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SWST Annual Conference 2008
Concepcion - Chile

Oriented Strand Board Industry Development in the South American Region. Main challenges

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Outline

- Introduction
- Objectives
- Research and development (R&D) situation in South America
- General view of the wood industry
- OSB Panel industry
- South American housing industry
- Opportunities
- Challenges

Introduction

In North America:

Wafer board ---------- Late 50's

OSB ---------- Late 60's

OSL ---------- Late 90's

Thousands of Scientific and Technical papers
Numerous Associations and Publications
Development Areas in Major Universities and research institutions: Forintek in Canada
USFS – FPL in U.S.
Universities (Maine, Tennessee, Washington, Wisconsin, etc.)

Introduction

- Oriented Strand Board (OSB) and Oriented Strand Lumber (OSL) are similar forms of EWP and they are currently referred as Oriented Strand Composites (OSC)
    - Related manufacturing technology
        - Resination
        - Formation
        - Consolidation of wood strands into a structural element

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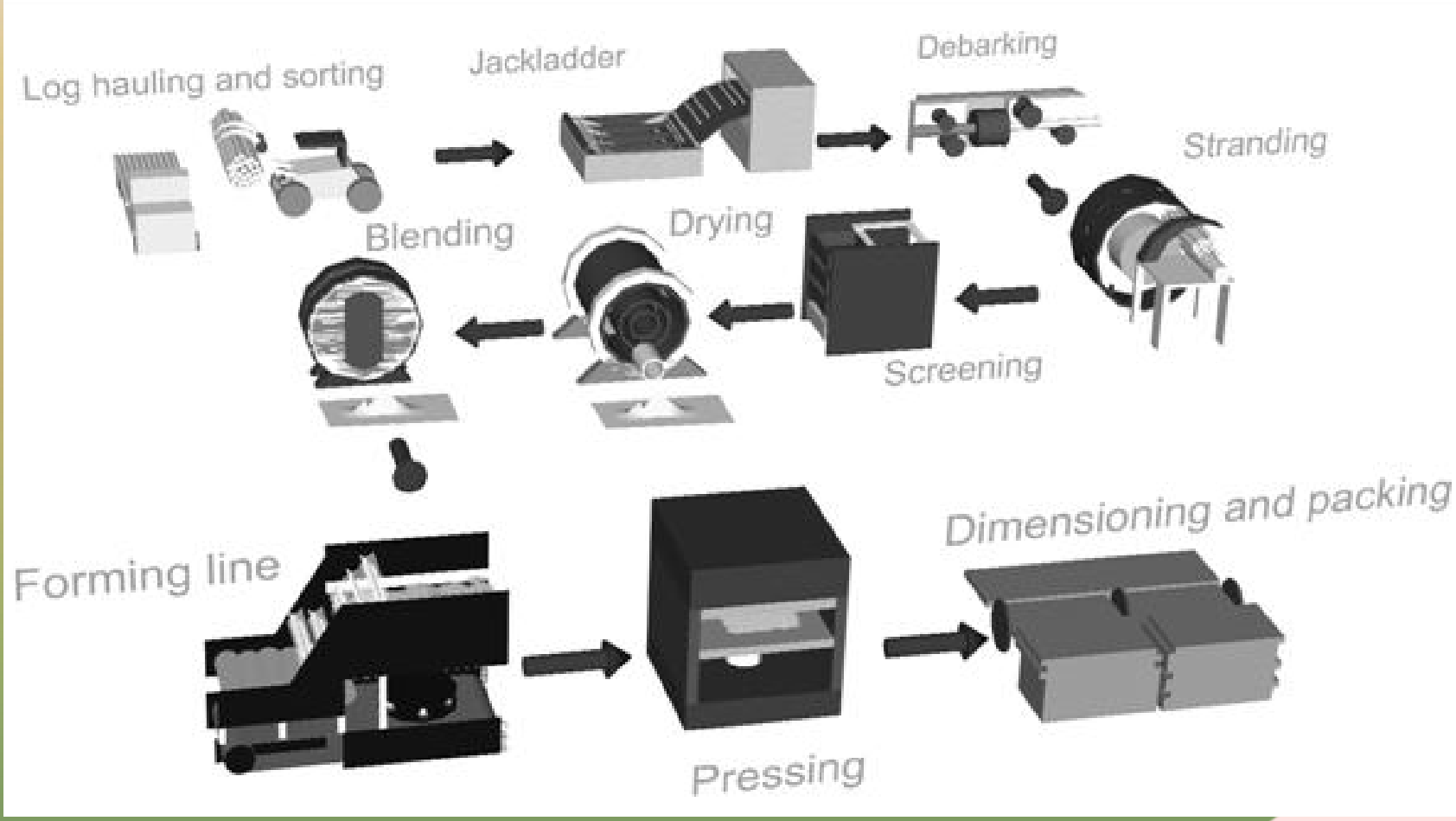
Introduction

OSC Production Process Diagram

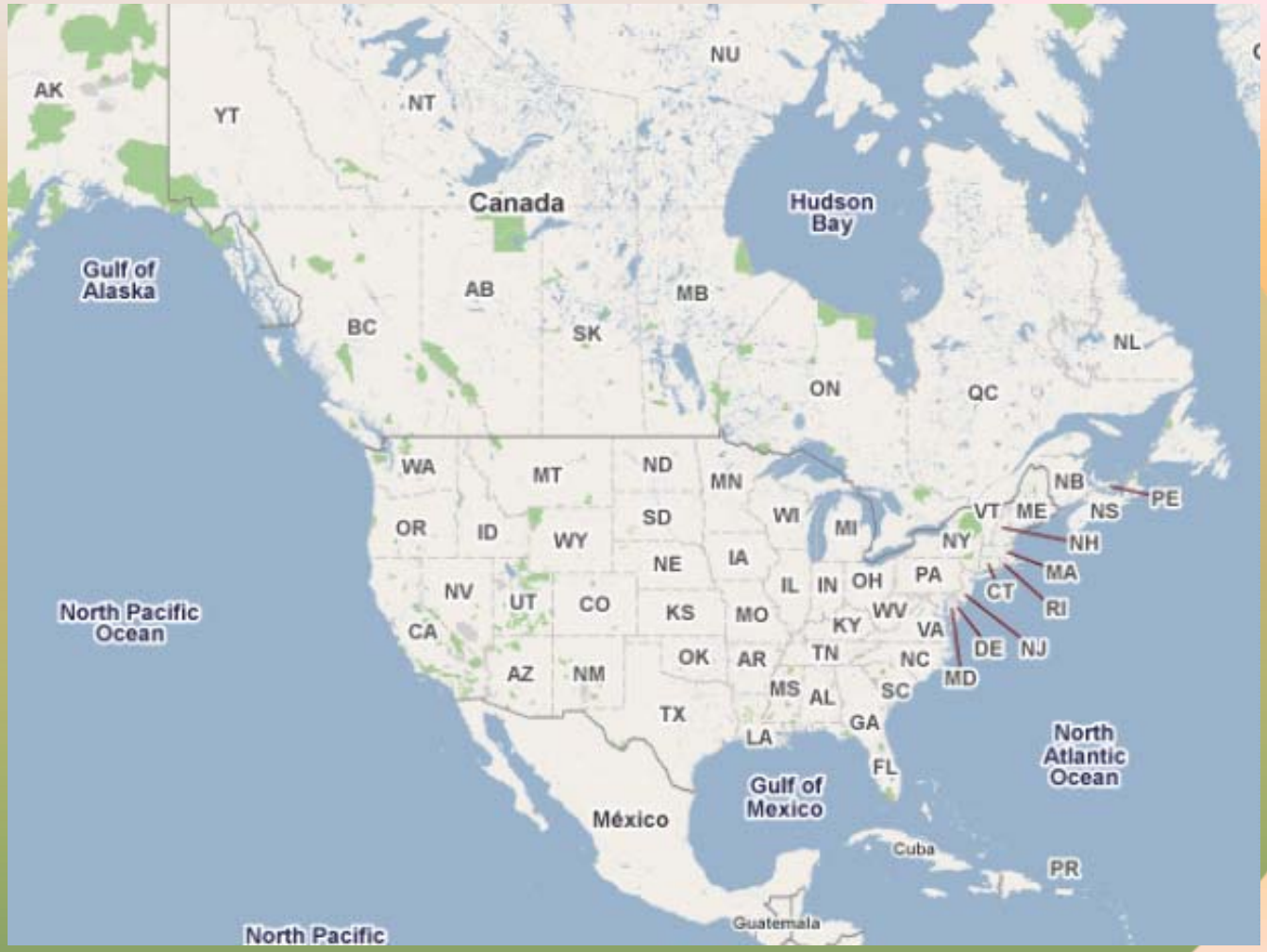


Capacity:

Roughly 30,000,000 m3/year

61 mills distributed across the U.S. and Canada

Weyerheuser
Tolko
Nordbord Inc.
Martco Limited
Louisiaa-Pacific Corp.
Longlac Wood Ind.
Jolina Capital Inc.
Huber Engineered Woods
Grant Forest Products
Georgia Pacific
Canfor/Louisiana Pacific
Canfor
Ainsworth/Grand Forest Products
Ainsworth Lumber



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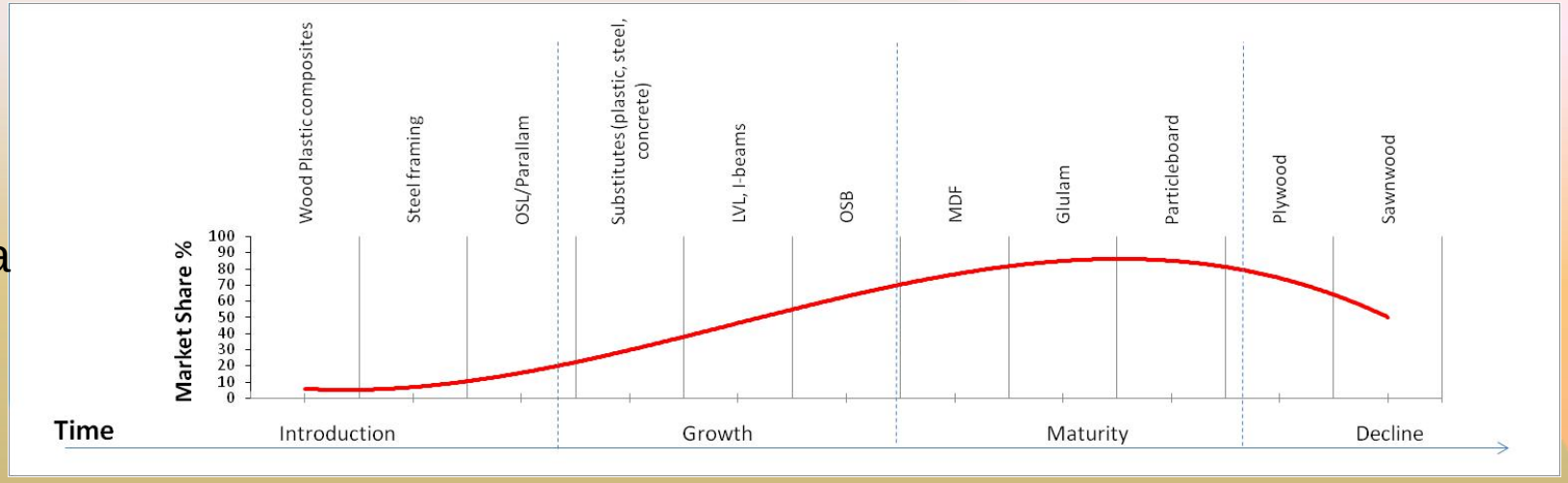
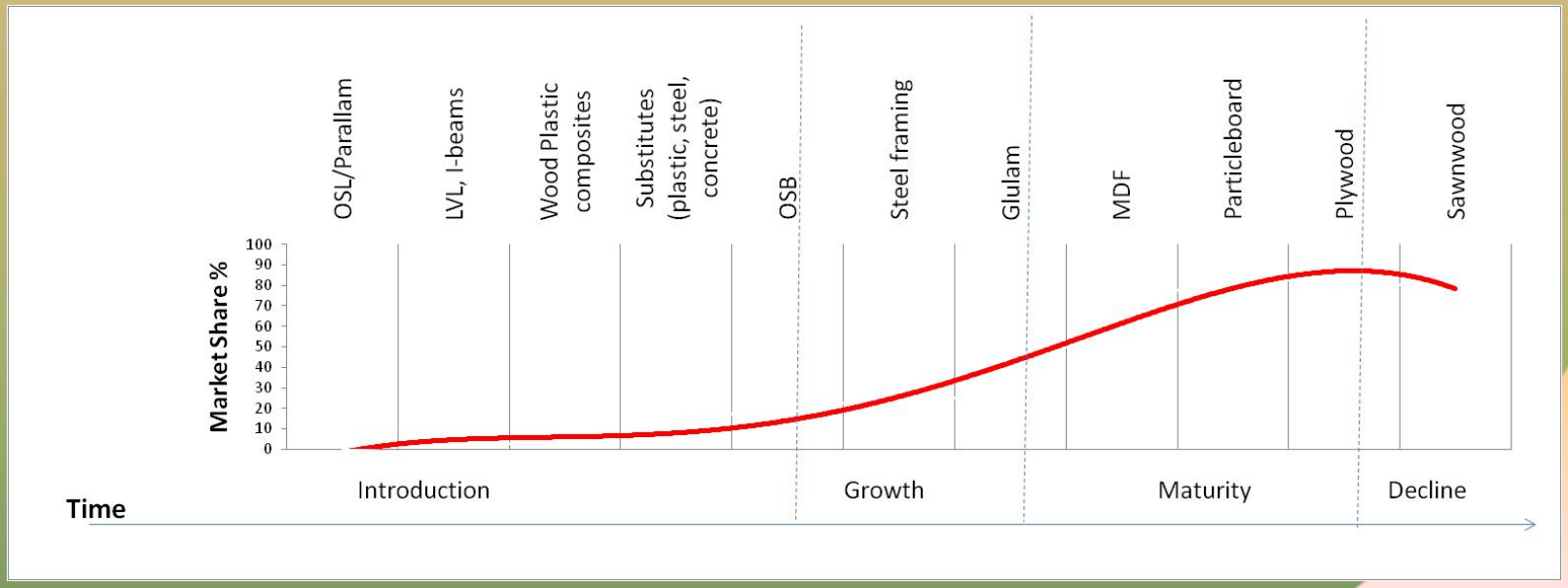
Introduction

North America



South America



Source: UMECE

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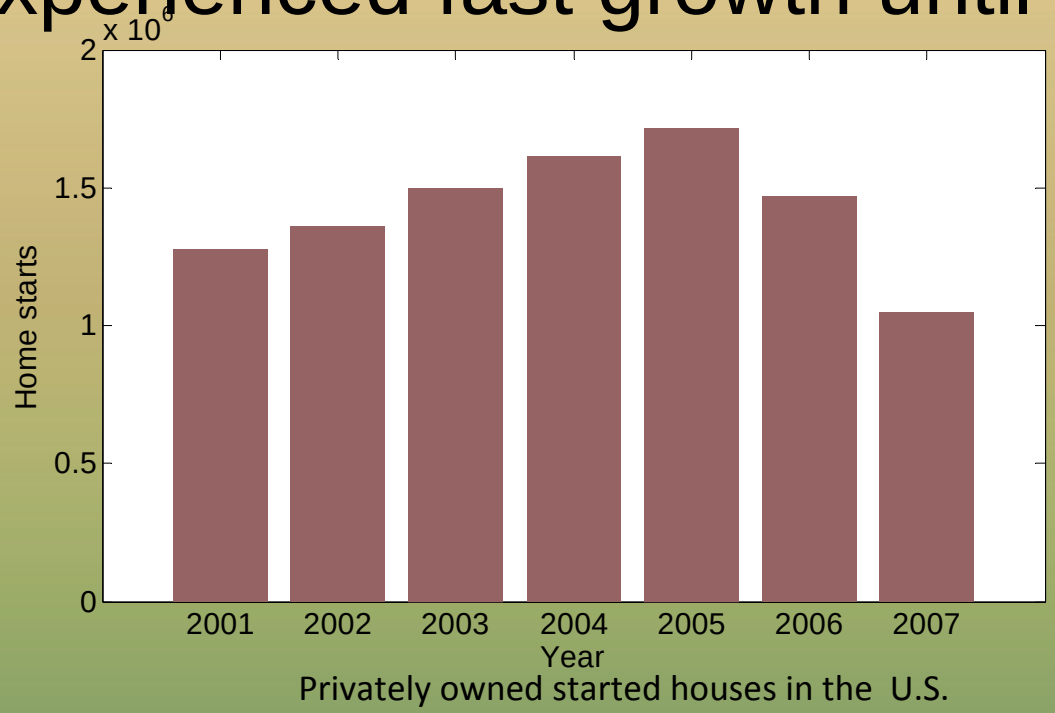
Introduction

North American Market

- Engineered Wood Products (EWP) experienced fast growth until 2007



Privately owned started houses in the U.S.

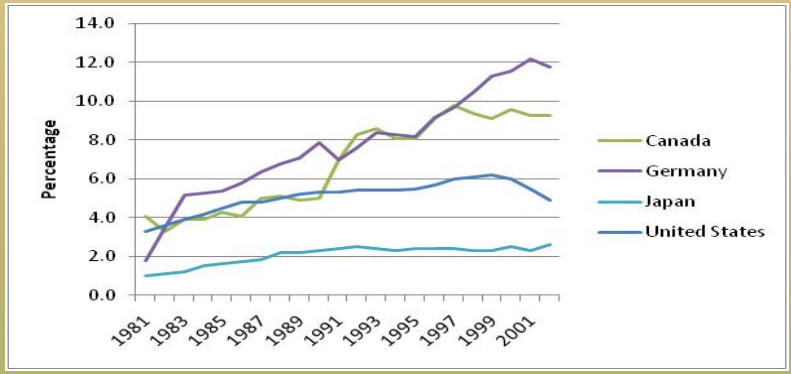
Objective

This study was carried out in an attempt to unfold the causes that inhibited a greater level of development and utilization of oriented strand composites in the South American continent

Research and development (R&D) situation in South America

R&D initiative generated at the academic level.

Conversely to the trend in North America, Europe and Asia



Percentage of industrial initiative research projects

In South America the industry plays a minor role in research development

Governmental funds = the only source of financing for Universities and Research Institutions

Research and development (R&D) situation in South America

Scattered efforts in Chile, Brazil and Venezuela implied the occurrence of redundant work with misuse of the limited resources available for research.

The lack of reliable statistics makes difficult to analyze and project the behavior of the region in this sector without a considerable bias.

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General view of the wood industry

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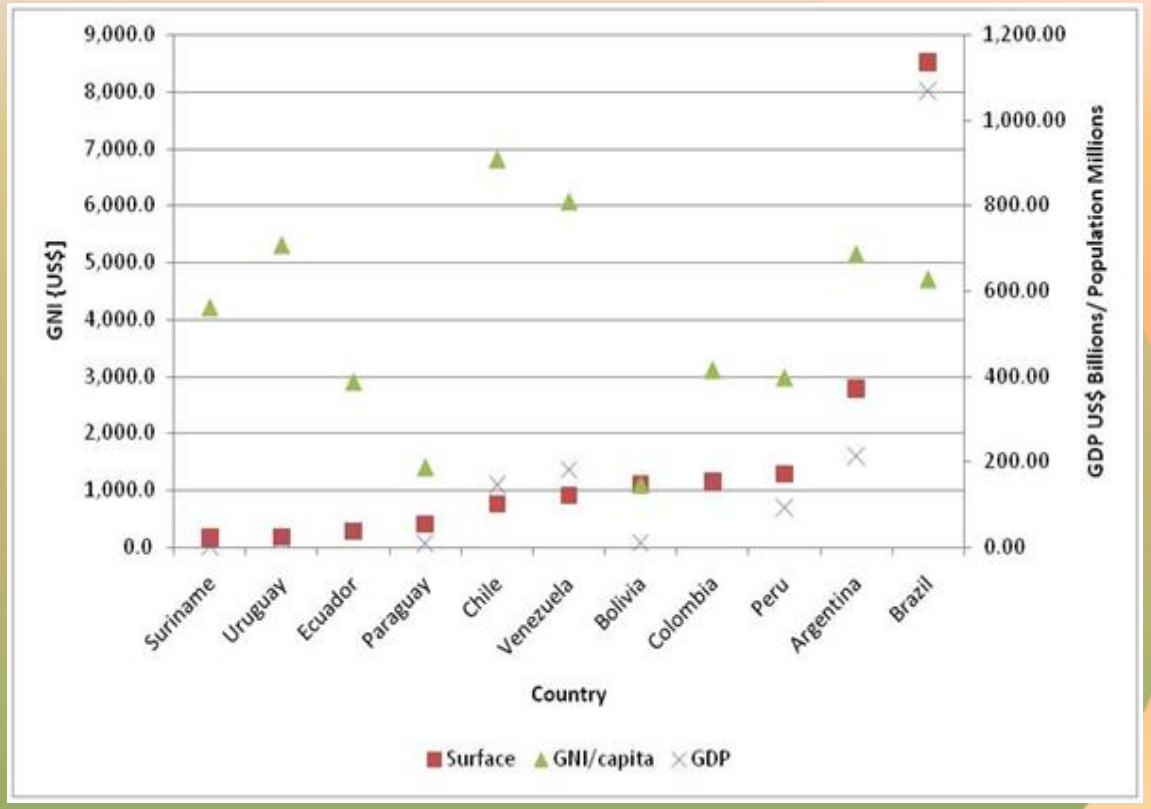

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General view of the wood industry

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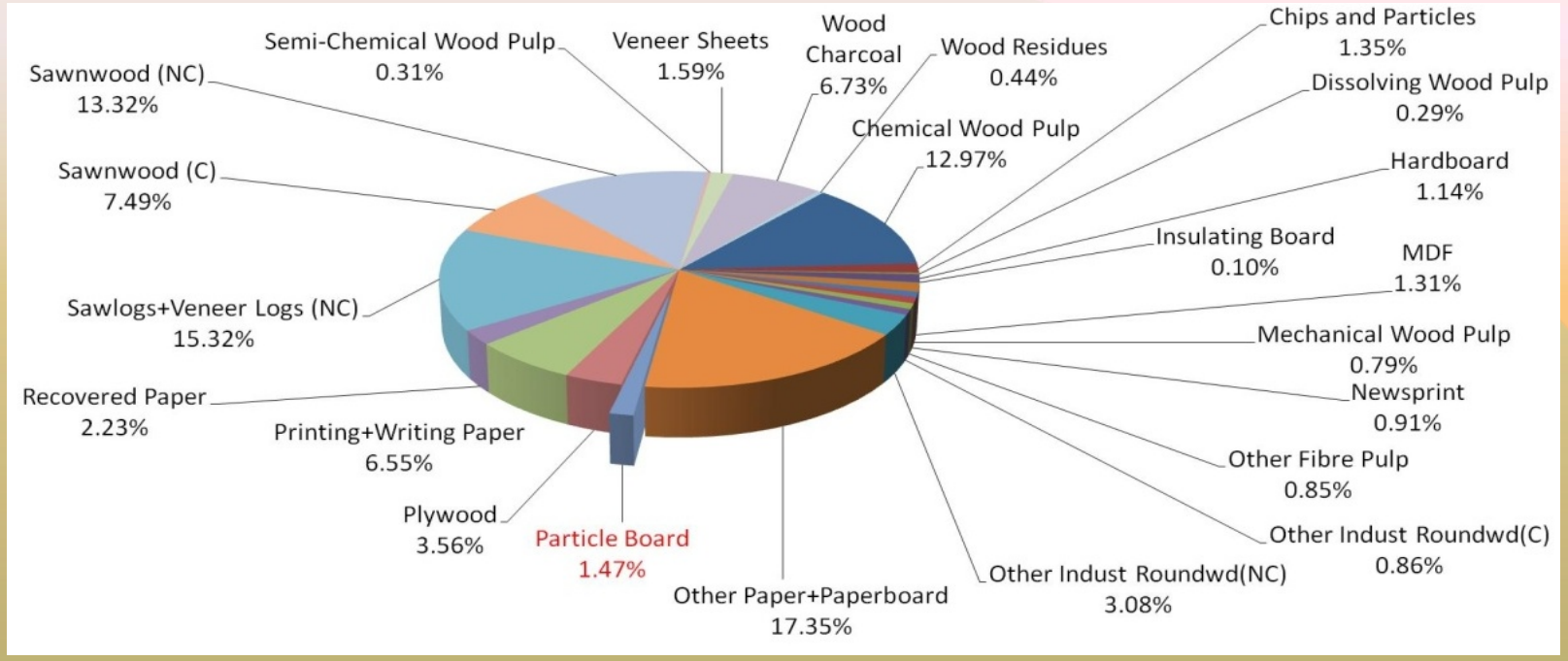
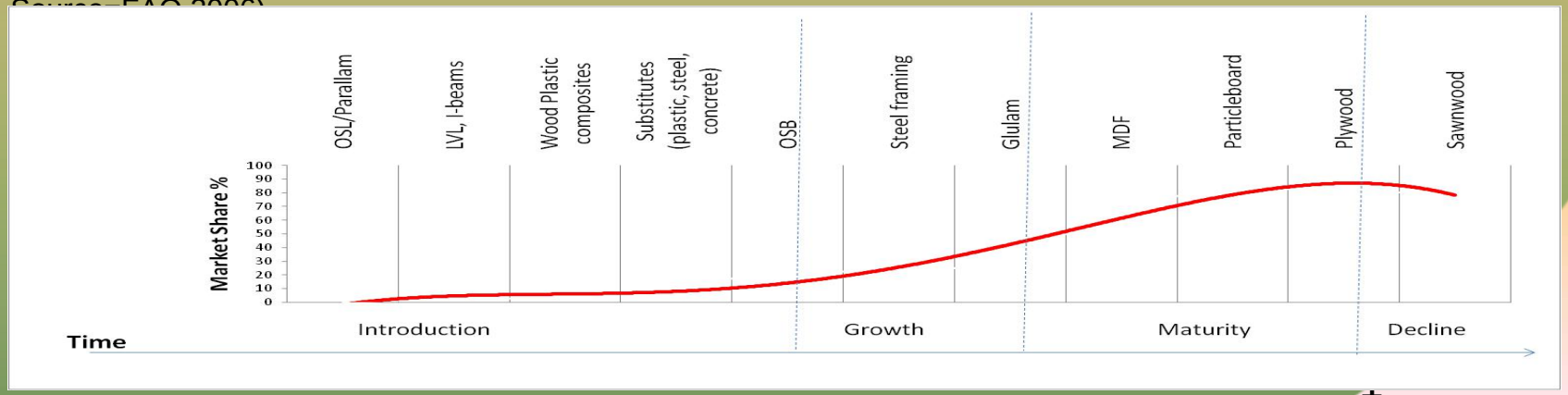


Breakdown of the South American region forest products production (C=Coniferous, NC= Non-Coniferous. Source=FAO 2006)



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General view of the wood industry

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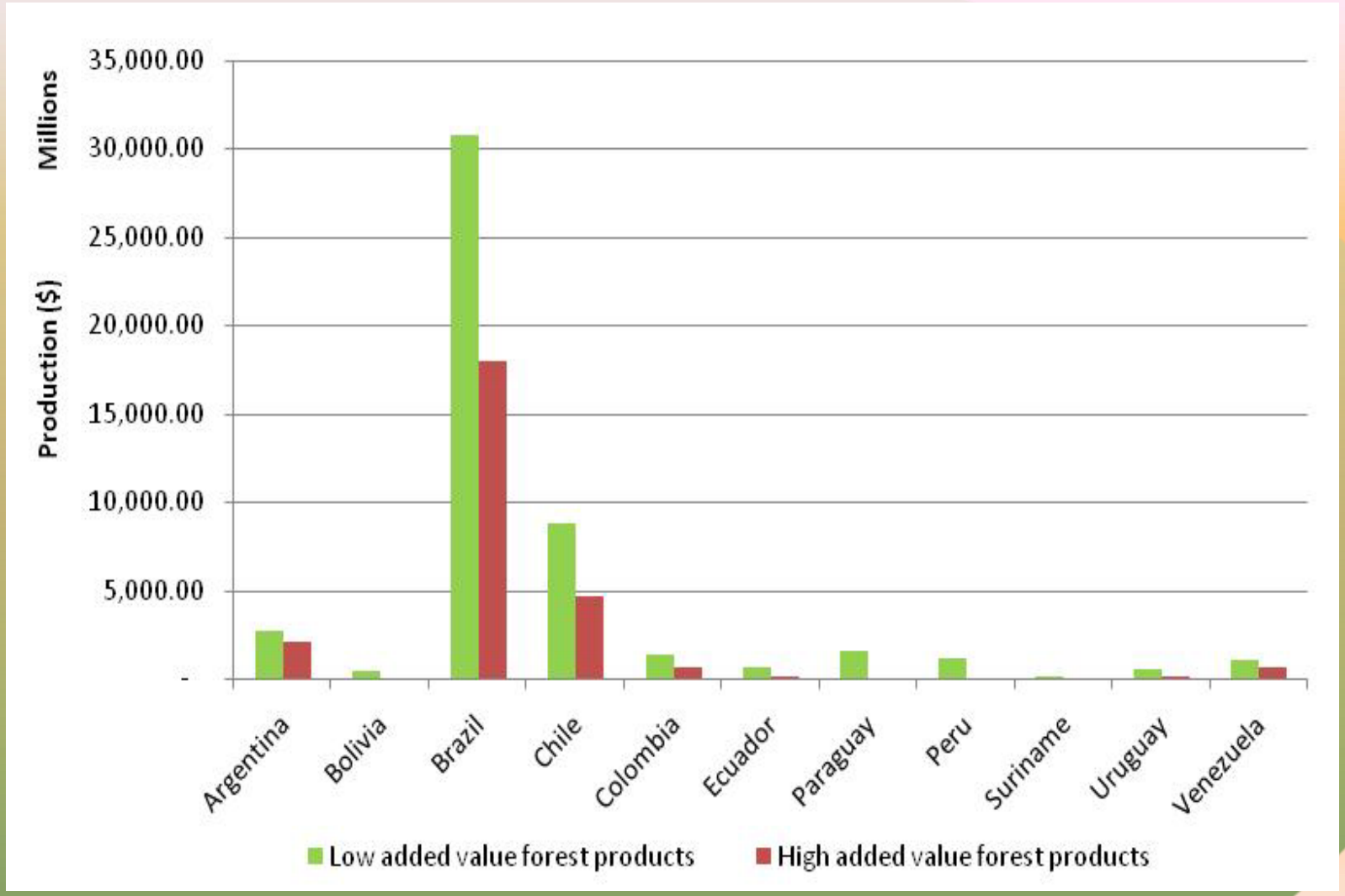

Comparison between high and low value-added forest products

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OSB Panel industry

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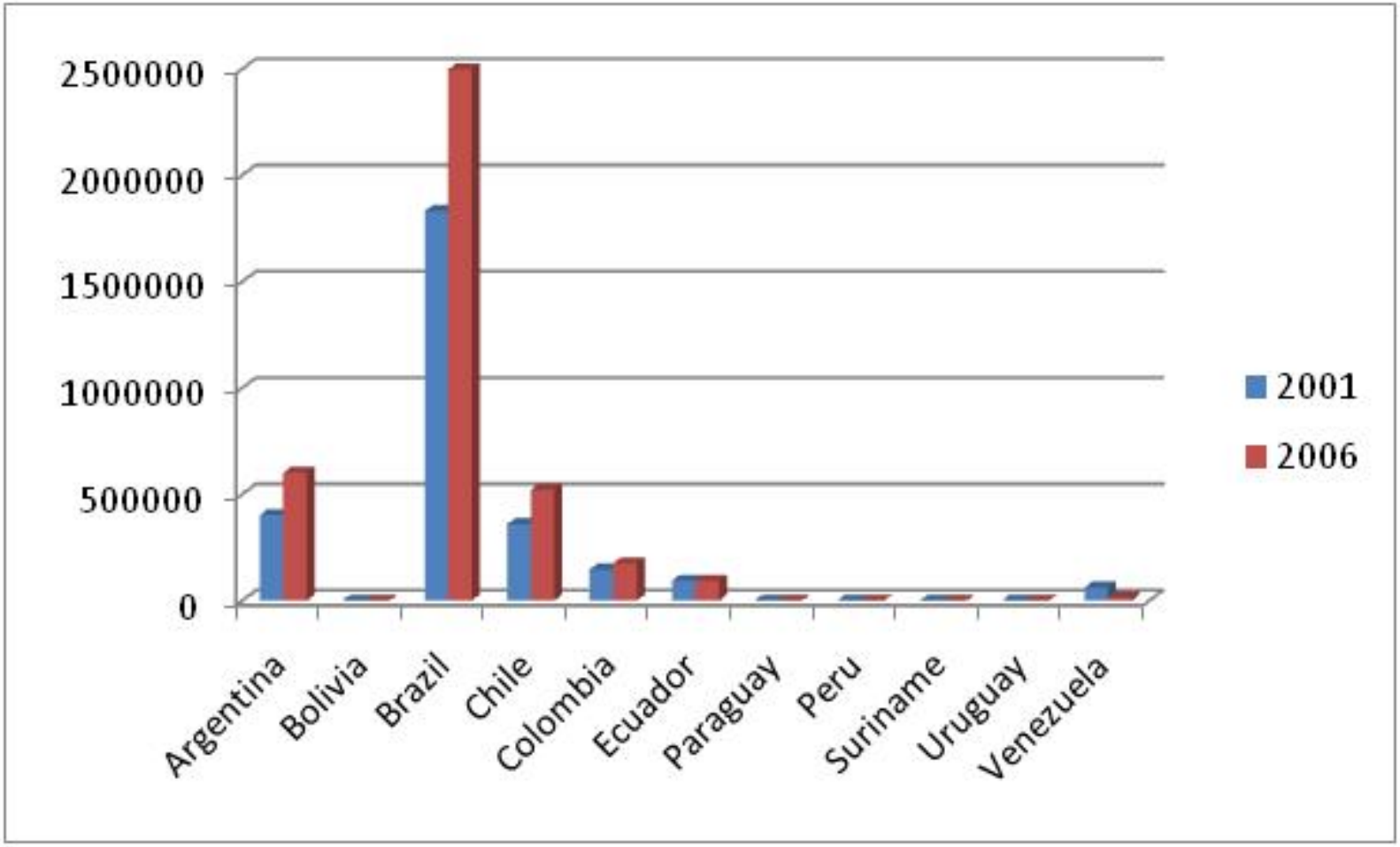
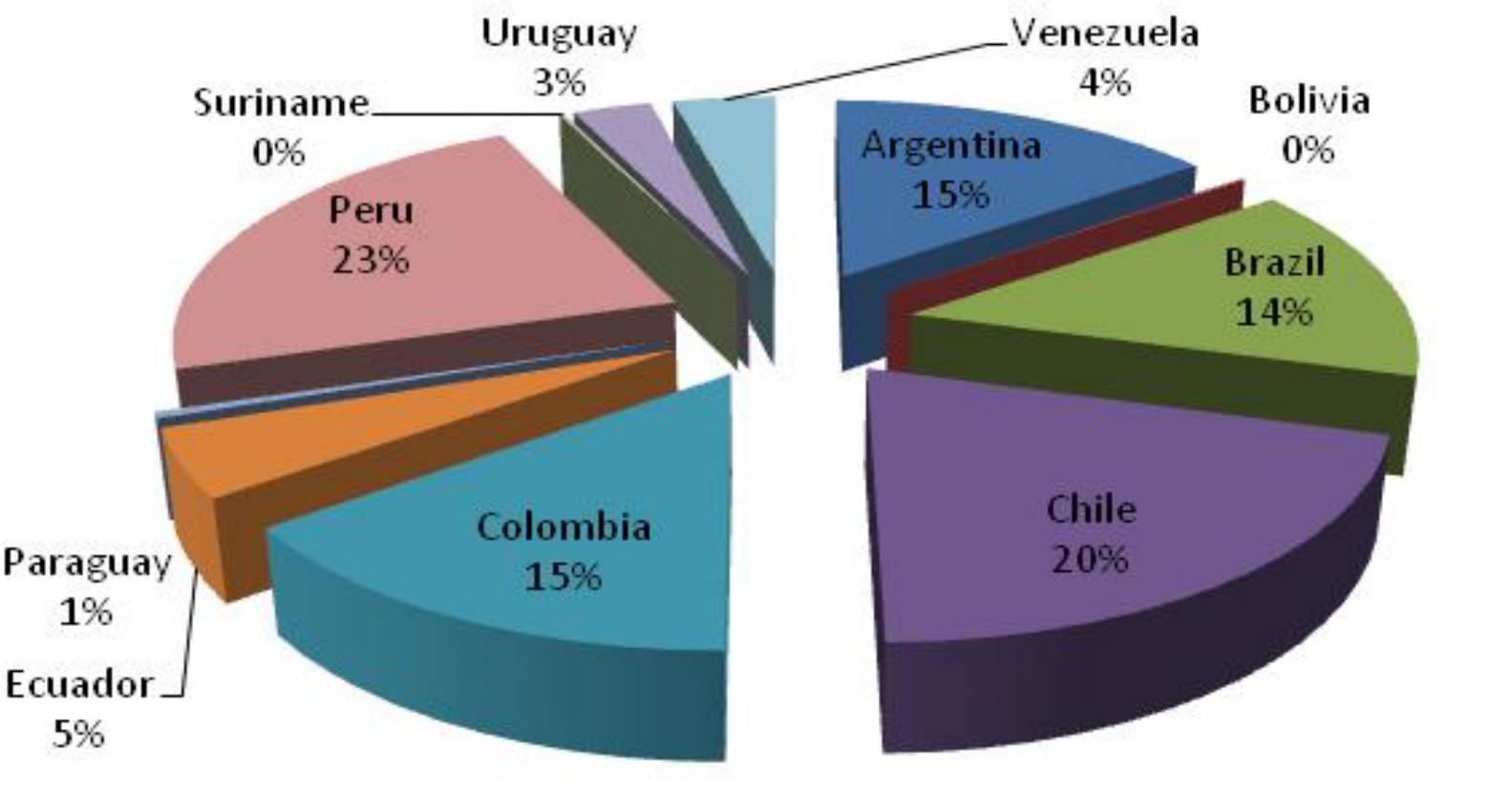


Production Share of Particle Boards (including OSB) in South America in 2001 and 2006 (Source=FAO)

OSB Panel industry



Particle board imports to South America by countries in 2006 (Including OSB/ Source=FAO)

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OSB Panel industry

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Two countries produce OSB in the region

LP in Chile
133000 m3/year
Native forest, especially of the type Roble (Nothofagus obliqua) - Rauli (Nothofagus alpina) – Coigue (Nothofagus dombeyii) and insigne pine (*Pinus radiata* D.Don).

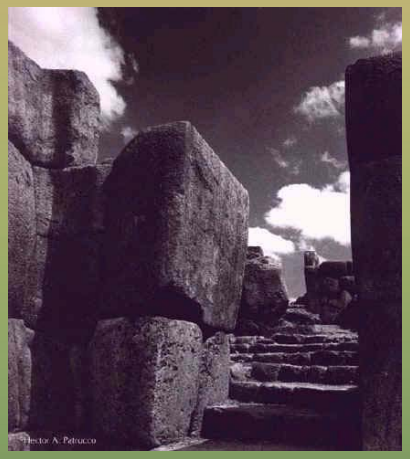
LP – Masisa in Brazil
State of the art facility with a capacity of 350000 m3/year
95% of Caribean pine logs
Fully automated

Recently Diefenbaker shipped an entire facility to Venezuela.
It would enter in operations in 2009
200,000 m3 per year in the first expansion (potentially double)

New OSB plant to start operating in Chile
Equipment formerly used in Montrose, Colorado
160 million square feet.

South American house construction activity

Iberian heritage + Original people tradition



South American house construction activity

Alto de madera

South American house construction activity

Landlord's colonial house

South American house construction activity

Currently in Public sector

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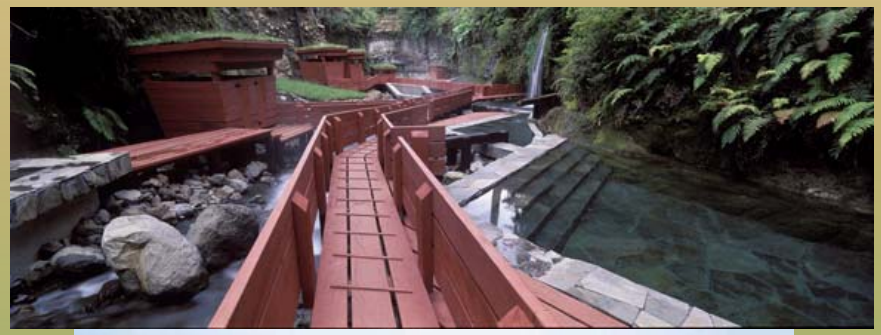
South American house construction activity

Private sector



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Opportunities

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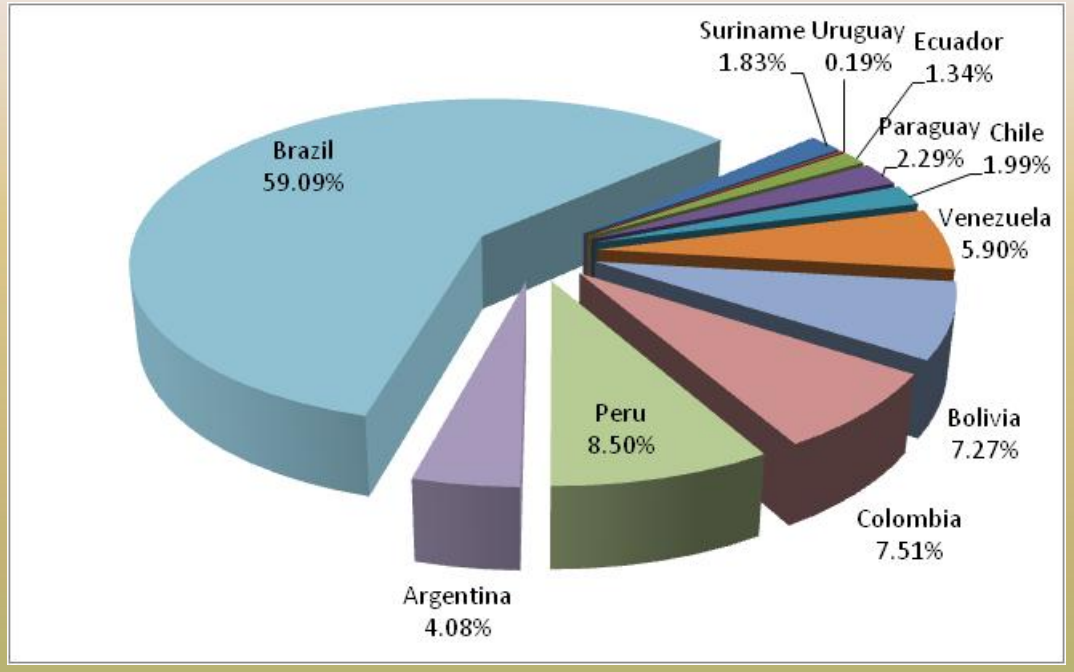

Percentage of forest land per country

Sustainable and environment friendly industry

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Opportunities

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Breakdown of OSB production costs in North America

Item	Normalized cost	South America
• Wood strands ----------	0.358	70%
• Resin ----------	0.173	150%
• Wax ----------	0.038	120%
• Energy ----------	0.100	80%-200%
• Labor ----------	0.177	40%-60%
• Miscellaneous ----------	0.154	
Total	1.000	

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Opportunities

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Necessity of engineered, high quality, and cheaper material

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Challenges

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Education, communication and promotion of the advantages of OSCs

Seminars, courses, workshops, technical training oriented to:

- Political Authorities
- Constructors & professionals
- Architects
- Users

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Challenges

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Increase research and innovation in the region in the use of OSCs

Natural durability, fire, earthquakes, natural fiber reinforcement

Lack of competition reduces the impulse to innovate

Overcoming the culture is a major task for the industry and it will might take years

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Thank you
Questions?

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