Global Trends in the Forest Sector

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Overview of New Forests

- Founded in 2005
- Managing forestry investment for institutional investment clients
- Currently managing over US$2 billion in assets in the Asia-Pacific region
- Head office in Sydney; 43 employees in Australia, New Zealand, Singapore, and San Francisco
- Managing over 500,000 hectares of land and forestry assets across the Asia-Pacific region and United States
- New Forests has generated excellent returns to our clients over 9 years, and has aimed to operate as a leading sustainable and responsible investor in the forestry sector

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Major Trends Affecting Forest Managers

Teak Plantation – Solomon Islands

1. Global timber demand growing and markets restructuring to accommodate Asian demand growth
2. Shift to plantations and the declining economic frontier of natural forests
3. Shifts in pulp & paper markets and increasing demand for bioenergy, biofuels, and other bioproducts
4. Rising institutional ownership of high productivity timber plantations
5. Sustainability imperatives and the pricing of ecosystem services

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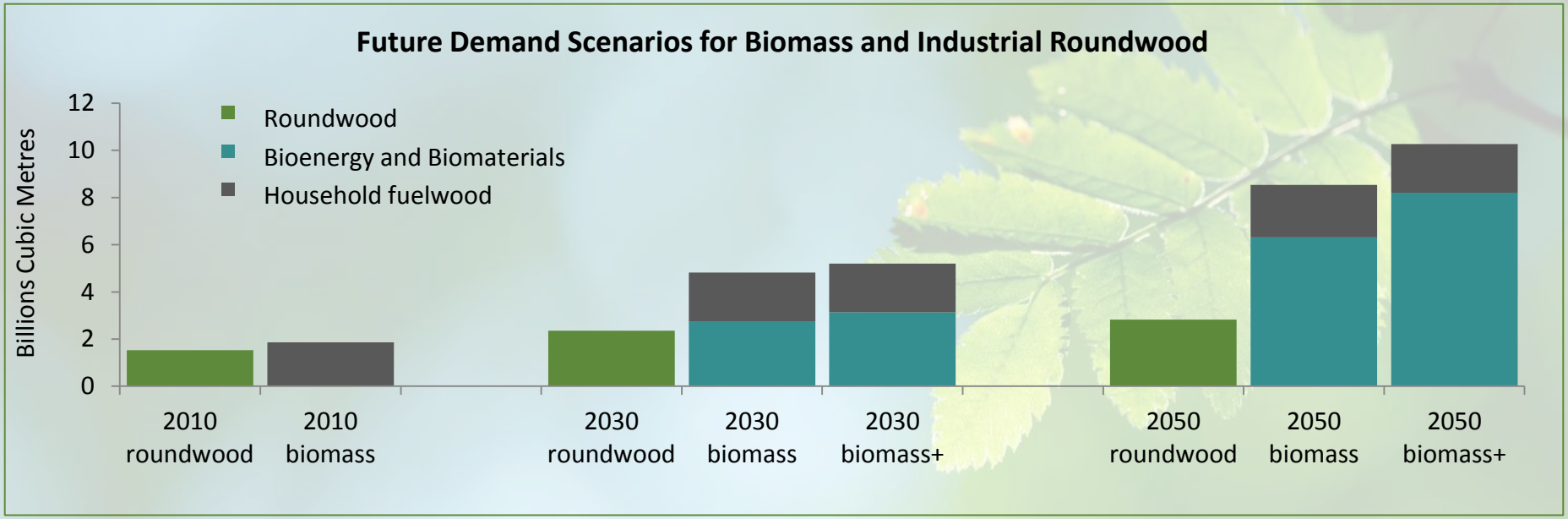
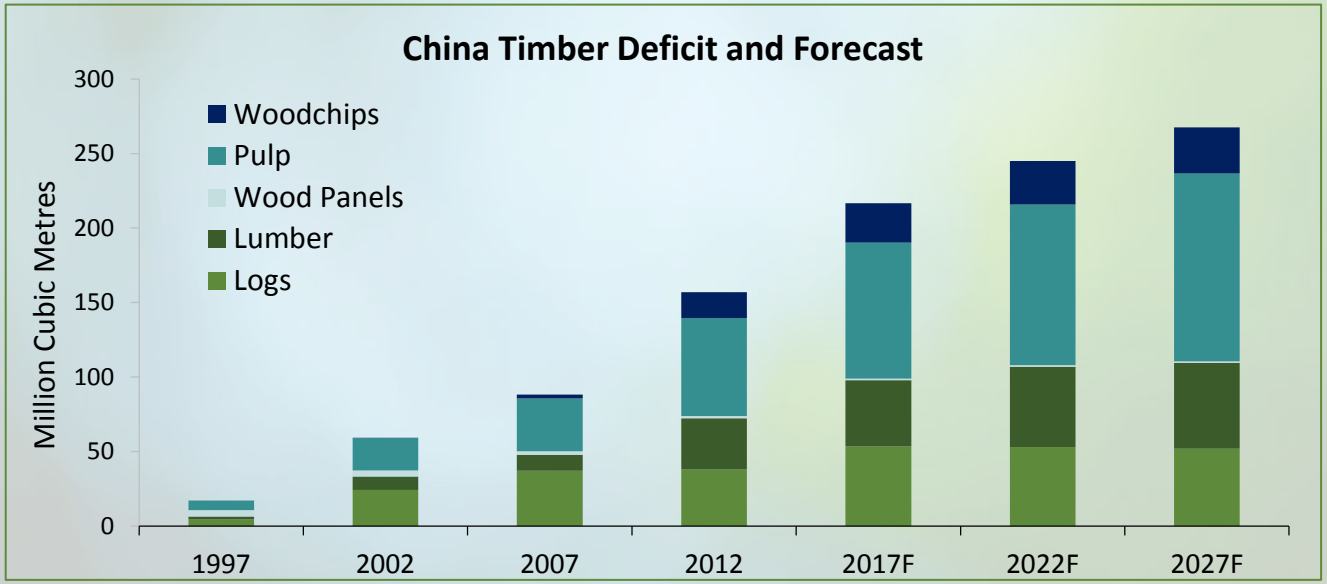
Market Conditions – Global Timber Demand





China's domestic forest resources are insufficient to supply growing timber demand across the range of wood products. This growing timber deficit makes China a rising force in global timber markets.

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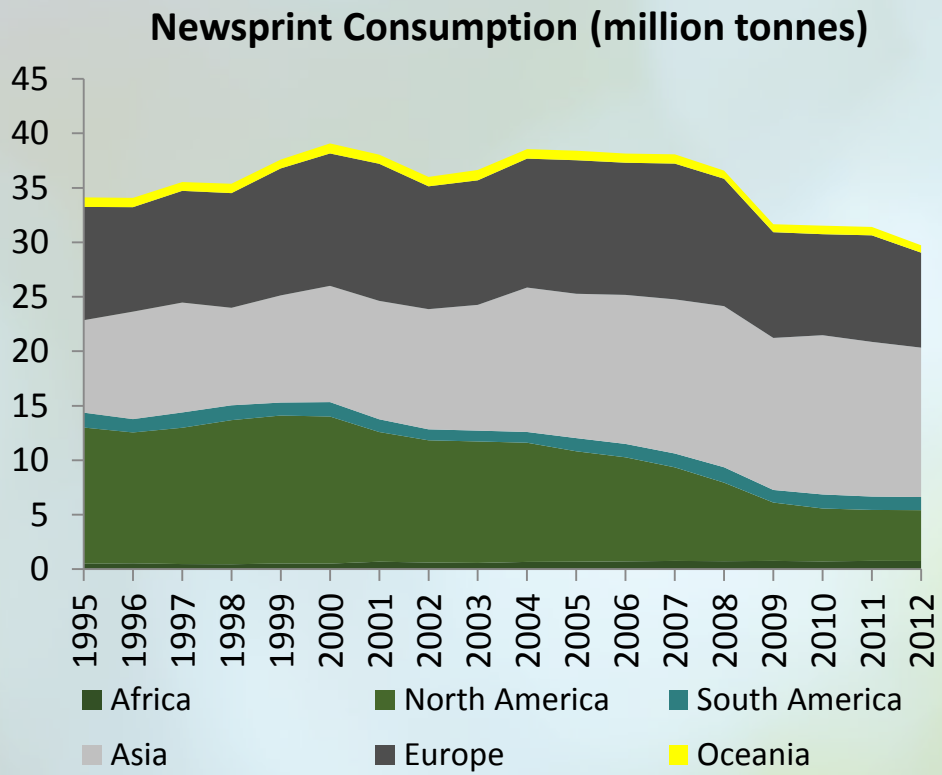
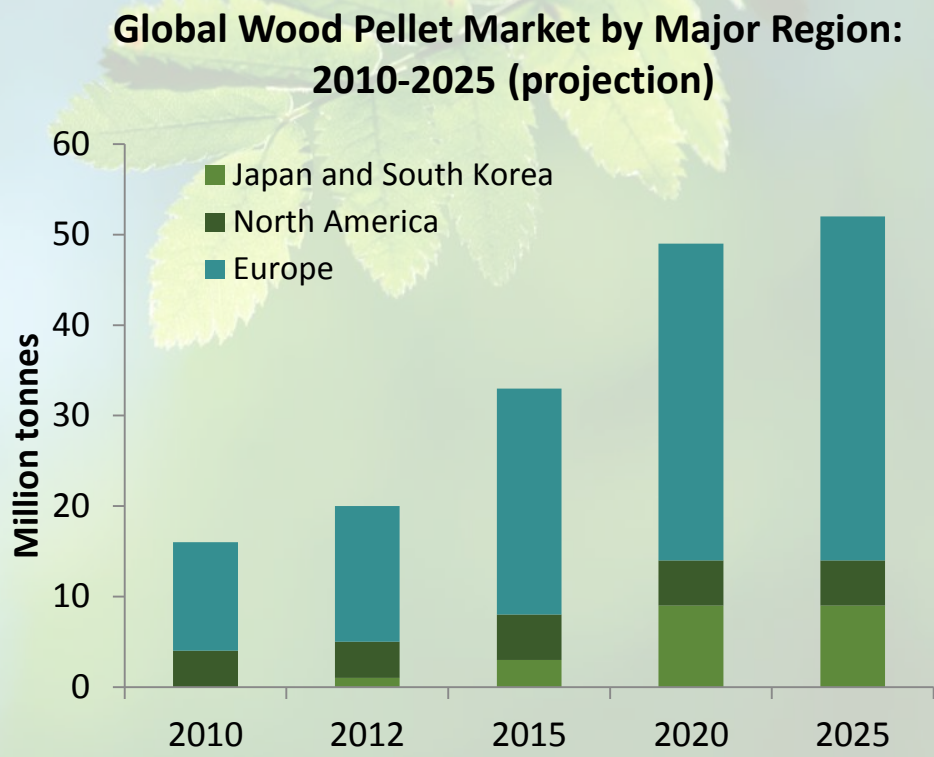
Source1: WWF 2013, "Living Forests Report." Source2: RISI. China Timber Supply Outlook.

Newsprint Demand & Growth in Pellet Market

As paper and newsprint demand falls, the forestry sector needs to move quickly into new markets such as biofuels.





New markets like wood pellets for energy are rapidly growing, and are likely to replace the fall in demand for pulp and paper.

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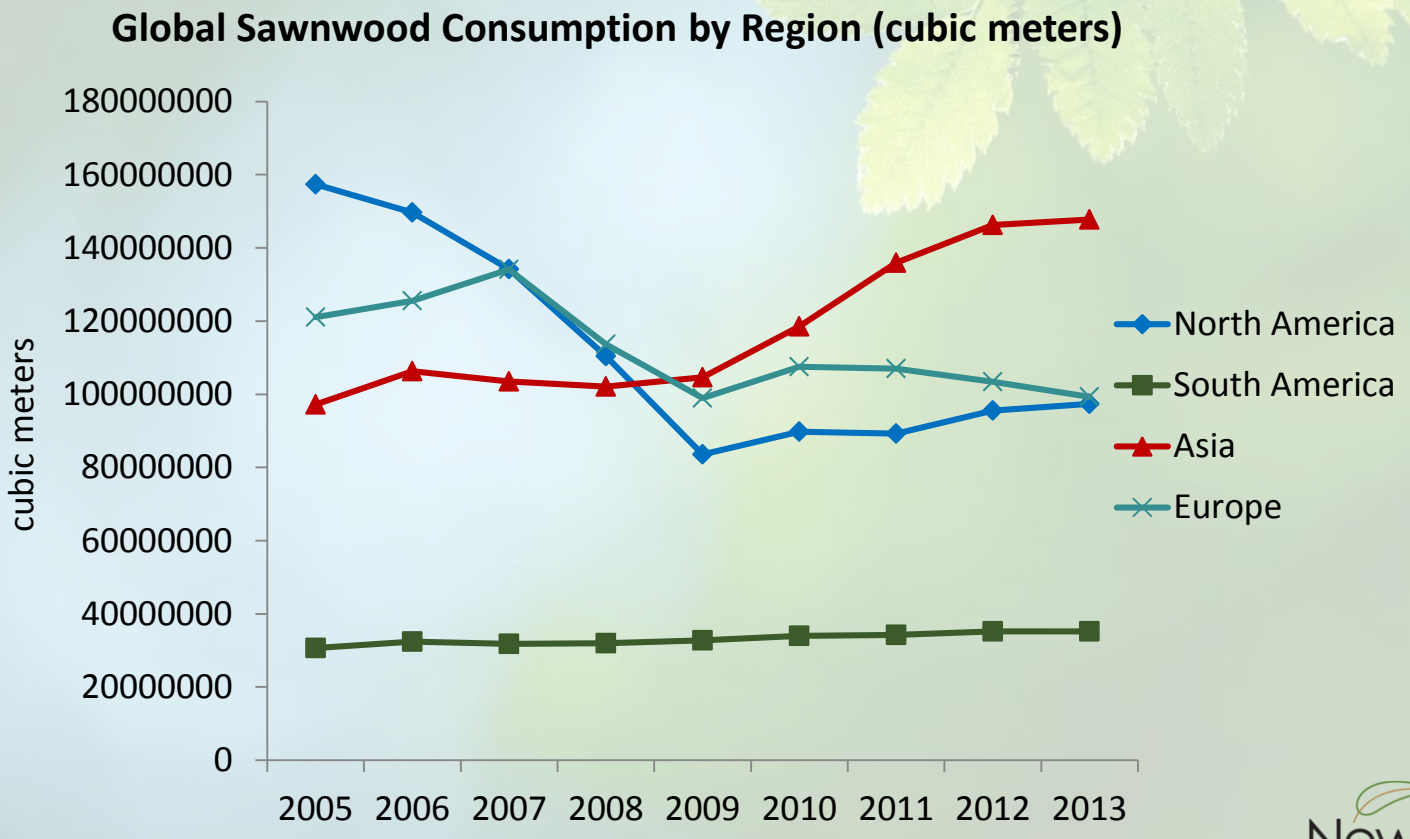
Sources: FAOstat, 2014. (left); http://www.statista.com/statistics/243910/global-wood-pellet-consumption-outlook (right)

Global Timber Production & Trade

Global sawnwood consumption has been adversely impacted by the global financial crisis. The Asia-Pacific region has increased its share of sawnwood consumption, while North America and Europe have declined significantly.



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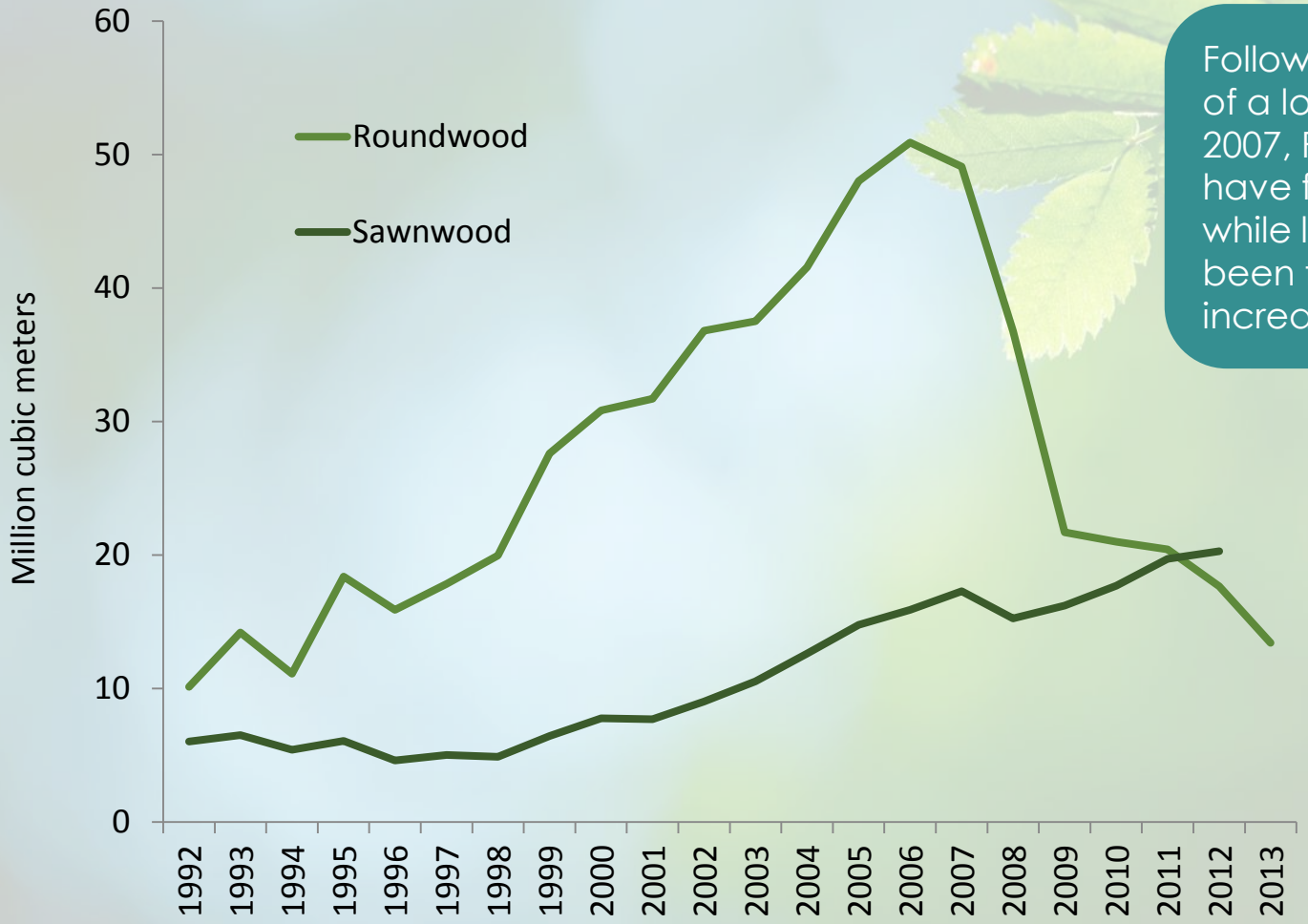
Source: FAOstat (2005-2012) and Poyry (for 2013 data)

Supply from Russia is Declining

Russian softwood exports have hit a wall…



Following the introduction of a log export tax in 2007, Russian log exports have fallen dramatically while lumber exports have been flat to slightly increasing.

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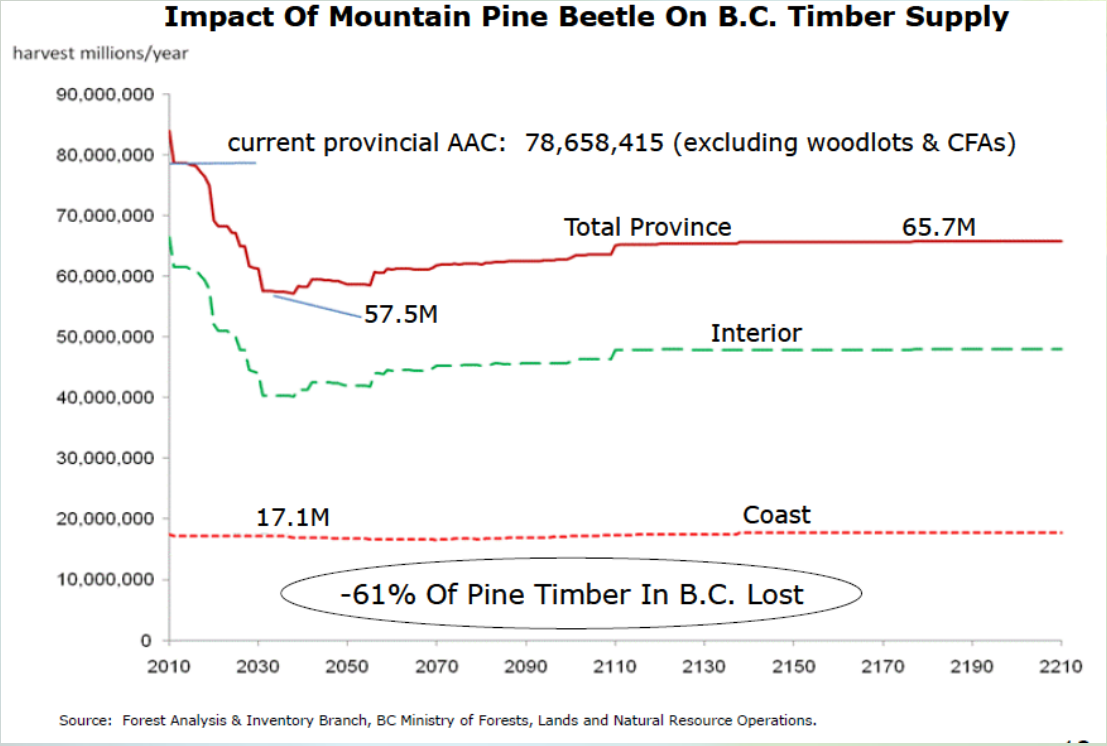
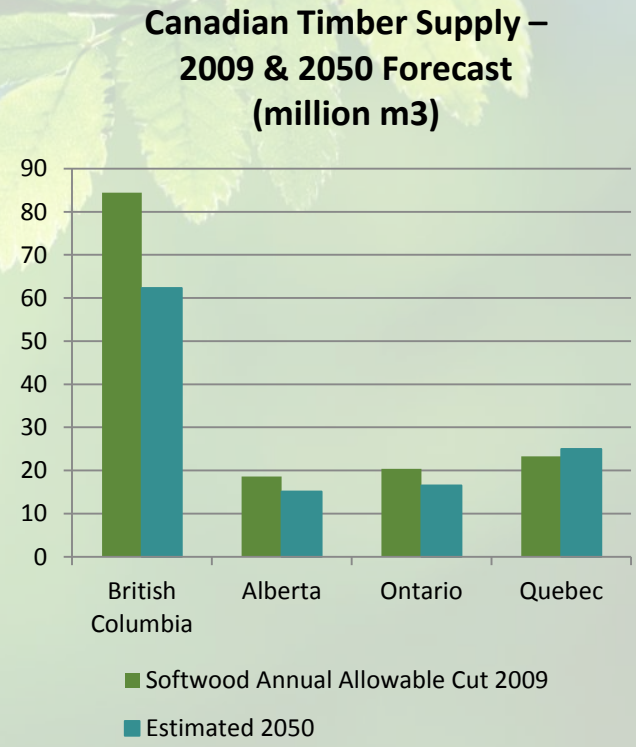
Source: FAOstat (to 2012), International Wood Markets Group for 2013.

Canadian Supply Falling

Policy constraints and Mountain Pine Beetle impact will lead to near-term decline in timber supply, leveling off in the medium to long term.



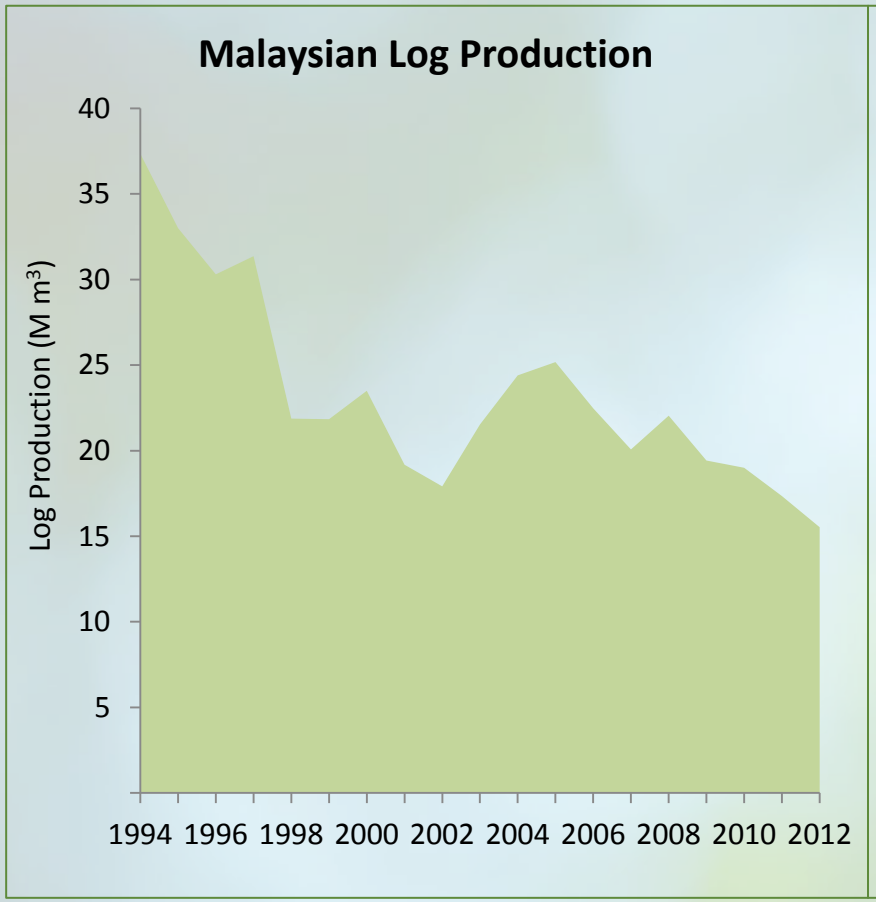


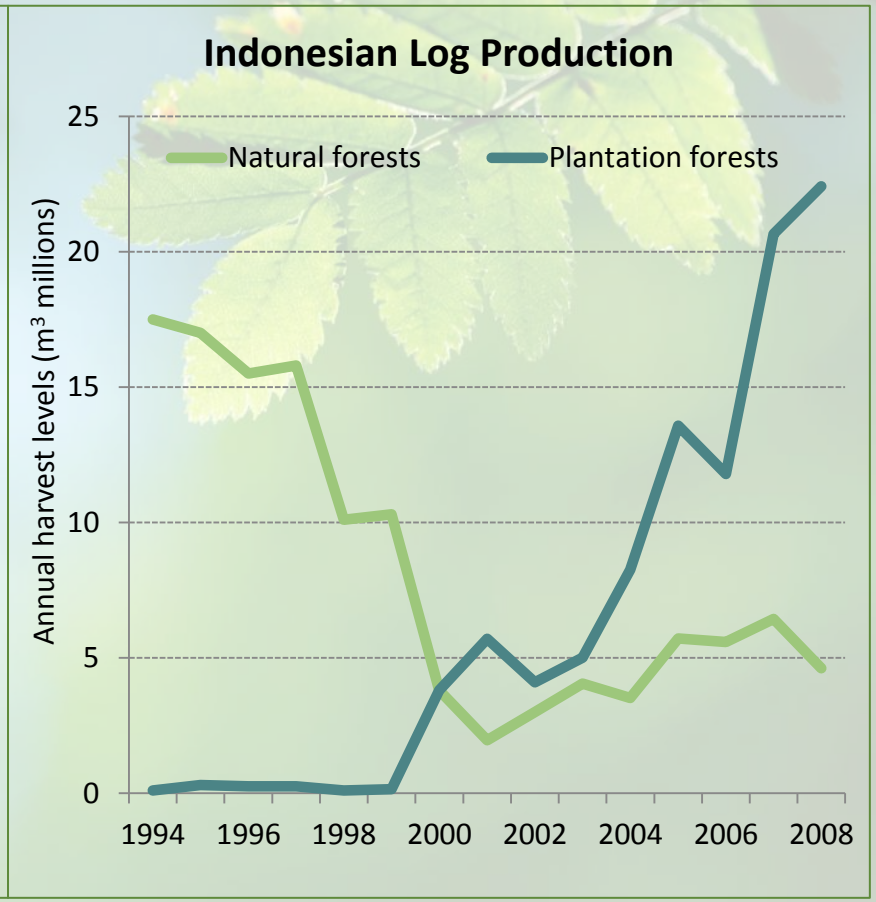
Canada and Russia are the second and third largest global timber producers respectively, and the fall in output from these countries will represent a large drain on the worlds supply of softwood logs for processing into lumber and other products

Source: Mark Kennedy, CIBC. "Global Perspectives on Forest Products Trade." Presentation to Future Forestry Finance.

Natural Forest Harvest in SE Asia in Decline

Steady Decline in Natural Forest Logging in Malaysia and Indonesia





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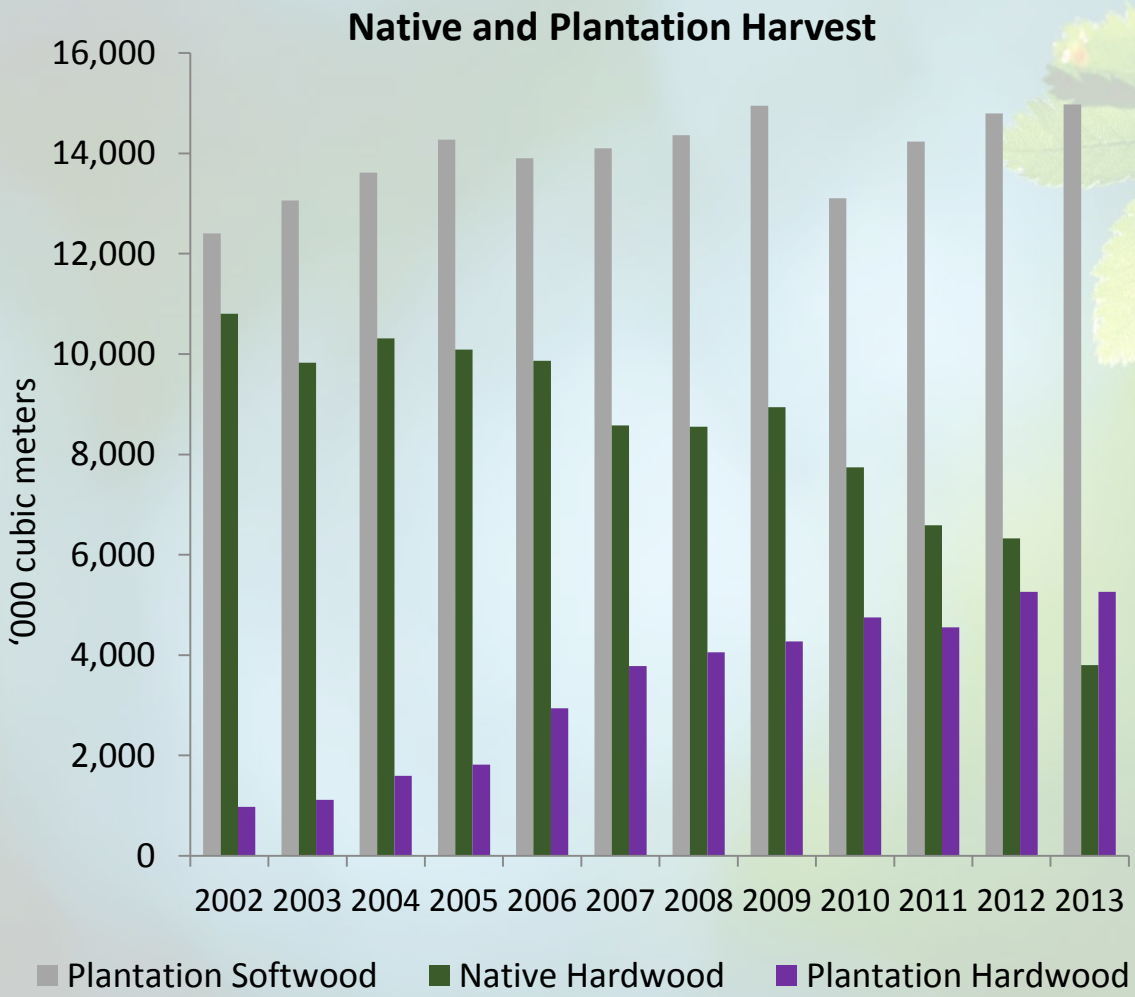
Sources: Malaysia Timber Council and personal communication with Yayasan Sabah; ITTO; Indonesian Forestry Department Annual Report, 2008.

Australian Plantation Harvest Rising

Australian hardwood plantations are steadily replacing a declining supply from native forests



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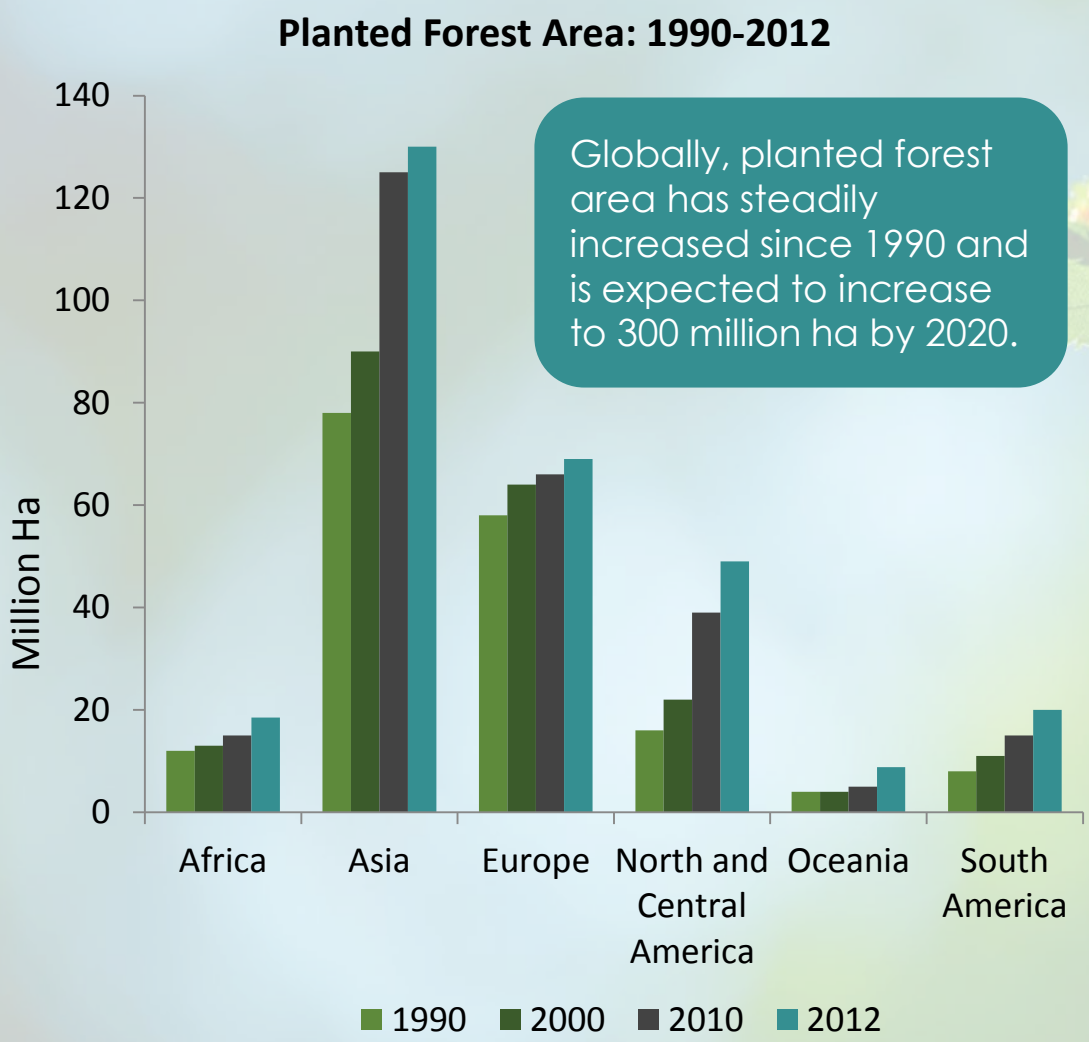
Source: ABARES, 2014

Increasing Importance of Plantations



Globally, planted forest area has steadily increased since 1990 and is expected to increase to 300 million ha by 2020.

- Global industrial roundwood demand is likely to rise from 1.5 billion m^3 in 2013 to 2.5 billion m^3 by 2050
- Somewhat speculative forecasts suggest biomass energy, biofuels and biomaterials demand could dwarf industrial roundwood demand over next 30 years*
- Almost all incremental supply will come from timber plantations—both productivity enhancement and plantation area will need to increase
- Investment needed could range between $100 and $500 billion to meet these levels of demand

*WWF, 2013 Living Planet Report

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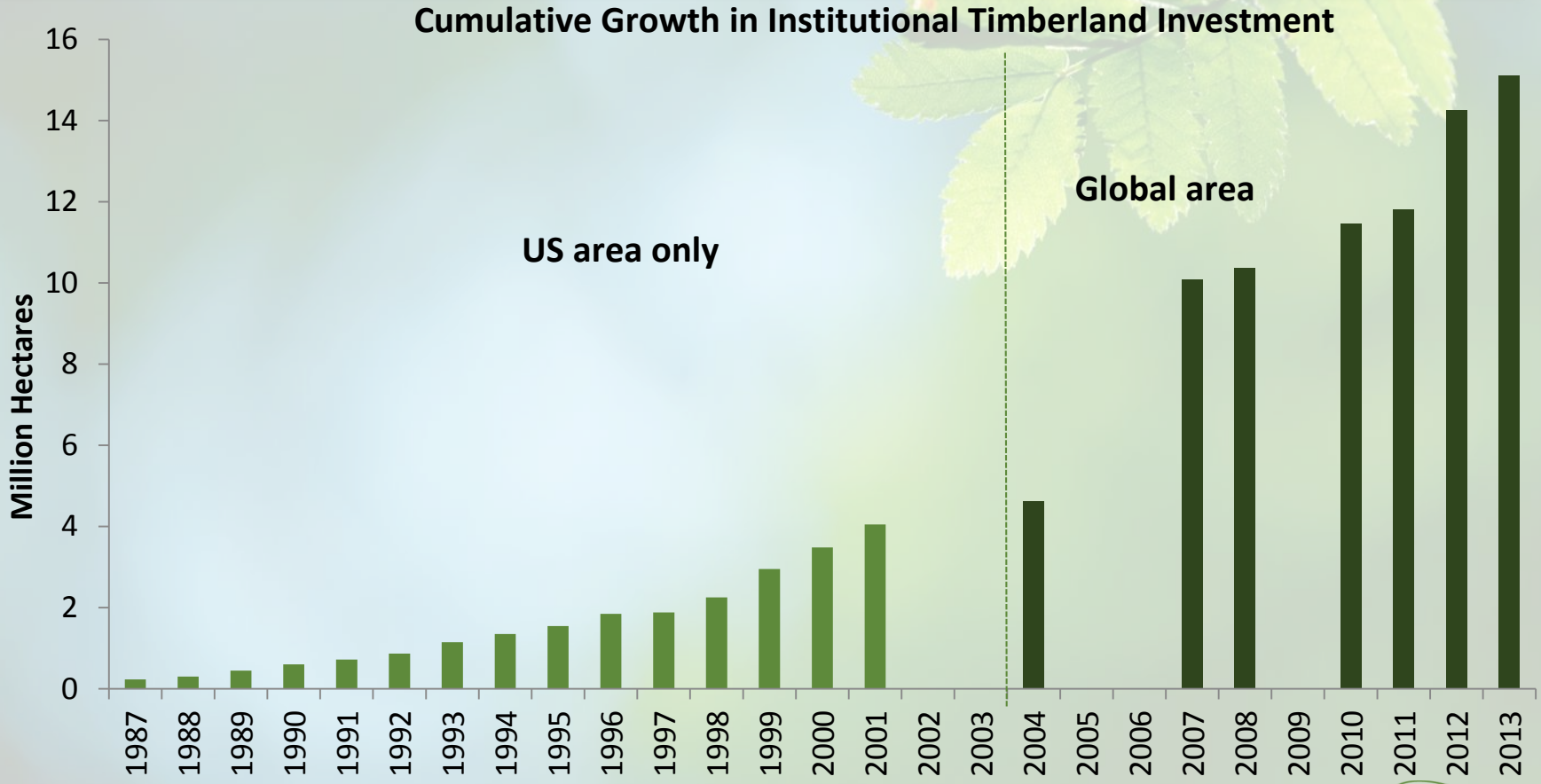
Source: FAO, 2013. Global Forest Resource Assessment (1990-2010); Indufor 2013 global plantation area study and forecasts for 2012 data.

Institutional Capital as a Source of Finance

Institutional Investors are steadily expanding their timber plantation ownership. Investor exposure to unlisted timberland investments has been increasing steadily over the past 20 years and today is estimated at $50 to $60 billion, with the total value of North American timber REITs at $35 billion.



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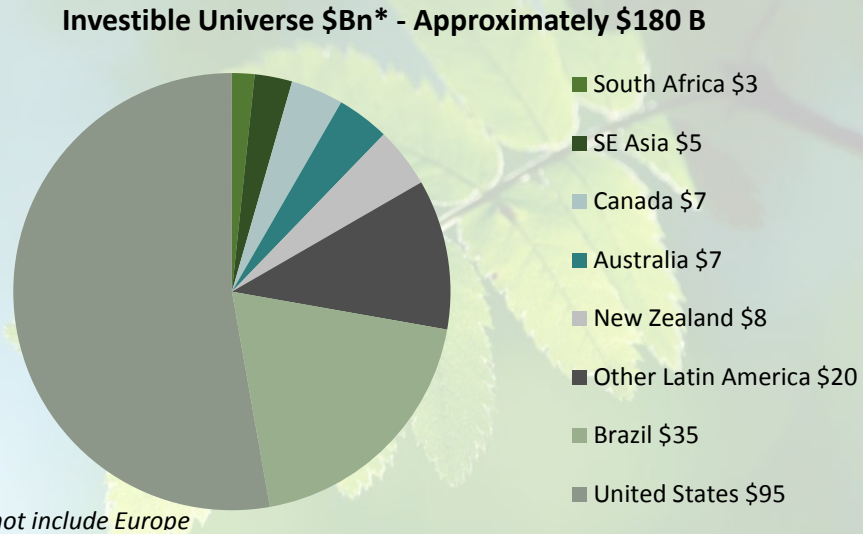
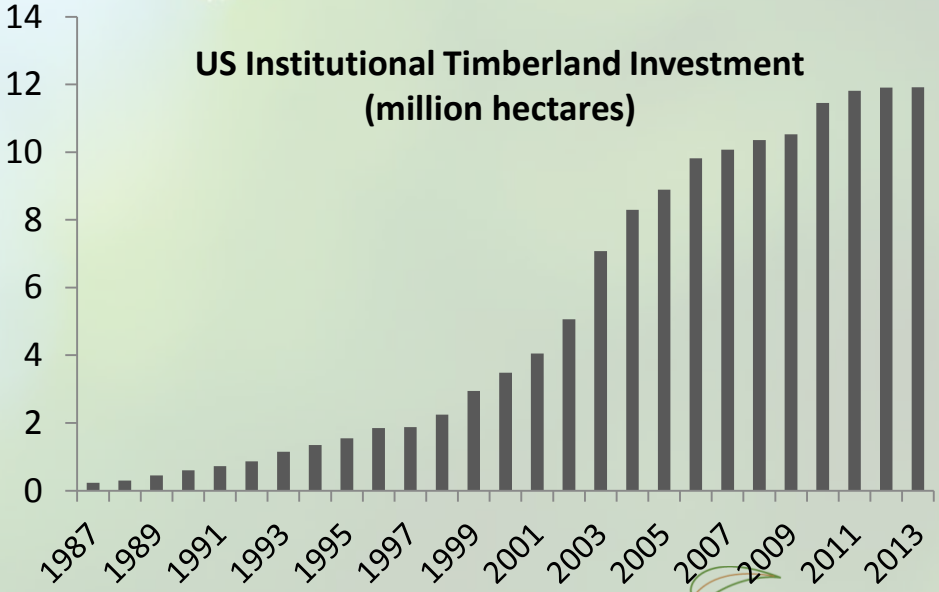
The Investible Universe of Forestry Today



*does not include Europe



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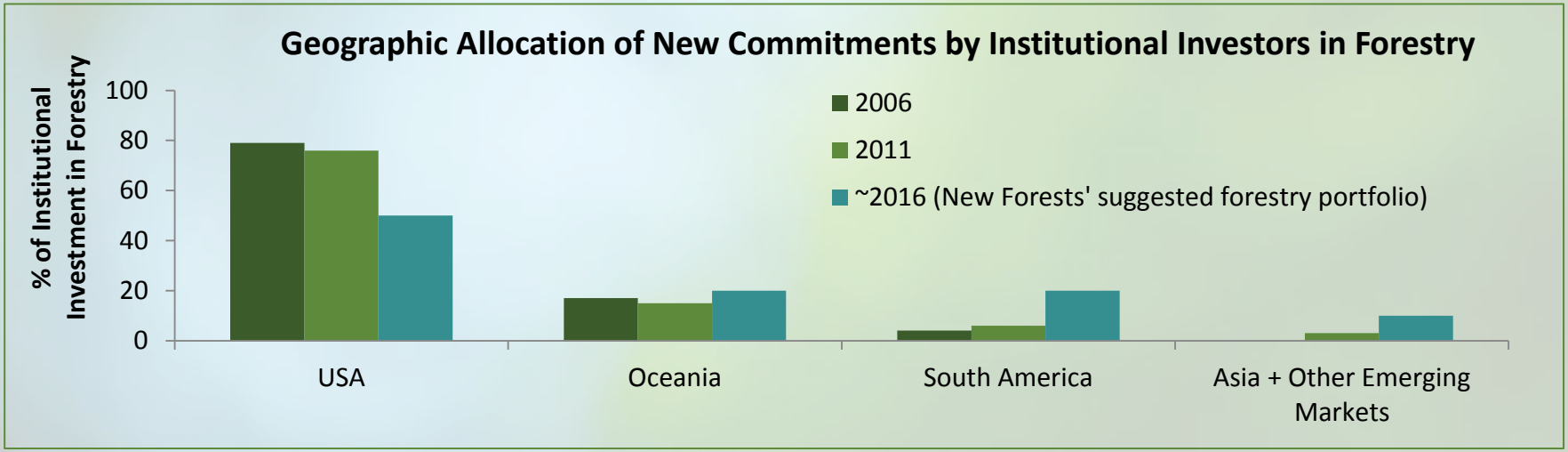
Sources: (clockwise) DANA, HNRG and New Forests estimates, RISI TMR June 2014..

Institutional Investment Capital Flows

- Forestry investors seek risk-adjusted returns that are based on market risk, currency, country risk, and other factors
- Investing in established plantations with established markets preferred
- As new investment opportunities in established markets decline, interest is rising in emerging markets, and new opportunities like energy crops

Country	Investible Assets	Discount Rates (real IRR, pre-fees, pre-tax)*
USA/Canada	$100 B+	5-6.5%
New Zealand	$7-8 B	8-9%
Australia	$7 B	8-9%
Brazil/Uruguay/Chile	$45 B	8-12%
Asia/Africa	$8 B**	10-18%

**If rubber and oil palm are included this could be $150B



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Tropical Asia Forest Fund (TAFF)

4-year old clonal teak in Java

- New Forests' TAFF is an example of new emerging markets forestry fund
- Investing in Southeast Asia with priority for Indonesia, Malaysia, and Vietnam
- Attractive growing conditions, low costs, and close access to growing markets
- Investment team in financial hub of Singapore
- US$170 million fund closed in June 2013
- Combination of existing and "greenfield" plantations
- Environmental, Social & Governance (ESG) factors and environmental markets offer value-add opportunities

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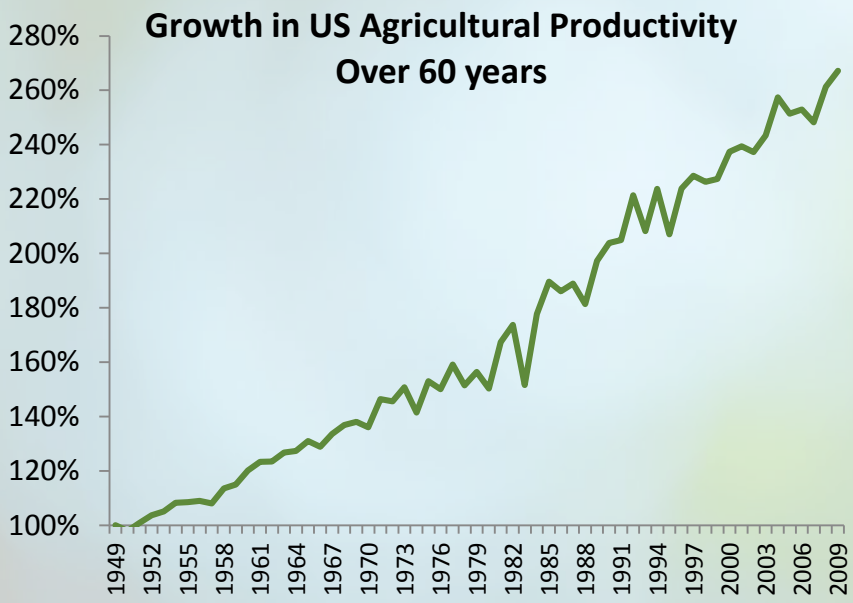
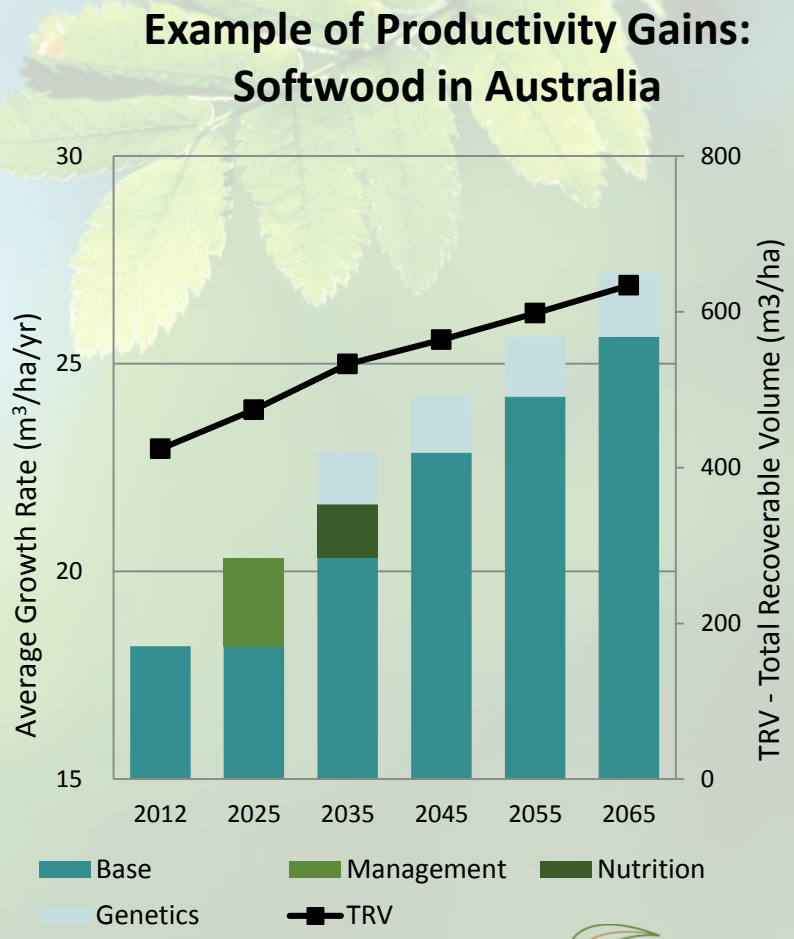
Plantation Productivity Can Increase

- If industrial wood demand grows at a rate equal to global GDP can we meet much of this demand via productivity enhancement rather than land base expansion
- Management strategies focus on silviculture, nutrition, risk management and genetics to increase productivity by 50-100% over the next 50 years



The Forestry sector should strive to increase productivity - like the Agricultural sector



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Source: Timberlands Pacific; OECD-FAO. June 2013.

Sustainability as a "Stay in Business" Issue

- Institutional Investors require sustainability policy, labour policy, corruption and bribery standards, use of certification and monitoring of performance standards
- Major consumer groups are increasingly demanding certification or product chain of custody documentation
- Governments are under pressure to create business environment that will encourage investment and support competitiveness of local industry

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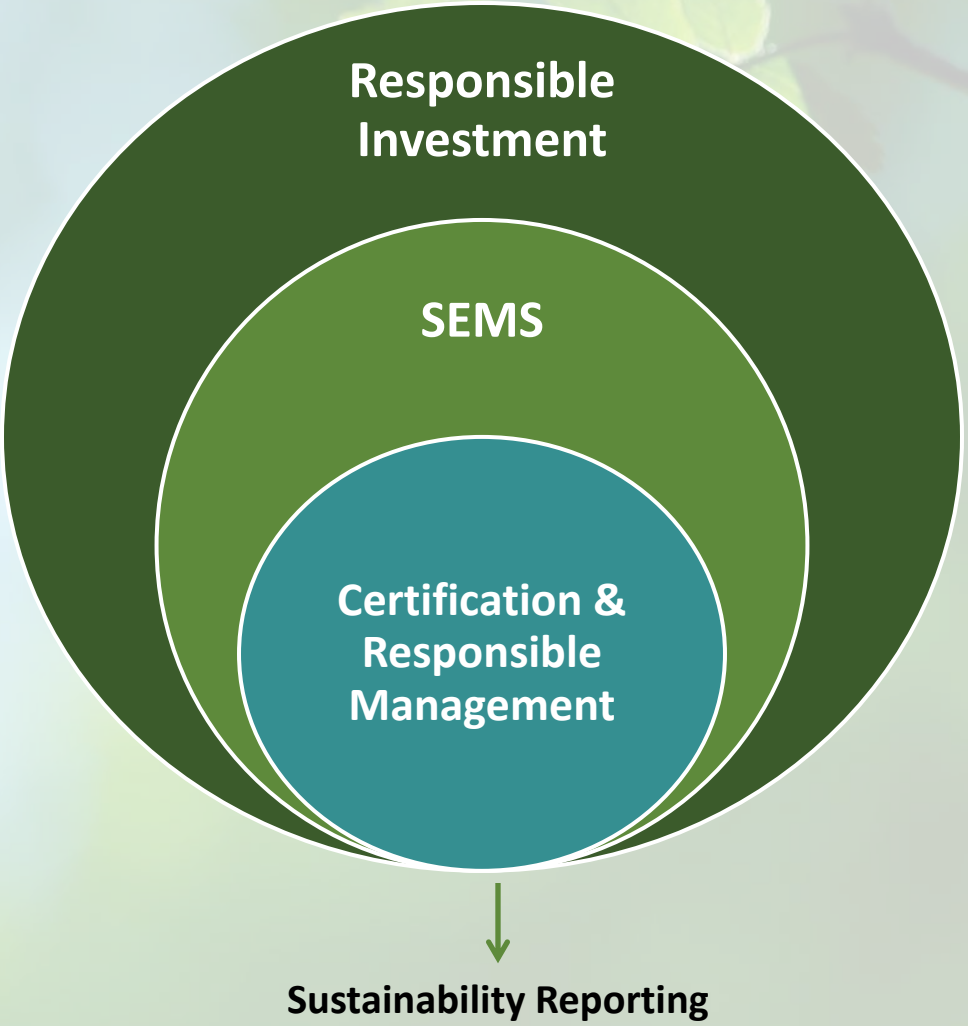
Sustainability at New Forests

New Forests is a signatory to the **UN Principles for Responsible Investment (PRI)** and commits to integrating Environment, Society, and Governance (ESG) principles into investment decision making

ESG policies are implemented at the fund level through a **Social & Environmental Management System (SEMS)** with internal auditing

The SEMS defines **third-party certification and responsible management** requirements relevant to the asset class and type of investment

Sustainability reporting is integrated into funds reporting structure and New Forests publishes an annual Sustainability Report covering responsible investment activities, targets, and progress



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The Need to Price Ecosystem Services

Markets set prices for timber products, but how do we value other benefits?

- Forests provide not only timber, but many other benefits related to freshwater, carbon cycling, biodiversity conservation, human health and well being
- These ecosystem services have not been priced and therefore are used wastefully and disregarded in land conversion decisions
- Leads to plantation and agribusiness industry using more land rather than increasing productivity per hectare
- Policy in conflict with overwhelming economic fundamentals is difficult to enforce on a sustainable basis

Region	Value of Natural Vegetation	Value of land converted to Agriculture
Malaysia	$500 (logging concession after primary harvest)	$20,000 to $25,000 (oil palm)
Brazil	$155 (Amazon frontier land)	$420 (grazing)
US South	$2500 (mixed timberland)	$6250 (cropping)
Australia	$1900 (woodland properties)	$4850 (mixed cropping and grazing)

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Environmental Markets Lessons Learned

- **Price signals work**
  - US SO_2 market drove changes in fuel from high to low sulphur coal
  - EU ETS drove $ billions into carbon funds and carbon companies
  - Australian water market restructured agriculture to increased efficiency and more valuable cropping
  - US Mitigation Banking is a billion dollar+ turnover industry
- **The finance and investment sector can facilitate change**
  - Investment funds sprang up related to the EU ETS, Australian Water market and Mitigation banking industry—creates liquidity to meet market needs
  - Markets create transparency in pricing; futures and options create stability; water rights as collateral for investment in water use efficiency
- **Stability is necessary, but fine-tuning is also necessary**
  - Meddling by Government killed the SO2 markets
  - Excessive allocations and unexpectedly huge offset supply have made the EU ETS unstable
- **It needs to cost more to remain outside rather than inside a scheme**
  - Lack of price premium has hampered most voluntary certification schemes
  - REDD has struggled to have impact because private sector is disengaged and continues to operate on a business as usual basis

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Towards the Future

Can forestry represent a "natural infrastructure" asset class?

- Projections are that global industrial roundwood demand will begin to plateau around 2.3-2.5 billion m^3 per annum in 2030.
- 100 to 150 million hectares of commercial plantation area (2.5-3.75% of world forest cover) could supply most of this timber, while timber production from frontier regions (Canada, Russia, tropical natural forests) will stabilize or decline. Biomass demand may double this.

Canopy view of New Forests' Malua Biobank in Sabah, Malaysia.

- Mechanisms to price ecosystems via REDD, BioBanking, watershed protection, etc. alongside commercial timber plantations could produce the basis for the stabilization of conservation and production functions and rival timber values
- Need to align public policy, supply chain initiatives, and NGO interests
- Ultimately this must be driven by private capital and investment

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Key Points in Summary

- World timber demand will continue to rise, markets will evolve to encompass Asian demand growth
- Supply increases will primarily come from timber plantations, rather than further expansion of the economic margin in primary forests
- Increases in plantation area are more difficult to achieve than increases in productivity of existing plantation base—land competition will also rise among food, energy, and fibre crops
- Institutional portfolios have gone from 5% real assets in 2000 to 15% real assets today, and likely will reach 25-30% by 2025—huge inflow of capital for real estate, infrastructure, agriculture, forestry, etc.
- The great bargain or 'end-game' needs a financing source for conservation as well as production—this could include REDD+, biobanking, water rights, no net loss supply chains, etc.
- Social and community integration via benefit sharing, consultation, and governance models, and respect for traditional and legal rights will be core to sustainable outcomes

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