



Forest Policy and Management in Uruguay

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Outline

- Uruguay: location and key facts
- The forest sector
- Regulation
- Major players
- Cost-benefit analysis
- Questions?

Uruguay



Uruguay

- Population: 3.3 million.
- GDP: 40 billion US\$. GDP per capita: 12,000 US\$.
- Main economic activities: services, agriculture and industry.
- Trade balance: - 576 million US \$ (2010).
- Inflation rate: 7.88 % (Oct. 2011).
- Unemployment rate: 6.0% (Sep. 2011).

The forest sector

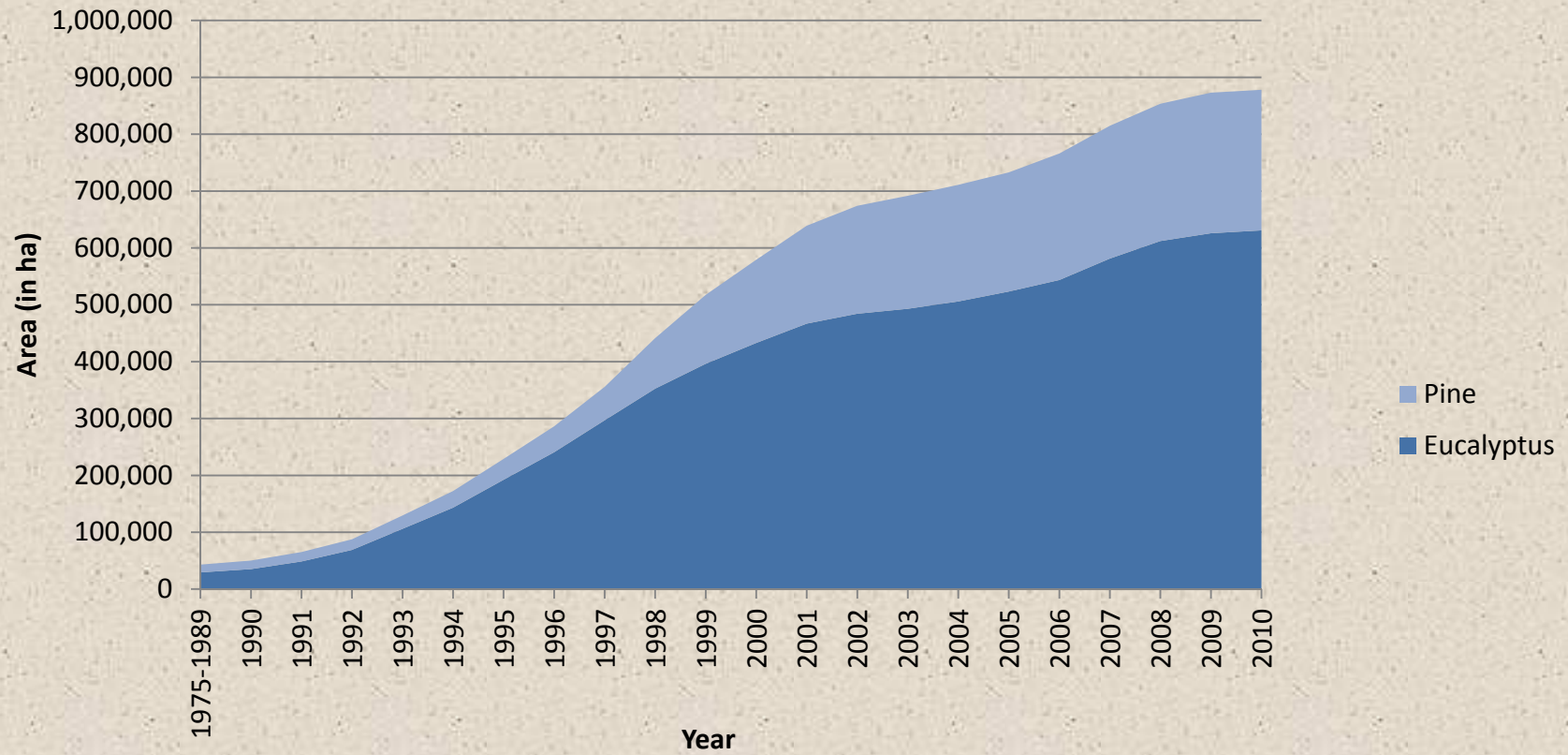
- Total forest area 1.5 million ha (3.7 million acres):
 - Plantations = 850,000 ha^(*) (2.1 million acres)
 - Native forest = 750,000 ha (1.8 million acres)
- Plantations: exotic. *Eucalyptus grandis*, *Eucalyptus globulus*, *Loblolly pine* and *Slash pine*.
- Growth rates: *Eucalyptus grandis* for solid wood, average MAI is 27 to 35 cubic meters/hectare/year ($\text{m}^3/\text{ha}/\text{yr}$); for pulp, average MAI is 22 to 40 $\text{m}^3/\text{ha}/\text{yr}$. Pine, average MAI is 18 to 27 $\text{m}^3/\text{ha}/\text{yr}$.
- Management regimes: rotations are 15-16 years for eucalyptus grown for sawtimber, with at least one intermediate thinning, and 7-9 years old for eucalyptus grown for pulp. For pine, rotations are between 22 to 28 years old.
- Land: private ownership.

^(*) Estimated 950,000 ha.

Forest Landscape (North)

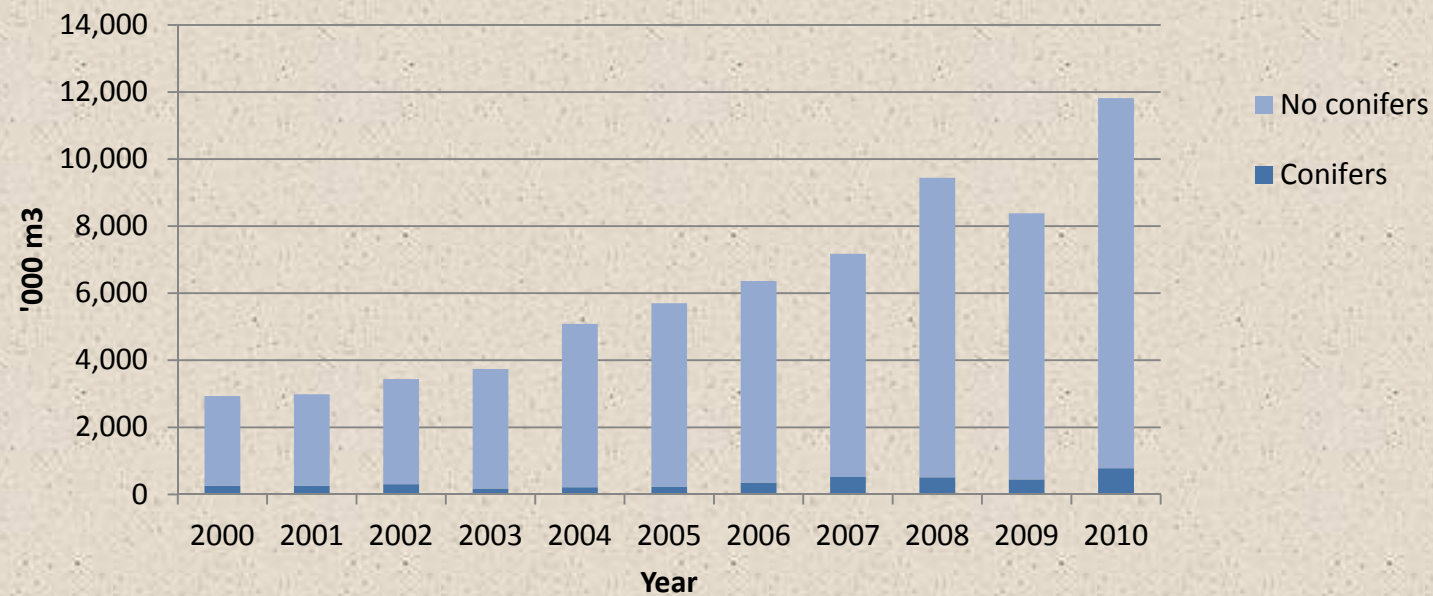


Area by species



Source: Uruguay Forest Division, 2011

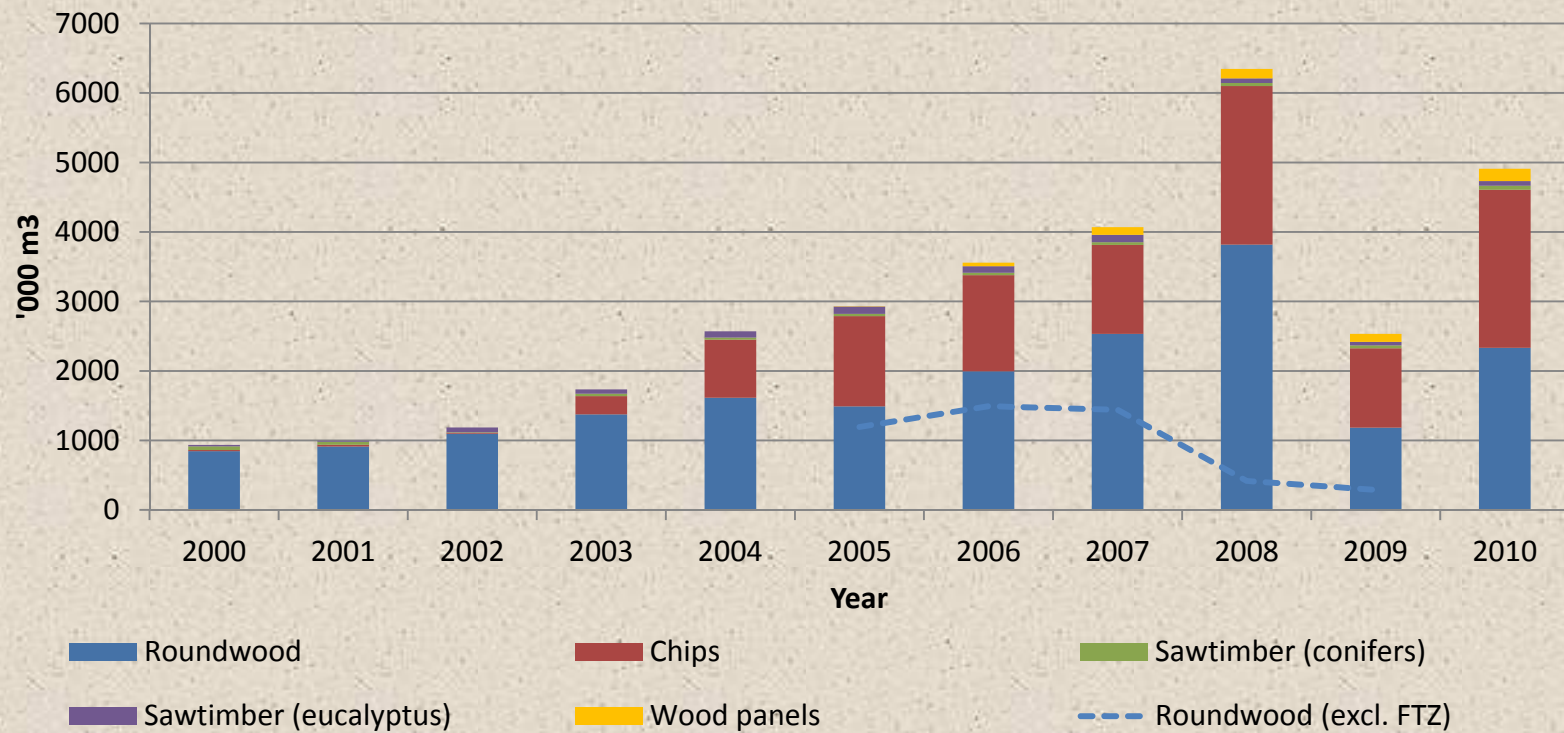
Harvest



Source: Uruguay Forest Division, 2011

- Harvest has been increasing since 2000.
- The majority of the volume comes from Eucalyptus plantations.
- The main products are chips and pulp.

Forest products exports



Source: Forest Division, 2011. Roundwood (excl FTZ) data from Uruguay XXI.

Forest policy

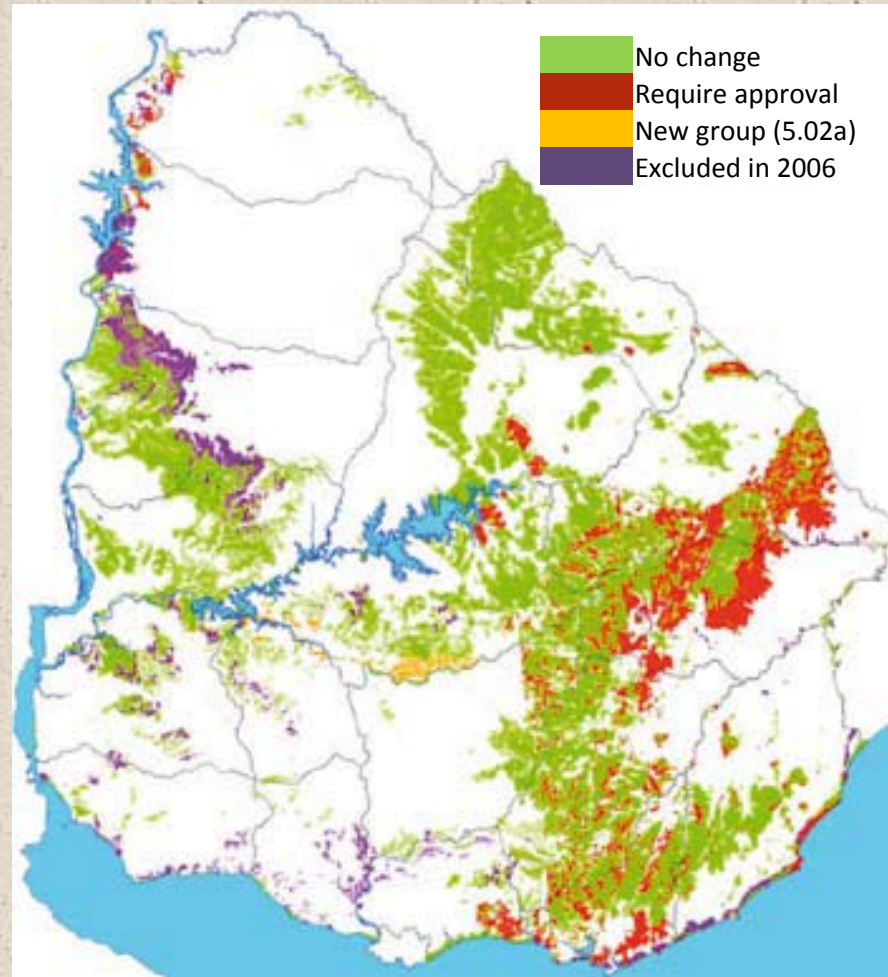
Law 13723 (1968)

- Objective: to increase forest area
- Instruments:
 - Tax exonerations
 - Loans
 - Taxes reinvestment (in plantations)

Law 15939 (1987)

- Objectives:
 - To encourage forestation (with other activities)
 - To protect native forest
- Instruments:
 - Fiscal incentives
 - Loans for plantations
 - Priority zones classified according to soil's quality

Regions (2006 changes)



Area by year ('000 ha)		
	2004	2006
Forest priority soils	3,862	3,342
Require approval	0	776
Total area	3,862	4,118

Source: GEO Uruguay, 2010

Major players

Uruguayan Entity			International Entity	Capital by origin
Industry	Plantations	Administration		
UPM Uruguay	UPM Forestal Oriental	UPM Uruguay	UPM	Finland
Montes del Plata	Montes del Plata (*)	Montes del Plata	Stora Enso/Arauco	Sweden/Finland/Chile
Weyerhaeuser (**)	Weyerhaeuser	Weyerhaeuser	Weyerhaeuser	USA
Urupanel	nc	Urupanel	-	Chile
COFUSA	COFUSA	COFUSA	nc	Uruguay
Fymnsa	Fymnsa	Fymnsa	-	Uruguay
nc	Caja de Profesionales Universitarios	Caja de Profesionales Universitarios	nc	Uruguay
nc	Caja Bancaria	Caja Bancaria	nc	Uruguay
	Caja Notarial	Caja Notarial	nc	Uruguay
nc	FAS	FAS	Harvard	USA
	Rio Biabo	Rio biabo	Harvard	USA
nc	GFP	Cambium	GFP	USA
nc	GMO	GMO	GMO	USA
nc	RMK	RMK	RMK	USA

(*) In some cases, they keep the original ownership by company.

(**) Weyerhaeuser Productos SA, Weyerhaeuser Uruguay SA, Colonvade, Vandora

Thesis research objective

To evaluate the impact of the new forest sector on the Uruguayan Economy, by considering costs and benefits associated with the policy that started with the Forestry Law 15939.

Analysis

- **With situation:** what happened in the economy after the Forestry Law.



- **Without situation:** what would have happened to the economy if the forestry policy would not have been established.



The model

- Primary and Secondary information.
- **Production** estimated based on growth rates and management plans.
- **Costs:** labor and imports of each category considered.
- **Benefits:** exports according to production estimations. Pulpwood: exported; sawn wood: processed and exported as sawtimber (conversion: 45% of sawn wood).
- **Terminal Value:** BLV (land), decreasing depreciation (industry).

Results

- Positive impact compared with livestock in the period 1989-2005.

IRR = 36.4%

NPV 1989 (6%) million US \$ = 630.2

- The most important wood industry activity had not yet started.

Sensitivity analysis

- Results very sensitive to changes in:
 1. Wood prices
 2. Yields
 3. Land Prices
- Results not very sensitive to changes in:
 1. Management costs
 2. Transportation costs

Research conclusions

- Forestry had a positive impact compared to livestock.
- Increased exports.
- More productive uses for poor quality lands.
- Attract foreign investment, generating income and employment, and providing environmental benefits.

Summary

- Sector developed by a regulation, economic incentives were important but as a signal of a policy.
- The policy has been consistent through different governments.
- The policy has been successful by increasing the forest area, attracting investors, and diversifying the land use.
- Challenges:
 - Roads/transportation.
 - Discussions on taxes.
 - Markets.

Questions?

