total</td>
<td>10,208</td>
<td>11,022</td>
<td>11,428</td>
<td>11,974</td>
<td>4.8</td>
</tr>
</tbody>
</table>
Challenges and Strategies in NR Production
5th and 6th ANRPC Annual Conferences:

• 17th October 2012 in Medan Indonesia
• 9th October 2013 in Colombo, Sri Lanka

Members Countries identified:

❖ Challenges and Constraints
❖ Governments - Policies and Strategies
NR Supply Challenges

1. Small land size - 0.2 < 1 > 2.3 hectares
2. Selection of planting materials
3. Level of “good agriculture practices”
4. High productivity, Quality material
5. Bridging/narrowing technology gap
6. Governments incentives
7. Enticing industry into production
8. NR Prices
9. Climatic constraints
10. Sustainability
11. Other sources of NR
Policies and Strategies

- **Enhance production and productivity**
  - Governments subsidy for planting materials (> 30% cost)
  - Governments introduction of regulatory measures on clonal materials
  - Governments effort to intensify effective extension programmes
  - Increase numbers of demonstration plots
  - Encourage smallholders to form and adopt cooperative system
  - Productivity target ≥ 2000kg/ha/yr

- **Replanting implementation programmes**
  - Restructure and monitor cooperation among governments agencies
  - Governments support during gestation period
  - Define policy on replanting (hectares/yr., financial aids)
  - Targets hectarage for replanting (20,000 – 40,000) ha/yr

- **Advancement of R & D**
  - Plant breeding, biotechnology, technology of harvesting
  - Development of new materials
Policies and Strategies

- Expansion of planting hectarage in suitable areas
  - In non-traditional areas
  - Farmers and private sector for joint development (SOC and farmers)
  - Entice private sectors to invest in rubber sectors (Tax incentives..)
- Labour Shortage
  - Improve working conditions in rubber production (LITS)
  - Higher income to discourage urban migration
  - Create business and enterprise opportunities in rubber sector
  - Formalized training
  - Encourage mechanization
- Quality awareness programmes
  - Educating farmers on importance of quality
  - Reform to acceptance and receptive culture by farmers
Consumption of NR
Sectorial Use of Natural Rubber

- TYRES: 68%
- LATEX PRODUCTS: 12%
- INDUSTRIAL PRODUCTS: 12%
- FOOTWARE: 5%
- ADHESIVES: 3%
Use of Natural Rubber in Tyres

- Approx. 70% NR global supply use for tyres
- Tyres - OEM (30%), REM (70%)
- Global Market 20% annual growth in value for 2008 - 2011 (ERJ)
- Passenger Cars - Ratio of SR:NR varies
- Light & Heavy Vehicles - High NR
- Aviation - Higher NR
Consumption of NR in ANRPC’s Member Countries, Jan- Sept 2013

<table>
<thead>
<tr>
<th>Country</th>
<th>2011</th>
<th>2012</th>
<th>% Change</th>
<th>2013</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(‘000</td>
<td>(‘000</td>
<td>On year</td>
<td>(‘000</td>
<td>On year</td>
</tr>
<tr>
<td></td>
<td>tons)</td>
<td>tons)</td>
<td></td>
<td>tons)</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>3,602</td>
<td>3,834</td>
<td>6.4</td>
<td>4,180</td>
<td>8.2</td>
</tr>
<tr>
<td>India</td>
<td>958</td>
<td>988</td>
<td>3.1</td>
<td>959</td>
<td>-2.9</td>
</tr>
<tr>
<td>Indonesia</td>
<td>474</td>
<td>548</td>
<td>15.6</td>
<td>603</td>
<td>10.0</td>
</tr>
<tr>
<td>Thailand</td>
<td>487</td>
<td>505</td>
<td>3.7</td>
<td>521</td>
<td>3.0</td>
</tr>
<tr>
<td>Malaysia</td>
<td>419</td>
<td>459</td>
<td>9.5</td>
<td>447</td>
<td>-2.5</td>
</tr>
<tr>
<td>Vietnam</td>
<td>145</td>
<td>150</td>
<td>3.4</td>
<td>155</td>
<td>2.7</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>112</td>
<td>110</td>
<td>-1.8</td>
<td>107</td>
<td>-2.6</td>
</tr>
<tr>
<td>Philippines</td>
<td>64</td>
<td>72</td>
<td>12.5</td>
<td>70</td>
<td>-1.9</td>
</tr>
<tr>
<td>Cambodia</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>6,261</td>
<td>6,666</td>
<td>6.5</td>
<td>7,021</td>
<td>5.3</td>
</tr>
</tbody>
</table>
Global NR Consumption in 2005 - 2011

![Global NR Consumption Graph]

- **World NR Consumption**
- **ANRPC NR Consumption**

- **Global NR Consumption**
  - 2005: 9000 ('000 tons)
  - 2006: 9500 ('000 tons)
  - 2007: 10000 ('000 tons)
  - 2008: 10500 ('000 tons)
  - 2009: 9000 ('000 tons)
  - 2010: 11000 ('000 tons)
  - 2011: 12000 ('000 tons)
Trends in Prices of NR
Price Movement SMR 20 and STR 20
January 2013- May 2014

US$ per 100 kg

KL SMR 20
Bangkok STR 20
Price movement of RSS 3, RSS 4 and Latex (in bulk, 60% DRC)
January 2013-May 2014

US $ per 100kg

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<table>
<thead>
<tr>
<th>Price (USD/100kg)</th>
<th>Kuala Lumpur</th>
<th>Bangkok</th>
<th>Bangkok</th>
<th>Kottayam</th>
<th>KL Latex</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SMR 20</td>
<td>STR 20</td>
<td>RSS 3</td>
<td>RSS 4</td>
<td>(60% DRC)</td>
</tr>
<tr>
<td>On 2 Jan 2013</td>
<td>301.35</td>
<td>302.85</td>
<td>327.27</td>
<td>297.85</td>
<td>201.01</td>
</tr>
<tr>
<td>On 2 Jan 2014</td>
<td>229.9</td>
<td>226.66</td>
<td>250.53</td>
<td>263.3</td>
<td>163.94</td>
</tr>
<tr>
<td><strong>Percentage Change</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan 2013-Jan 2014</td>
<td>-24%</td>
<td>-25%</td>
<td>-23%</td>
<td>-12%</td>
<td>-18%</td>
</tr>
<tr>
<td>On 16 May 2014</td>
<td>170.35</td>
<td>170.28</td>
<td>207.39</td>
<td>241.25</td>
<td>142.95</td>
</tr>
<tr>
<td><strong>Percentage Change</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan 2014-May 2014</td>
<td>-26%</td>
<td>-25%</td>
<td>-17%</td>
<td>-8%</td>
<td>-13%</td>
</tr>
</tbody>
</table>
NR Producers - > 90% are smallholders
Farmers will reduce harvesting intensity, input application, stimulation and rain-guarding.

They may abandon low-yielding and aged trees, especially in Malaysia and Indonesia.

Aged trees become more uneconomic, prompting farmers to replant them.

As replanting rate goes up, yielding area comes down.
Response of NR Supply to Price Rise

- Usually, a high price prompts farmers to have more output
  
  _This works only when the price rises after staying low for a few years._

- The current scenario is different
  
  _Farmers have already exploited all available options for increasing output from existing trees, further space is very much limited._

- Wages and other input costs rose substantially in the last couple of years.

- Farmers profit margin is on the decline, despite high prices.

- Farmers enthusiasm is likely to erode even if prices continue to stay high.
Outlooks of Future Demand of NR
# Outlook of Global GDP Growth

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2014</th>
<th>2016</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>World Output</strong></td>
<td>2.6</td>
<td>3.0</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td><strong>NAFTA Economies</strong></td>
<td>2.7</td>
<td>2.4</td>
<td>3.4</td>
<td>2.8</td>
</tr>
<tr>
<td><strong>Western Europe</strong></td>
<td>-0.3</td>
<td>1.5</td>
<td>1.8</td>
<td>1.7</td>
</tr>
<tr>
<td><strong>European Union</strong></td>
<td>-0.3</td>
<td>1.5</td>
<td>2.0</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>Euro Zone</strong></td>
<td>-0.6</td>
<td>1.1</td>
<td>1.7</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Central Europe &amp; Balkan</strong></td>
<td>1.2</td>
<td>2.8</td>
<td>2.6</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Commwlth of Ind. States</strong></td>
<td>3.4</td>
<td>1.4</td>
<td>3.5</td>
<td>3.7</td>
</tr>
<tr>
<td><strong>Japan</strong></td>
<td>1.4</td>
<td>1.4</td>
<td>0.9</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>China</strong></td>
<td>7.7</td>
<td>7.5</td>
<td>7.4</td>
<td>7.6</td>
</tr>
<tr>
<td><strong>India</strong></td>
<td>4.7</td>
<td>5.3</td>
<td>6.5</td>
<td>7.4</td>
</tr>
<tr>
<td><strong>South Korea</strong></td>
<td>2.3</td>
<td>3.3</td>
<td>3.6</td>
<td>3.4</td>
</tr>
<tr>
<td><strong>Latin America n Caribbean</strong></td>
<td>2.4</td>
<td>2.1</td>
<td>3.6</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>Middle East</strong></td>
<td>2.8</td>
<td>3.6</td>
<td>4.5</td>
<td>4.5</td>
</tr>
</tbody>
</table>

*Source – IHS Economics April 2014*
Use of Natural Rubber in Tyres

- Approx. 70% NR global supply use for tyres
- Tyres - OEM (30%) ,REM (70%)
- Global Market 20% annual growth in value for 2008 - 2011 (ERJ)
- Passenger Cars - Ratio of SR:NR varies
- Light & Heavy Vehicles - High NR
- Aviation - Higher NR
Use of Natural Rubber in Tyres

- Radialisation - Increase use of NR, PC n CV
- Tyre Labeling - Increase/decrease use of NR??
- Retreading options
- Single Wide load Vs Double wheel Tyres - CV
- Performance Tyres - > 17” diameter
- Expansion / Investment by Tyre Manufacturers
  
  USD10 bil in 2011 by Hankook, Bridgestone, Continental, Michelin, Pirelli, Goodyear...
1. Currently total planted area of 10.62 mil ha. available lands for expansion by ANRPC members
2. Improvement in productivity and farm management
3. Accelerate utilization of R&D findings and advancement in NR science
4. Positive strategies and policies for sustainable NR supply by member countries
5. High domestic/regional consumption - China, India, Malaysia, Thailand
6. Substantial GDP growth in NR producing and emerging economies countries
Conclusions

• The NR demand growth in tandem with global GDP growth. Positive for world GDP of 3.0 % in 2014 to 3.8 % in 2018 growth.

• Consumption of NR in ANRPC has shown to grow from 43% in 2005 to 63% in 2013 of total Global NR Consumption. Future increase in NR consumption is expected.
Conclusions …

• **Opportunities for positive supply growth of NR are encouraging and sustainable by ANRPC’s members**

• **ANRPC’s members take position on balance between future global supply and demand of NR**

• **NR prices have shown to decrease ranging from -24 % to -26 % from January 2013 to May 2014. Not favourable to NR producing countries.**
Thank You
Thank You!