



# Wood from Planted Forests: Global Outlook, 2005-2030

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Presentation to:  
Joint NZFOA and NZWPA  
Forest & Wood Conference  
8-9 Oct 2009, Nelson



# Planted Forests Context

Continuum of Forest Characteristics						Non-forest
Primary	Modified natural	Semi-natural		Plantation		Trees outside forests
		Assisted natural regen.	Planted	Productive	Protective	
Forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed	Forest of naturally regenerated native species where there are clearly visible indications of human activities	Silvicultural practices for intensive management (weeding, fertilizing, thinning, selective logging)	Forest of native species, established through planting, seeding or coppice of planted trees	Forest of native or introduced species, established through planting or seeding mainly for <i>production of wood or non-wood goods</i>	Forest of native or introduced species, established through planting or seeding mainly for <i>provision of services</i>	Stands < 0.5 ha; trees in agric. land (agro-forestry, home gardens orchards); trees in urban environments; and scattered along roads and in landscapes
<b>PLANTED FORESTS</b>						



## Why Planted Forests?

- Renewable, energy efficient (solar driven), environmentally acceptable, highly productive
- Meet demands for wood & non wood forest products
- Alternative wood, fibre & fuel supplies to conserve indigenous forest resources
- Increasing potential, 2<sup>nd</sup> generation bioenergy
- Sequestration of Carbon & carbon sinks
- Protection of soil and water
- Rehabilitation of degraded lands/landscapes

NB: planted forests in past not always met potential



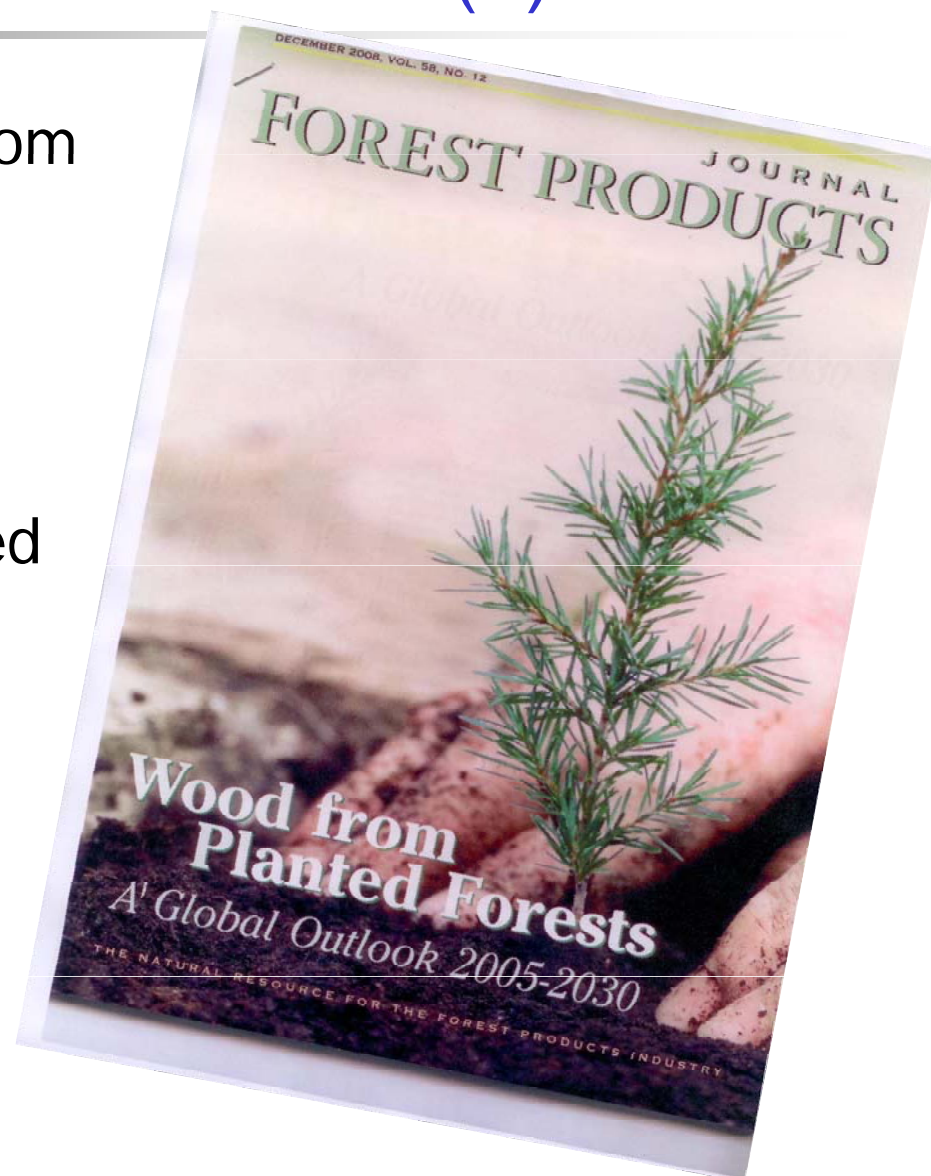
# Planted Forests: Global Assessment 2005 (1)

- GFRA 2005 (forest plantations)
- Global Assessment 2005
  - guidelines for country reporting (PF WP 35)
  - country reporting tables (PF WP 35a)
  - desk study (PF WP 35b)
  - thematic study report – Results & Analysis - 61 countries (PF WP 38)
  - user friendly CD version of planted forests database (copies available)
- Web: [www.fao.org/forestry/site/plantedforests](http://www.fao.org/forestry/site/plantedforests)



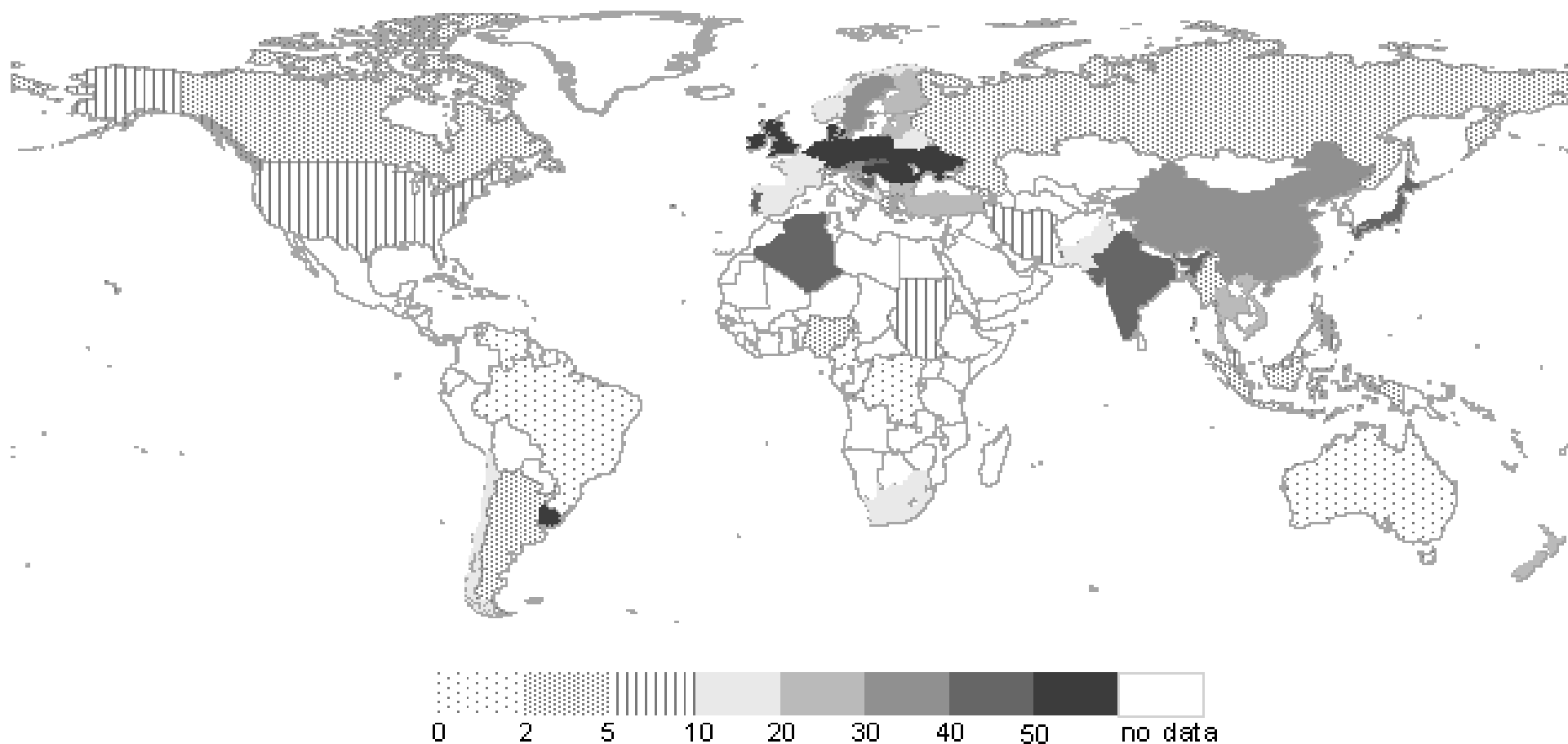
# Planted Forests: Global Assessment 2005 (2)

- Industrial Roundwood from Planted Forests: Global Outlook 2005-2030 (scientific paper: Forest Products Journal)
- Major Publication: Planted Forests (CABI, in press)
- Planted Forests Global Outlook 2005-2030 (FAO Forestry Paper Methodology, results, in press)





## Planted Forests/Total Forests Area %

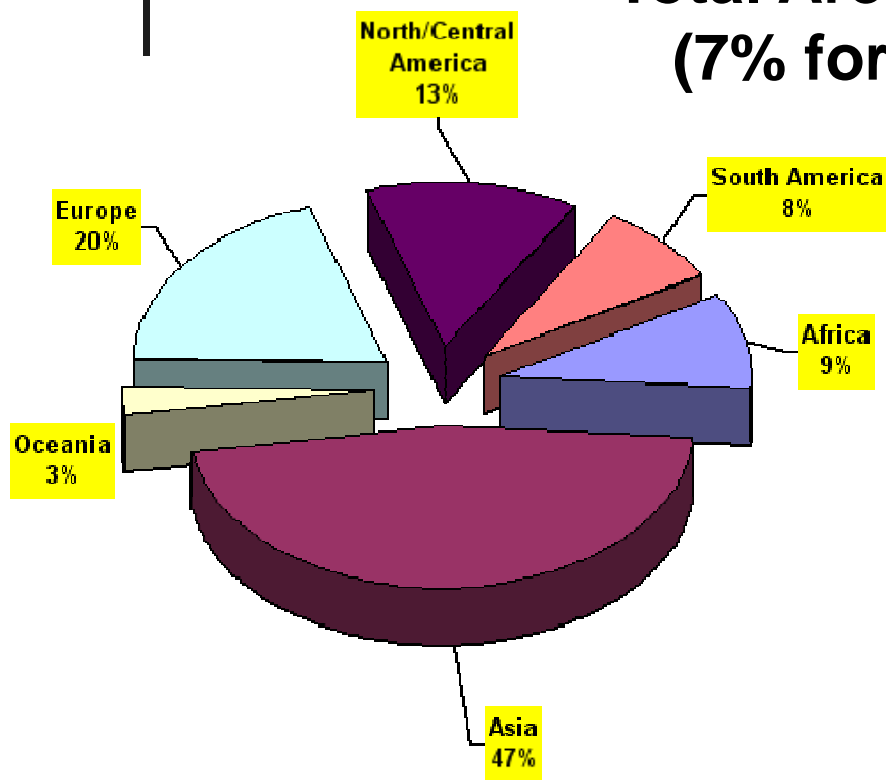


NB: 61 countries > 90% global planted forests

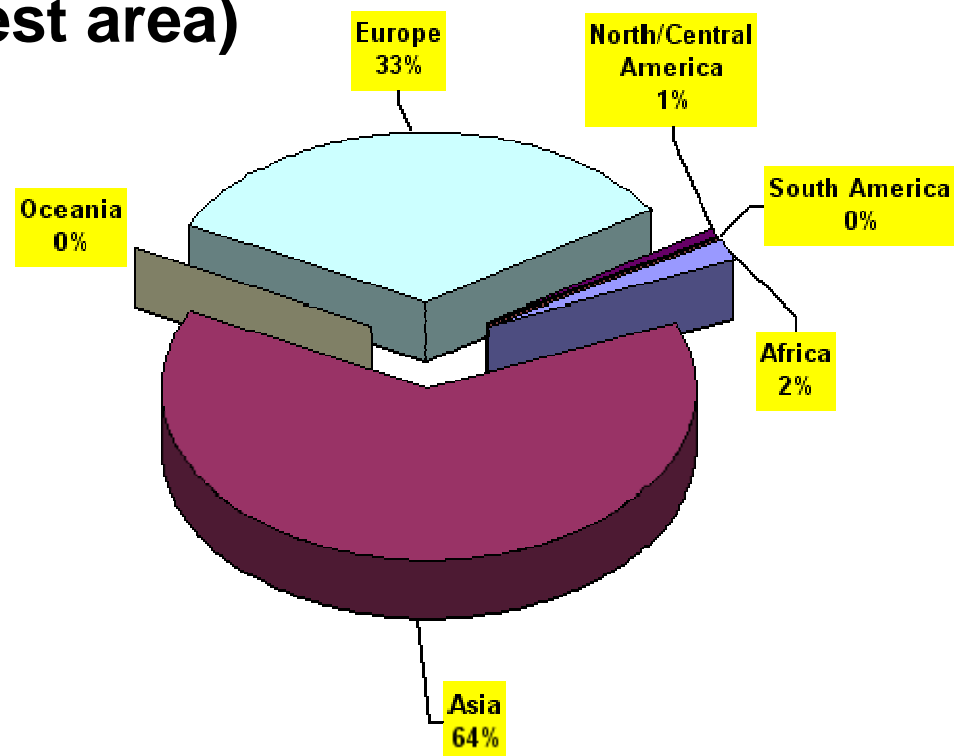


# Global Planted Forests Area

**Total Area 271 m ha  
(7% forest area)**



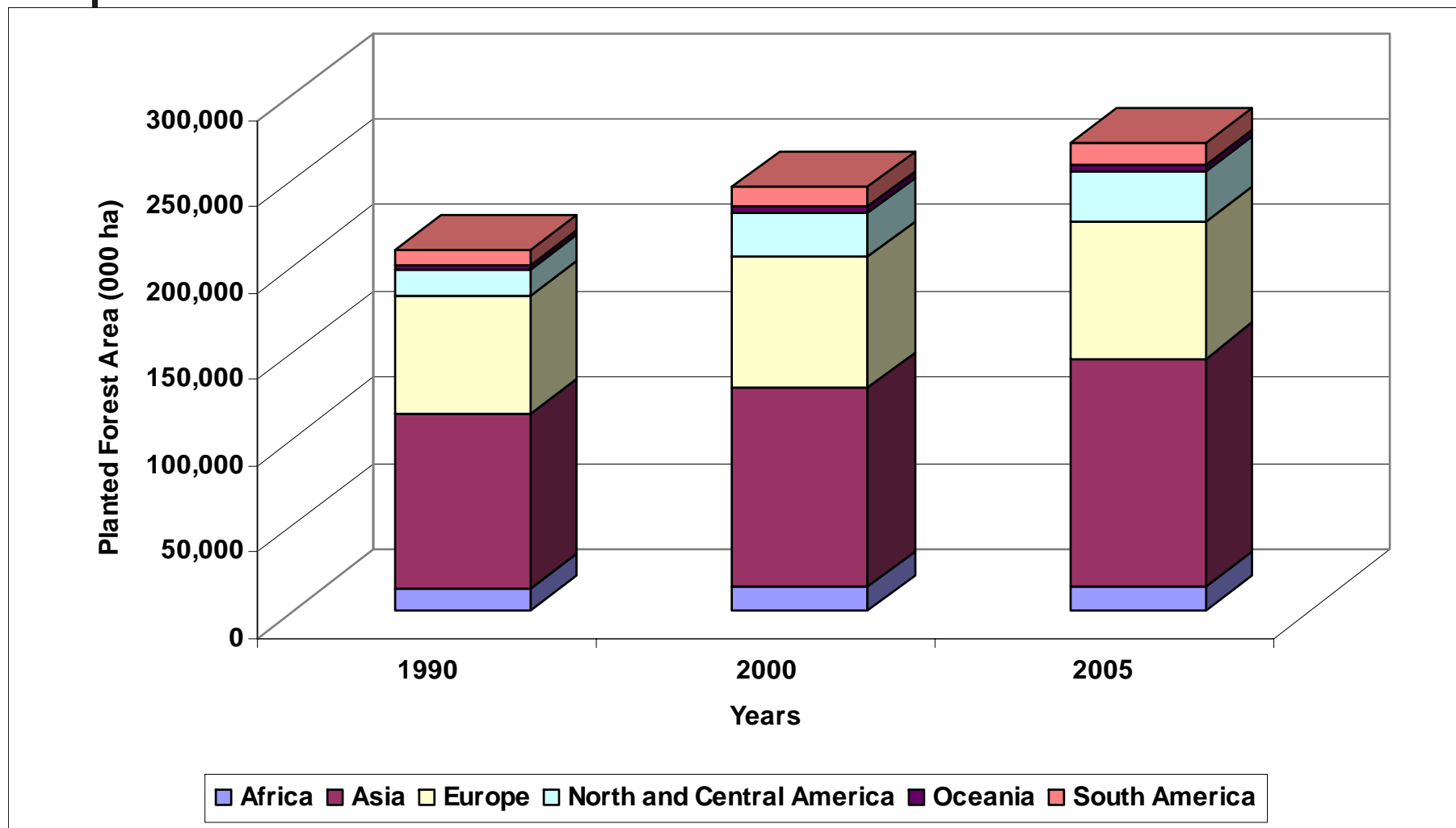
**Plantation Forest  
141 m ha  
(4% forest area)**



**Planted Semi-natural Forest  
130 m ha  
(3% forest area)**

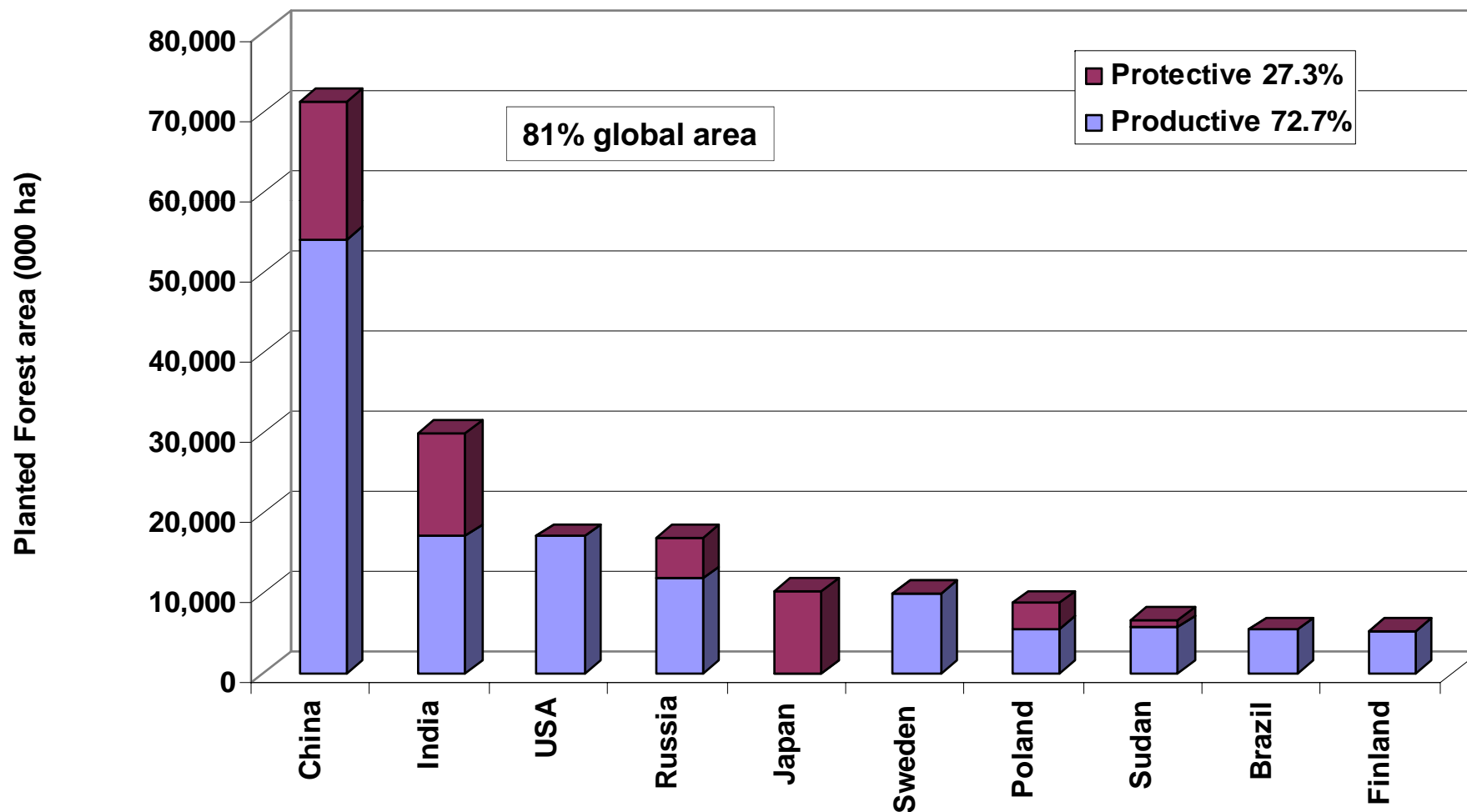


# Global Planted Forest Trends/Region



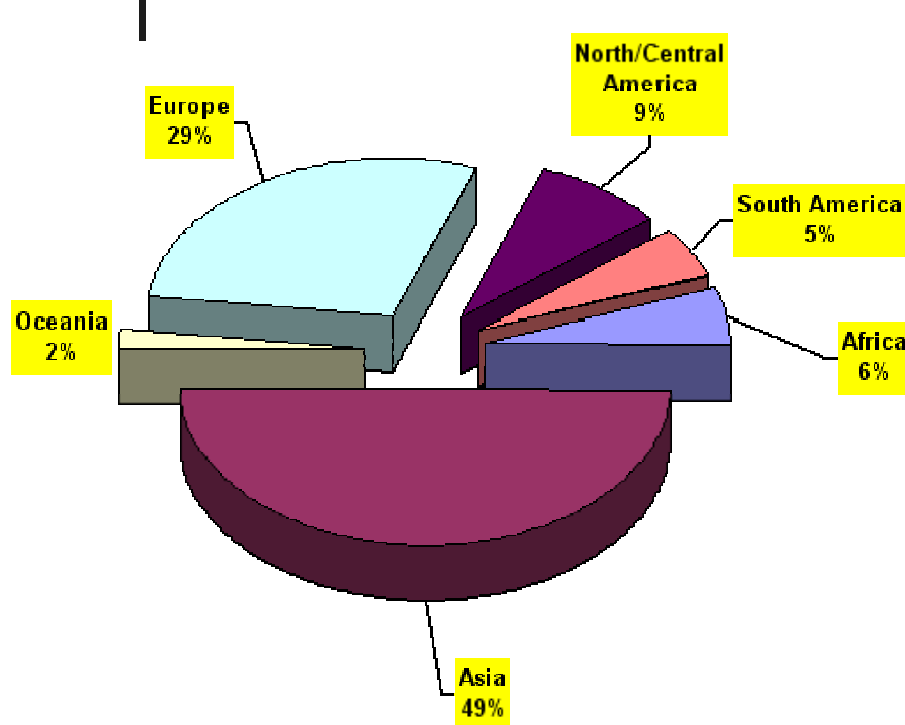


# Planted Forests Top 10 countries

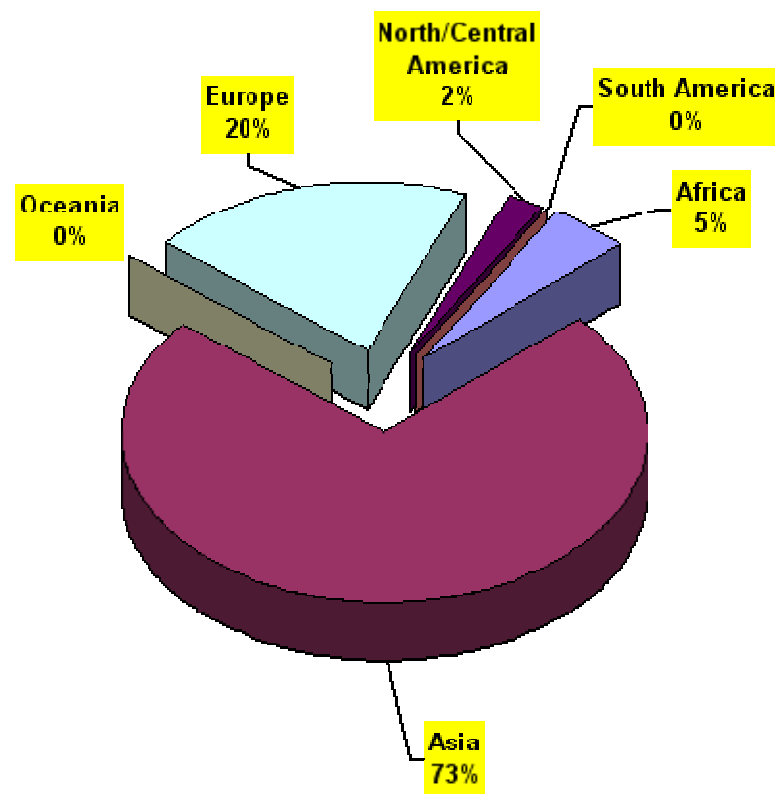




# Global Planted Forests by Function



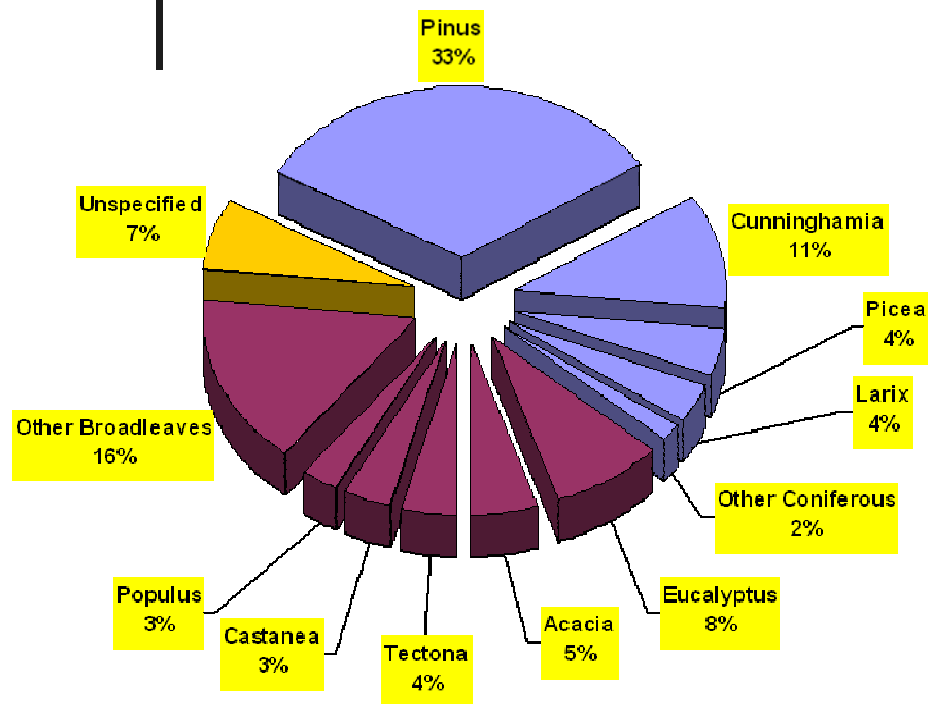
**Productive Planted Forest**  
205 m ha (76%)



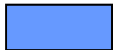


**Protective Planted Forest**  
66 m ha (24%)

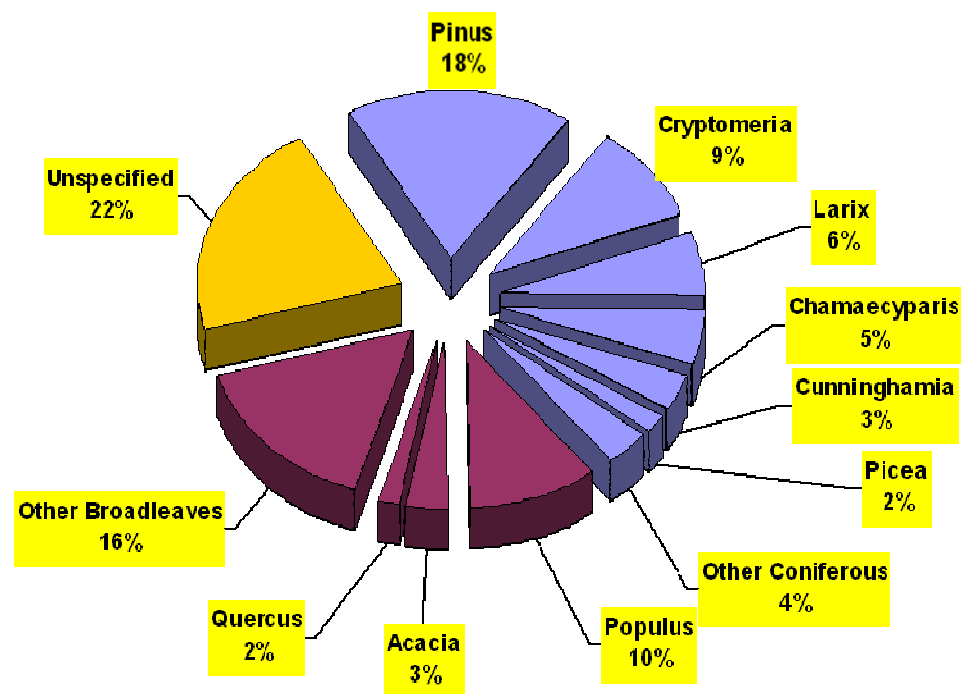


# Global Planted Forests by Genera

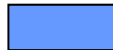




## Productive Function:

Conifers	54%	
Broadleaves	39%	
Unspecified	7%	



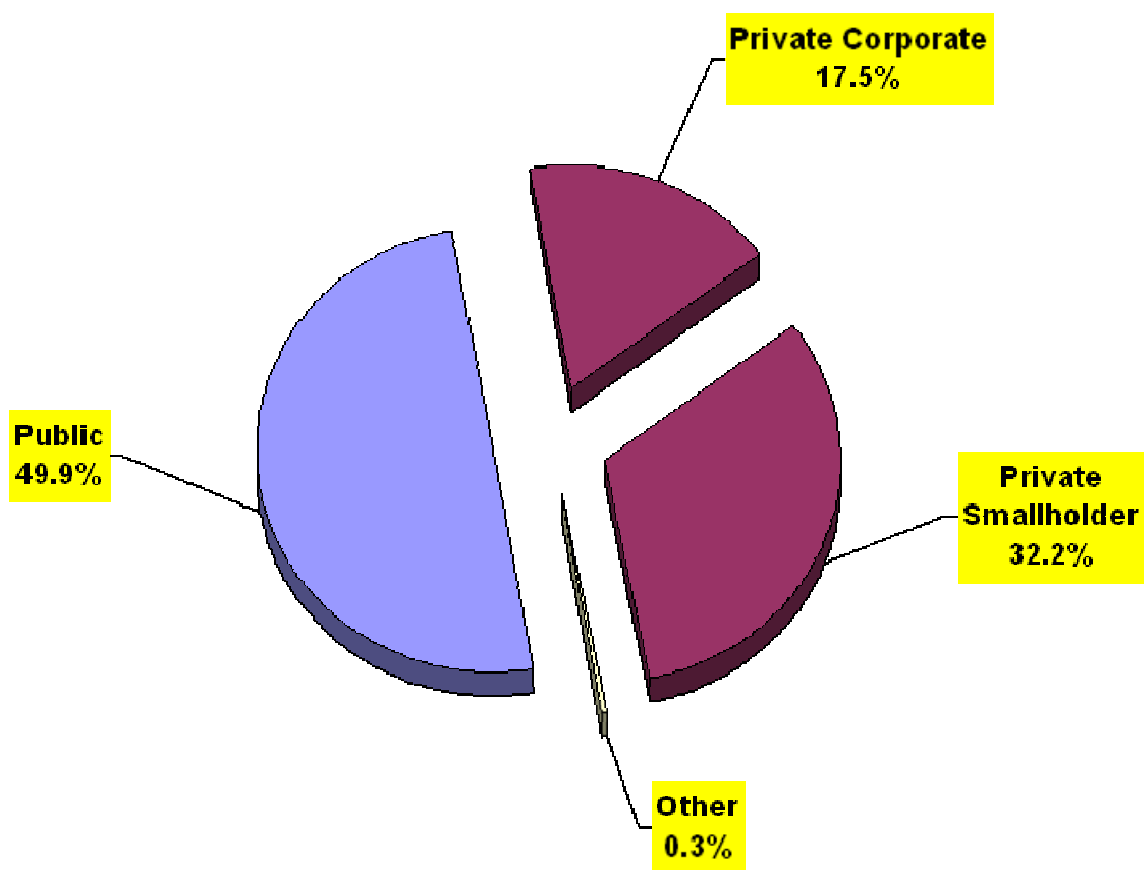
## Protective Function:

Conifers	47%	
Broadleaves	31%	
Unspecified	22%	

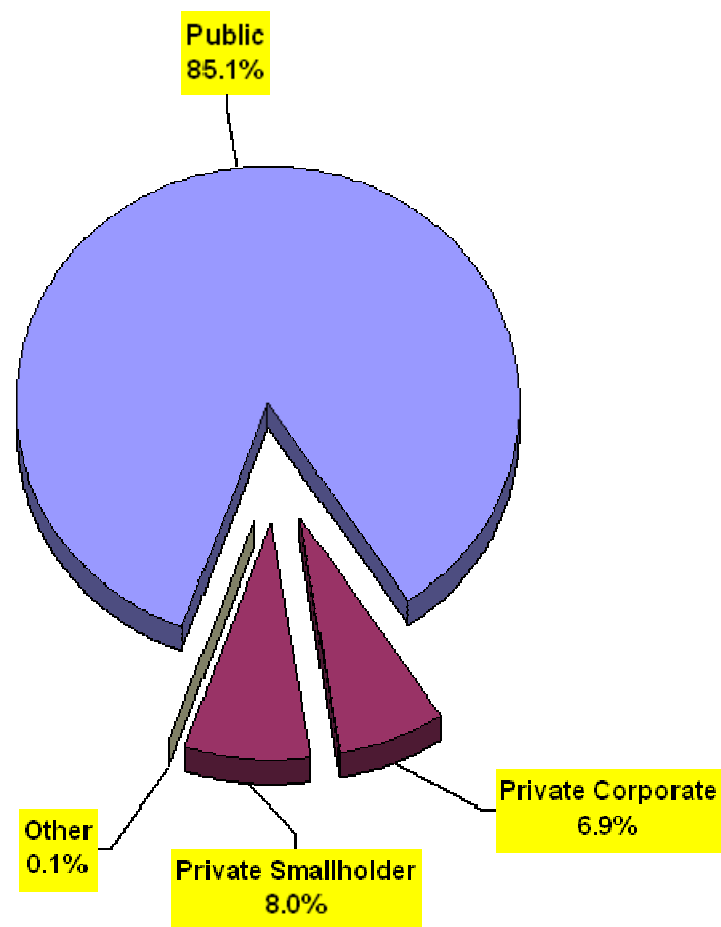


# Global Planted Forests by Ownership

**Productive Purpose:**

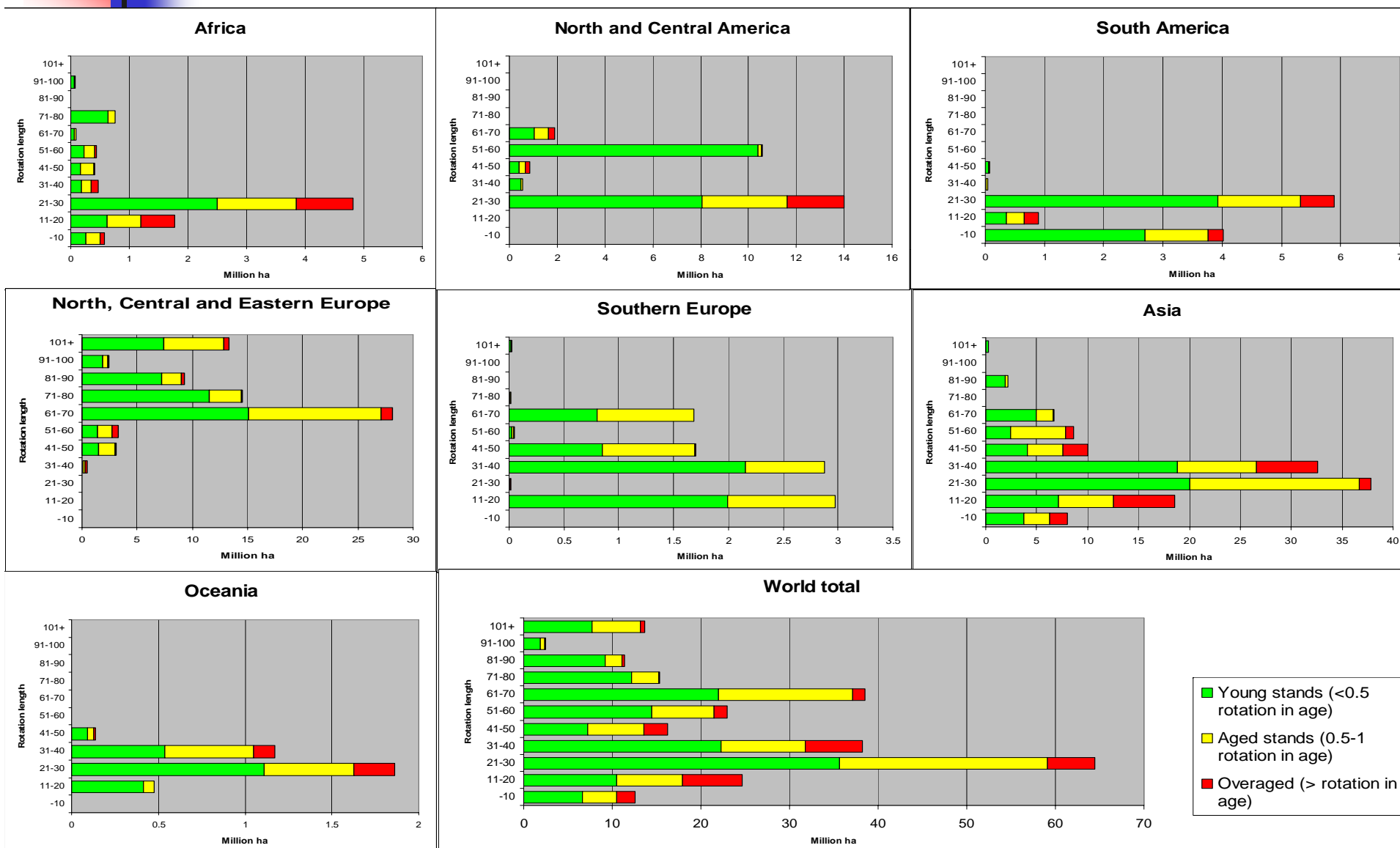


**Protective purpose:**





# Planted Forests: Rotation, maturity, rotation length by region





# Planted Forest Outlook Scenarios

## **Scenario 1 – Pessimistic scenario**

Area changes half those of past trends, no productivity increases. Assumed current increase of planted forest area will slow down.

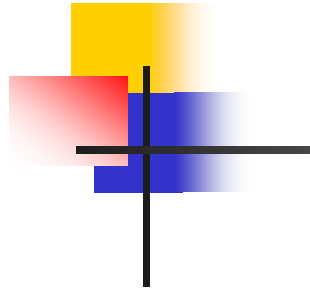
## **Scenario 2 – Business as usual**

Area changes predicted based on past trends assumed to continue at the same rate until 2030, no productivity increases.

## **Scenario 3 – Higher productivity**

Area changes predicted as in Scenario 2, plus annual productivity increases for management schemes where genetic, management or technological improvements are expected.

# Planted Forests: Potential production/region 2005-2030 (millions m<sup>3</sup>/yr)

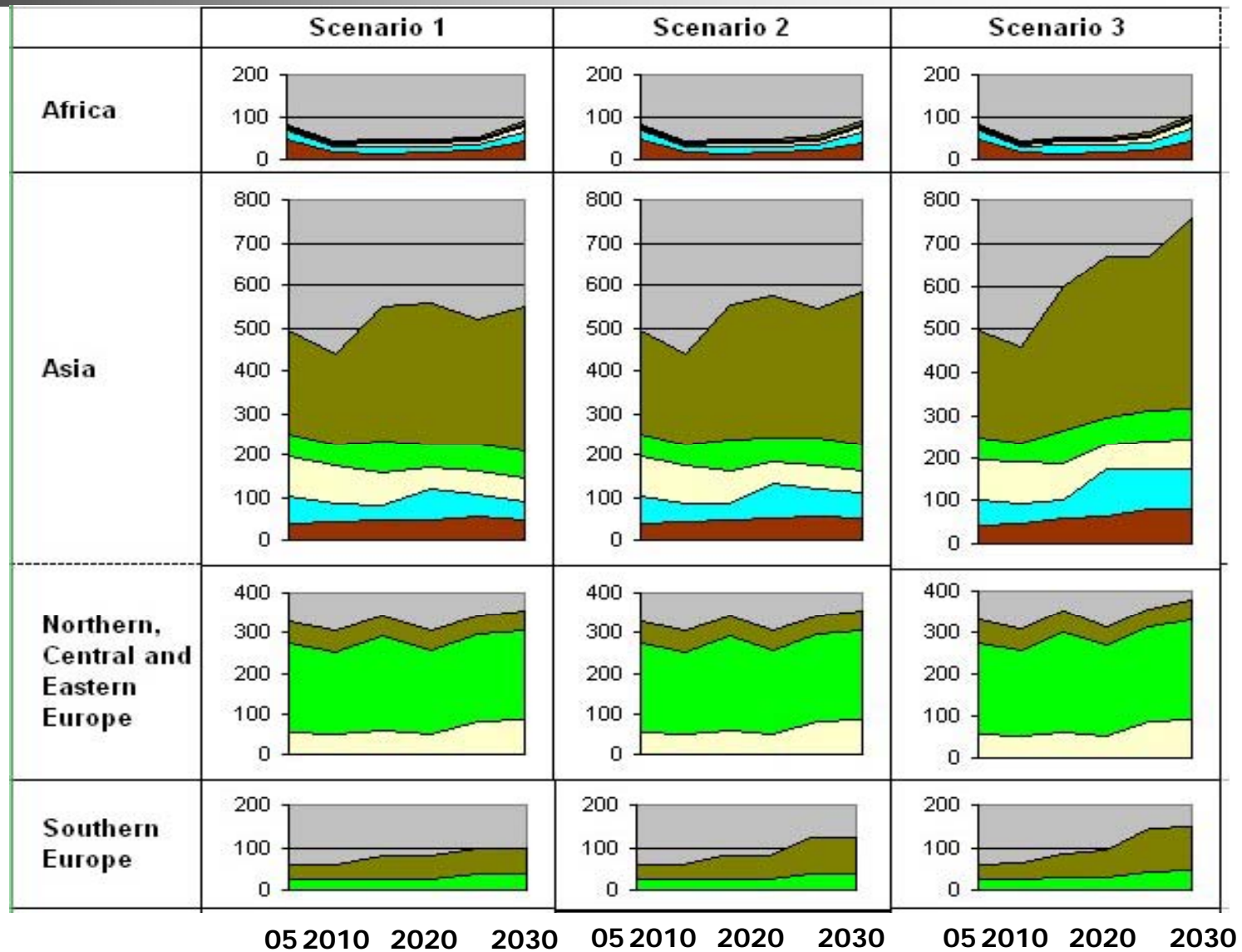


## Softwoods

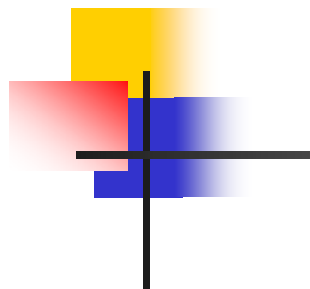
Pinus:   
 Other spp:

## Hardwoods

Eucalyptus:   
 Acacia:   
 Other spp:



# Planted Forests: Potential production/region 2005-2030 (millions m<sup>3</sup>/yr)

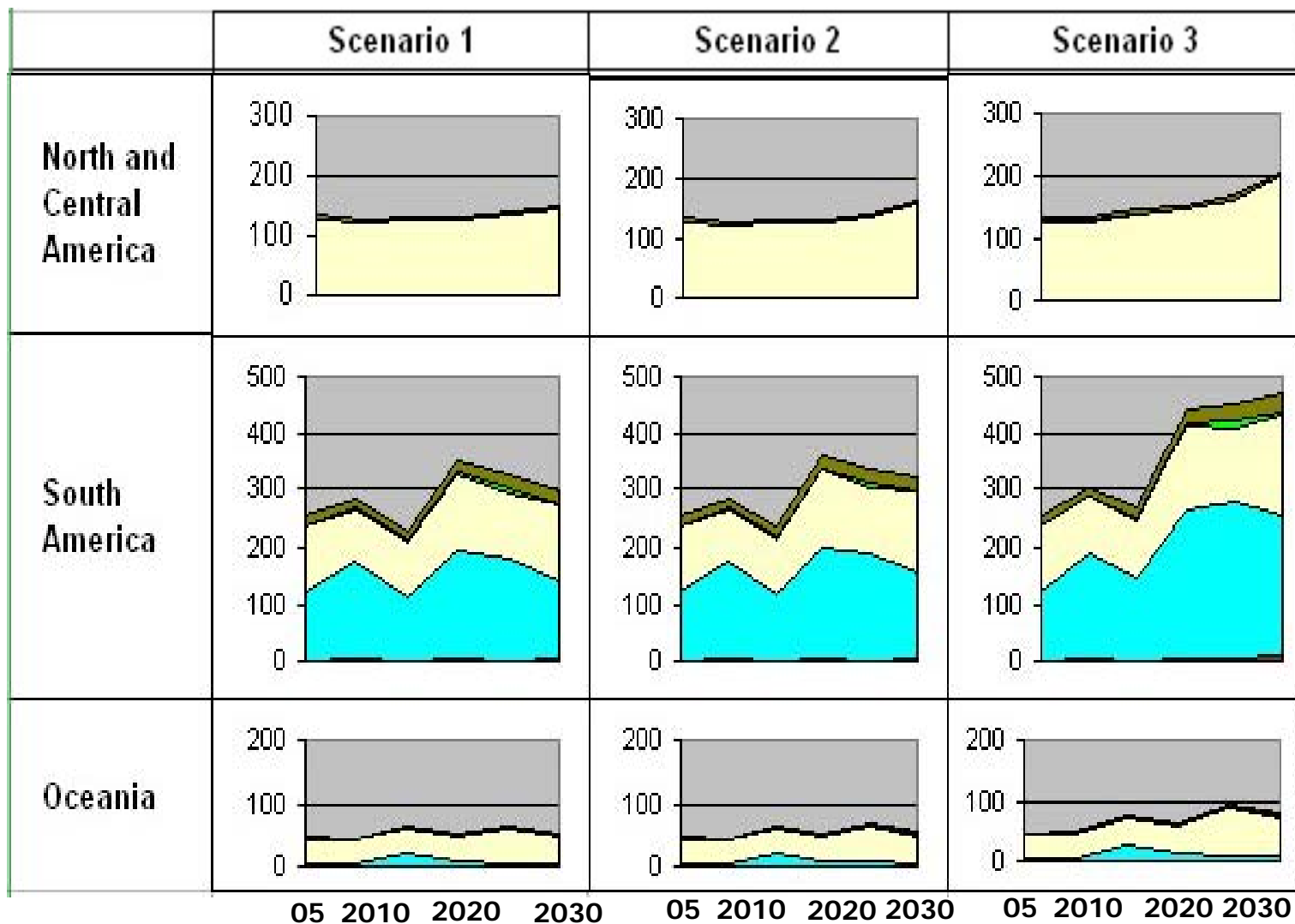


## Softwoods

Pinus:   
 Other spp:

## Hardwoods

Eucalyptus:   
 Acacia:   
 Other spp:



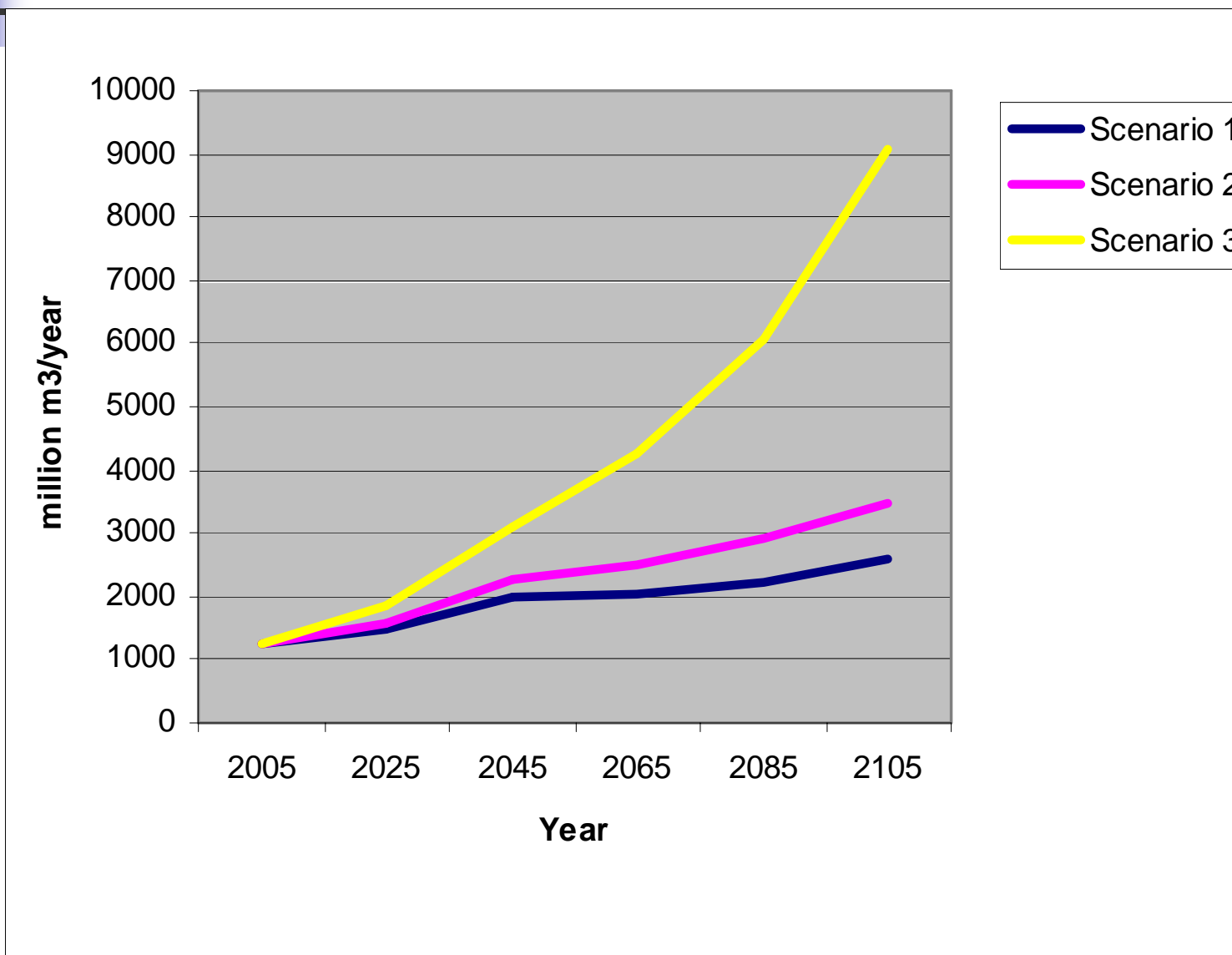


# Potential Ind. R'wood End-use Planted Forests 2005-2030 by scenarios (millions m<sup>3</sup>/yr)

	Fuel/ Bioenergy	Pulp/Fibre	Wood products	Unspecified	Harvest losses	Total
<b>2005</b>						
Africa	11	9	55	6	1	<b>82</b>
Asia	79	<b>141</b>	<b>264</b>	6	5	<b>495</b>
NCE Europe	17	<b>123</b>	<b>166</b>	8	15	<b>329</b>
Southern Europe	3	26	26	0	3	<b>58</b>
NC America	7	98	24	0	7	<b>135</b>
South America	19	<b>133</b>	<b>91</b>	0	10	<b>253</b>
Oceania	1	11	31	0	4	<b>47</b>
<b>Total</b>	<b>136</b>	<b>540</b>	<b>659</b>	<b>21</b>	<b>44</b>	<b>1400</b>
<b>2030</b>						
<b>Scenario 1, Total</b>	<b>146</b>	<b>593</b>	<b>767</b>	<b>29</b>	<b>53</b>	<b>1589</b>
<b>Scenario 2, Total</b>	<b>155</b>	<b>647</b>	<b>800</b>	<b>30</b>	<b>57</b>	<b>1689</b>
<b>Scenario 3, Total</b>	<b>191</b>	<b>866</b>	<b>998</b>	<b>33</b>	<b>57</b>	<b>2145</b>

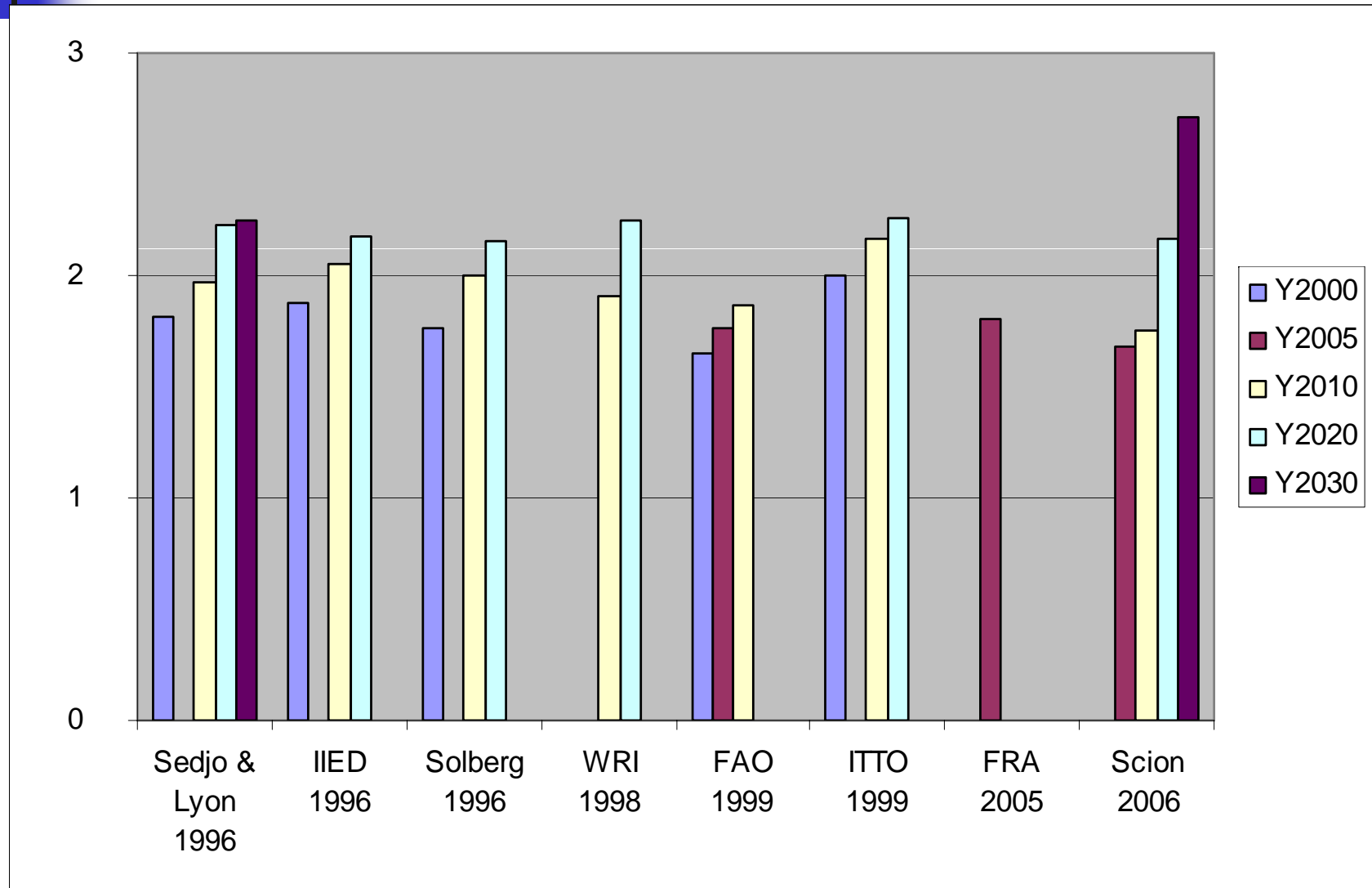


# Planted Forests: Long Term Global Industrial R/Wood Prod. Potential





# Global Industrial Roundwood Supply “All Forests”





# Global Planted Forests Context

## Planted Forests Assessment (2005)

Total Planted Forest:	271 million ha
Total Forests	3,952 million ha
Forest cover	7%
Land cover	~2%
Industrial wood supply	~65%
Carbon Sequestration	1.4 giga tonnes/year
Wood products C Storage (from planted forests)	0.5 giga tonnes/year

### Note:

Deforestation (all forests) 1.6 giga tonnes/year



# NZ Plantation Forestry in Global Context

- Plantation area: 1.8m ha (<1% global)
- Species: 90% Radiata Pine; 6% Douglas fir (97-98% conifer)
- NZ Industrial r/wood production: 20-25 m m<sup>3</sup>/yr (2% global)
- Domestic Wood Process 70-80% (15-20 m m<sup>3</sup>/year), Log exports 20-30% (5-6m m m<sup>3</sup>/yr)
- Stable governance, infrastructure, research, education, technical capacity, private ownership
- Strong social, cultural & environmental covenants
- Relatively high cost of production (land, labour, transport, RMA compliance, shipping)



## Recommendations

- Manage risks: diversify clones/spp., silviculture, products, market niches & strengthen biosecurity & fire management (NB: climate change)
- Clear consistent national land-use policies & forest vision
- Streamline regulatory compliance
- Increase collaboration with key stakeholders
- Strengthen & focus research, education, training & technical support systems on critical issues
- Increase added value, in-country processing
- Establish strategic partnerships (growing, processing, using) in NZ & beyond
- Strengthen “wood is good” campaigns
- Monitor competing growers, processors, users, markets

**Thank you for your attention**