THE OPPORTUNITIES AND CHALLENGES FOR NATURAL RUBBER PRODUCTION AND CONSUMPTION IN A NET-ZERO WORLD

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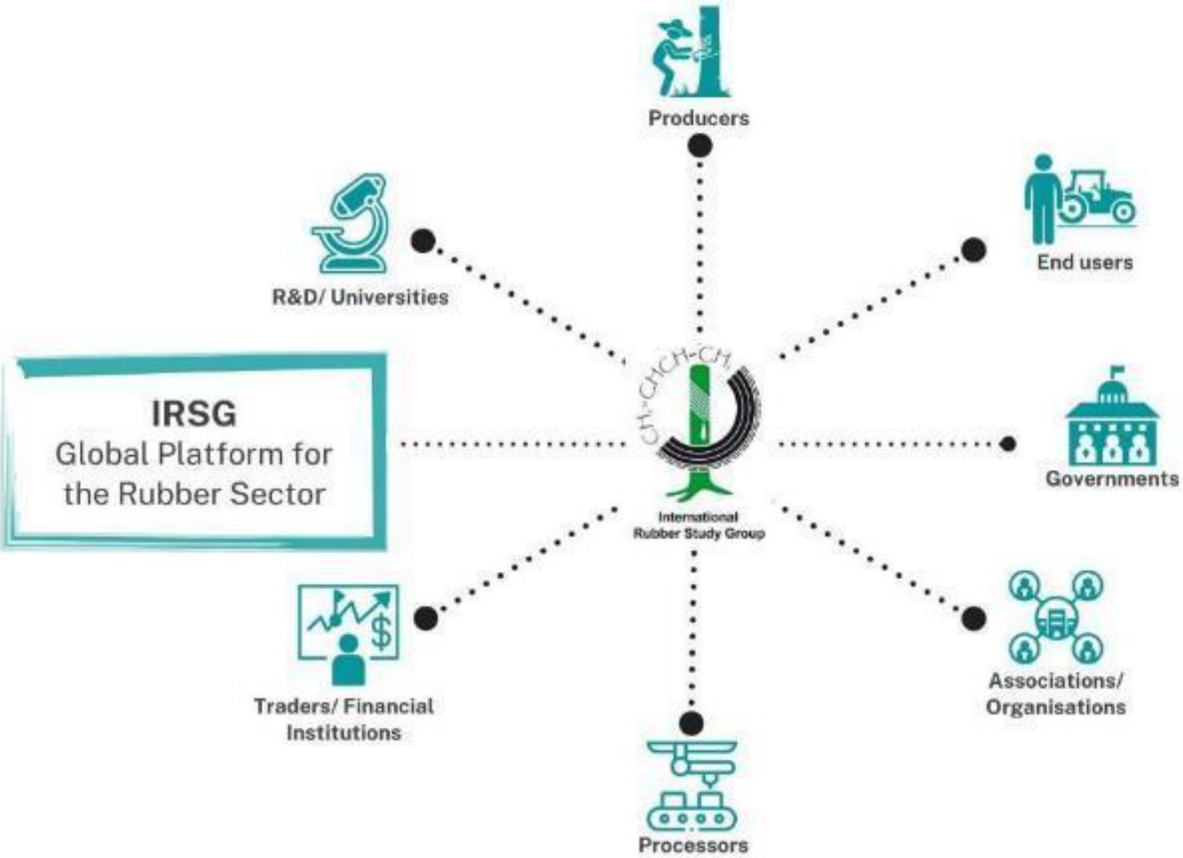
INTERNATIONAL RUBBER STUDY GROUP (IRSG)

- **Who are we?**
- **Established in 1944 as an inter-governmental organisation, headquartered in London, UK. As of July 2008, the Group has been based in Singapore.**
- **IRSG is the forum for discussion of matters affecting the supply and demand for natural as well as synthetic rubber.**
- **IRSG is the only forum where Governments, Industry and other important stakeholders can meet to discuss the main challenges that the rubber economy faces.**
- **Authoritative source of statistical data and analysis for all aspects of the rubber industry.**


Producers
End users
Governments
Associations/
Organisations
Processors
Traders/ Financial
Institutions
R&D/ Universities
IRSG
Global Platform for
the Rubber Sector
International
Rubber Study Group

IRSG - A WORLD NETWORK OF MORE THAN 100 INDUSTRY MEMBERS

COLLABORATION WITH OTHER ORGANISATIONS

UNITED NATIONS UNCTAD

UNDP

UNFSS

United Nations Forum on Sustainability Standards

SICCRA

SINGAPORE INTERNATIONAL CHAMBER OF COMMERCE RUBBER ASSOCIATION

IISRP INTERNATIONAL INSTITUTE of SYNTHETIC RUBBER PRODUCERS, INC.

RTAS

CGIAR RESEARCH PROGRAM ON Forests, Trees and Agroforestry

IRRDB INTERNATIONAL RUBBER RESEARCH & DEVELOPMENT BOARD

GPSNR Global Platform for Sustainable Natural Rubber

ETRma

cirad AGRICULTURAL RESEARCH FOR DEVELOPMENT

Forests, Trees and Agroforestry Partnership

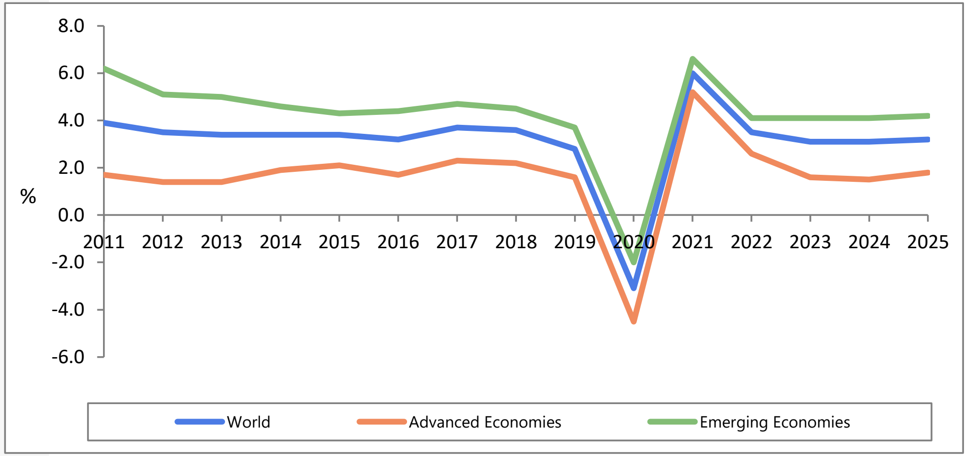
ICCO INTERNATIONAL COCOA ORGANIZATION

INTERNATIONAL COFFEE ORGANIZATION

NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

Singapore Agri-Food Innovation Lab (SAIL)

Natural Rubber Demand – 1. Macroeconomic environment



Annual GDP Growth	**2023**	**2024**	**2025**
World	3.1	3.1	3.2
Advanced Economies	1.6	1.5	1.8
Emerging Economies	4.1	4.1	4.2

Source: IMF World Economic Outlook, Jan 2024

The IMF World Economic Outlook in January 2024 adjusted the forecast for 2024 to 3.1%, up from 2.9% in October outlook.

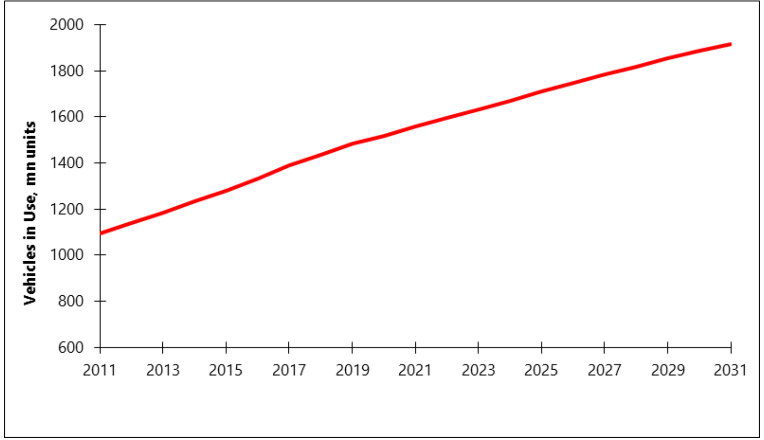
The global economic recovery has proved to be surprisingly resilient.

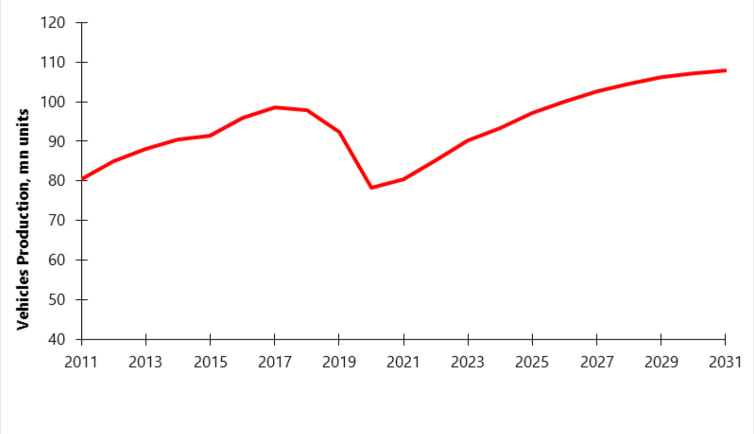
- Inflation is falling faster than expected in most regions. The risk of hard landing has receded.
- However, inflation could still go up due to geopolitical tensions and global supply chain disruptions.

Natural Rubber Demand – 2. Vehicle Sector

- **Growth for total vehicles in use was 2.4% in 2023 (unchanged from 2022) and is expected to slow down to 2.3% in 2024.**
- **The global vehicle production growth is 5.6% in 2023. Vehicle production is forecast to increase by 3.5% to reach 93.23 million units in 2024, which surpasses the pre-pandemic levels.**

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Total Vehicles in Use	**1518.2**	**1557.7**	**1594.4**	**1632.9**	**1670.9**	**1709.0**	**1746.3**	**1782.8**	**1818.6**	**1852.7**	**1885.9**	**1916.2**
% change	*2.4*	*2.6*	*2.4*	*2.4*	*2.3*	*2.3*	*2.2*	*2.1*	*2.0*	*1.9*	*1.8*	*1.6*
Total Vehicle Production	**78**	**81**	**85**	**90**	**93**	**97**	**100**	**103**	**105**	**106**	**107**	**108**
% change	*-15.4*	*3.0*	*5.9*	*5.6*	*3.5*	*4.2*	*3.0*	*2.5*	*1.9*	*1.6*	*0.9*	*0.6*

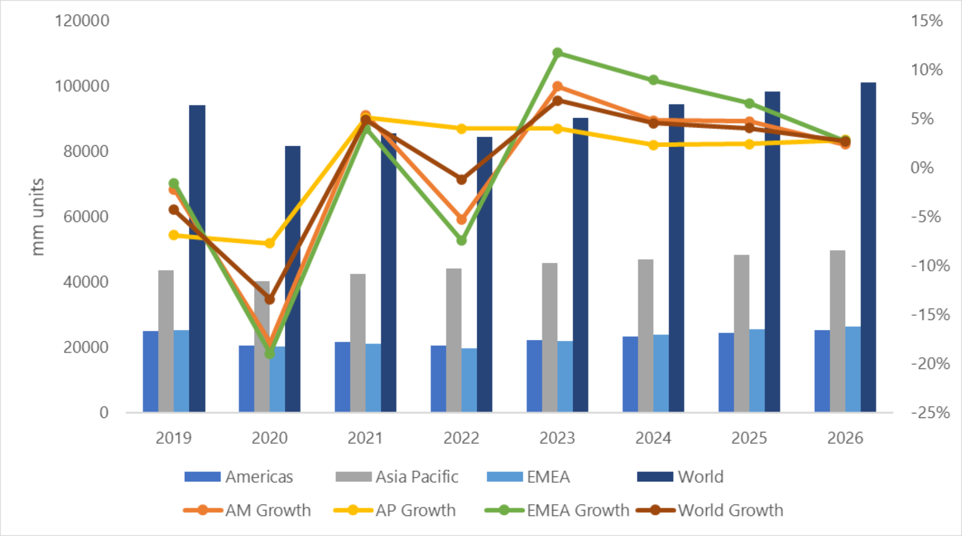




Source: WTFS, LMC/GlobalData; IRSG Staff Calculations/Estimations

Natural Rubber Demand – 2. Vehicle Sector

Global vehicle sales recovered marginally in 2023. The growth of global vehicle sales in 2023 was more reflective of the sales growth of LCV (8.8%) and MHCV (8.97%).
Global vehicle sales are expected to pick up by 4.6% in 2024 supported by PC (4.49%) LCV (5.2%) and MHCV (4.88%).



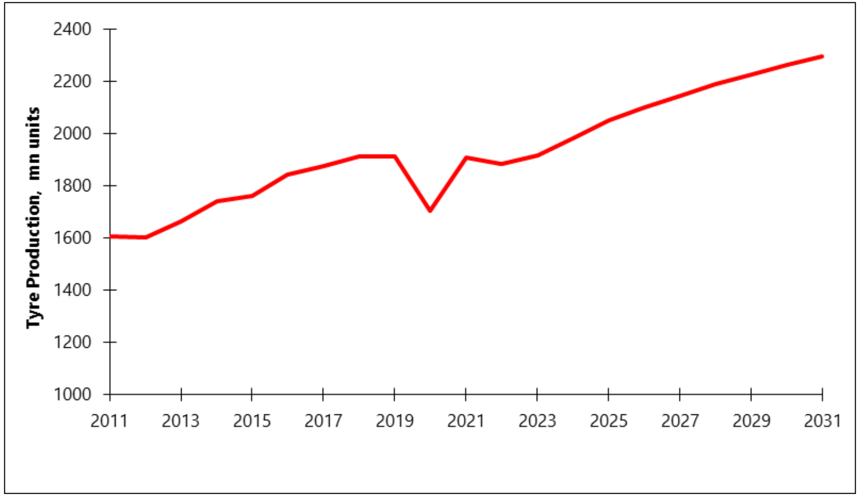
Electric car markets have seen exponential growth as sales exceeded 14 million in 2023. A total of 22% of all new cars sold were electric in 2023, up from around 14% and 9% in 2022 and 2021, respectively.

Many countries reported easing of supply shortages in early 2023 despite the economic headwinds.

LCV - Light Commercial Vehicle
MHCV - Medium/Heavy Commercial Vehicle

Natural Rubber Demand – 3. Tyre Sector

	2020	2021	2022	2023	2024	2025
Production (million)	**1706**	**1907**	**1886**	**1919**	**1982**	**2053**
% change	*-10.8*	*11.8*	*-1.1*	*1.8*	*3.3*	*3.6*
	2026	2027	2028	2029	2030	2031
Production (million)	**2101**	**2148**	**2189**	**2228**	**2264**	**2296**
% change	*2.4*	*2.2*	*1.9*	*1.8*	*1.6*	*1.4*

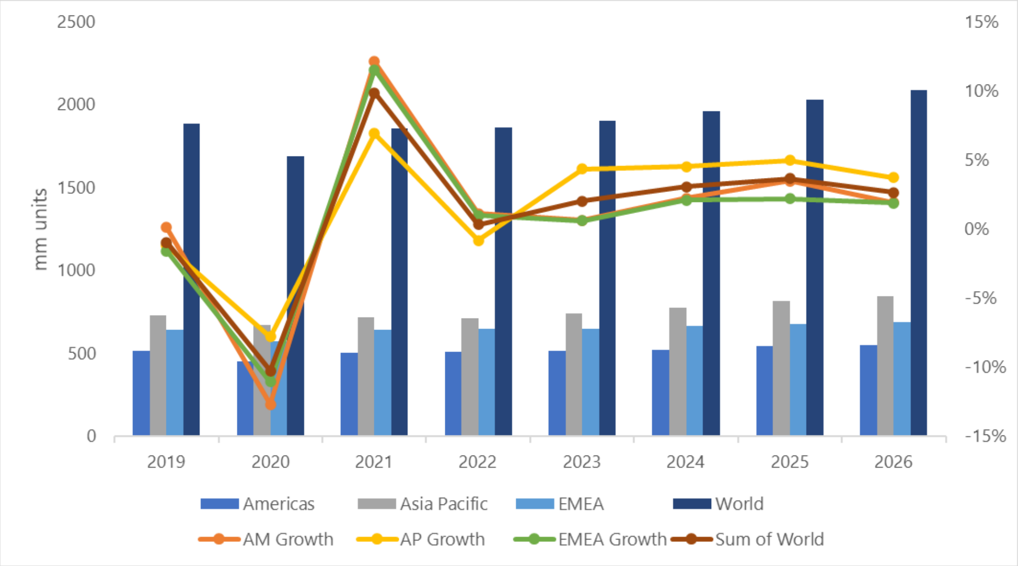


Source: WTFS, LMC/GlobalData; IRSG Staff Calculations/Estimations

- **Global tyre production recovered marginally in 2023, reaching 1919 million units in 2023.**
- **Global tyre production is estimated to grow by 3.3% in 2024 and 3.6% in 2025.**
- **The global tyre production growth is expected to grow at an average of 2.2% between 2023-2031.**

Natural Rubber Demand – 3. Tyre Sector

- **Sales are expected to continue picking up in 2024, higher than pre-pandemic level.**
- **Global tyre sales are forecast to grow at 3.1% in 2024, with stronger growth for PCT sales (3.3%) over LCVT (2.4%) and MHCVT (2.7%).**



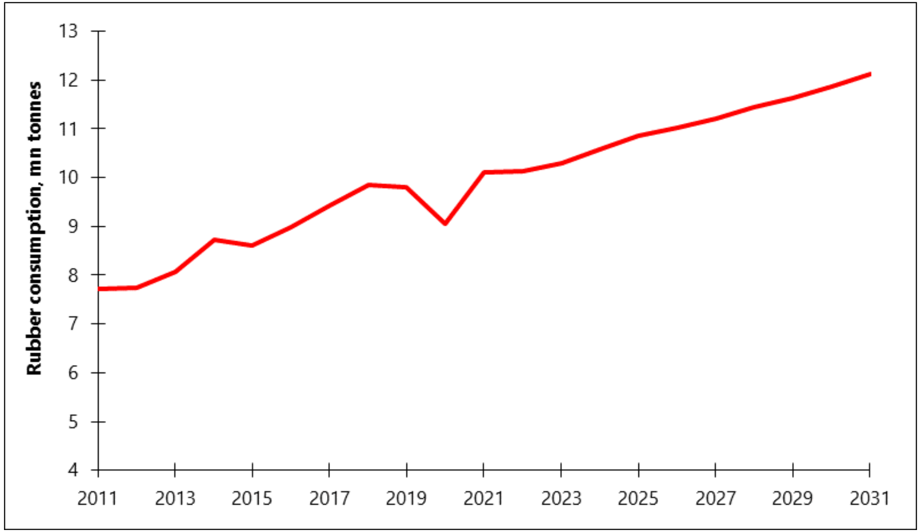
Global tyre sales in the Original Equipment market is forecast to grow by 3.2% in 2024 while the replacement market is expected to increase by 3.0%.

Vehicle and tyre markets are gaining momentum in the second half of 2023 with the inventory replenishment.

PCT - Personal Car Tyre
LCVT - Light Commercial Vehicle Tyre
MHCVT - Medium/Heavy Commercial Vehicle Tyre

Natural Rubber Demand – 4. Tyre and Non-Tyre products

- **Rubber demand in the tyre sector in 2023 recovered by 1.1%**
- **Rubber consumption in the tyre sector is forecast to rise by 2.7% in 2024 as the consumption demand continued to recover in various markets.**
- **Rubber consumption is forecast to increase by 3.4% in 2025, expecting a better performance of the tyre segment.**



Rubber Consumption by Tyre and Tyre Products, 2011-2031

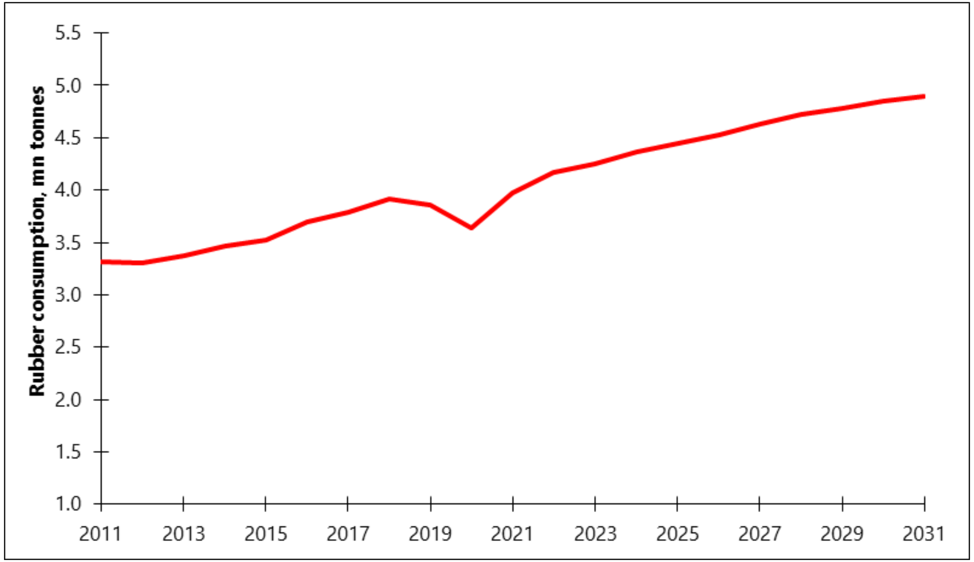
Source: IRSG Staff Calculations/Estimations

Rubber consumption for the tyre sector is forecast to grow by 1.9% beyond 2023 and rubber demand in this sector is forecast to reach 19.85 million tones by 2031.

While the global rubber consumption in the tyre sector reached the pre-crisis level, tyre demand in mature markets is not expected to exceed by the end of this decade.

Natural Rubber Demand – 4. Tyre and Non-Tyre products

- **Rubber demand in the non-tyre sector is generally dominated by usage in healthcare applications, automotive, offshore and construction industry.**
- **Rubber demand in this sector is projected to increase by 1.5% in 2024.**
- **Rubber consumption the non-tyre sector is forecast to grow by 1.4% beyond 2023**



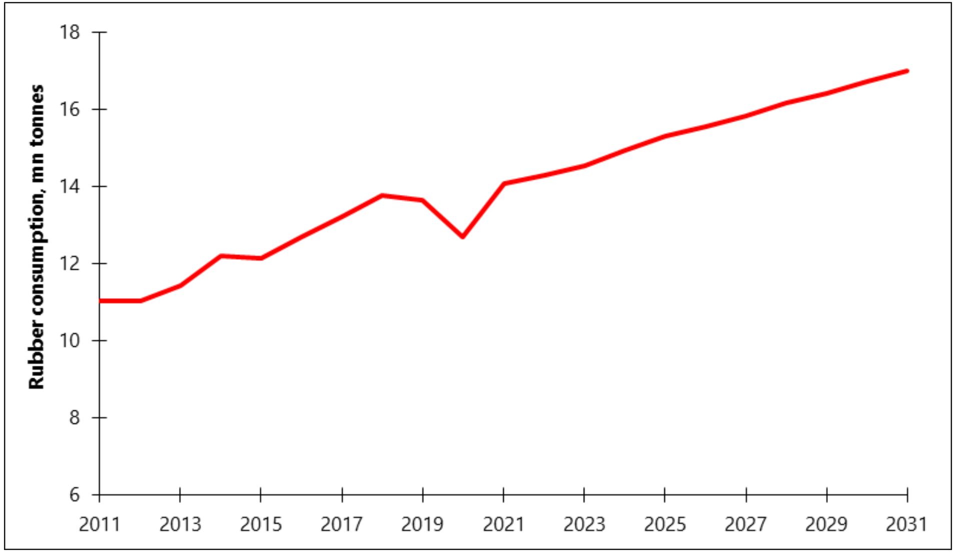
Rubber Consumption by Non-Tyre and Non-Tyre Products, 2011-2031

Source: IRSG Staff Calculations/Estimations

Natural Rubber Demand – Total natural rubber consumption

NR demand growth is estimated to increase by 2.7% in 2024, further grow by 2.4% in 2025, and to grow by an average of 2.0% beyond 2023, reaching 17.02 million tones in 2031.

NR consumption (demand) growth (2.0%) will outpace NR production (supply) growth (1.7%) during the forecast period, 2023-31.



Total Natural Rubber Consumption, 2011-2031

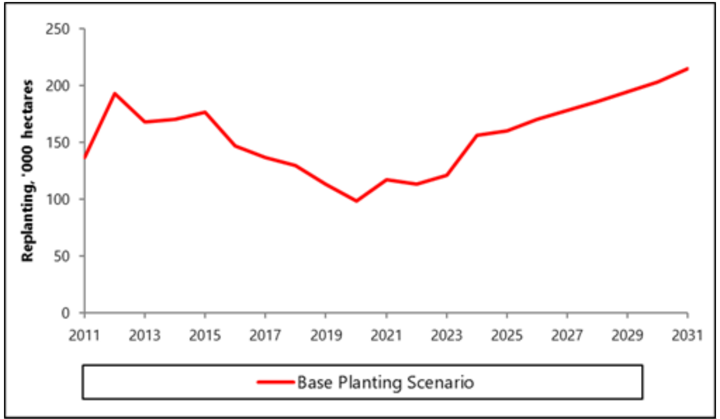
Source: IRSG Staff Calculations/Estimations

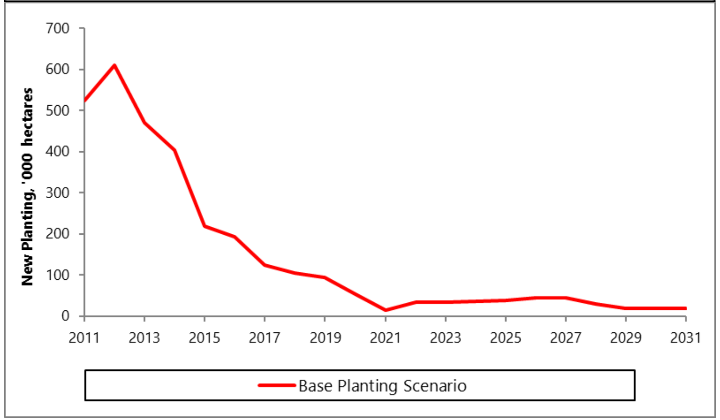
Natural Rubber Supply – 1. Southeast Asia production loss

Multiple factors lead to decline in production for some producers, especially in the Southeast Asia:

- Many years of low prices for the natural rubber sector since 2015 had delayed many investments in replanting.
- Insufficient financial support for replanting
- Small farmers adopted intensive tapping to maintain an income while prices were low.
- Outbreak of leaf fall disease
- Low tolerance to pests and diseases
- Typhoons, unseasonal rains, storm/flash floods, drier seasons and more variable precipitation
- EU Deforestation Regulation
- Switch to alternative economic crops

Natural Rubber Supply – 2. Replanting vs New planting





- Lower prices prevailed for many years had led to lower replanting in the later years of the last decade and early years of this decade.
- Replanting could accelerate considering the higher share of old trees, but the amount is not substantial.

Rubber area expansion in the Asia-Pacific region was driven by Thailand and the Mekong region, while Côte d'Ivoire drove the area expansion in West Africa.

- This has led to an average of 5.7% growth in Normal Production globally during the 2015-19 period.
- However, the rate of area expansion as well as replanting has declined consistently since 2019.