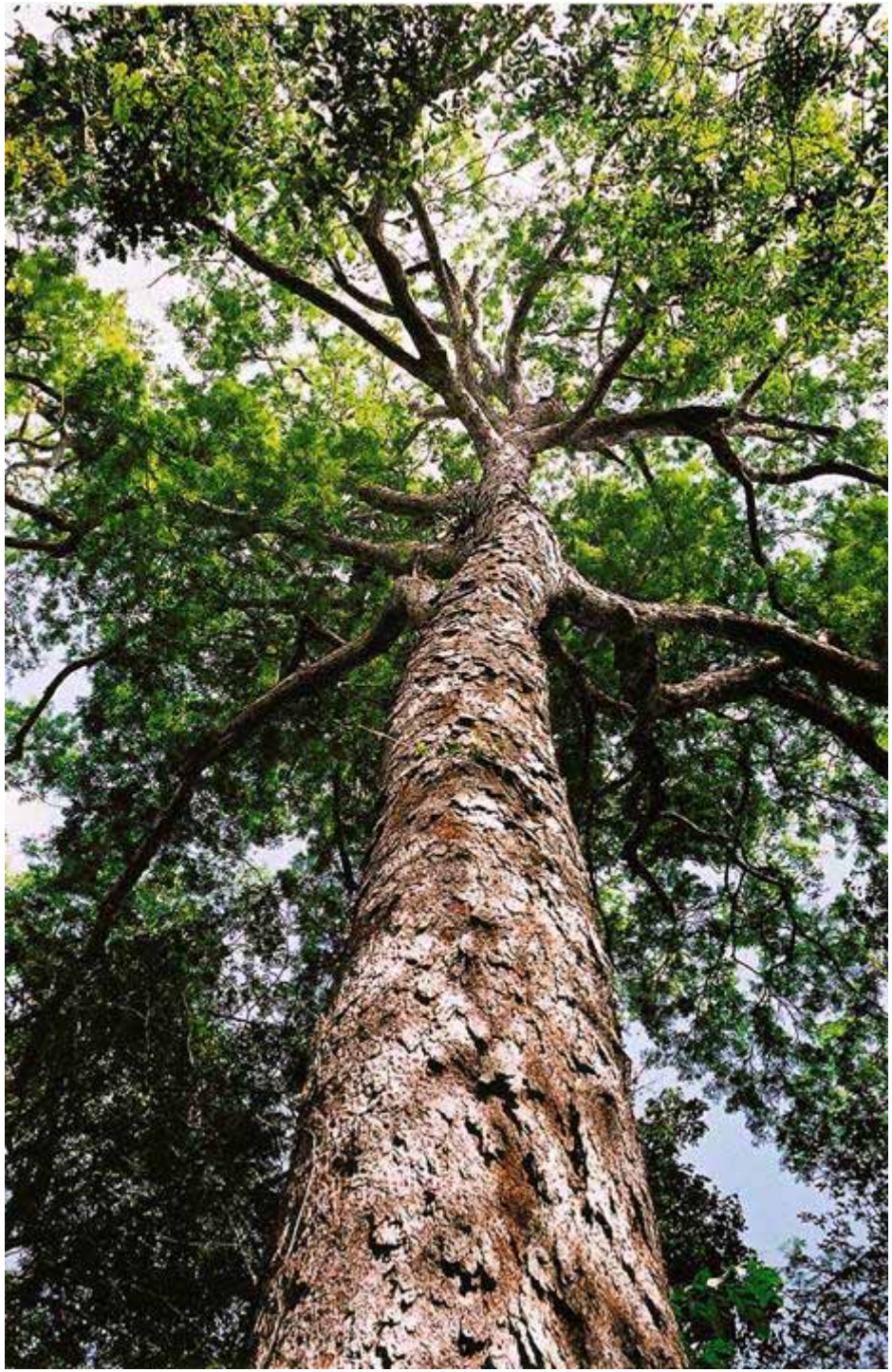

GRUPO ORSA

Developing Sustainability

Orsa Florestal

International Tropical Forest Investment Forum

April 2006

Cancun - Mexico

Brazil

- **Natural resources**
- Relatively solid **institutions**
- **Democracy**, although needs political reforms
- Population **open to innovation** and entrepreneurship
- **No major internal conflicts**, same culture, same language
- **Social discrepancies** but not so high as China, India and African countries. Improving
- **Fiscal debt solvable** through tax and social security reforms
- **Need** for more intensive governmental **investment in infrastructure and education**. Doable
- Need to be **more open and participative in the external market**. Doable
- **Macroeconomics** fundaments reasonably well
- Industrial infrastructure and **base for technological development**

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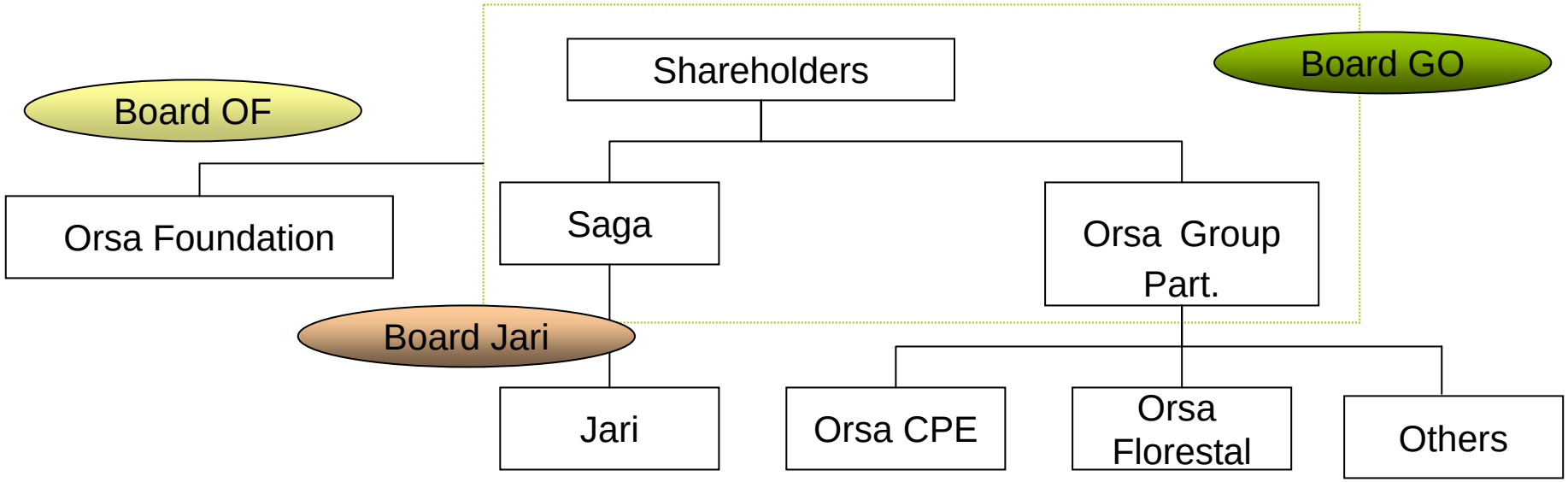
Who are we?

FSC

- 100% Brazilian-owned
- 6600 employees
- Integrated production: forests, pulp, paper and corrugated cardboard.
- 25 years of experience at the pulp and paper segment
- 40% of preserved forests
- Sales of US$ 515 million per year

Corporate Governance



Vision

Companies are **instruments to transform the society**.

One has to **look beyond the generation of wealth for shareholders**, and include the generation of social wealth as well as the adoption of sustainable development models that give precedence to both human being and environment, and that can be used by all society agents.

People **Profit** **Planet**

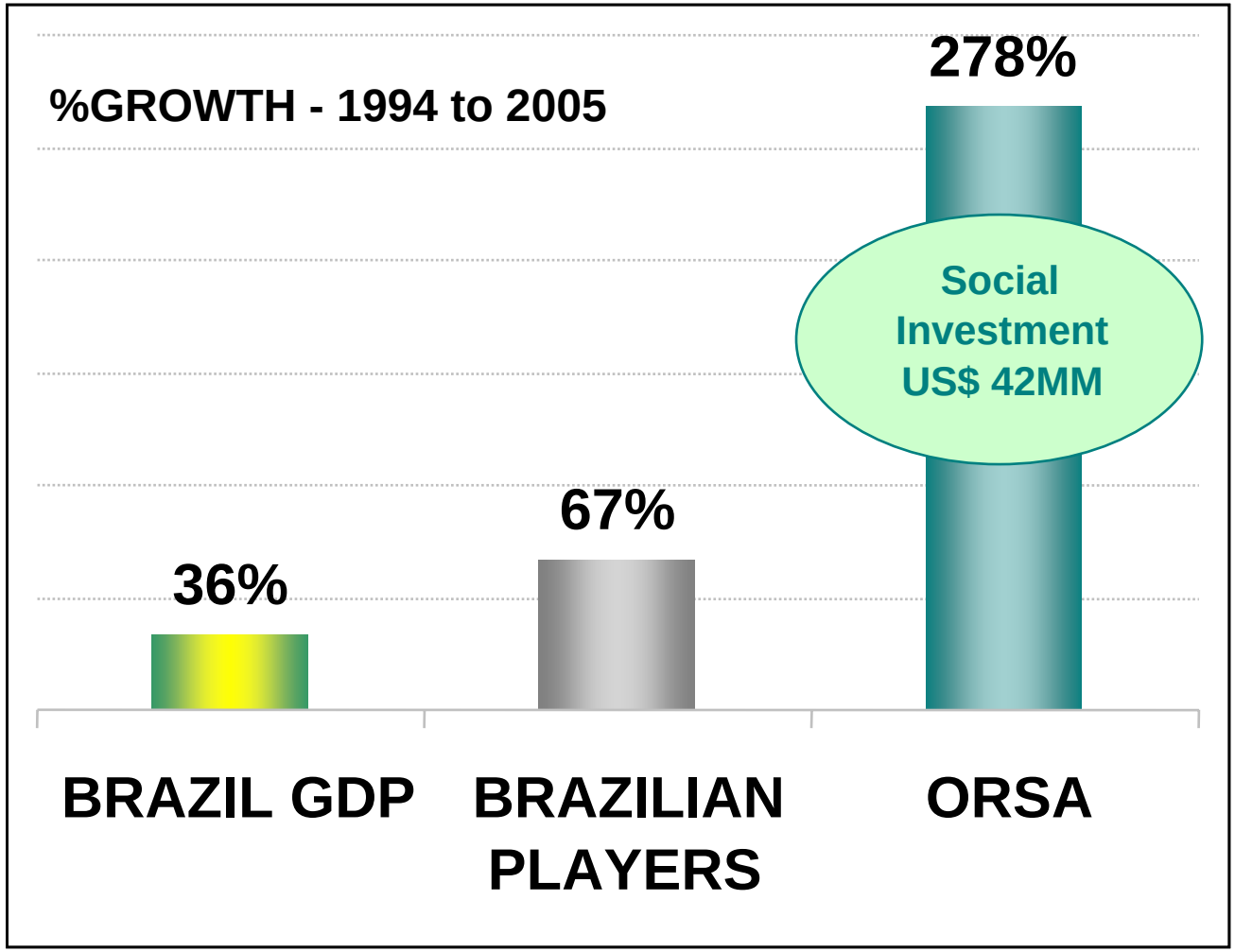
Corporate Social Responsibility
The driving force of the Orsa Group

1%

Gross Sales

- **1,4 million attendances in 2005**
- **US$ 42 million invested over 11 years**
- **275 employees**

Orsa Group Economic Growth: “In Spite of or Thanks to...?”



Country Risks Challenges

- Inexistence of formal investment and risk guarantee mechanisms adapted to forest context
- Investment climate
  - ITTO survey 2005 (Opportunities and Constrains to Investment: Natural Tropical Forest Industries)
  - 25 countries … position of Brazil
  - Time to start a business – 24
  - Enforcing contracts – 18
  - Registering property – 9
  - Resolving insolvency – 25
  - Investment profile – 11 (“contract viability, expropriation and ability to repatriate profits”)
  - Intensity of local competition – 15
  - Transparency of governmental policy – 10

Few numbers about Amazônia

- 9 countries 6,4 km^2 15% non frozen fresh water of the planet
  Brazil 63% of the area
- Population in Brazil 20 million habitants 12% pop Br 6% GNP
- Situation of the forests in 2004
  - 64% dense forests 22% low density forests 14% devastated
  - Average devastation per year of 25 thousand km^2
- Land ownership situation
  - 24% private 33% protected 10% special purpose 33% non defined

Few numbers about timber industry in Amazônia

- 82 industrial timber poles 10000 saw mills
- Yearly extraction of 25 million of cubic meters (round wood)
  - Only 30% from own property
- Generation of 380 thousand employments (1/3 direct)
- Gross income generation of US$ 2,3 billion/year
- Production destination:
  - 36% exports 42% S/SE regions
  - 63% rough sawn 21% plywood 16% industrialized
- Residues destination:
  - 51% burned of abandoned
  - 24% coal 10% energy 15% diverse

The Orsa Group Amazonian Challenge

- Pulp mill located in the Amazon region, at the shore of the Jari river. One of the last frontier of Brazilian territory
- 1,7 million hectars of land, 90% of which native forest
- 4 cities inside the area
- Around 120 thousand inhabitants
- Almost no employment opportunities, health problems (infectious and sexual transmitedd diseases), por urban infra-structure, weak education conditions, youth prostitution, etc.

The Amazonian challenge...The other side...

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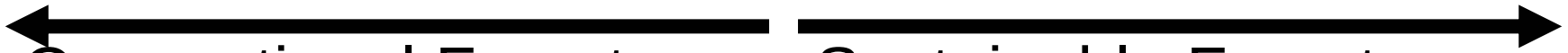
- Immeasurable natural resources:
  - *water*
  - *climate*
  - *light and sun*
  - *biodiversity*
  - *culture*
  - *energy*
  - *land*
- Wealth generation opportunities
- Knowledge and regional culture
- Openness to integrate
- Social and market development

The Continuum of Forest Management



Conventional Forestry

- Maximizes current income
- Simplifies forest and outputs
- Emphasizes quantity of production
- Reduces standing timber inventory and long-term yields
- Reduces native biodiversity
- Environment is cost

Sustainable Forestry

- Builds asset value and total returns
- Restores forest complexity
- Manages for multiple products
- Emphasizes quality of production
- Increases long-term timber yields
- Increases native biodiversity
- Environment is benefit

MacArthur Foundation 1999

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Sustainable Development as a Business

- Multiple use of the native forest
- Aims to promote sustainable development in the Jari Region
- Becoming a model for Tropical Forests

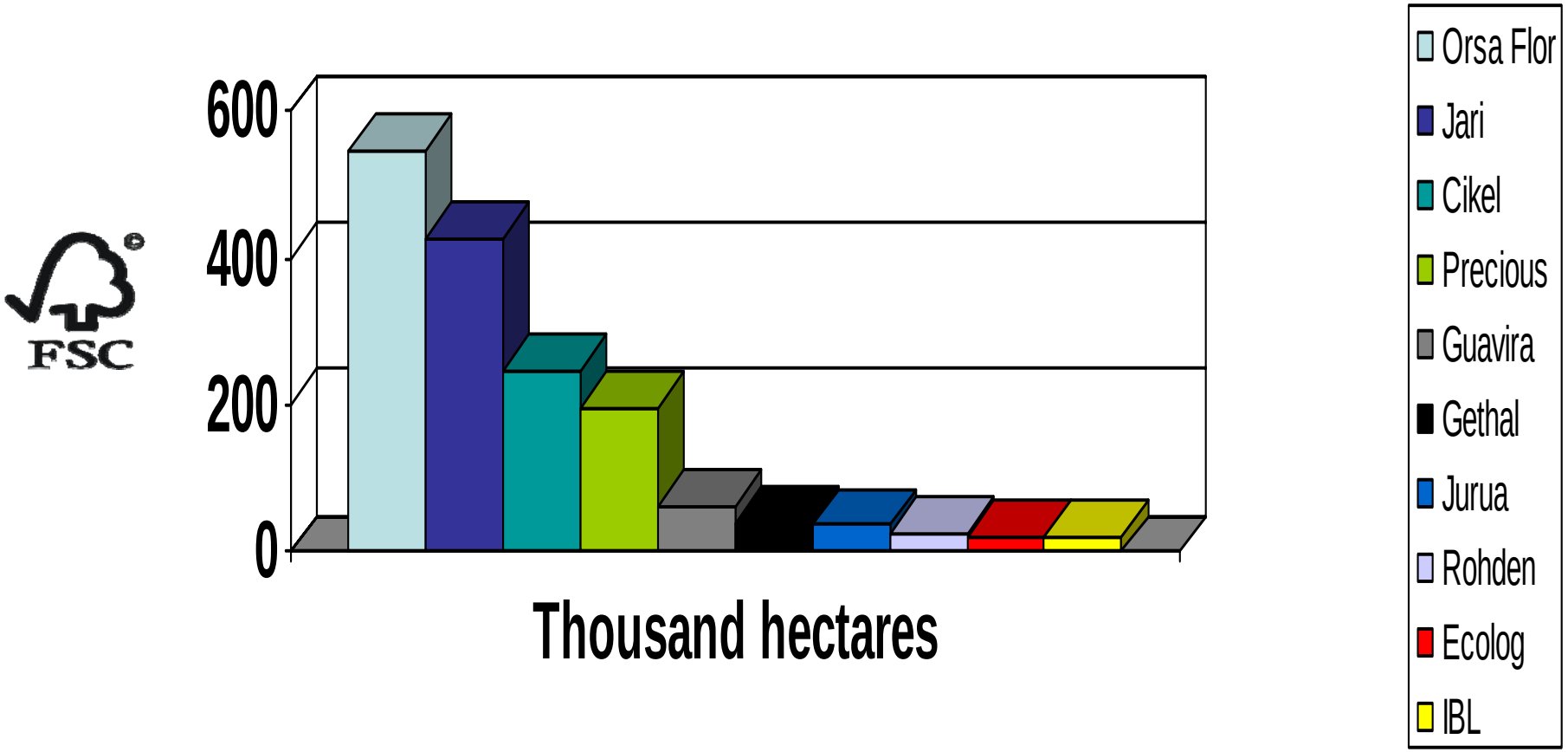
Institutional Challenges

- Institutional environment very fragile for tropical forests
- Extremely high transaction costs (2005: 30% of gross sales! For certified operations)
- Enormous legal enforcement tolerance (illegal / semi legal / legal)
- Enormous fiscal tolerance (informal / semi formal / formal)
- Extremely confuse and instable fiscal system
- Corruption at all levels (regulatory, propriety ownership, etc)
- Very poor land ownership situation (24% private / 33% non defined)
- Confuse and instable regulatory framework
- Concession law recently approved (important step forward but still embryonic)
- Certification systems not yet consolidated (FSC / CERFLOR / PEFC / SFI)

FSC Sustainable Forest Management
545 000 hectares 30 years cycle

Orsa Foundation Children Theatre Group teaching Sustainable Forest Management

FSC in Amazônia



- End of 2004…1,2 million hectares 12 companies 7 communities
  - End of 2005…the same…

Economical Challenges

- Productive tropical forest economy is emerging
- Disequilibrium on industry scale (10000 small scale / 100s medium / 10s large)
- Disequilibrium on industry origin (few multinationals and foreign investors)
- Margins are not high for low added value industries, specially if directly competing with informal / illegal loggers
- Economics of certified operations to be better understood for comparison with non certified industries

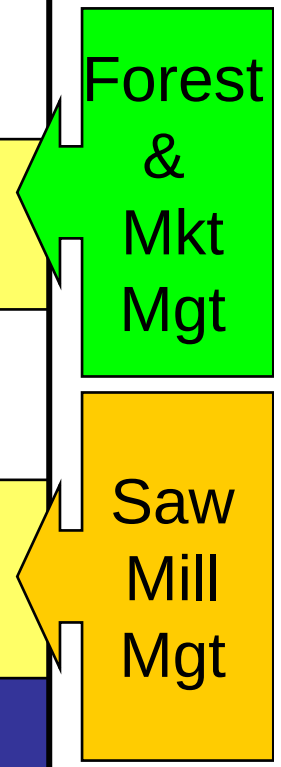
Productive Area

Forest Management

Year	Gross Area Hectares	Net Area Hectares	Productive Area %
2003	2280	1600	70%
2004	7530	3448	46%
2005	9860	7035	71%
Next years	10700		

Sawn Timber Production

Productive Area	60%	65%	70%
Net Area Hectares	6420	6955	7490
Productivity m^3/hectare	18	20	22
Log volume m^3	115.560	139.100	164.780
Saw mill yields	20%	27%	35%
Sawn timber production m^3	**23.112**	**37.557**	**57.673**

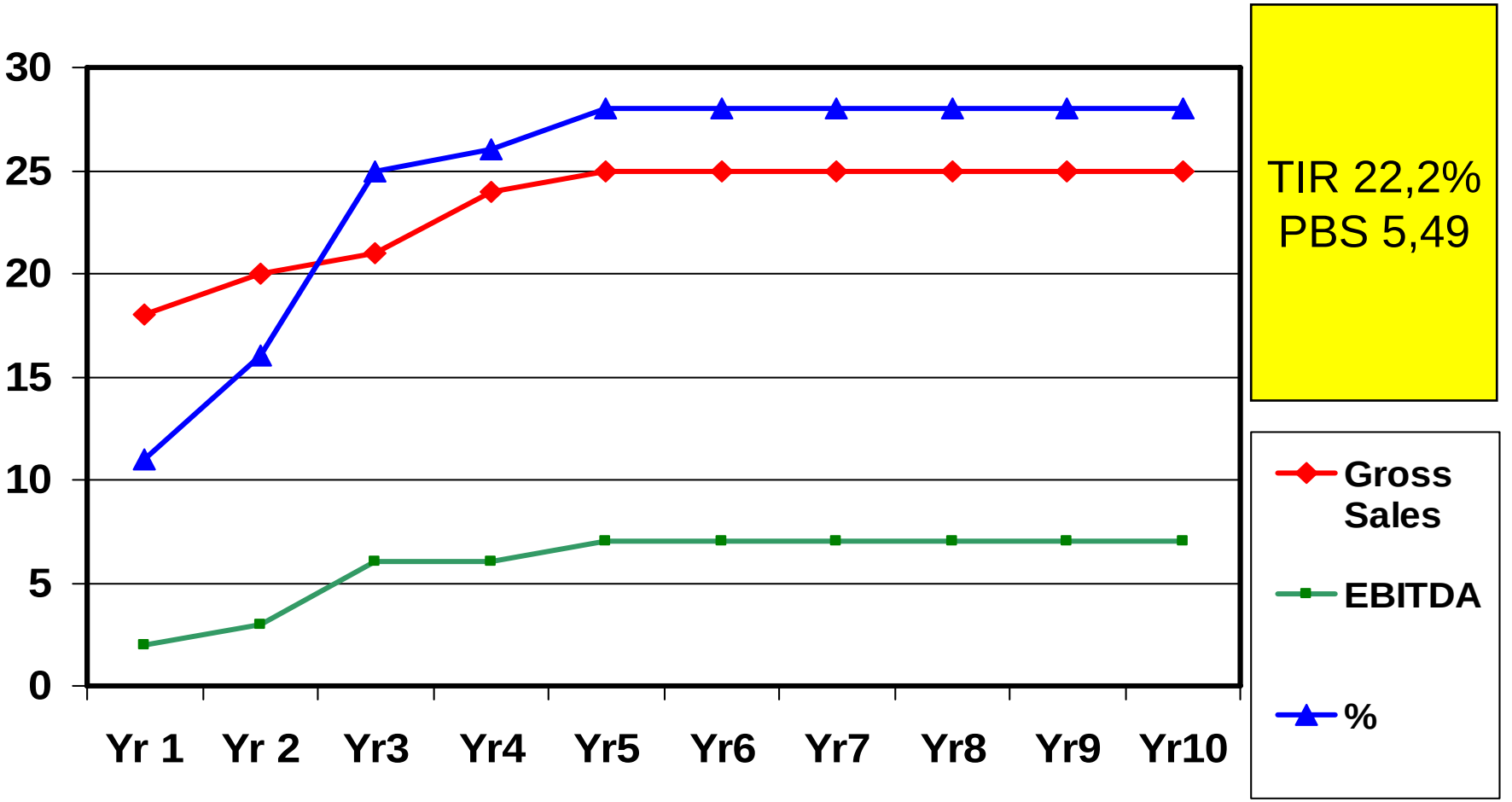


Products and Results

Product & Mkt mgt

Product	Low value addition	Medium Value addition	High Value addition	Price US$ m^3
Flooring	0%	6%	20%	850
Plained KD	0%	4%	10%	550
Plained AD	0%	27%	30%	450
Rough Sawn	100%	27%	30%	380
Biomass	80%	73%	65%	33
Gross sales US$ Million	**13**	**21**	**35**	

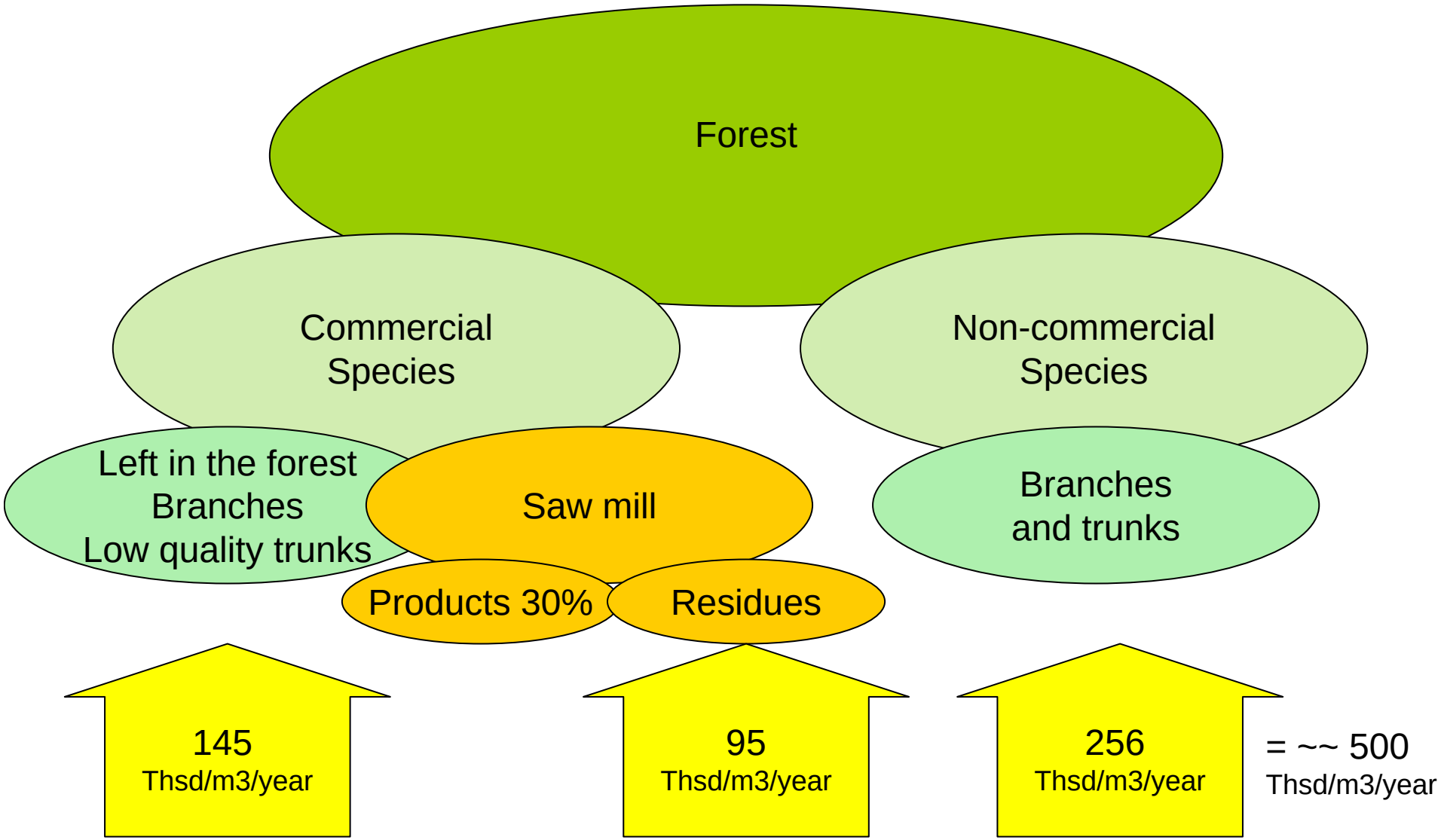
Economic Results MUS$



Up sides

- Prices goes up 30% (Done)
  - Base scenario goes to US$ 27 million/year
  - Aggressive scenario goes to US$ 45 million/year
- Forest area increases 50% (AP and PA)
  - Base scenario goes to US$ 40 million/year
  - Aggressive scenario goes to US$ 67 million/year
- Plywood, Moldings, Furniture

Biomass & energy (Theoretical Case Orsa/STCP)

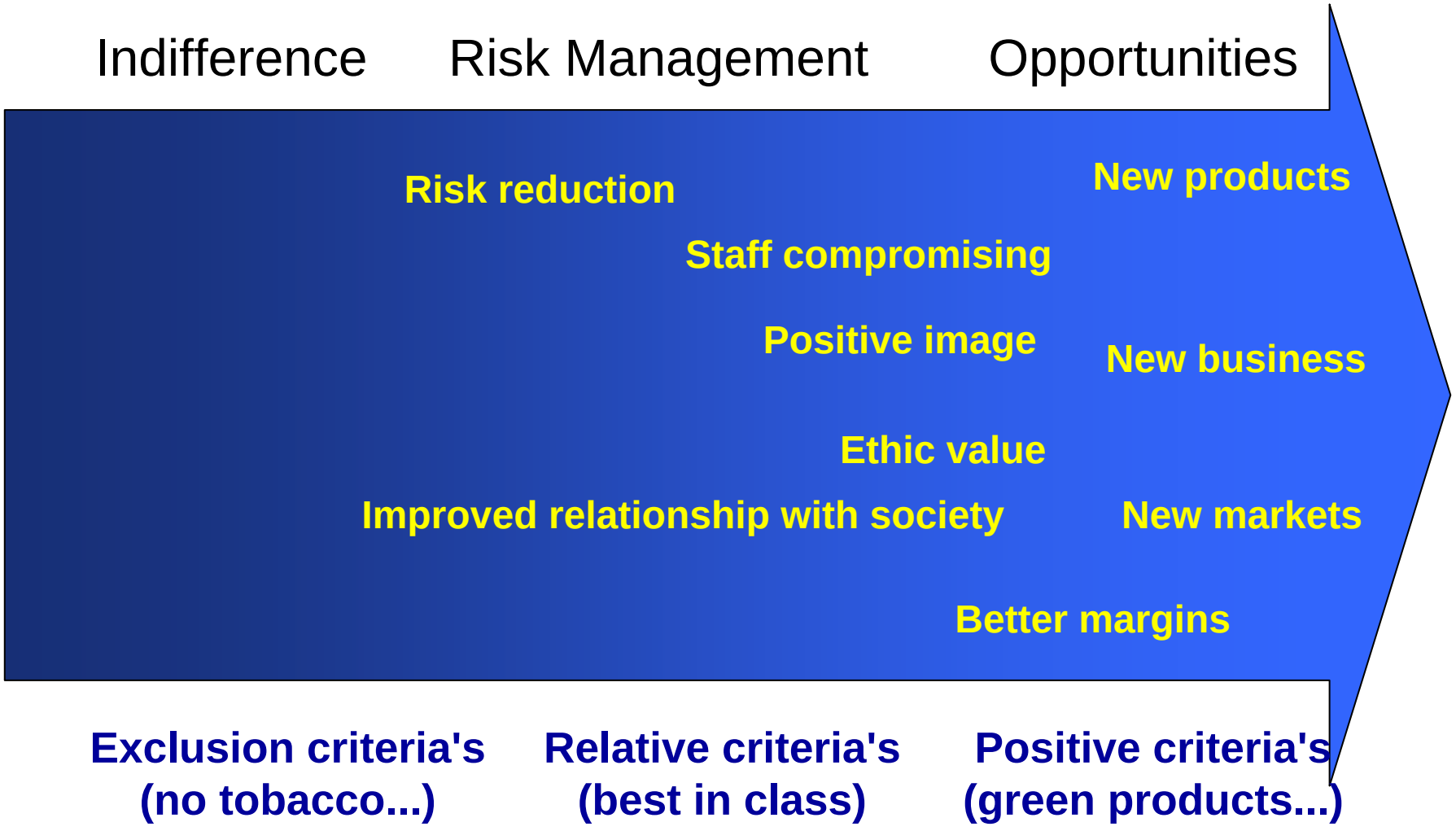


Source ITTO/STCP/FUNPAR 2005

Financial Challenge

- Lack of adequate financial lines and products for tropical forest industries

Evolution of Financing World and Sustainability



Sources of Capital

- Private
  - Domestic investor
  - International industrial investor
  - Commercial banks
  - Investment funds
  - Timber investment management organizations
  - Pension funds
  - Foundations
  - Private equity
  - Venture capitalist
- Public
  - Grants
  - Development funds (national, multilateral banks, international agencies)
  - Loan guarantees
  - Trade-related financing
- Philanthropic
  - Grants
  - Program-related investments
  - Socially responsible investments market
  - Corporate Socially responsible investments

FMU + Saw mill US$ 12m

Future

Second Saw Mill US$ 10m

Future

Returns

- Timber-related returns
  - Logs
  - Sawn timber
  - Plywood, veneer
  - Added value products (flooring, moulding, furniture)
  - Biomass & energy
- Non-timber forest products
  - Carbon sequestration
  - Recreation and ecoturism
  - Watershed services
  - Conservation real estate
  - Biodiversity related products (pharma, cosmetics, nutricionals, fibers)
  - Knowledge based products (forestry / environment university)
- Around the forest products
  - Agriculture at degradated lands
  - Silviculture

1000 m3 per month today

3000 m3 per month 2007

6000 m3 per month today

Development projects

Development projects

Business Opportunities

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- Certified sustainable native forestry management
- Saw mill, flooring, furniture, objects
- Phytotherapics, cosmetics and nutraceutics
- Oils and Soap chips
- Fiber production (Curauá)
- Organic Amazonian fruits and nuts
- Ecological and sustainable tourism
- Carbon certificates (climate exchange market opportunities)
- Forest University

•Network of partnerships (tech/commercial)
•University partnerships all over the world
• Forest and social certification
• Reputation of good ecological practices
• Amazon image

Knowledge and Technological Challenges

- Enormous technological tolerance (very low tech and high tech companies in the same industry)
- Multi-optional vertical integration possibilities
- Productive tropical forest operational procedures (heterogenic forests) into the beginning of the technological curve

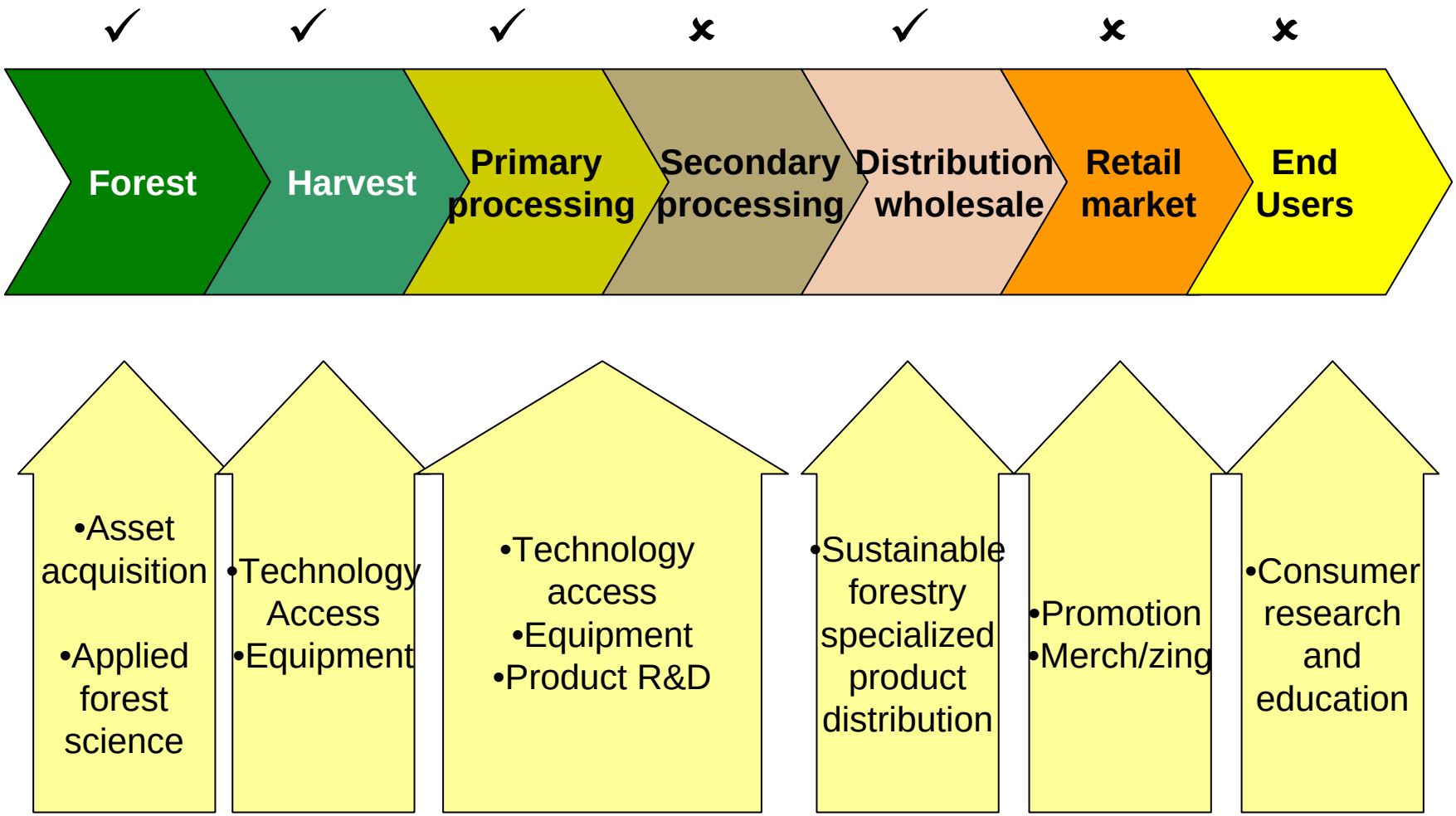
- Sustainability concepts and practices are new area to scientific and technological development

- Lack of skilled human resources availability, specially in industrial phases
- Very poor educational situation on tropical forest areas

Value Chain

✓ Today

× 2007



Distribution per species (m^3)

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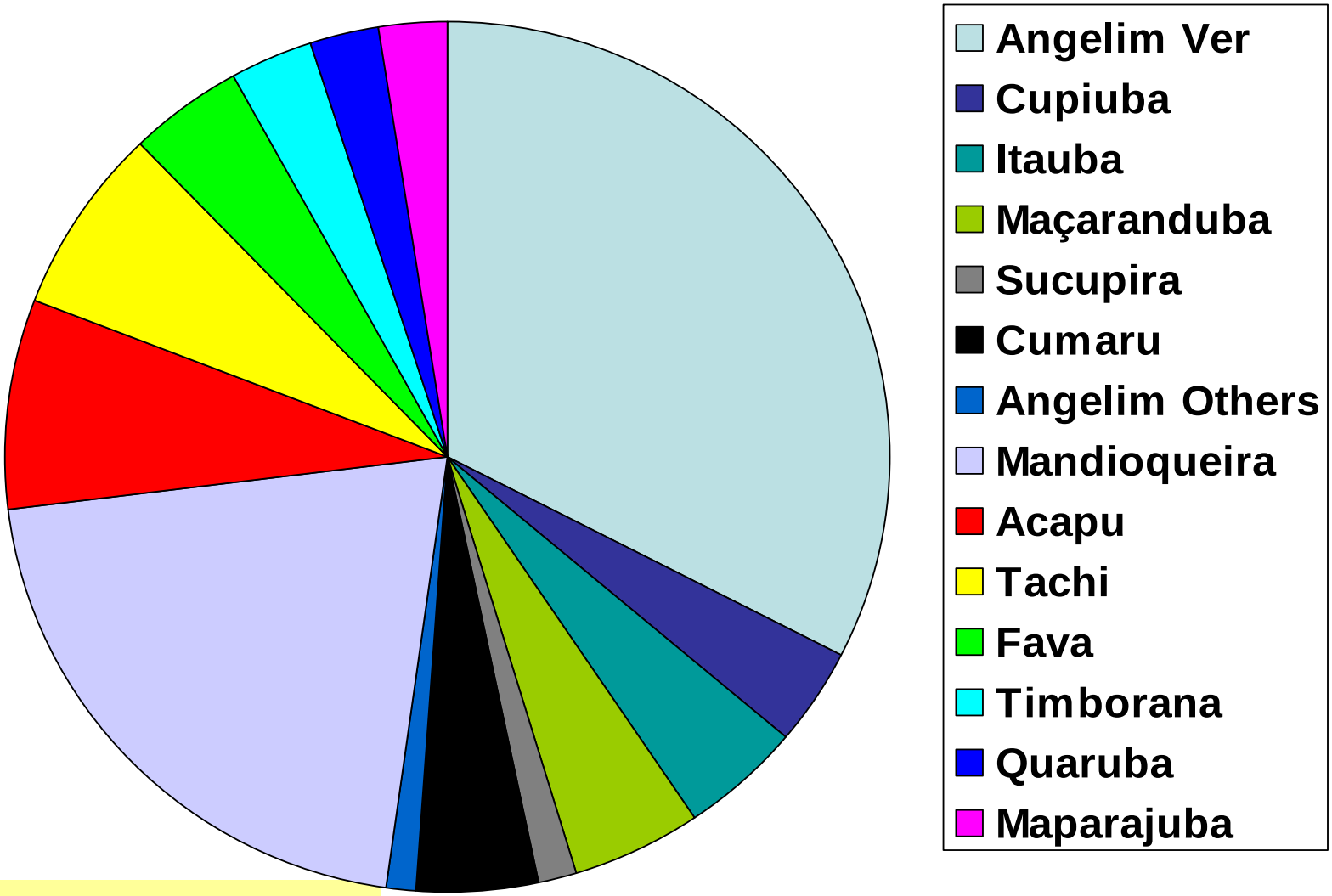

UPA 2 - 90 thousand m^3

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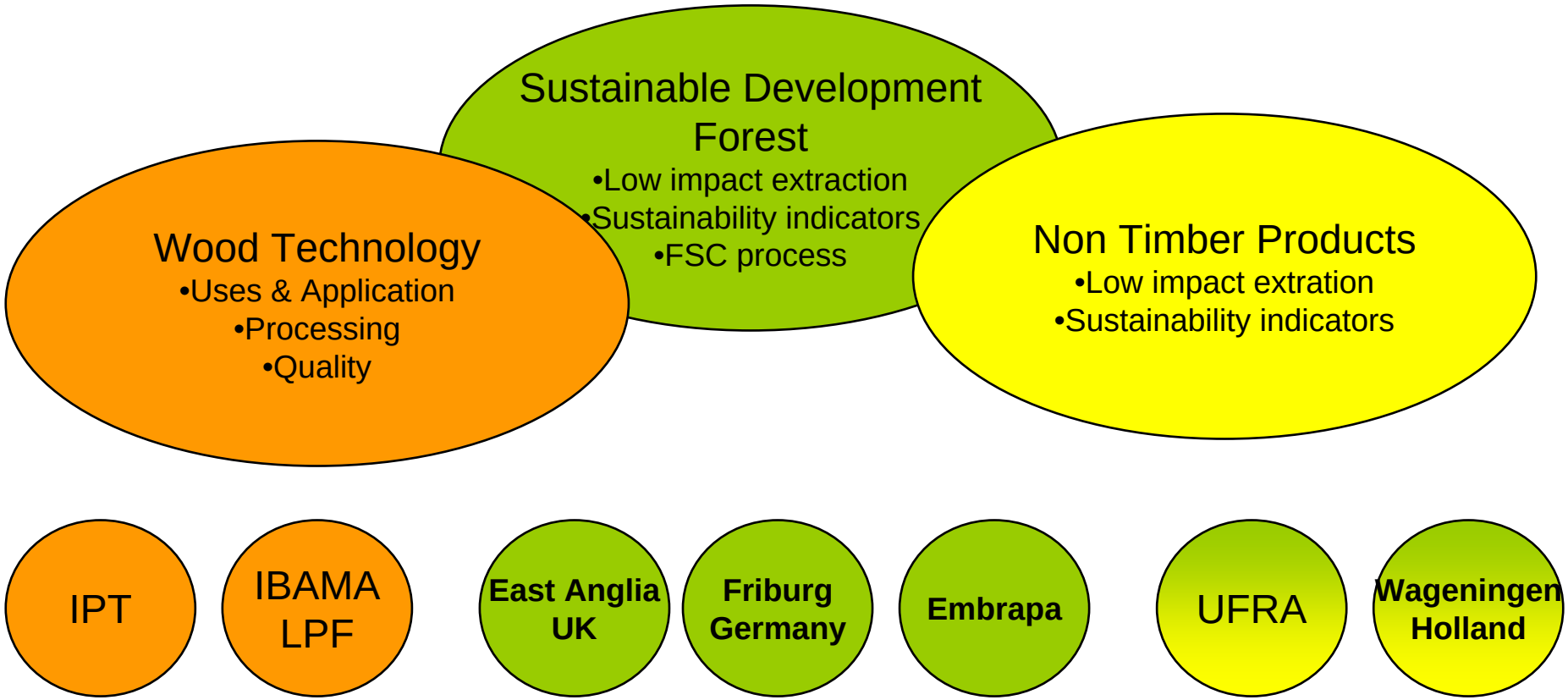
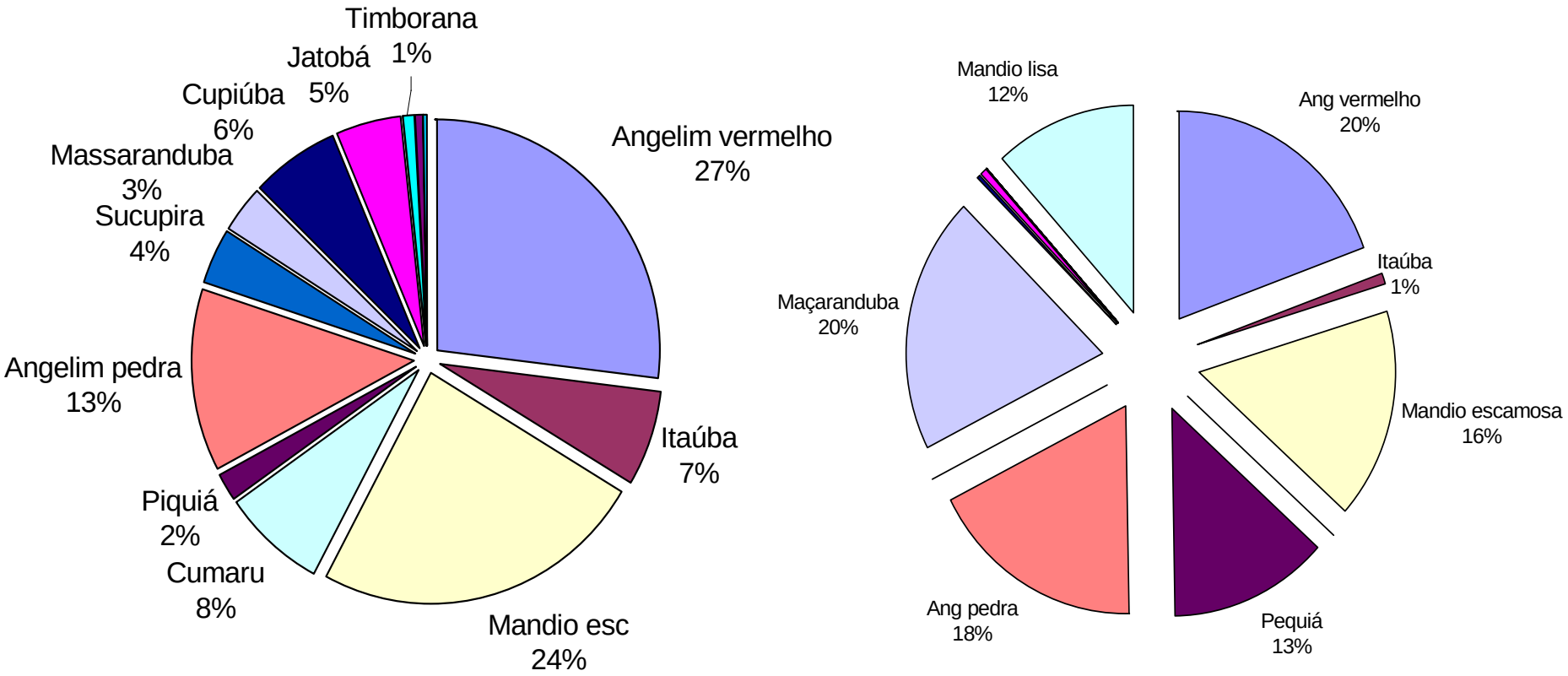
Technological Development



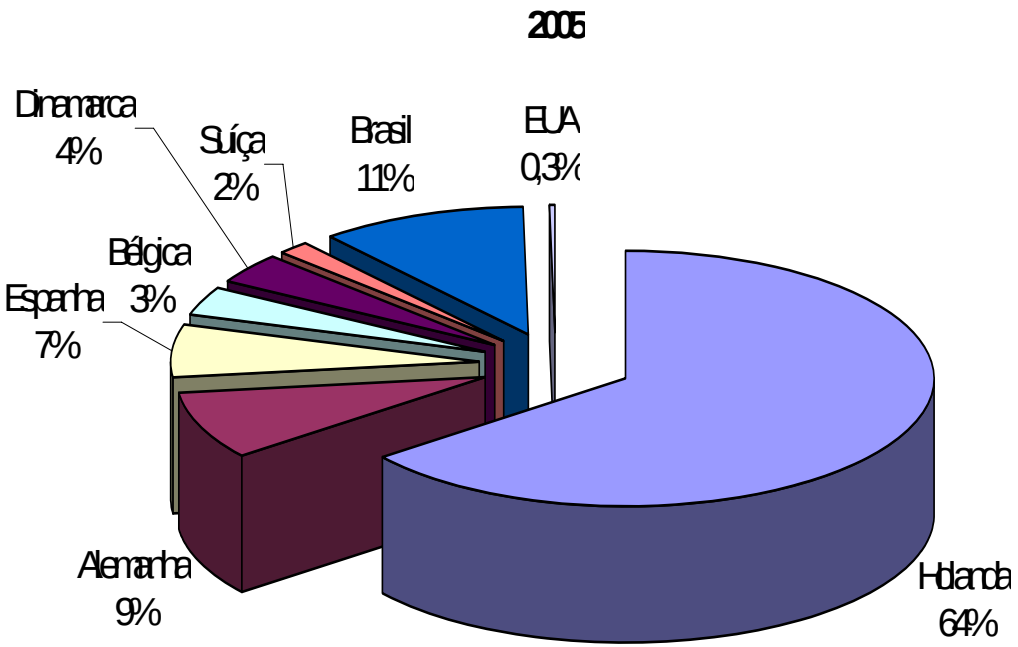
Marketing Challenges

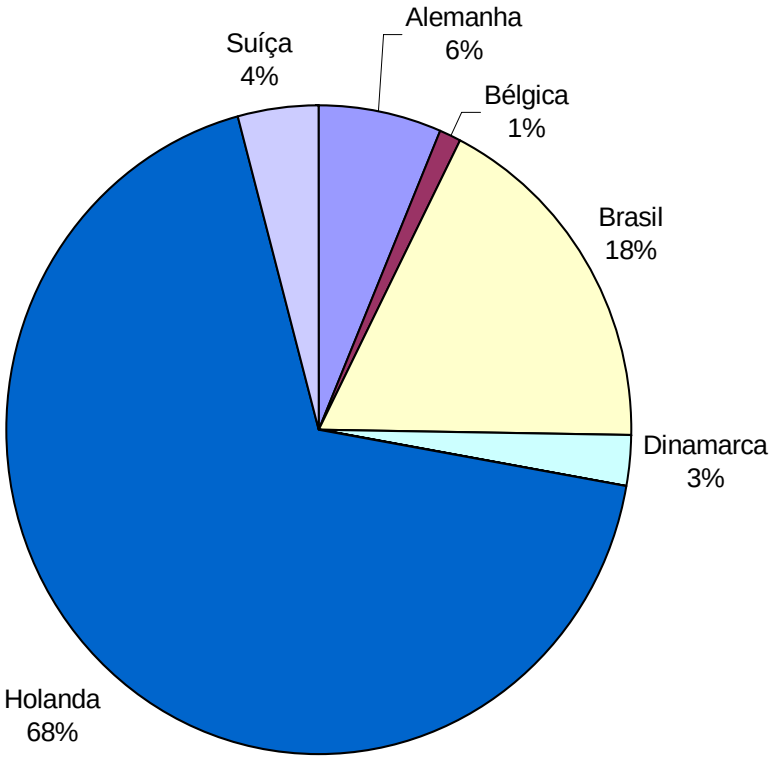
- Demand for forest products is increasing. Not a clear trend for tropical
- Demand for responsibly-produced wood is increasing but market is emerging and frequently related to niches
- Complexity of market structure (agents, added value products chain)
- Bad image of tropical timber sector, associated to illegal loggers and environmentally predatory
- Long and complex cycle for development of Lesser Known Species (lack of technological infrastructure in the country)
- High demand for internal market but low value (competition to illegal / informal activities)
- Lack of experience and culture of access to external markets (language and knowledge of commercial practices)
- Complex and wide product mix, difficult to balance using economical logic
- Premium price for certified products is a reality but not evident and easy to access

Sales per specie 2005 / 2006



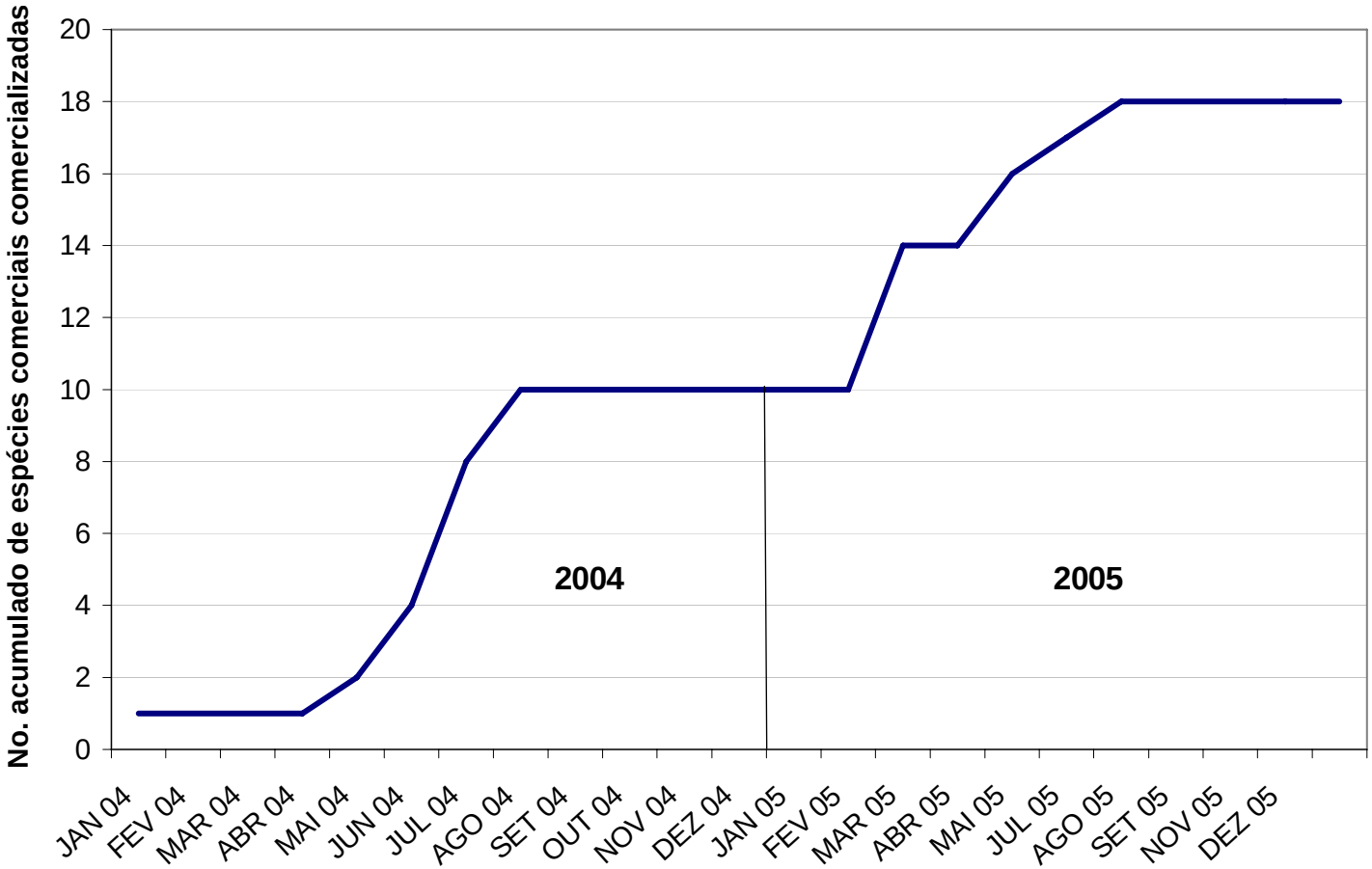
Exports 2005 / 2006





Number of Commercial Species

26 botanical species



Corporate Governance Issues

- Corporate governance in Brazil is emergent. Systems yet in implementation
- Corporate governance not implemented in tropical forest business
- Traditionally tropical forest industries are family owned. Family governance not common

- Stakeholders consultation and engagement not a common practice in tropical forest business.
- Complexity of direct, indirect and hostile stakeholders in the forest industry

Infrastructure Issues

- Very poor logistic infrastructure of roads and ports in tropical forest areas
- Very poor telecommunication infrastructure
- Unbalanced energy generation and distribution

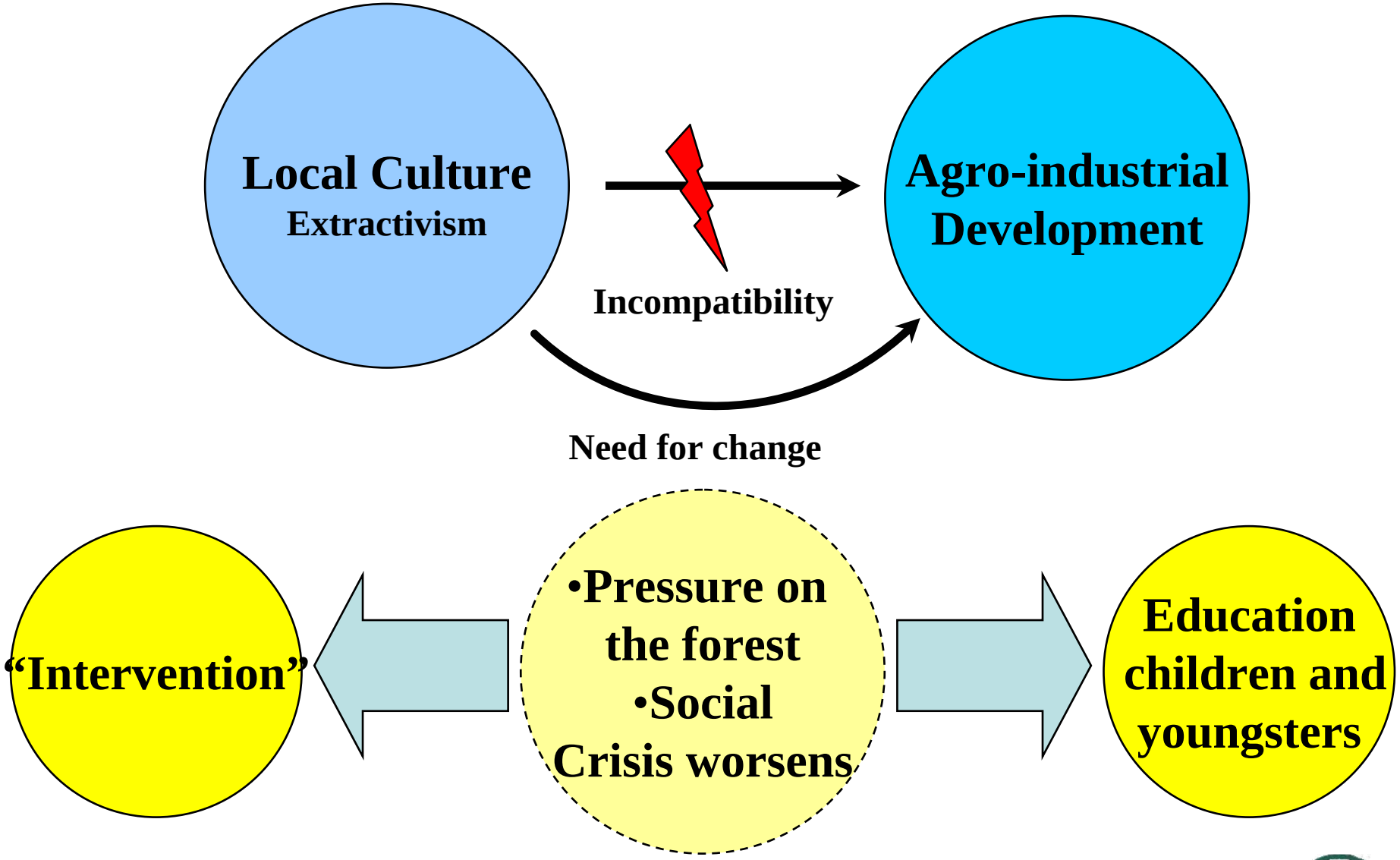
Munguba Port – 40 000 ton ships capacity


WINDFIELD

Social Challenges

- Production and quality skills
- Market relations skills
- Social Organization (associations, cooperatives, etc)
- Contracts models between community organization
- Monitoring routines (opportunistic actions)
- Types and sources of community financial instruments (access, guarantees, monitoring)
- Financial architecture of the network (company + community);
- Scale has to be large
- High degree of agility
- Institutional land ownership situation confusing and imprecise
- Political situation can be conflictive (diverging interests)

98 communities, 14 000 people, poverty, absence of government



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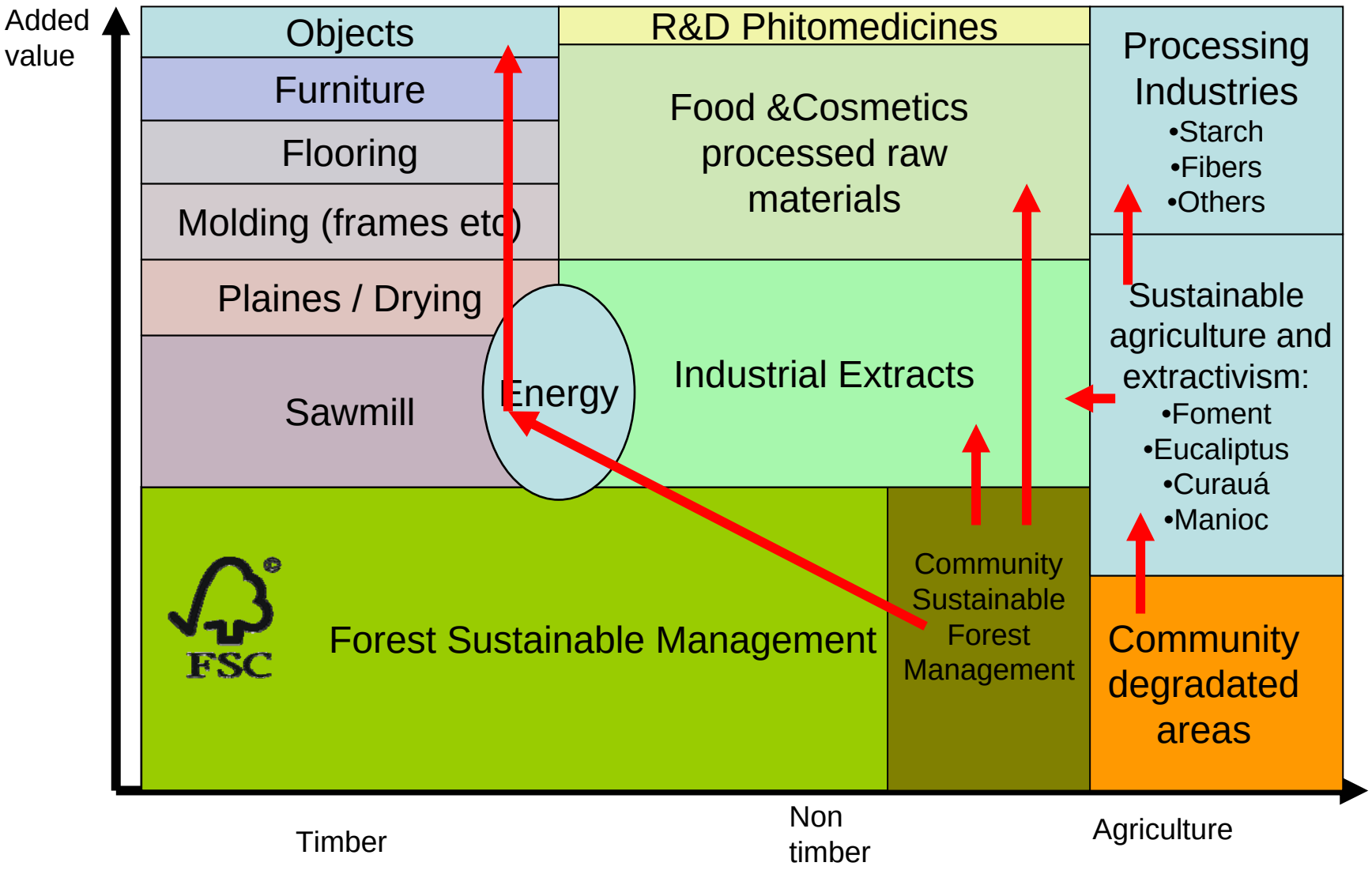
Environmental Challenges

- Environmental issues at early development stage (biodiversity assessment, inconsistency of concepts such as HCVF - High Conservation Value Forests)

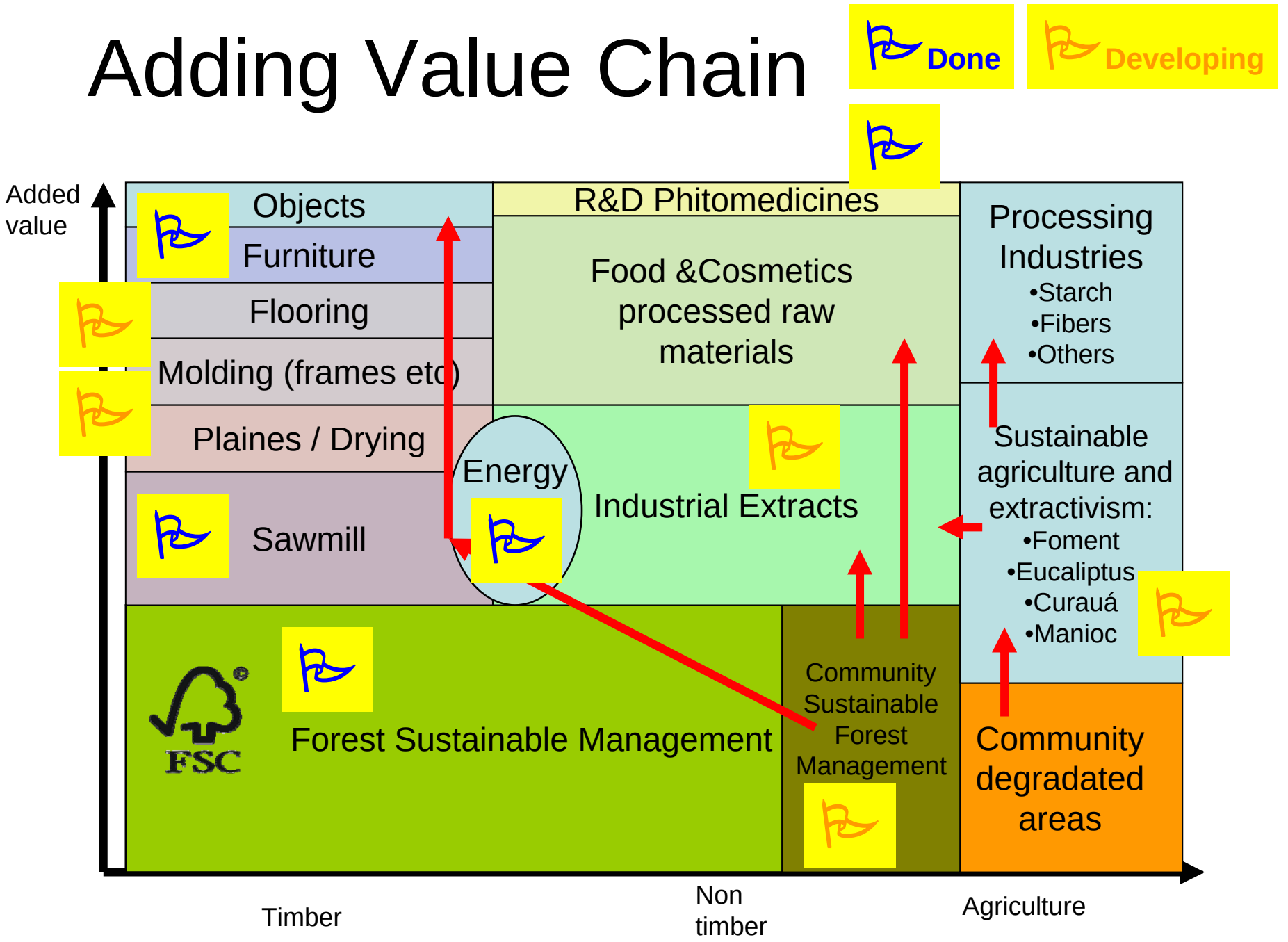
- Metrics and evaluation procedures for **Ecosystem Services** not yet available

- Inconsistent, ideological and scientifically poor debate about plantation X native forestry

Adding Value Chain Integration



Adding Value Chain



Dynamic Capabilities

- Active **risk management**
- **Political skills** to deal with fragile and unstable institutional environment
- **Business diplomacy:** skills to deal with **hostile stakeholders**
- **Mapping** and involvement with **financial sector**, specially with sources of sustainability-related funds
- Networking and **cluster of business management**
- **Innovation in forestry & industrial technologies, species, products and market development**
- Strong **corporate social responsibility**
- **Communication**
- **Global spectrum of activity**


GRUPO ORSA
Thank you!

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