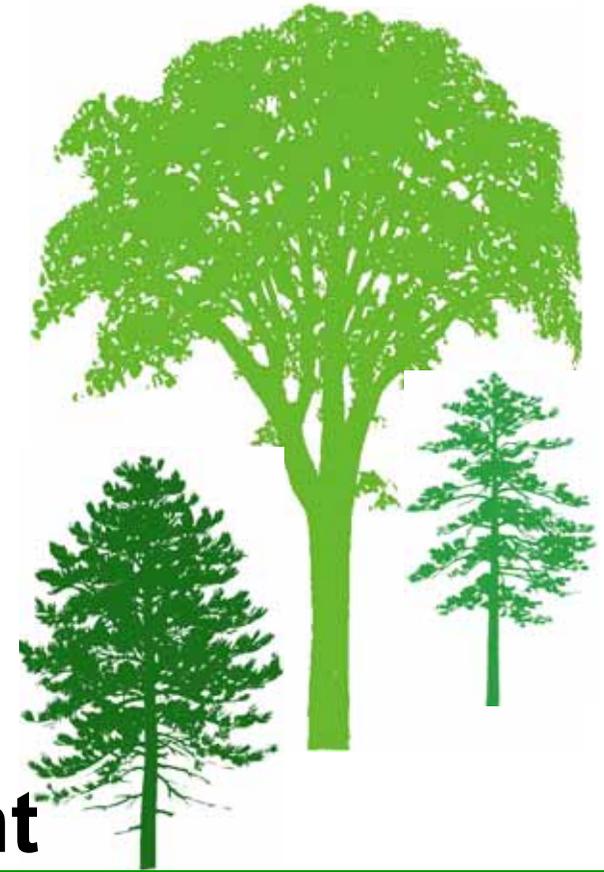


ForestRe



An Insurance Contribution to Sustainable Forestry Investment

ITTO Presentation

26-27th April 2006; Cancun ,Mexico

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Why & What is ForestRe?

ForestRe: Specialist Insurance



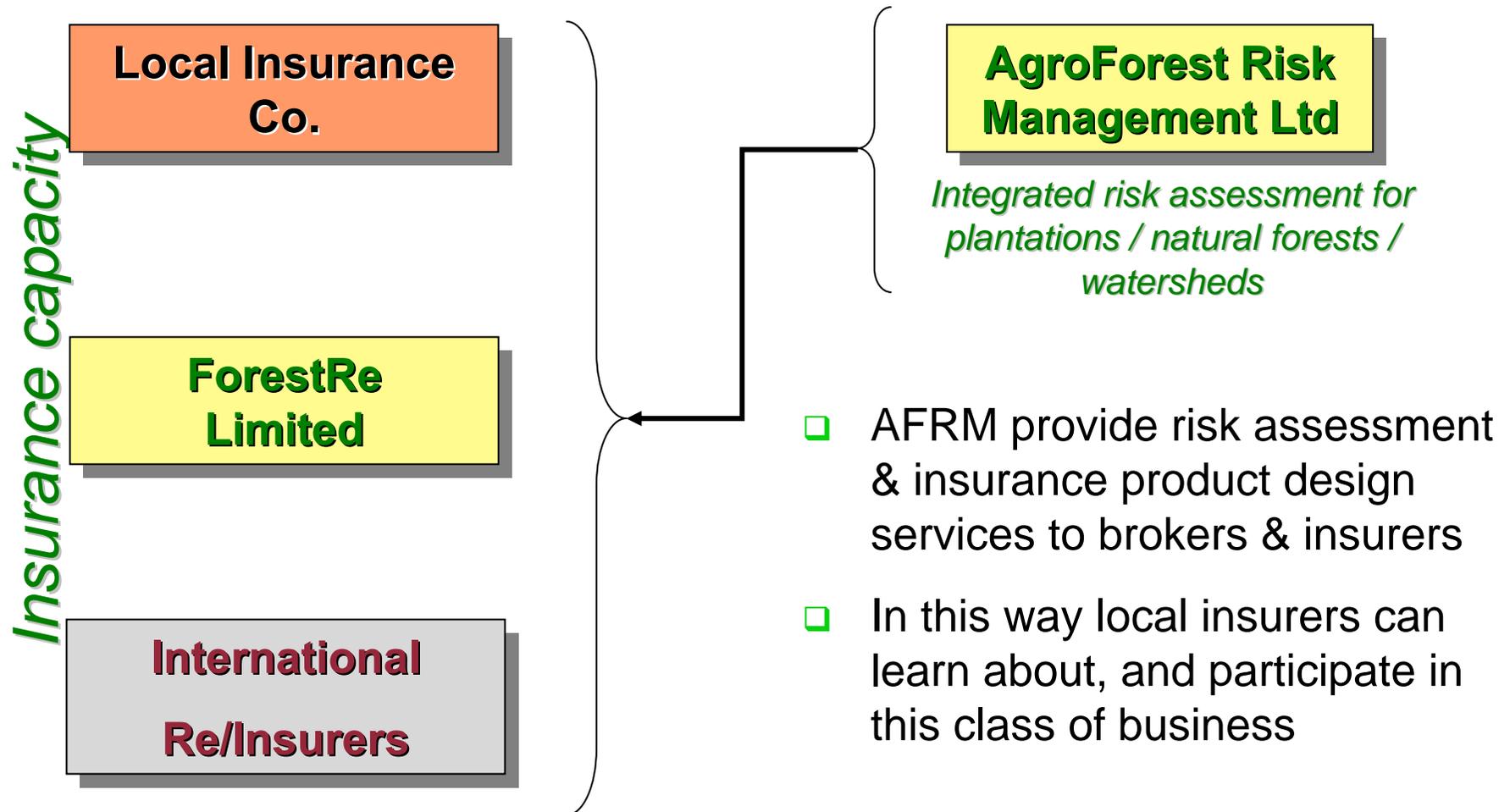
- ❑ established in 2005
- ❑ as a new dedicated forestry insurance intermediary
- ❑ Insurance capacity uses A rated fronting
- ❑ to insure:
 - natural forest**
 - reafforestation & afforestation**
 - plantations**
 - tree crops &**
 - biofuel feedstocks**

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Lloyd's of London building

Market Structure



ForestRe Mission



- ❑ **to increase significantly the insurance capacity for forest & tree crop enterprises**
- ❑ **to facilitate finance & investment into all forestry as an asset class supported by conventional and environmental revenue streams (water, carbon, biofuels...)**

Why is FRe Needed?



- ❑ International insurance markets have rarely made money from forestry...
 - due to very small & unbalanced forest portfolios
- ❑ 2003 saw a major collapse in the capacity available for forestry, increasingly seen as a niche business
- ❑ Global capacity fallen by 75% from 1995 levels
- ❑ 2006 only 3 major international reinsurers remain 'leaders in forestry'

Insurance Benefits:



Insurance PROTECTS

- ❑ forestry investments & loans
- ❑ future income flows
- ❑ forest yields & services
- ❑ the balance sheet
- ❑ facilitates investment where fiduciary obligations or investment criteria mandate risk reduction

AND

- ❑ a cost-effective way to manage risk of catastrophic loss.



Ensuring Sustainability

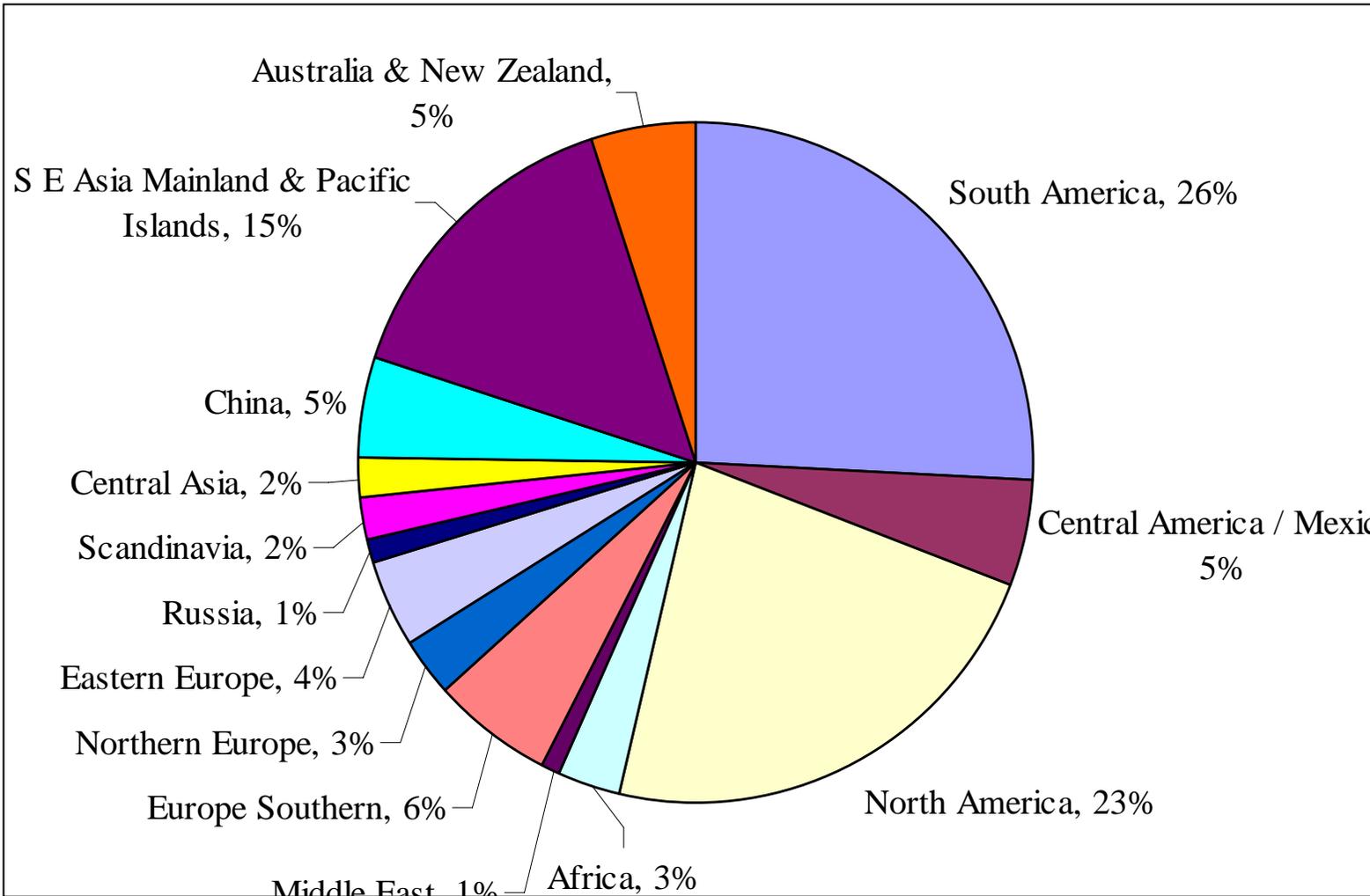
Sustainable Portfolio



Portfolio balance

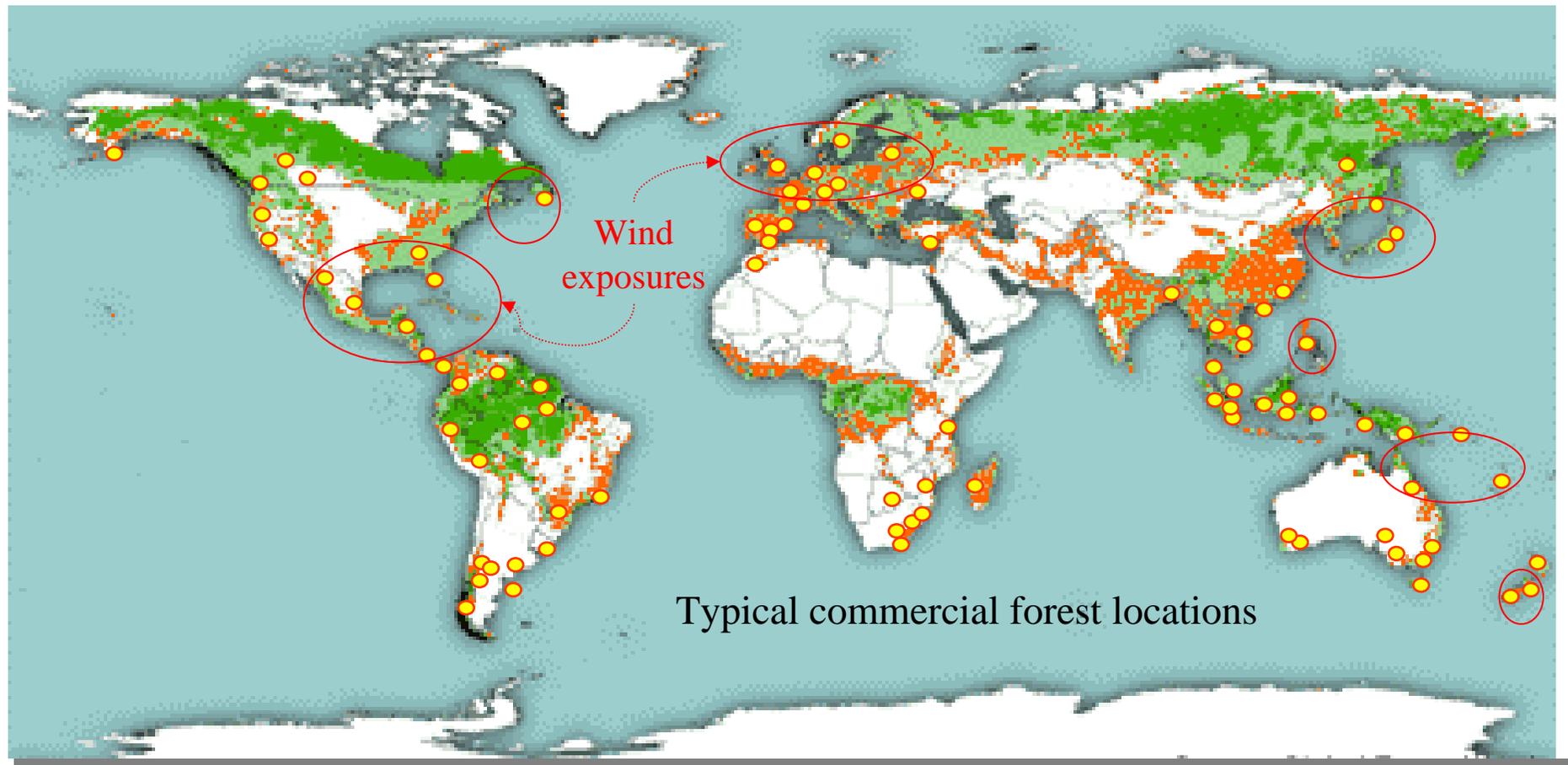
- ❑ mix of natural and plantation forestry
- ❑ preference for SFM certified practices
- ❑ maximum of 50:50 high to low risk regions by values at risk
- ❑ size balance of 50:50 or better of small vs large forestry risks by premium
- ❑ focus on small forestry risks under US\$5m but participating in forests of any value (US\$100m +)

Portfolio Spread & Balance



Access forests through brokers, all types of banks, forestry funds, companies and public sector.

Traditional Insurance Demand





Insurance Products for Investors

ForestRe Core Products



- ❑ Loss of insured interest such as growing trees, fruit & yield
 - due to fire & allied perils
- ❑ Fire fighting cost protection
- ❑ Business interruption
 - increased costs of working
 - Process plant overheads
- ❑ Optional protection from:
 - Wind storm
 - hail, snow



Source: CSIRO Australian Bush fire

Capacity Provided



Base forestry product

- ❑ up to US\$5m every 'separate' risk location

Larger investments

- ❑ Limit % share ('line') on big forests IF small forestry premium pool is adequate

New Product Development



- ❑ Insurance wraps for forestry investment instruments
- ❑ Certified emission reductions for 'permanence' as defined (CER)
 - compliant markets within Kyoto and EU trading scheme (EU ETS)
 - voluntary compliance
- ❑ Watershed environmental services:
 - biofuels
 - water quality and flows
 - salinity credits



Source:

Sumitomo Forestry Co. Ltd, Tokyo: Japanese Forestry

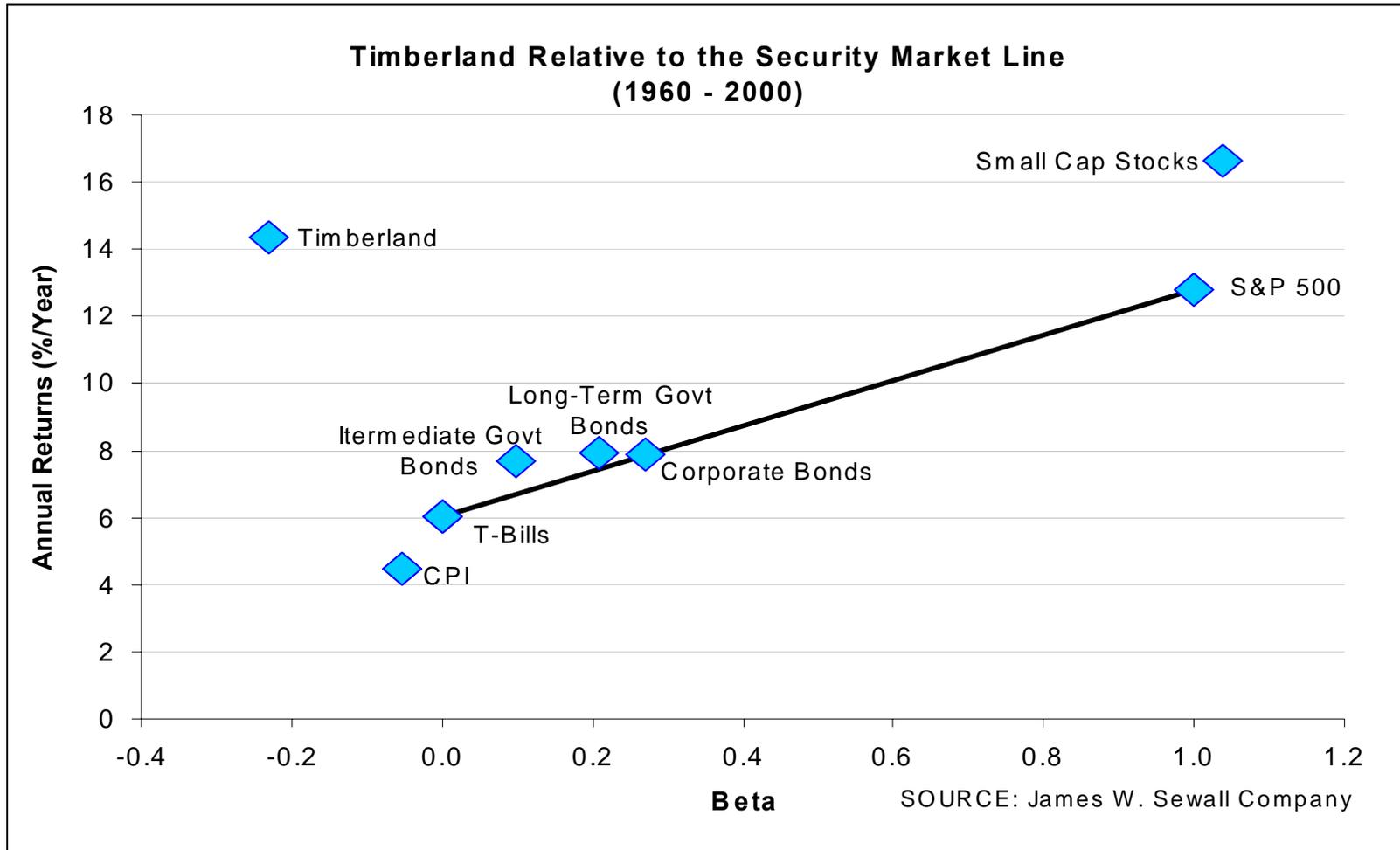
Forest Insurance Wraps



Forestry not part of the standard fund asset mix but:

- ❑ institutional & high net worth individuals recognise the merit of forestry as an investment.
- ❑ In particular:
 - the long-term nature of forestry is attractive for funds matching long-term liability, such as pension obligations (>20 years)
 - attractive risk-adjusted returns (5% - 14% \propto to region)
 - negative correlation to other asset classes - when the market is down timberland/forestry tends to be up, which causes it to function as an effective, counter-cyclical hedge
 - => benefits to a multi-asset portfolio

Low Correlation with Equities



Forest Investment Impediments



Fund managers & advisors' investment is prevented by:

- ❑ a lack of specific forestry knowledge
- ❑ by structural, conventional and institutional impediments

Opportunities exist

- ❑ to create forestry investment product with the desirable attributes of the forest asset whilst having characteristics of a regular fixed income structure
- ❑ demand will be very significant for a securitised forestry investment

Issues in Forest & Eco-Projects



Forestry & environmental projects ...

- ❑ operate in immature, opaque & fragmented markets
- ❑ investor funds operating in unfamiliar sectors (forestry)
- ❑ perceived risk profile is very high
- ❑ sustainability requirements conflict with traditional financial hurdle rates & expectations.
- ❑ require high hurdle rates 20

Insurers Can Provide Investment Catalyst



How?

- ❑ secure investors' / banks' funds in the projects
- ❑ reduce risk of failure
- ❑ increases viability of lower IRR projects
- ❑ raises project market profile and quality
- ❑ raises security of environmental products & services
- ❑ hence raises liquidity



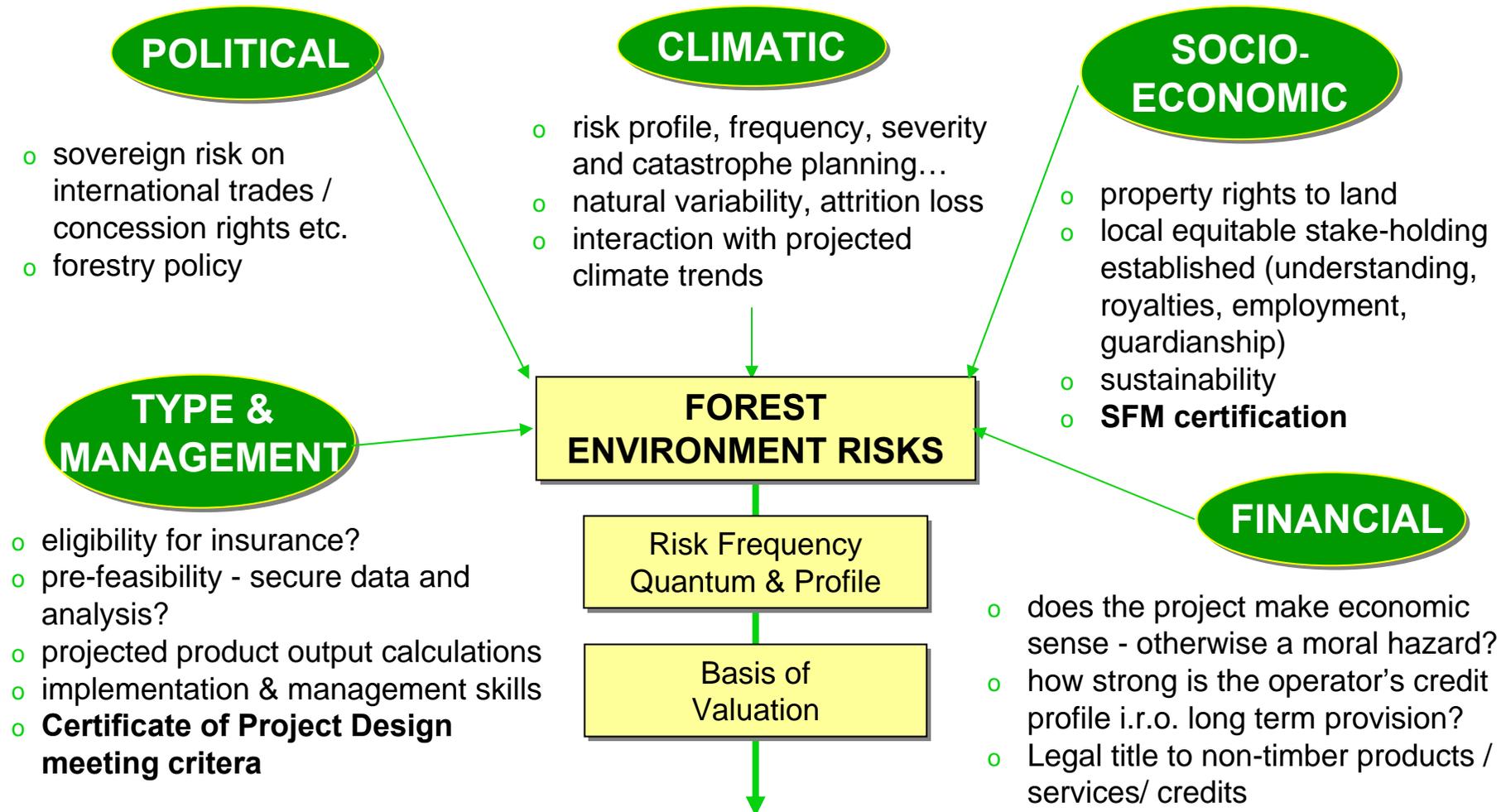
Insurers do this by:

- ❑ assess & model risk profile for probability of achieving targets
- ❑ comprehensive project overview linked to enhanced management capacity
- ❑ a multi-line, multi-year approach
- ❑ forms a proactive strategic partnership with investor



Forestry Risks, Assessment & Management

Forestry Risk Assessment



Risks to Forests & Tree Crops



Production risks:

1. fire
2. hurricane
3. drought
4. land invasion by settlers/loggers

Impact of these production risks depends on portfolio size, spread, species, enterprise types

Notes

1. fire risk impact is inversely related to tree age & can be catastrophic
2. limited insurance availability for wind, unless in a balanced portfolio
3. systemic impact of drought risks, fire correlated, reduces growth
4. invasion takes time to develop and to control - governance an essential factor is risk management

Nature of Catastrophic Risks



□ Infrequent

- Insurers now estimate exposure up to a 250 year return period for accurate risk pricing (data dependent)
- Losses due to 20 - 50 yr events add significantly to the average value of expected losses

□ Severe

Example Australia

Pre-loss annual mean

= 1.17%

Post-loss mean

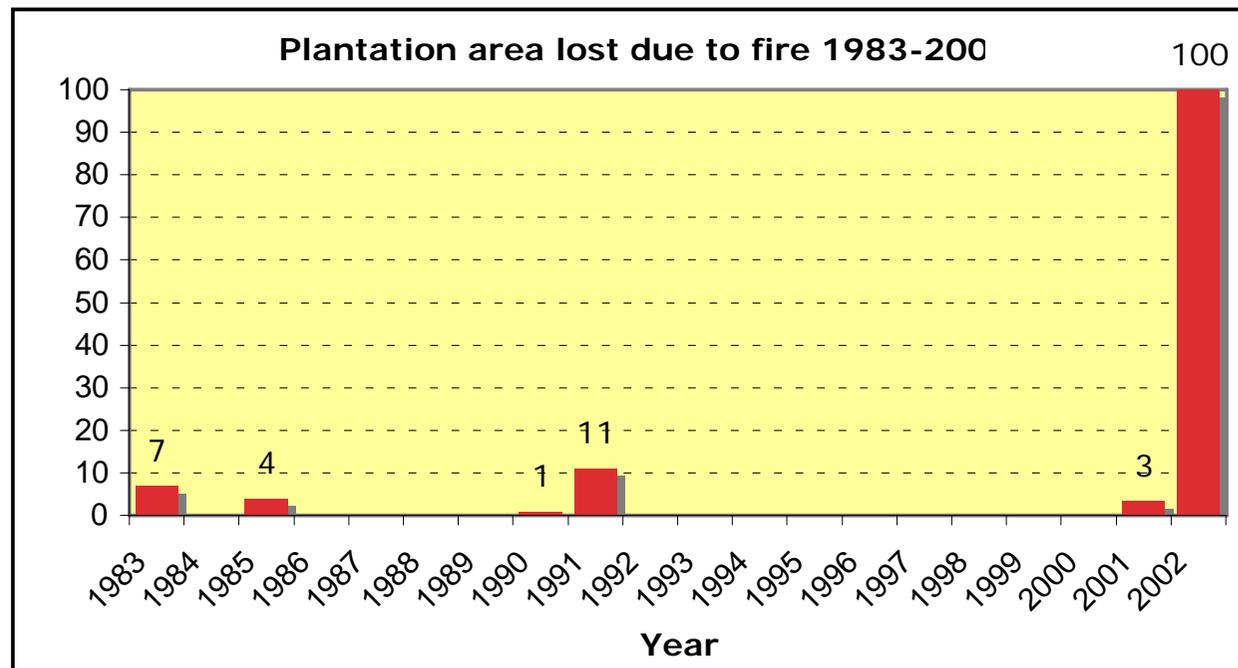
=4.92%

....Called the

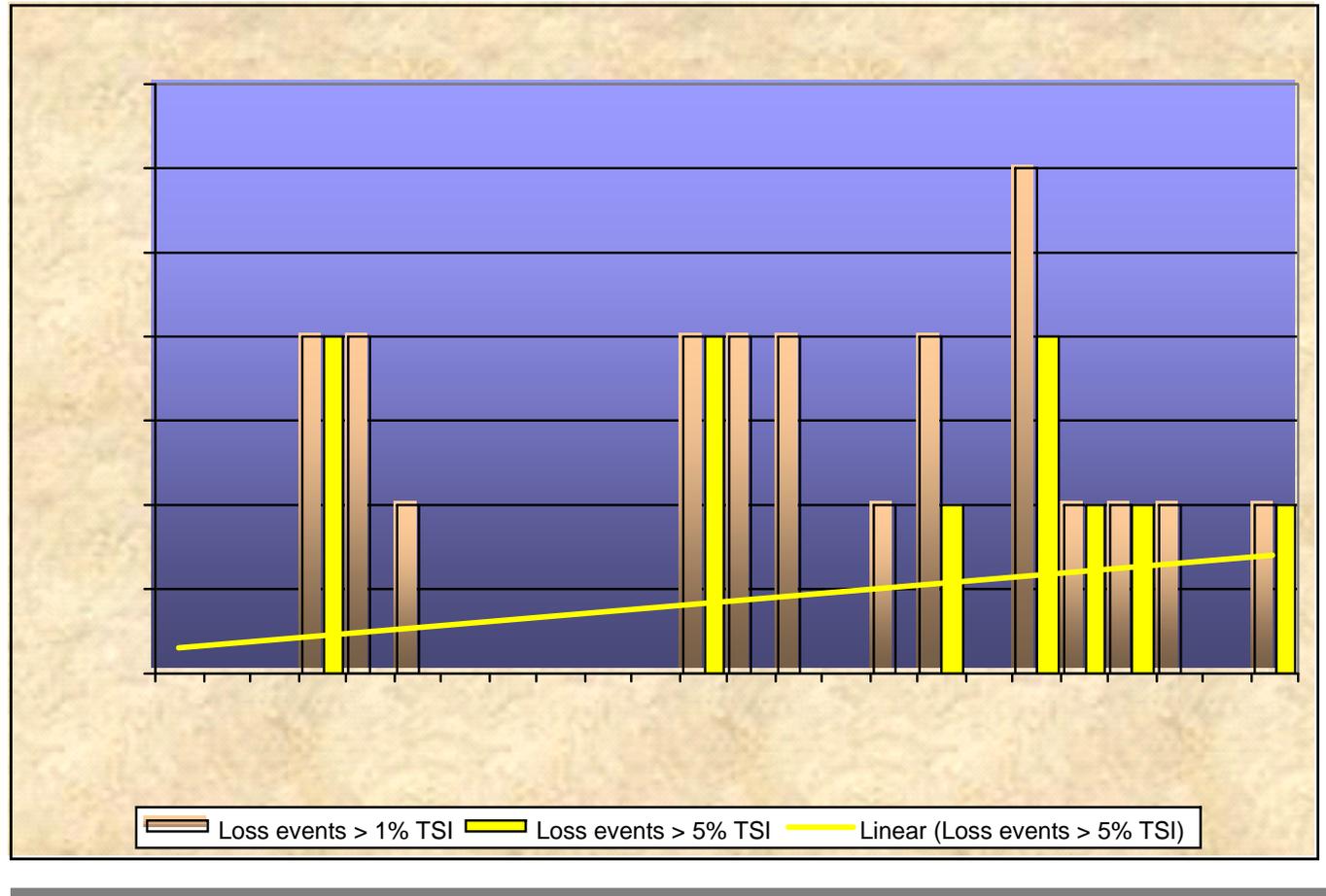
'Loss cost'

Cat Loading = 420%

over this period.



Trends in Fire Risk



Factors in Increasing Risk



□ **Climate change**

- higher temperatures
- greater climatic variability
- impact on natural cycles - El Niño (Southern oscillation index)

□ **Forest & development policies**

- increases access to forested areas
- greater access => greater risk from people
- increases in fire and illegal felling / logging

Management of Insurers' Risk



- ❑ **Use of earth observation data to estimate:**
 - catastrophic hazard & pre-existing losses to insurance
 - confirmation of forest condition at the location stated
- ❑ **Geographic information systems (GIS) to**
 - map risks
 - monitor risk accumulations & risk data
- ❑ **Rating procedures based on in-country loss data**
 - trends associated with climate change
 - El Niño risk factors for forest territories
- ❑ **Claims notification, measurement and analysis**

Satellites for Risk Management

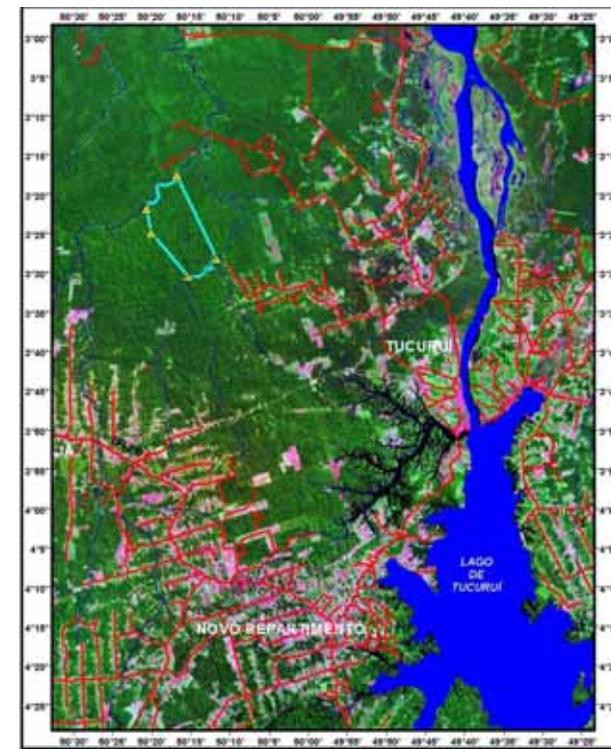


Use of earth observation from satellites to:

- monitor fire activity & forest health
- road access
- loss of tree cover (holes)
- land invasion and tree felling
- commercial illegal logging

React to observations to:

- inform forest managers
- local authorities
- accumulate data on losses for better risk pricing





Requirements for Implementation

Requirements for Implementation



- ❑ **Insurers to release appropriate products**
 - multiperil
 - multiyear for life of investment
 - working together with international development banks
 - Many insurers to participate in supporting this class

- ❑ **Invite forestry owners to be part of an investment portfolio**
 - Natural forests at all latitudes
 - Sustainable (SFM certified) commercial plantations

- ❑ **Develop portfolios in units of \approx US\$300 million**

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THANK YOU