

6-2019


Economics of Modern Plantation Forests in China - June 2019

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Xu, Jintao and Shi, Miaoying, "Economics of Modern Plantation Forests in China - June 2019" (2019). *Forest Collaborative Research*. 16.

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6th EFD Forest Collaborative Biannual

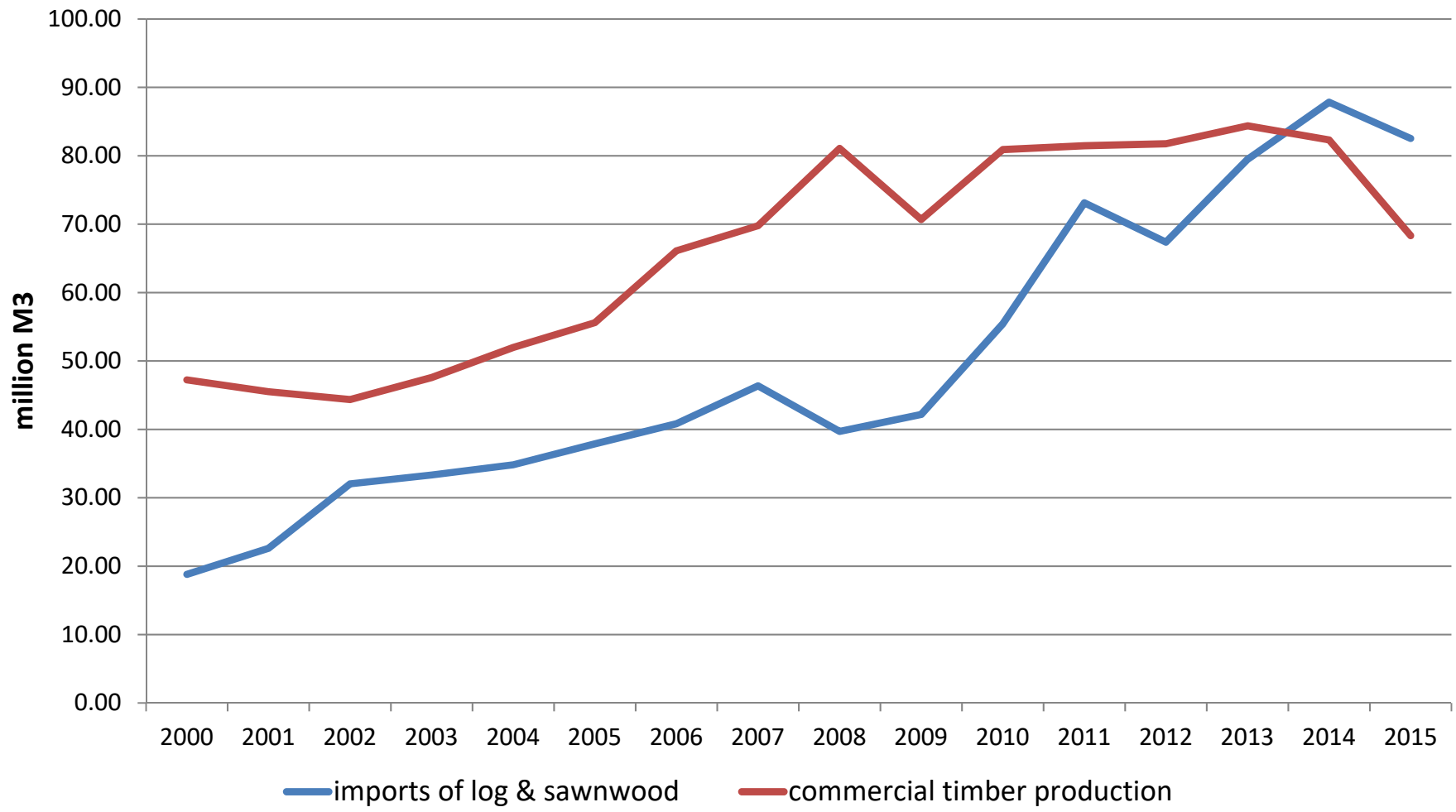
Economics of Modern Plantation Forests in China

Jintao Xu and Miaoying Shi

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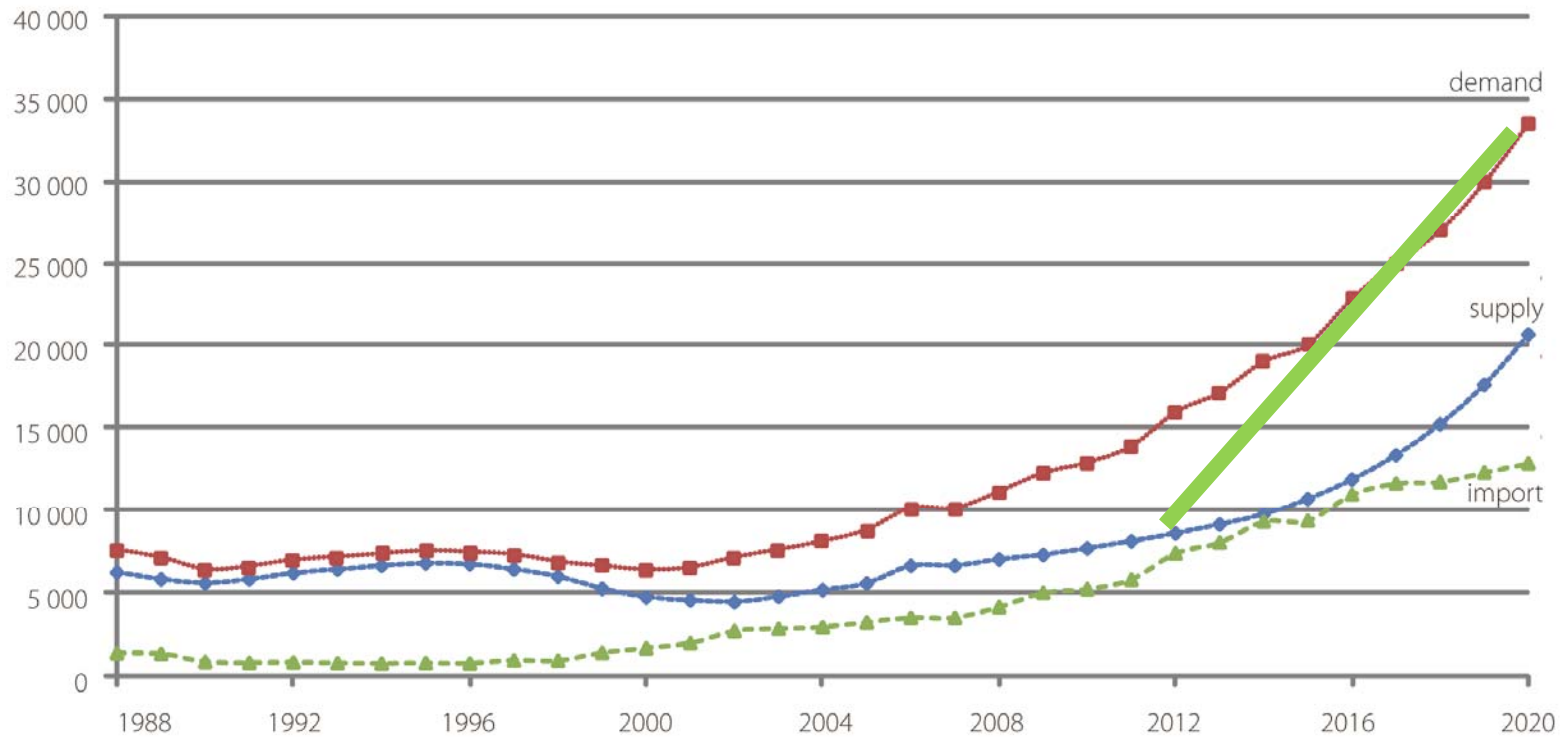
06/26/2019

Log and Sawnwood : Production and Imports in 2000-2015



Raising Productivity : Simple Import Substitution

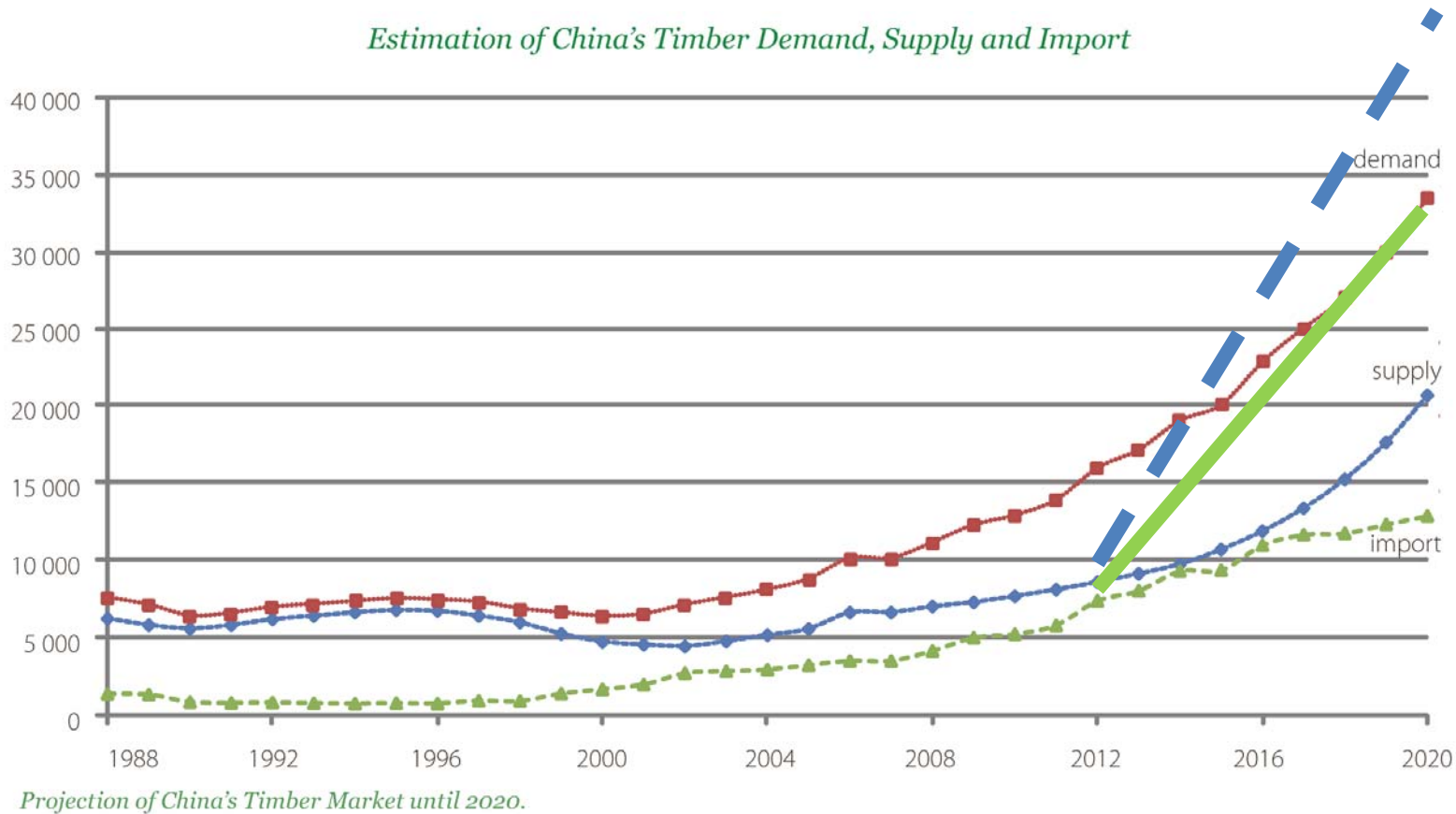
Estimation of China's Timber Demand, Supply and Import



Projection of China's Timber Market until 2020.

(Raw Timber Only (Unit: 10K m³))

Raising Productivity : National Green Transition Scenario

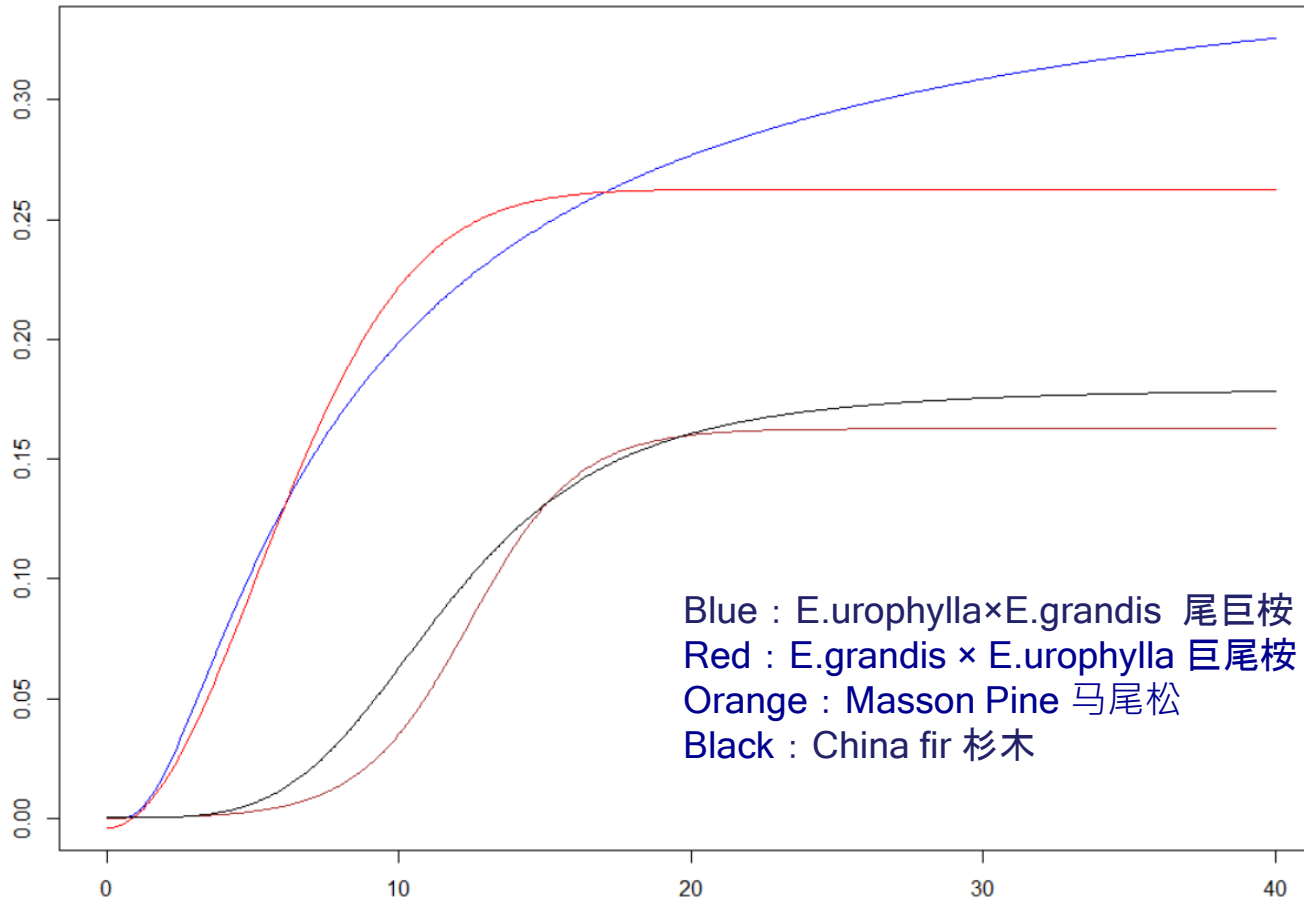


(Raw Timber Only (Unit: 10K m³))

Eucalyptus: a forest green revolution in the horizon?

- The experience of agricultural green revolution in the late 1960s
- Productivity up by only 70%

Potential in Eucalyptus

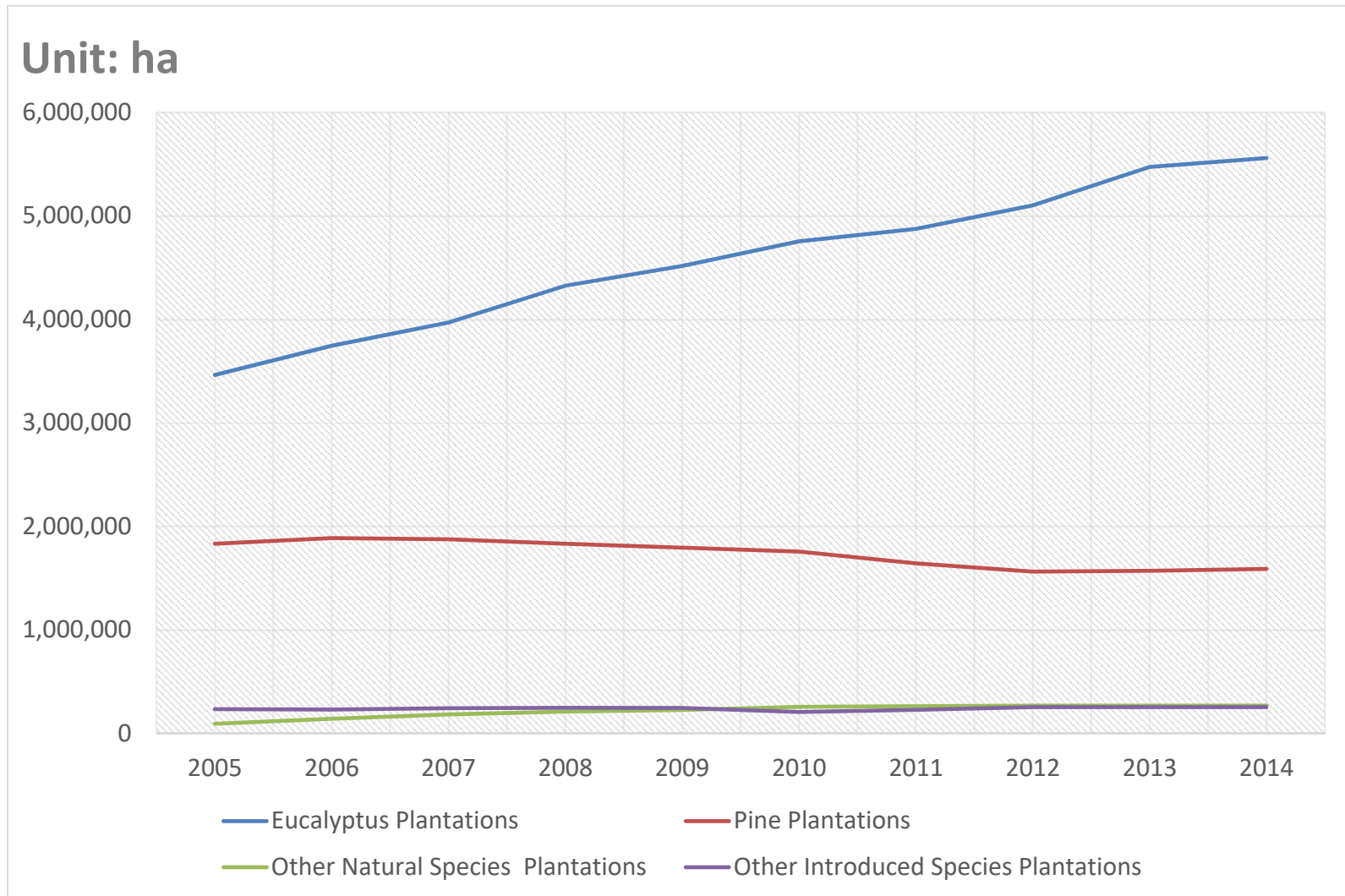


	马尾松Masson Pine	杉木China fir	尾巨桉E.urophylla×E.grandis	巨尾桉E.grandis × E.urophylla
Bertalanffy	14.39	14.22	6.70	7.71
ChapmanRichards	15.95	15.09	6.78	8.04
Levakovic1	15.44	14.28	6.39	7.90
Schumacher	13.02	12.39	6.24	7.54
Average	14.70	13.99	6.53	7.80
28 YearVolume m³/ ha	260.31	289.52	899.82	939.68

Expected Land Value

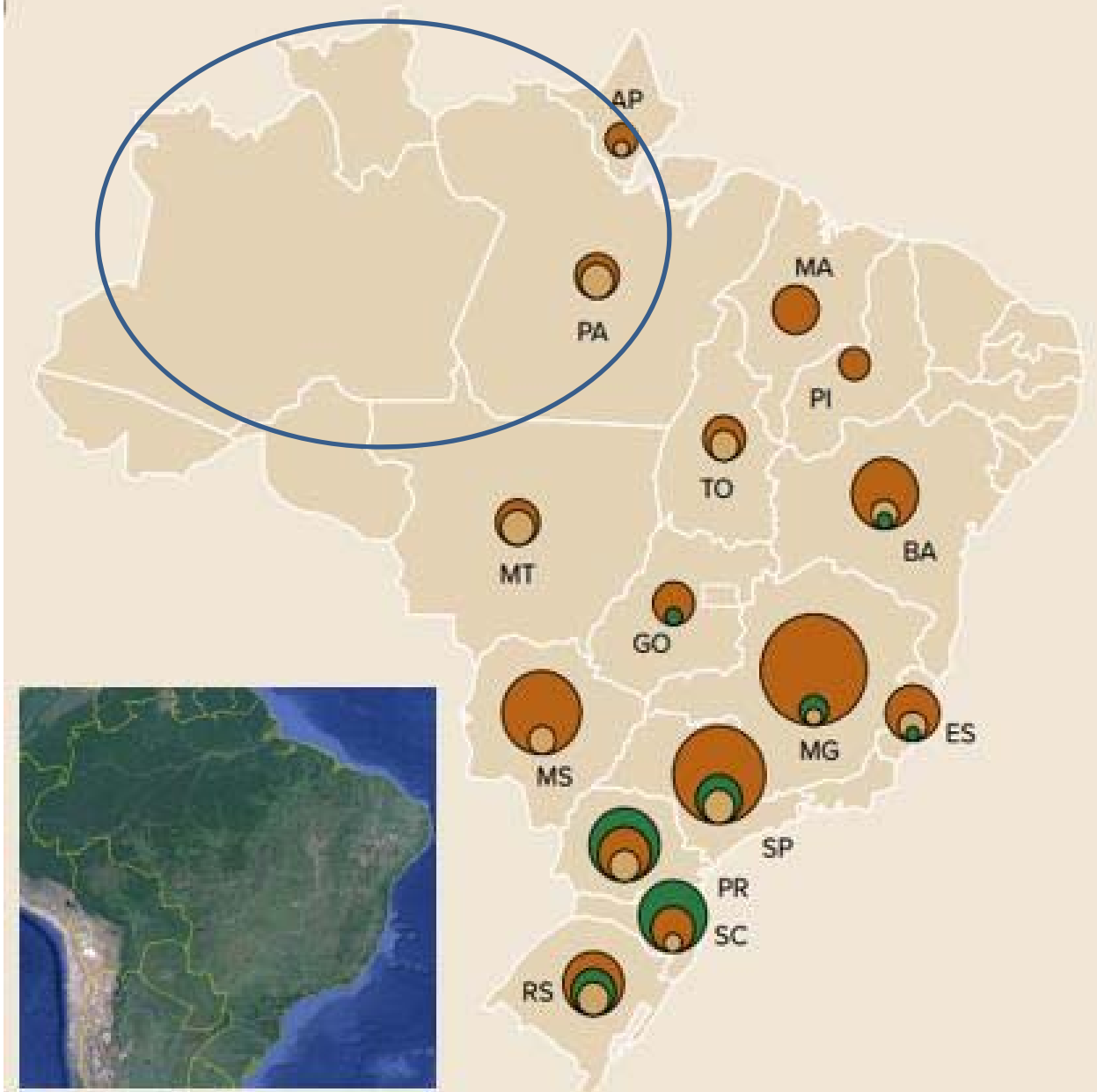
	ROTATION (YEAR)	NPV (YUAN/HA)	VOLUME IN 20 YEARS (M3/HA)	ELV (YUAN/HA)
CHINESE FIR	20	45989	66	73806
MASSON PINE	18	10214	122	17475
POPLAR	10	23646	206	61245
EUCLYPTUS	7	39350	717	136009

A Brazilian Puzzle: Planted Forests 2005-2014



Data for 1990-2000: from FRA2010 . For the other years: Statistical Yearbooks of the Brazilian Forest Plantation Producers - ABRAF.

Distribution of planted trees by state



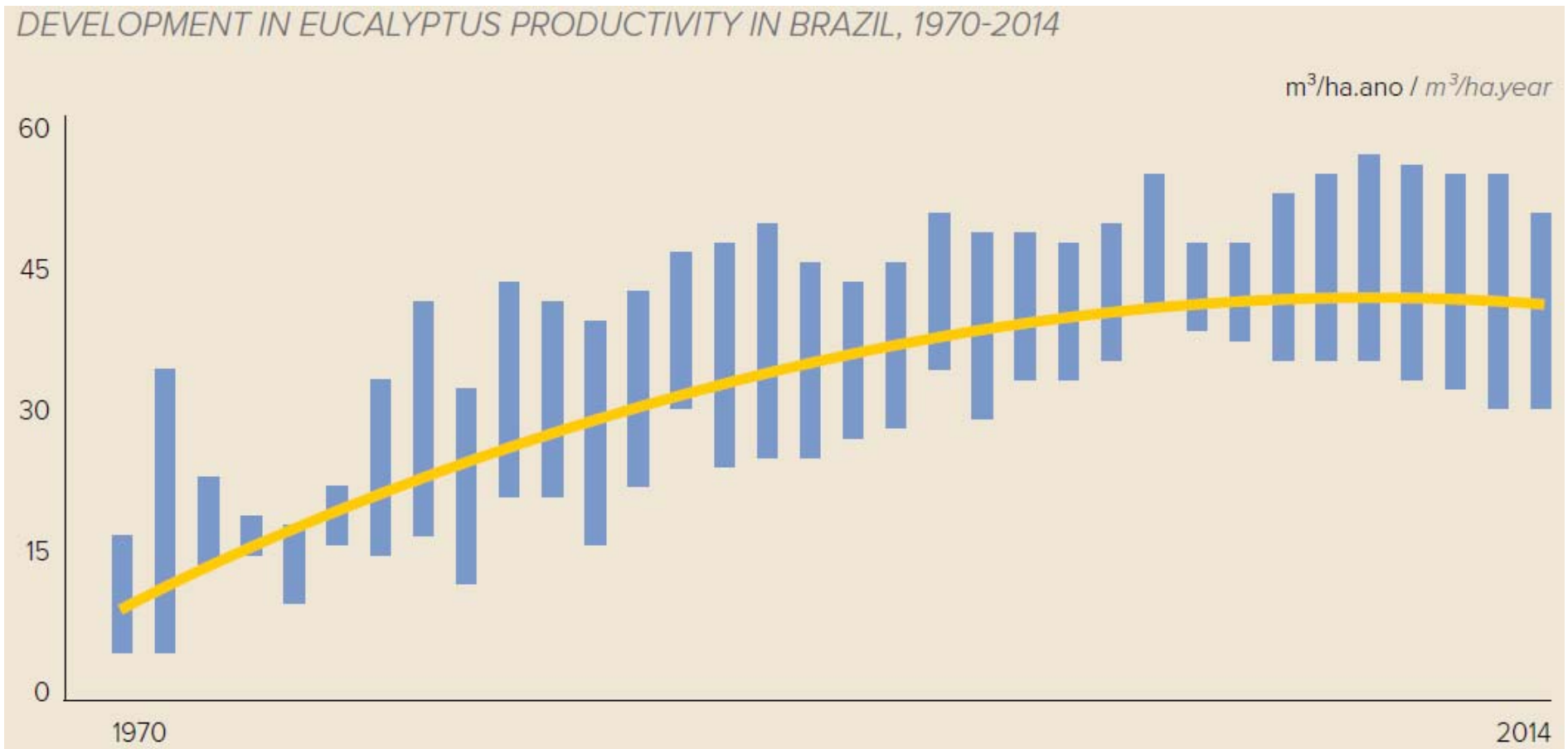
Distribution of Eucalyptus in Brazil

Annual growth of 30-45m³/ha

Reduced pressure on tropical forest deforestation

Technology Change and Forest Productivity

1970-2014 Trends in annual eucalyptus growth m³/ha



Source : Graph from ABRAF report

Brazilian consumption of round wood for industrial use by segment and genus, 2012 (72% from Eucalyptus)

Segment	Round Wood Consumption (m ³)			Total
	Eucalyptus	Pine	Others	
Pulp and Paper	55,033,172	9,108,030	5,000	64,146,202
Reconstituted Panels	5,580,247	7,252,635	158,576	12,991,458
Wood industry	7,034,315	27,424,294	288,000	34,746,609
Charcoal	23,144,200	-	-	23,144,200
Industrial Firewood	37,067,120	3,829,361	3,786,103	44,682,584
Treated Wood	1,650,320	-	-	1,650,320
Others	1,061,617	31,135	-	1,092,752
Total	130,570,991	47,645,455	4,237,679	182,454,125

Eucalyptus development in Guangxi

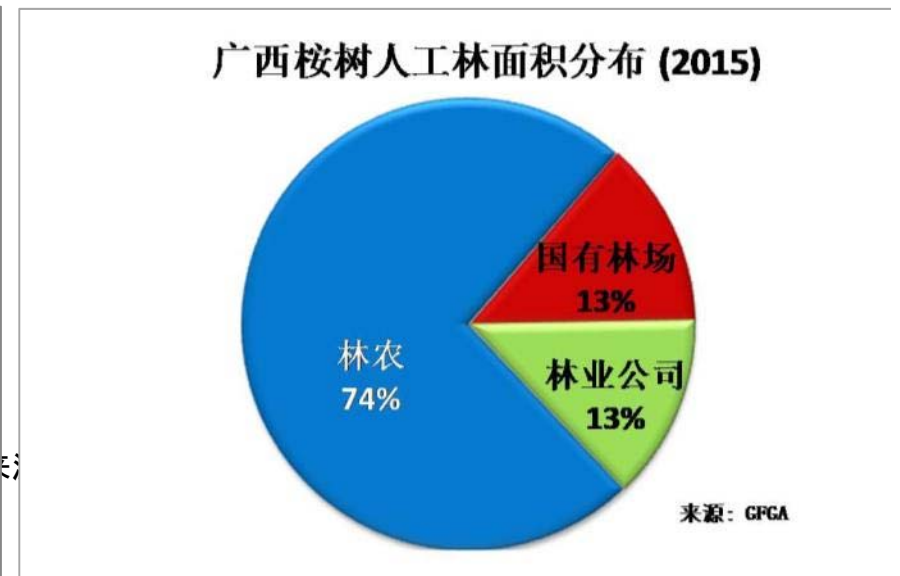
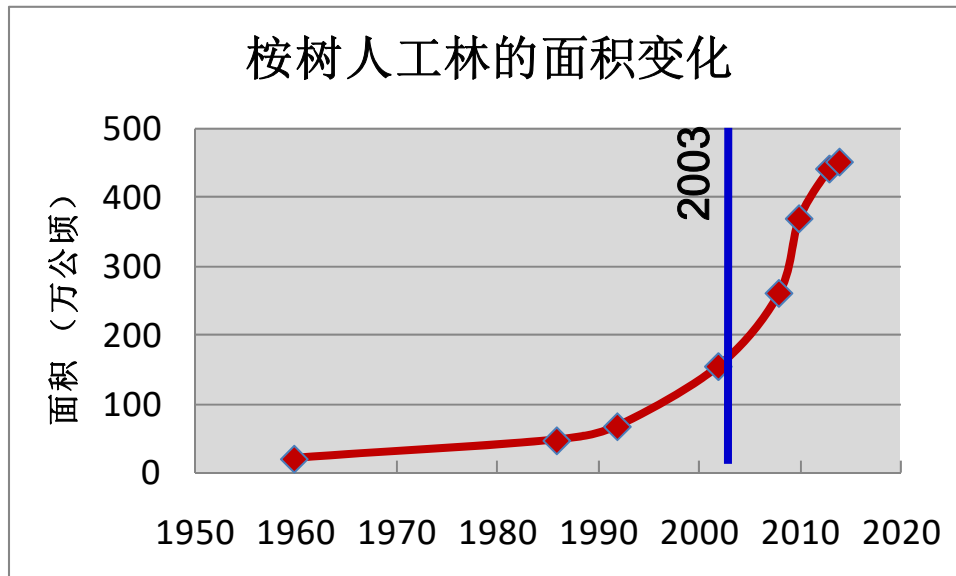
- 2011-2015, Eucalyptus production by 1950 m³/year
- Annual growth at near 20m³/ha
- 80% of total timber in Guangxi, more than 20% of national total, on only 12% forestland in the province and 24.2% of the standing volume.
- Furthermore, the estimated annual growth can reach 30m³/ha.
- 2 million ha of eucalyptus plantation, potentially 4 million m³ timber production, double current production and reach half of national total
- Adding eucalyptus production from Guangdong, total timber production from eucalyptus can reach 8 million, equivalent to current national total.
- What if annual growth reaches 45m³/ha?

Eucalyptus Development- Role of government

- Public good provision
- 1st eucalyptus farm build in 1950s
- 1982~1999, Dongmen Forest Farm as Model Eucalyptus Forest Project, for seedling development
- Since 2000s, supporting policy from provincial government

Eucalyptus Development-Role of Private Sector

- Farmer Eucalyptus Plantation account for 74% of the areas。
- Forest companies for 13% ; State farm only 13%。



Conclusion

- Forest industrial policy should have balanced emphasis for timber production
- Focusing on maximum support for private sector effort
- Eliminate unfavorable policies
 - Logging restrictions
- Improve business environment
 - By removing grabbing hands
 - Better extension services for greater productivity
- Facilitate green revolution

Thank You !