



Natural Rubber : A Strategic Material for a Sustainable World

Salvatore Pinizzotto, IRSG

Workshop
“Natural Rubber Systems and Climate
Change”

Open Digital Workshop
23-25 June 2020

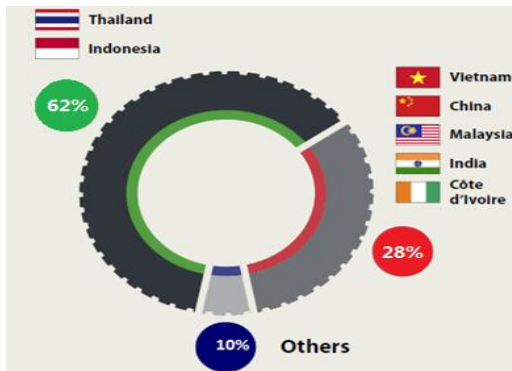
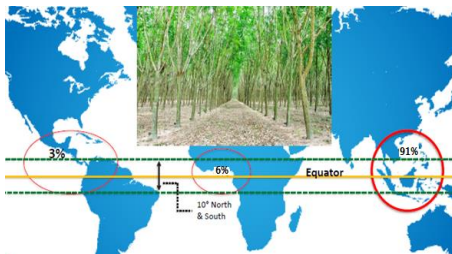


RESEARCH
PROGRAM ON
Forests, Trees and
Agroforestry

Rubber- A Key Raw Material: Facts

2

Natural Rubber: 48%

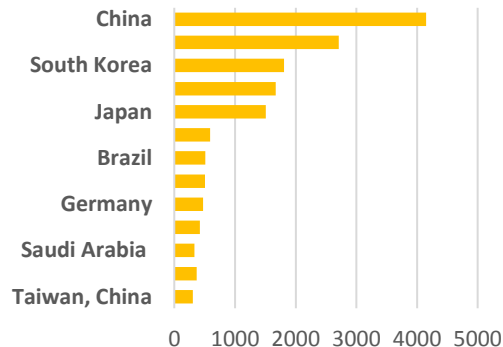


- Thailand & Indonesia representing 62% of Global NR Production

Tyre: 58%



Synthetic Rubber: 52%

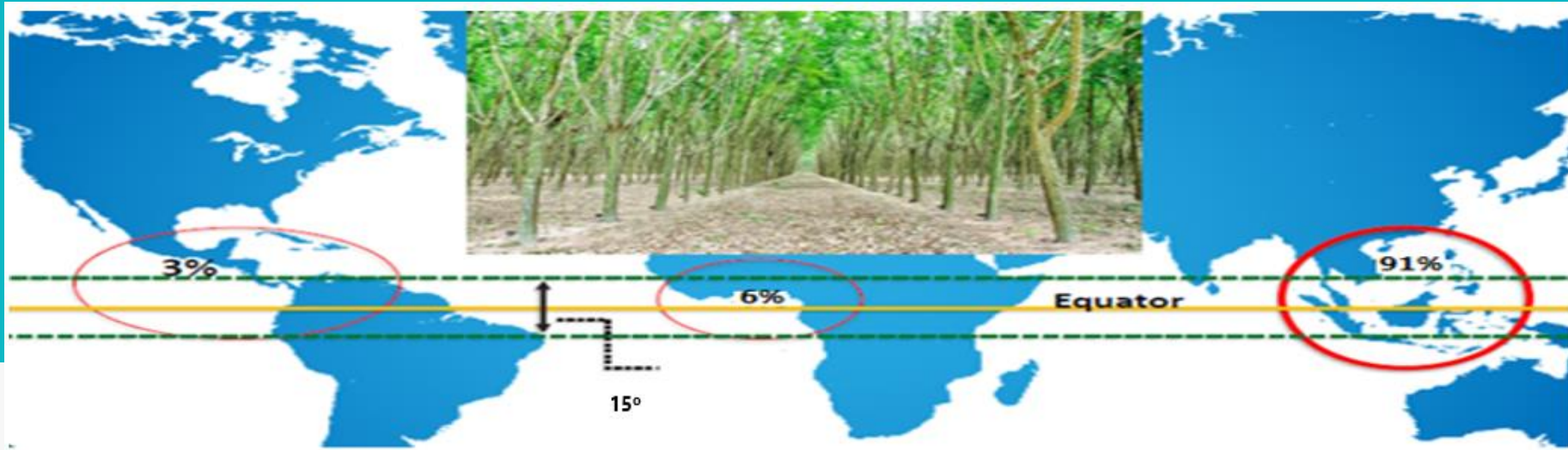


- China and USA representing 42% of Global SR Capacity

GRG: 42%



Natural Rubber: Economic and Social Dimension



Above 13 M ha

90% SFs

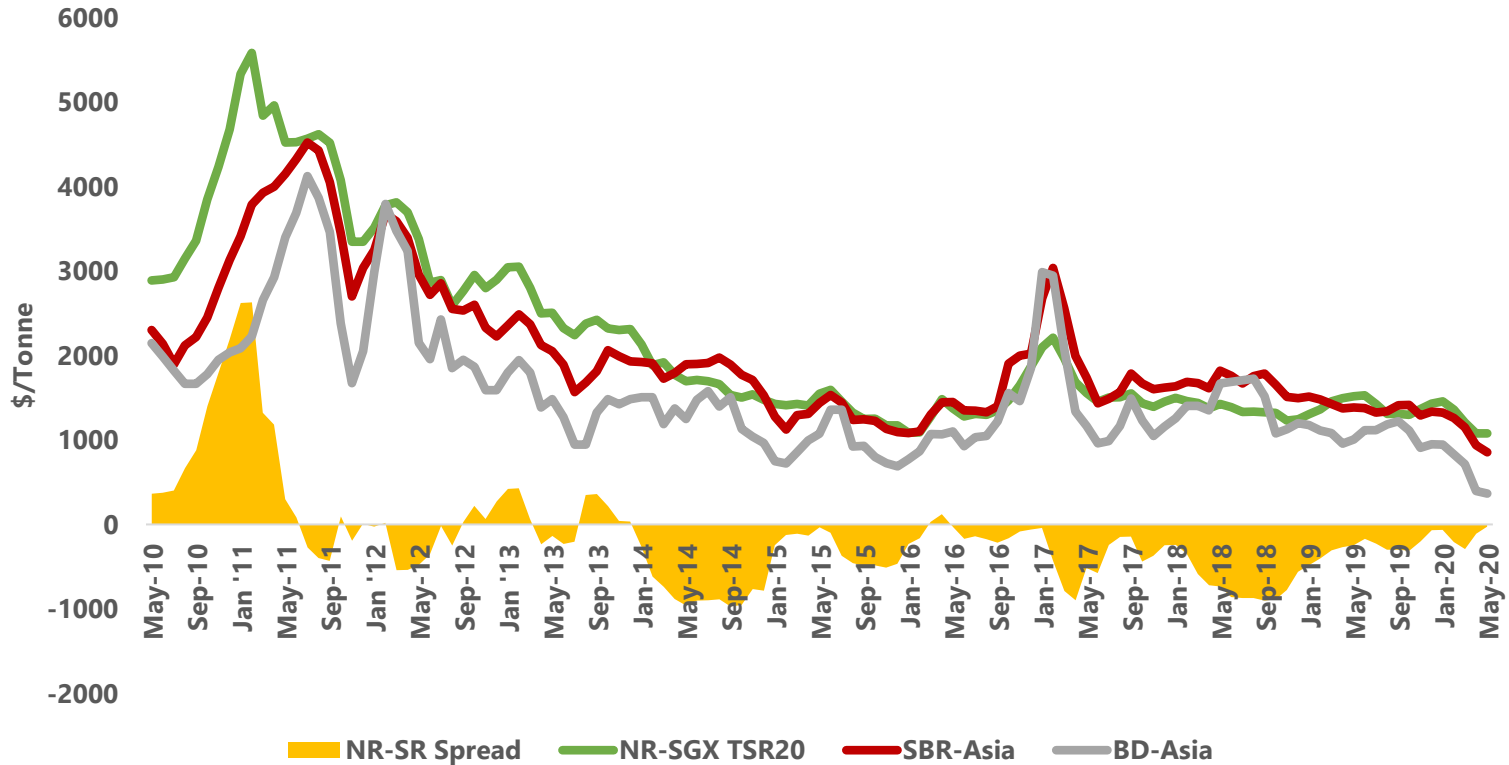
13.6 M tonnes

1.2 tonnes/ha

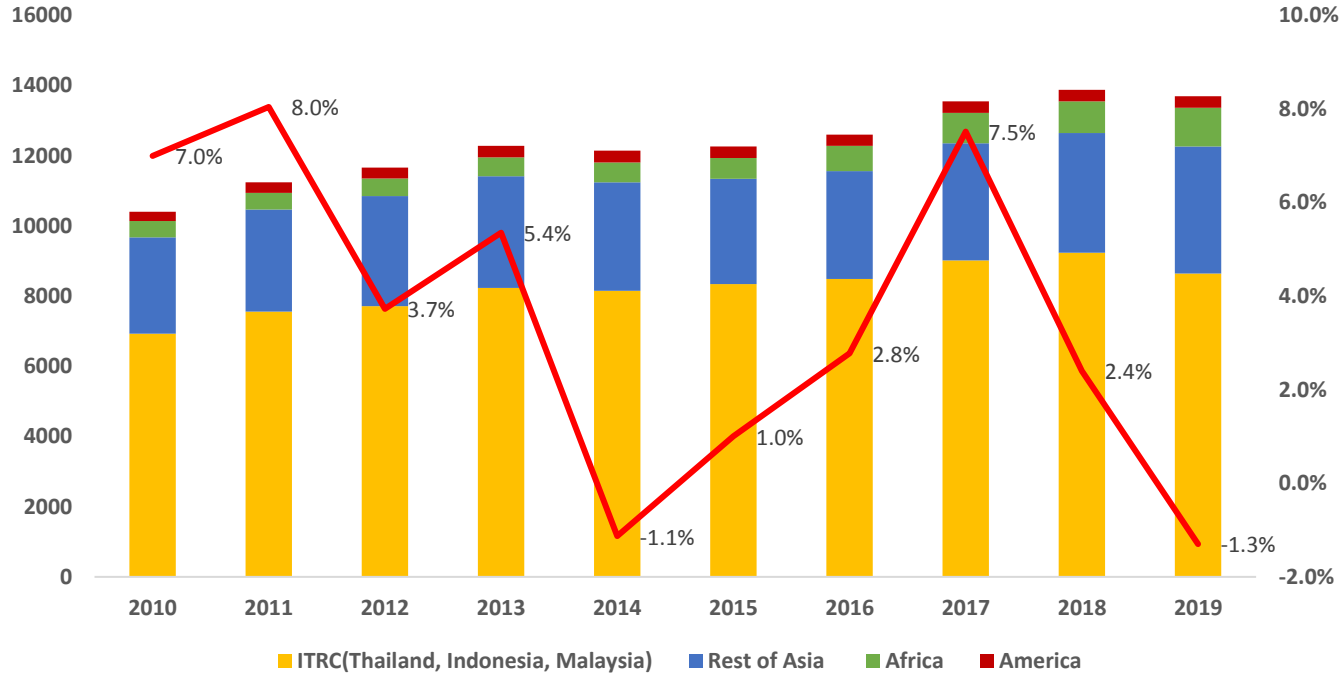
USD 1.14/kg
SGX TSR 20

Listed as CR in Europe

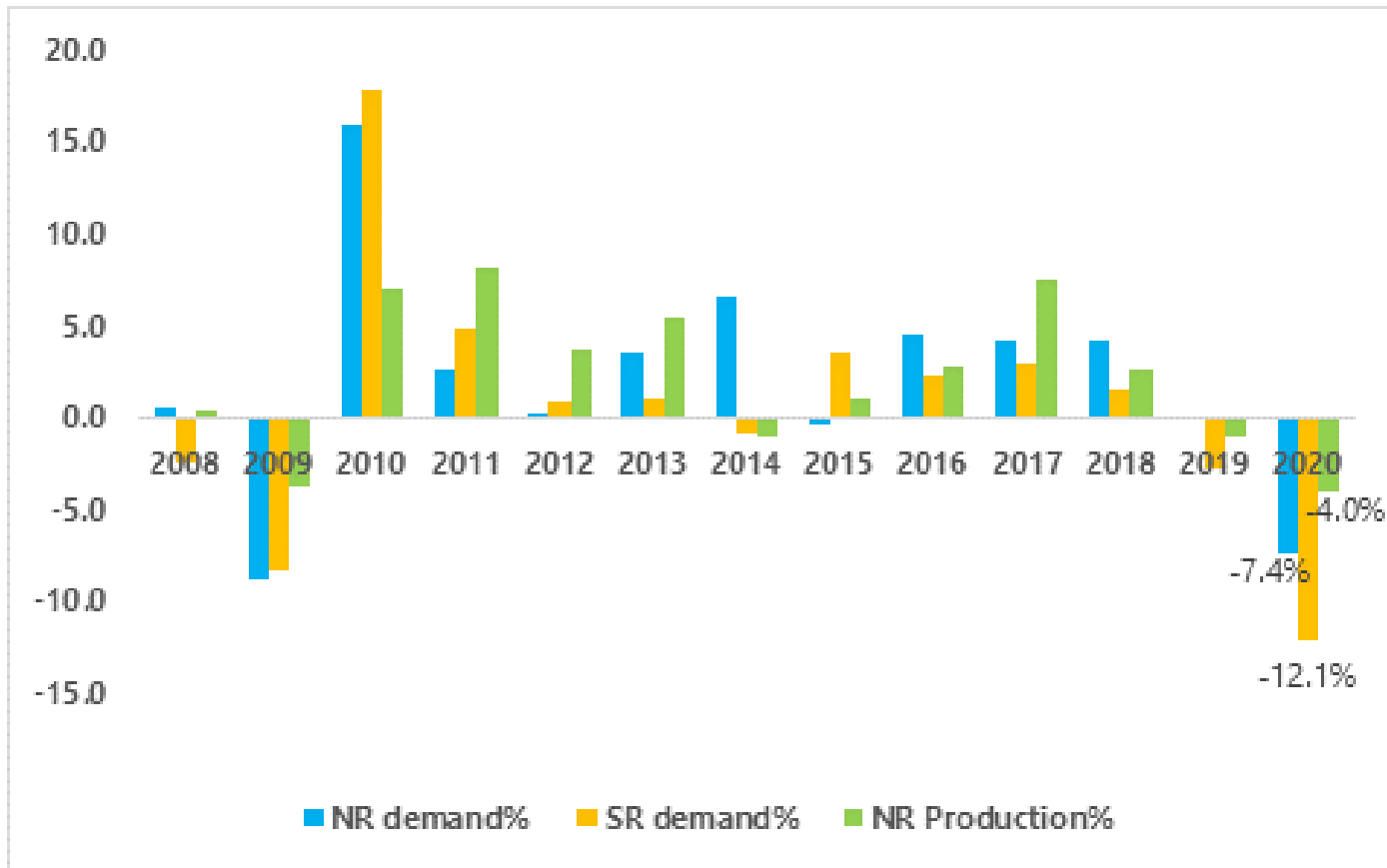
Rubber Price Relationship



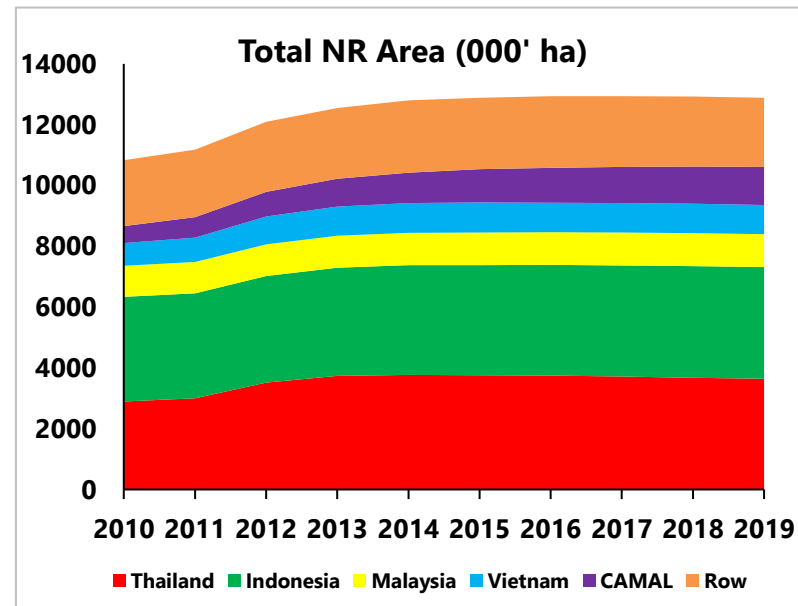
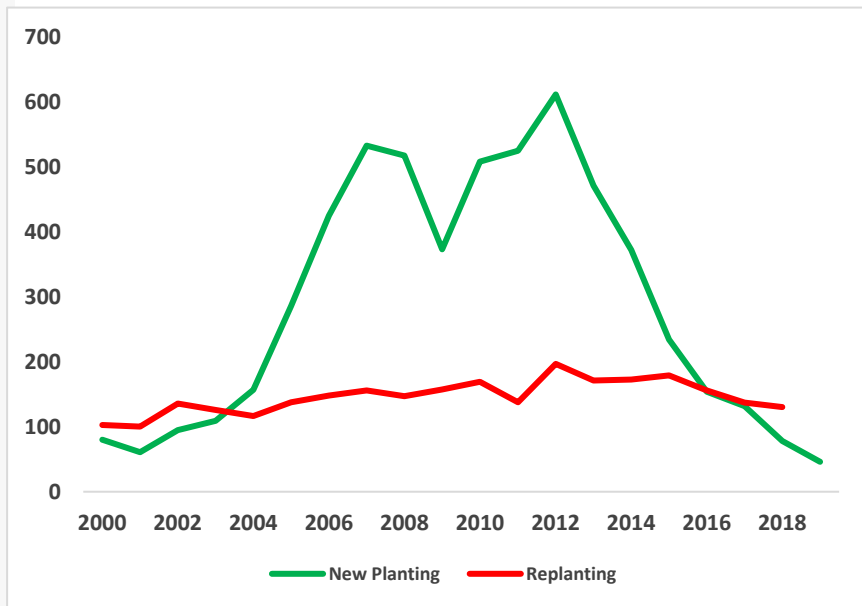
World NR Production ('000 tons)



NR Production & Demand Trend (%)

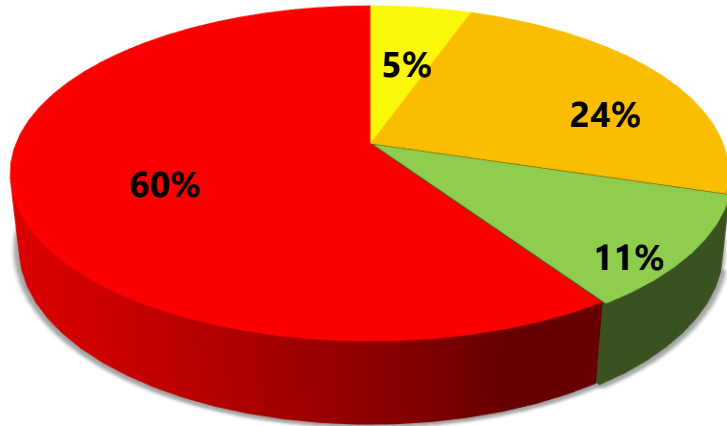


- **25% increase in total rubber area driven by non-traditional regions**
- **Area expansion under more than three million ha in the last decade**
- **Lower than expected total planting in the last 3-4 years**



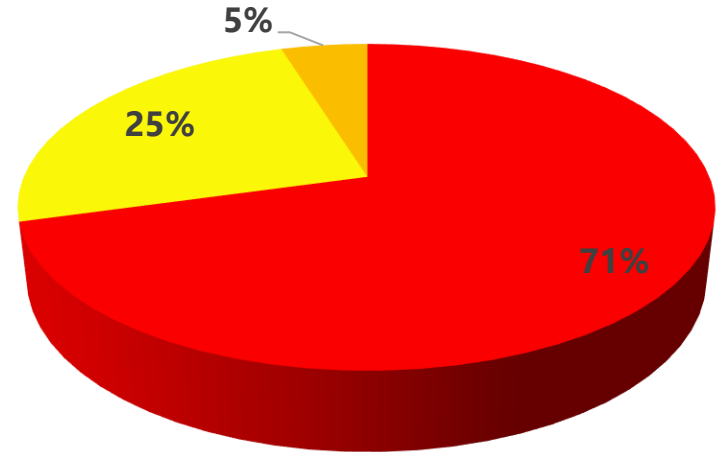
Distribution of Rubber area-Thailand & Indonesia

Thailand



■ North ■ Northeast ■ Central ■ South

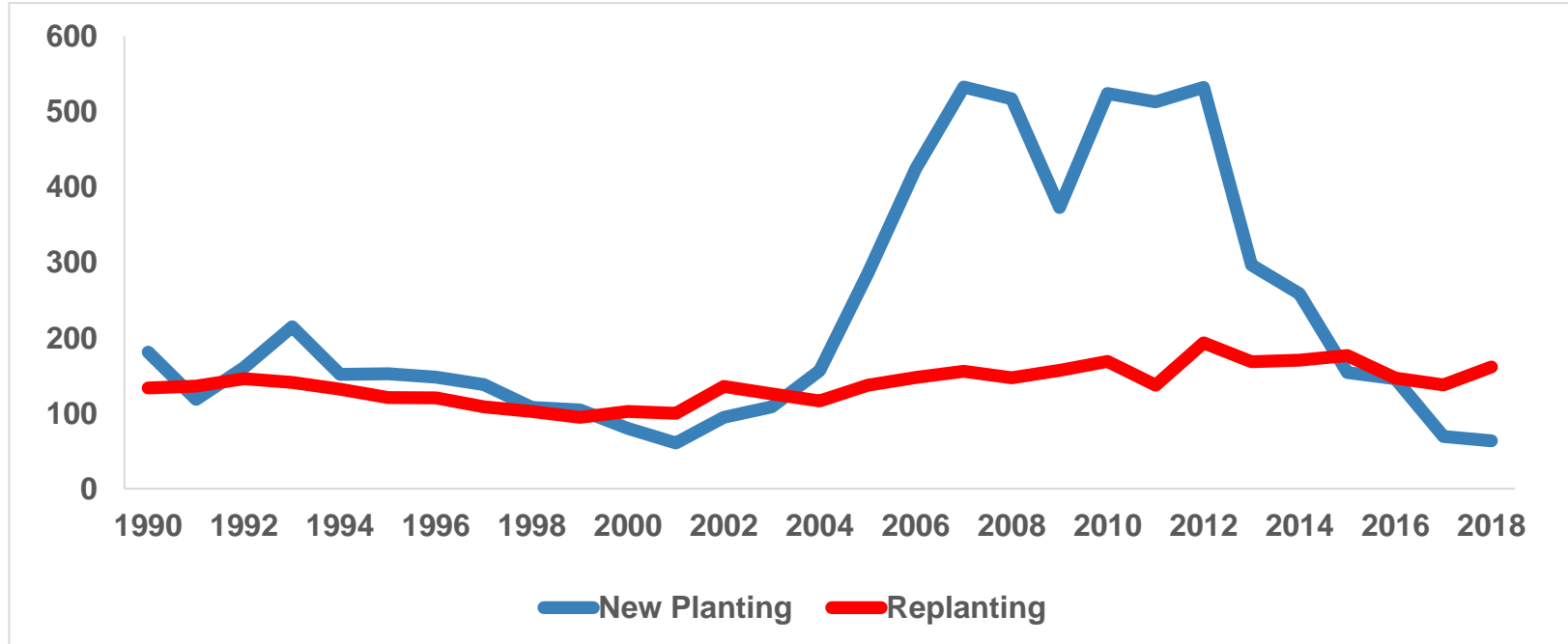
Indonesia



■ Sumatera ■ Kalimantan ■ Rest



Area Expansion-Thailand ('000 ha)

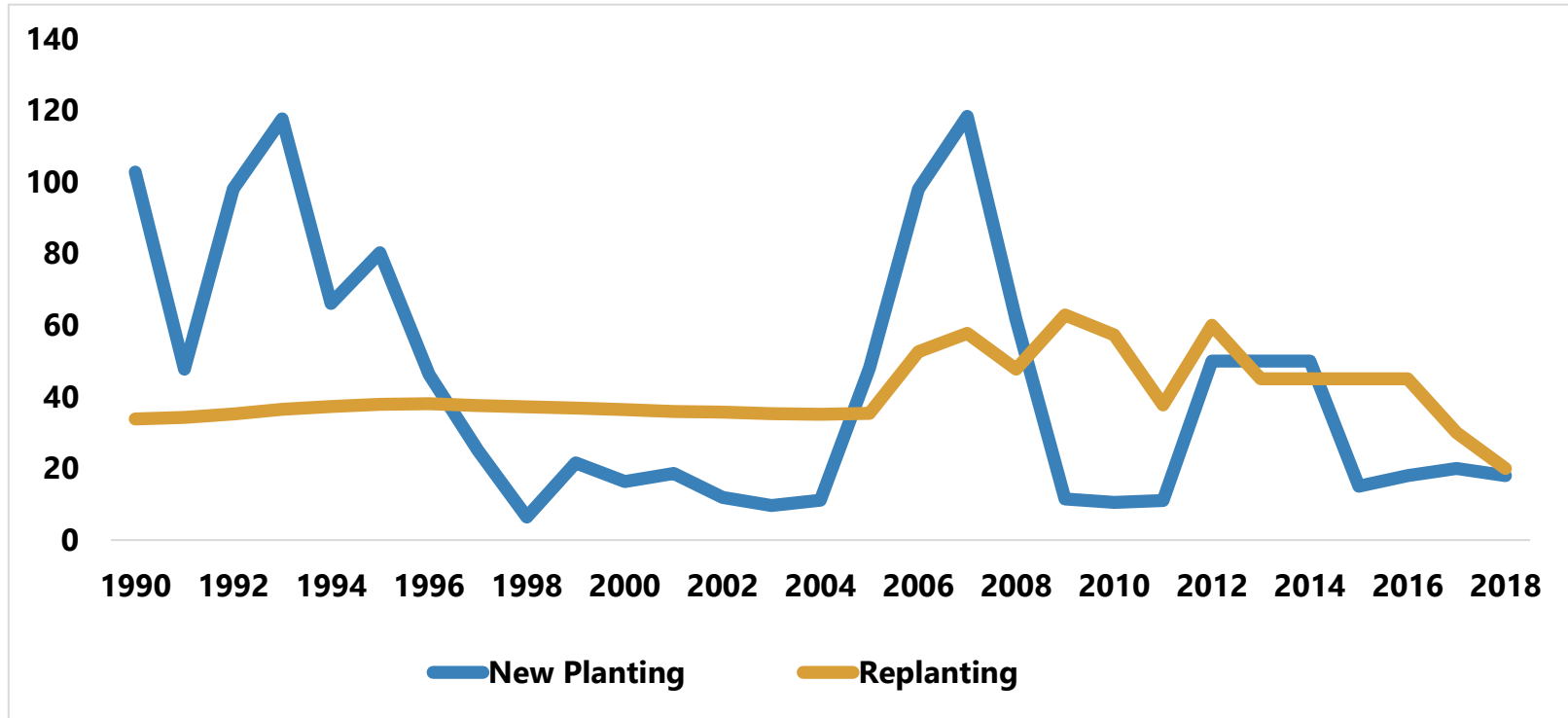


Area expansion driven by north, north-east and southern part of Thailand

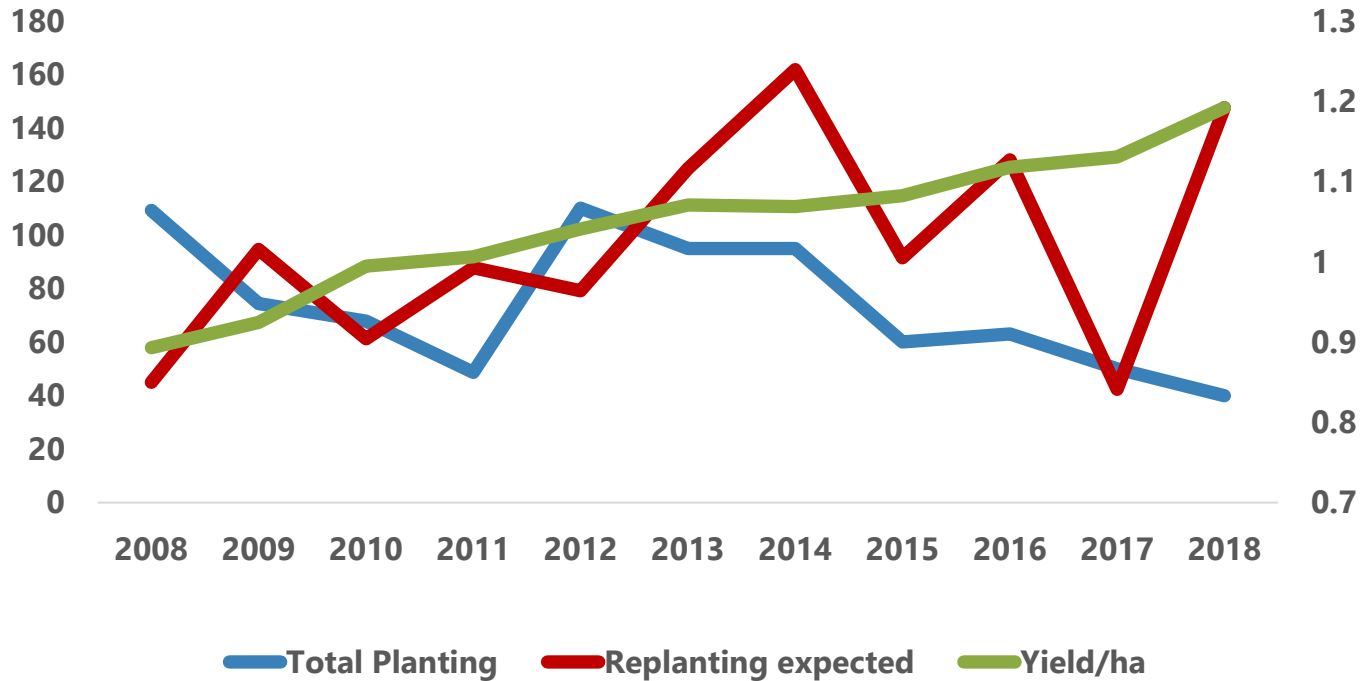
Area expansion under more than one million ha in the last decade



Area Expansion-Indonesia ('000 ha)



Area Growth-Indonesia (000'ha)



Expected uprooting to replace older plantation is lower by 45% in Indonesia



Challenges Faced by Traditional Regions

- Erratic weather conditions and incidence of diseases
- The secondary leaf fall disease (caused by fungus *Pestalotiopsis*) has reported as affected around 382,000 ha in Indonesia

Locations/Provinces

North Sumatra, South Sumatra, Lampung, Central Java, East Java, Central Sulawesi and South Kalimantan

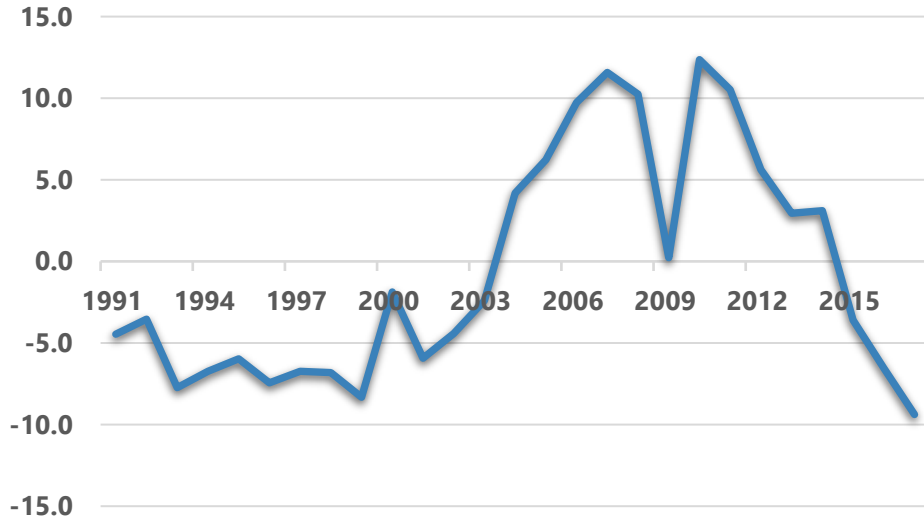
Reported *Pestalotiopsis* Hotspots in Sumatra



Incidence of Fungal Disease



Production Intensity Variations



Contributing factors:

- **Poor agro-management**
- **Increasing share of untapped areas**
- **Shift from farming to other economic activities**



Sustainability

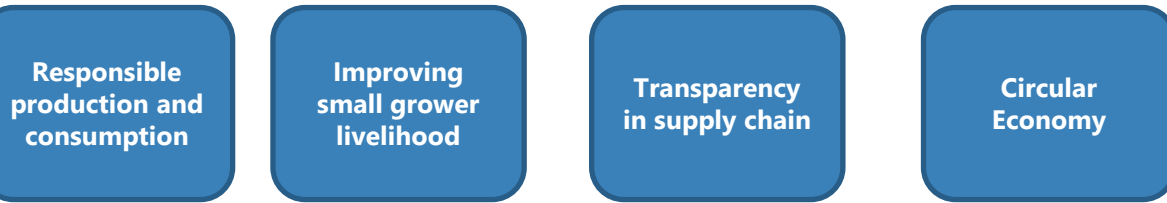
- ❑ Sustainable material supply is key factor for end-users leading to increased sustainability awareness
- ❑ Raw material account for 50% major end-user- tyre; about 12% environmental impact occurs during production of raw material and manufacturing of product
- ❑ Sustainability is beyond protecting environmental, it has to ensure that stakeholders in the value chain to be treated socially just and economically viable



New Developments-Where are We Now?

16

Rubber Industry Sustainability: Main Focus Areas



- ☒ Industry partnership to address challenges to all stakeholder in addressing broader sustainability agenda
- ☒ Sustainability policy announcements of industry majors












IRSG Sustainability Agenda

The Agenda considers nine among the UN Sustainable Development Goals (SDGs) that are the main pillars of the IRSG activities on Sustainability



IRSG Sustainability Agenda

18

-  **1 NO POVERTY**
End Poverty in all its forms everywhere
-  **5 GENDER EQUALITY**
Achieve gender equality and empower all women and girls
-  **6 CLEAN WATER AND SANITATION**
Ensure availability and sustainable management of water
-  **8 DECENT WORK AND ECONOMIC GROWTH**
Promote sustained, inclusive and sustainable economic growth
-  **11 SUSTAINABLE CITIES AND COMMUNITIES**
Sustainable cities and communities
-  **12 RESPONSIBLE CONSUMPTION AND PRODUCTION**
Ensure sustainable consumption and production patterns
-  **13 CLIMATE ACTION**
Take urgent action to combat climate change and its impacts
-  **15 LIFE ON LAND**
Life on Land –sustainably manage forests, combat desertification, halt land degradation and biodiversity loss
-  **17 PARTNERSHIPS FOR THE GOALS**
Partnerships for the Goals



Collaboration with other organisations

19



Global Platform for Sustainable Natural Rubber



Conclusions

20

- After more than 10,000 years of relative stability the *Earth's climate is changing*. Since 1880's the average global temperature has risen by about 1.1 degree Celsius driving substantial physical impact in regions around the world.
- As average temperatures rise, acute hazards such as heat waves and floods grow in frequency and severity, and chronic hazards such as drought and rising sea levels intensify.
- These physical risks from climate change will translate into increased socioeconomic risk, presenting policy makers and business leaders with a range of questions that will challenge existing assumptions about supply chain resilience, risk models and more.



Conclusions

- For centuries, financial markets, companies, governments, and individuals have made decisions against the backdrop of a stable climate. But the coming physical climate risk is *ever-changing and nonstationary*. Replacing a stable environment with one of constant change means that decision making based on experience may prove unreliable.
- *Climate hazards manifest locally*. There are significant variations between countries and even within countries. The direct effect of physical climate risk must be understood in the context of a geographically defined area.
- *Climate change can have knock-on effects across regions and sectors*, through interconnected socioeconomic and financial systems. *Supply chains are particularly vulnerable systems*, since they prize efficiency over resilience. They might quickly grind to a halt if critical production hubs are affected by intensifying hazards.
- *The poorest communities and populations of the world are the most vulnerable*.



Conclusions

22

For Natural Rubber the implications are clear:

- **“Business as usual” is not an option.** As this workshop has shown further researches are needed to investigate the real risks posed by climate change to the natural rubber systems . We need data and information ! **Science plays a fundamental role.**
- **Need for a visionary R&D leadership** with focus on emerging mass markets and invest to realize future potential technology. There is a wide gap between the knowledge available in the institutional framework and the knowledge converted to effective practice. Improve and make effective the knowledge transfer process.
- **R&D programmes based on Public-Private Partnership.** National and institutional innovation systems for the rubber industry needs to be reviewed to pool resources and target effective results.
- **Innovative forms of cooperation across national borders** and among a variety of actors – governments, businesses, academia and civil society.
- **Act now:** climate change requires urgent, coordinated, and consistent action.

