

Producing food and energy for a healthier planet: the case of Brazilian sugarcane ethanol

# THE SUSTAINABILITY AGENDA OF THE BRAZILIAN SUGARCANE INDUSTRY



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Milan

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# ABOUT UNICA

- UNICA is the leading sugarcane industry association in Brazil.
- Its more than 100 member companies, voluntarily engaged, represent over **60% of the sugarcane, sugar and ethanol** produced in Brazil
- Its expertise covers key areas including the environment, energy, technology, international trade, corporate social responsibility, sustainability, regulation, economics and communications
- It has offices in **four locations**: São Paulo (headquarters), Brasília, Washington D.C, and Brussels



# AGENDA

- I. Overview of the sugarcane industry in Brazil**
- II. Sustainability projects and programs**



# KEY NUMBERS

Number of mills	369
Sugarcane growers	70,000
Direct employment	1.02 million
Revenue	US\$ 43.8 billion
Foreign revenue	US\$ 10 billion
% energy matrix	16.1% (2nd source, > hydro)
CO <sub>2</sub> emission reductions CO <sub>2</sub>	> 600 million t since 1975

**28 billion liters**



*2<sup>nd</sup> world largest producer: 25% of production and 20% of world exports*

**15 million MWh**



*3.3% of Brazilian electricity consumption*

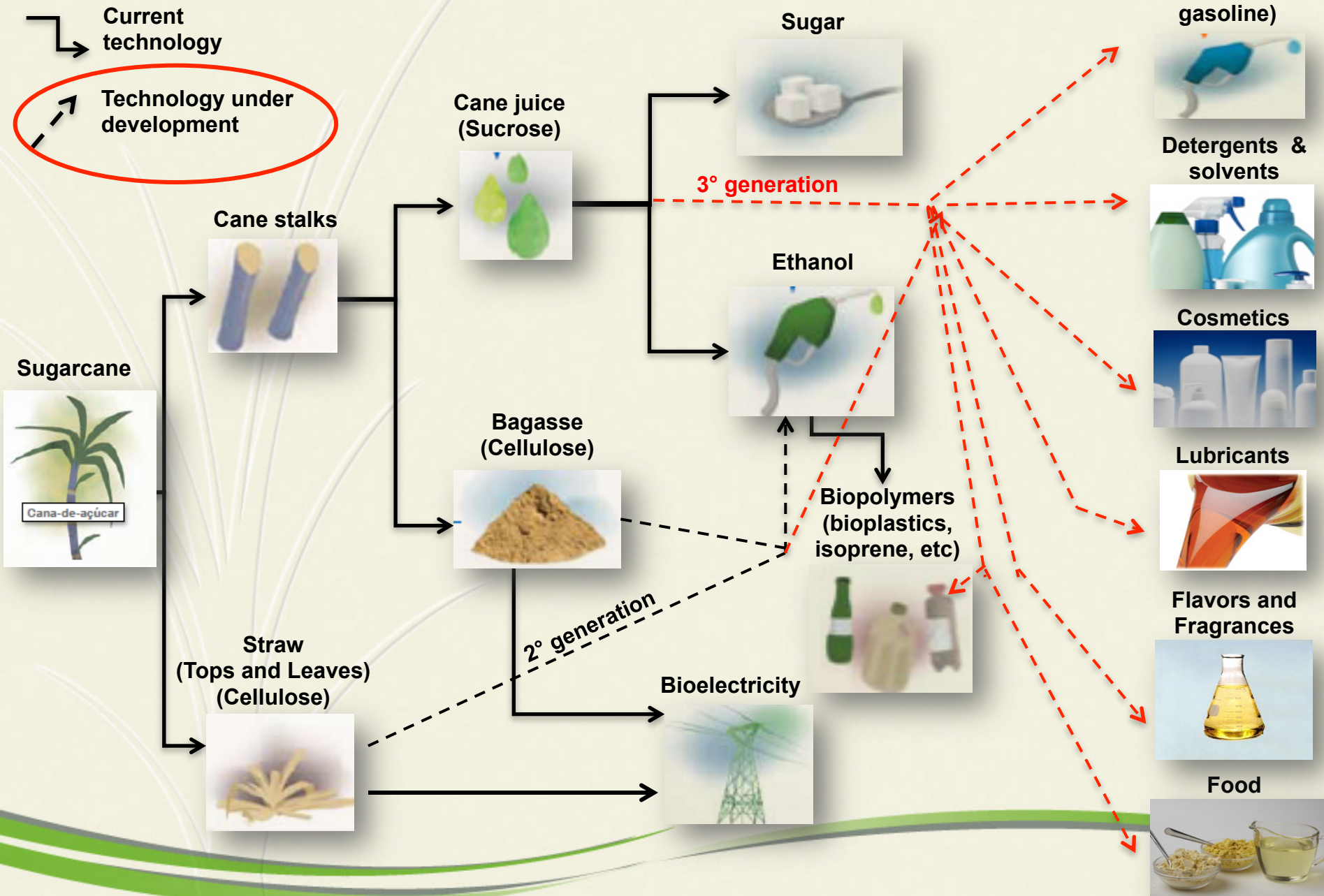
**35 million tons**



*Largest producer and exporter in the world: 20% of global production and 40% of exports*







# SUGARCANE PRODUCTS: STEP BY STEP



# SUGARCANE ETHANOL ENVIRONMENTAL PERFORMANCE

## *Advantages of sugarcane ethanol*

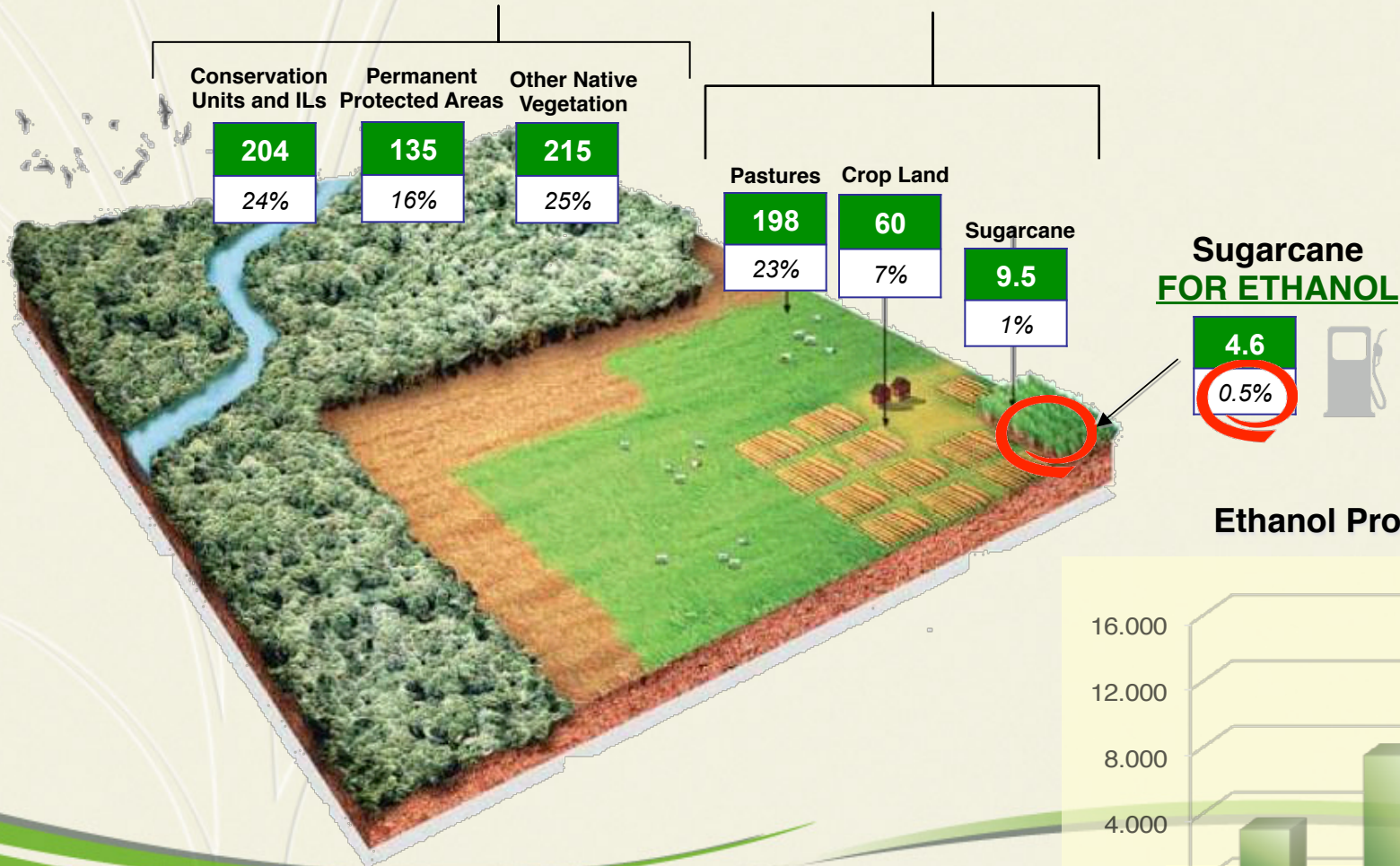
Source				
Energy balance (units of renewable energy per unit of fossil fuel input)	<b>9.3</b>	1.4	2.0	2.0
Productivity (liters/ hectare)	<b>7,000</b>	3,800	2,500	5,500
GHG reduction (from US and EU legislations)	<b>61%-91%</b>	0%-38%	16%-69%	52%

\*Note: reduction of avoided emissions with ethanol as a gasoline substitute and calculated according to life-cycle analysis. Source: World Watch Institute (2006) and Macedo et al. (2008) – energy balance. Productivity: IEA – International Energy Agency (2005), MTEC, EU Commission, EPA and UNICA. GEE: IEA – International Energy Agency (2004) and Macedo, I. de C. et al. (2004 and 2008). Elaboration: UNICA

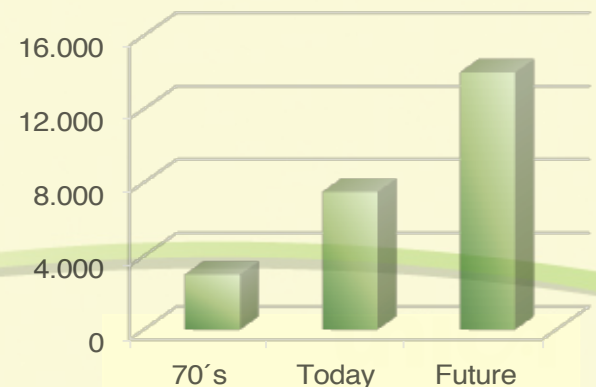
# LAND USE IN BRAZIL

Million Hectares

Total Area	Native Vegetation	Land in Actual Use	Other Uses
851	554	258	38
100%	65%	30%	5%



## Ethanol Productivity





# AGENDA

I. Overview of the sugarcane industry in Brazil

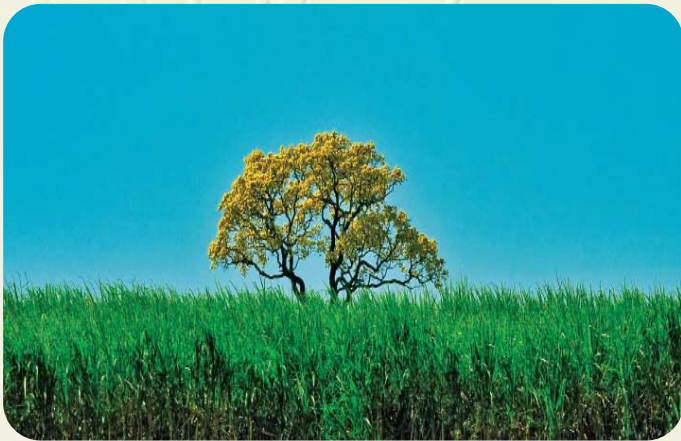
**II. Sustainability projects and programs**





# ENHANCING THE SUSTAINABILITY

## ➤ *Government Initiatives*



# SUGARCANE AGROECOLOGICAL ZONING IN BRAZIL

## *Guidelines for Sugarcane Expansion*

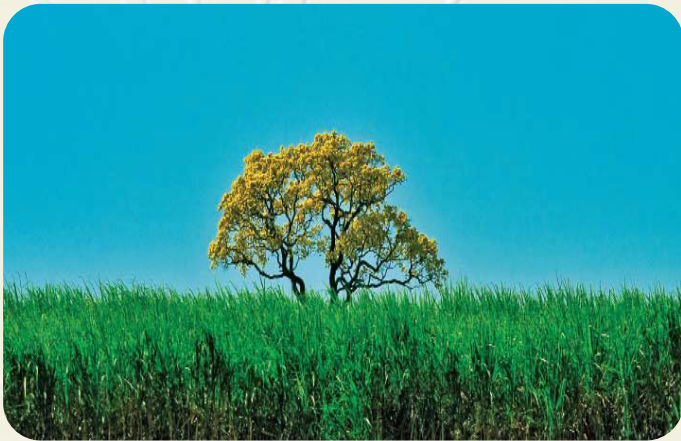
1. It **excludes sugarcane expansion in the most sensitive biomes** – e.g. Amazonia and Pantanal
2. It **excludes sugarcane expansion on any type of native vegetation** (*Cerrados*, *Campos*, etc.)
3. Authorized areas for sugarcane expansion: **64.7** ml hectares, equivalent to **7.5%** of the Brazilian territory (currently 1% of the area is used for sugarcane)

**It guides licensing decisions of the Brazilian environmental agencies.  
Public funding for sugarcane mills is subject to its compliance.**



# ENHANCING THE SUSTAINABILITY

## ➤ *Public-Private Partnerships*





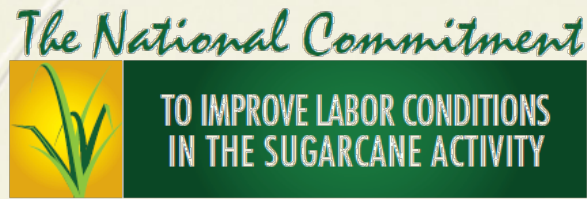
# THE GREEN PROTOCOL OF SÃO PAULO STATE



- **Voluntary agreement** reached between São Paulo state government, the sugarcane industry (UNICA) and the cane suppliers (ORPLANA)
- **It anticipates the deadline for ending sugarcane burning:** from 2021 to 2014 in areas that can be mechanized and from 2031 to 2017 in other areas.
- **It also includes other conservation measures**, such as the protection of river side woods, the recovering of those near water springs and the reduction of water use.
- 144 mills and 26 association of sugarcane suppliers joined the initiative, representing **93,5% of the state ethanol production and 45,5% of Brazilian production**







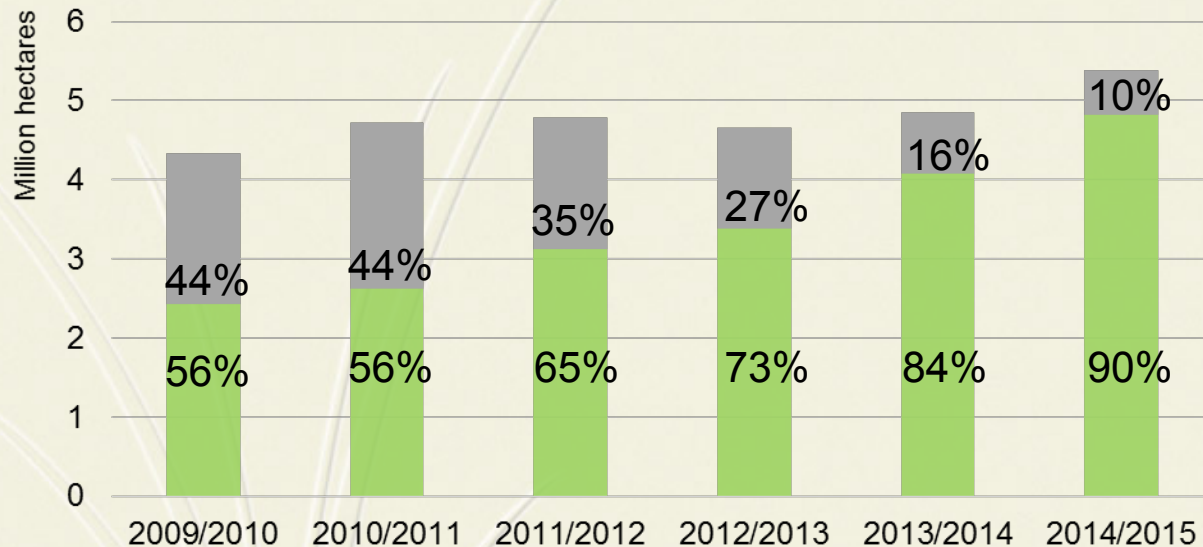
- **“Trilateral” agreement** - Government, Private Sector and Labor Unions - which **sets around 30 better work practices** that go beyond legislation demand.
- It is **a voluntary agreement** where participating units are verified by independent auditing companies. **180 sugarcane production units are currently in compliance with the Commitment.**

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- ❖ **It also includes other conservation measures**, such as the protection of river side woods, the recovering of those near water springs and the reduction of water use.
- ❖ 173 mills and 29 association of sugarcane suppliers joined the initiative, **representing 90% of the state production and 50% of Brazilian production.**



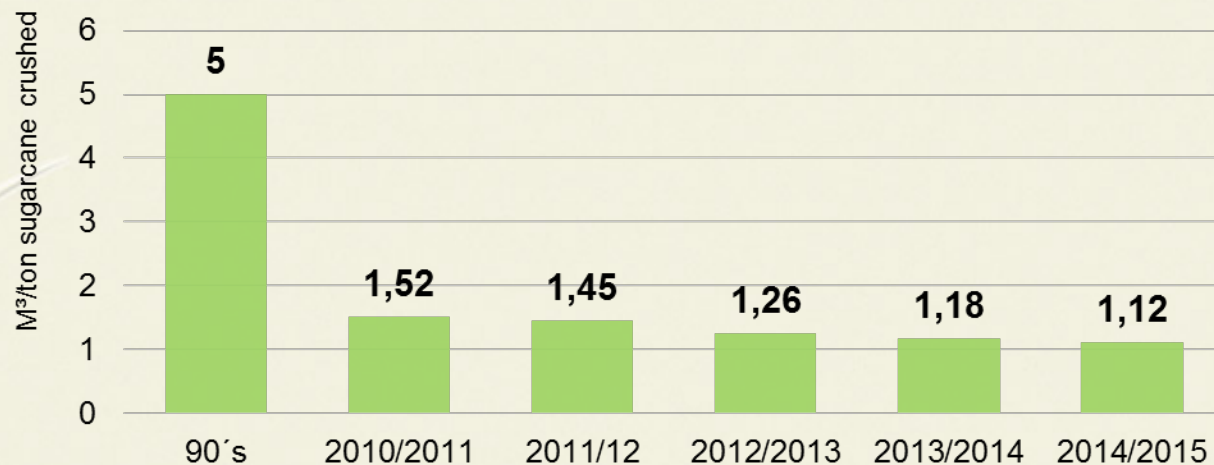
# THE GREEN PROTOCOL OF SÃO PAULO STATE



**Mechanization in the state exceeded ~ 90% of all cane fields**

■ Manual Harvesting - with use of fire  
■ Raw Cane - harvested mechanically

**Water resources management by the sugarcane mills**



# ENHANCING THE SUSTAINABILITY

## ➤ *Private Partnerships*





# renovAção

## *Retraining Program for Sugarcane Rural Workers*

- ❖ **Response to the process of mechanizing the sugarcane harvest** to eliminate burning;
- ❖ **It aims at providing specialized training for sugarcane rural workers** in the state of São Paulo;
- ❖ Partnership among UNICA and FERAESP (Federation of Rural Workers of the State of São Paulo), IADB, mills, companies from the supply chain and international NGOs (Solidaridad)
- ❖ Along 4.5 years of Project, RenovAção re-qualified **more than 6,000 people** among current and former rural workers (cane cutters), and members of the communities affected by the crop mechanization process, through 78 courses offered by distinguished schools in 194 different classes



# renovAção

## *Retraining Program for Sugarcane Rural Workers*

- ❖ The Program **encouraged similar actions inside the mills**, multiplying the number of trained workers (more than 22,000 trained in the last 4 years)
- ❖ *RenovAção's* initiatives were the base for the public initiative to begin launching new projects with very similar features, such as the *Pronatec, a Federal Public Program*, coordinated by the Ministry of Education, that aims to train and requalify around 12,000 people from the sugarcane sector, just in the state of Sao Paulo
- ❖ International recognition by FAO as an “example” among the initiatives that combined renewable energies production with social inclusion







*Graduation— Presidente Prudente region*



*BID visit – June, 2011 – Ribeirão Preto region*



*IVECO visit – may, 2010 - SENAI Ribeirão Preto*



*Electrician course – São José do Rio Preto region*





Mechanical tractor course



First welder graduate class



Electrician tractor course



Mechanical of harvester course





# SOCIAL AND ENVIRONMENTAL RESPONSIBILITY

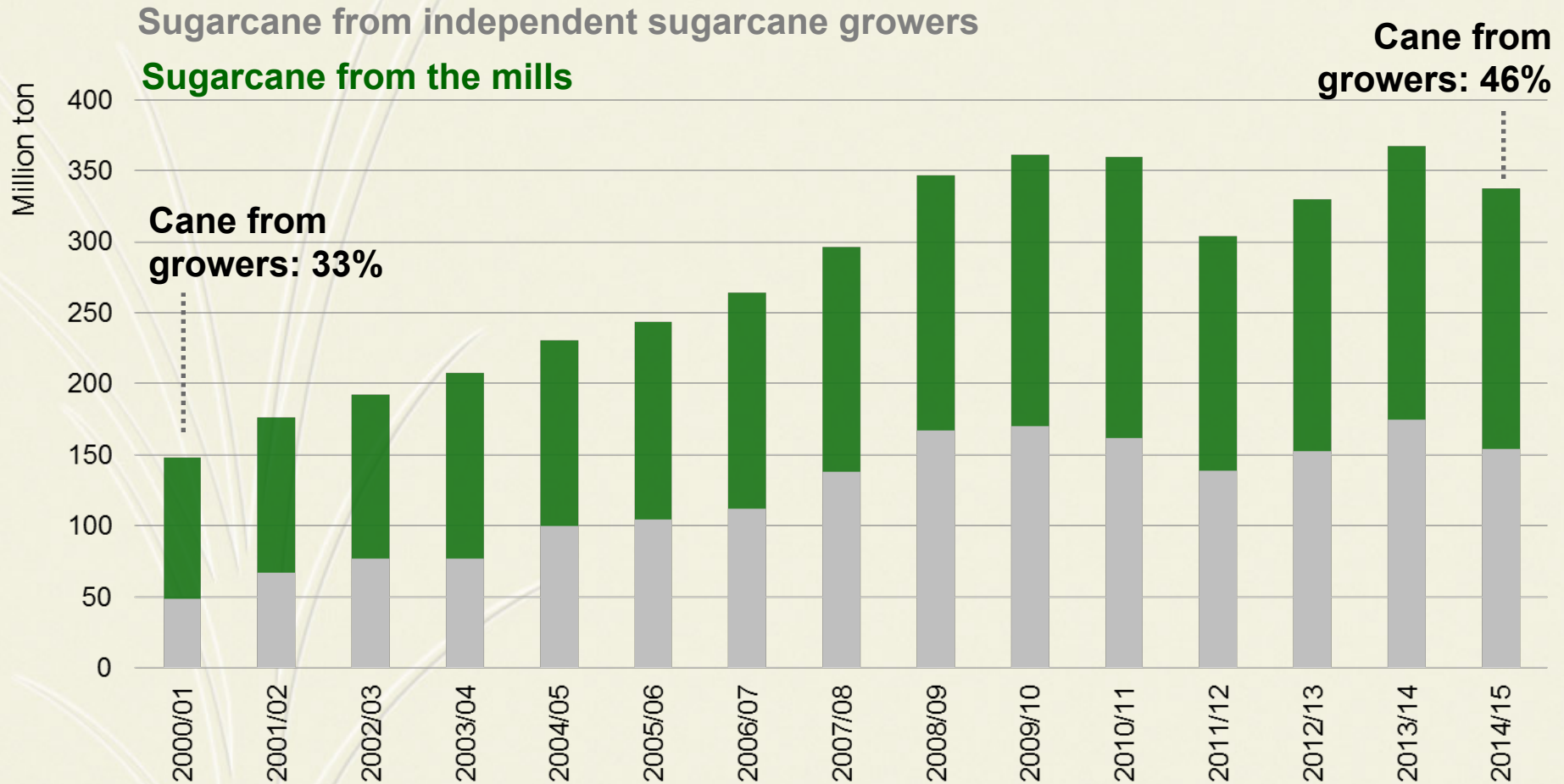
- UNICA was the first agribusiness association in the world to publish a **sustainability report** following the Global Reporting Initiative Framework.
- In its last version (2010/11) it achieved an “A+ Grade”. Dissemination of the practice within the Sugarcane sector: **more than 100 mills have now their own GRI Sustainability Report!**

## GRI Sustainability Report



- ❖ **A bilateral private sector arrangement** between sugar/ethanol industry and sugarcane growers that establishes a **dynamic and transparent model to define the price paid by ton of cane**
- ❖ Created in 1999, it aims at sharing risks between agents and comprises two private entities:
  - UNICA, representing sugar and ethanol producers 
  - ORPLANA, representing sugarcane growers 
- ❖ **Main principles:**
  - Balanced forum between growers and the industry
  - Voluntary engagement
  - Dynamic model, subject to revisions of its parameters and improvement of its rules on a regular basis (general revisions conducted every 5 years)
  - **Revenue of the sugarcane grower is proportional to the industrial revenue**
    - *On average, sugarcane production accounts for 60% of total sugar and ethanol production costs. Therefore, the sugarcane grower receives on average 60% of the agroindustrial revenue.*

# SUGARCANE CRUSH IN THE STATE OF SÃO PAULO





# BONSUCRO™

BETTER SUGAR CANE INITIATIVE

An international *multi-stakeholder* certification of best sustainability practices














Some of the 60+ Bonsucro members

Since 2011

- ✓ 40 Brazilian mills certified out of 46 in the world
- ✓ 9% of all cane area in Brazil
- ✓ 28% of EU consumption targets for 2020



# SUSTAINABILITY INITIATIVES

	<i>Examples</i>	<i>Instruments</i>	<i>Scope</i>
<b>Public policies</b>	National and State Agroecological Zonings	Regulatory	
	New Forest Code	Regulatory	
<b>Public-private partnerships</b>	The Green Protocol, The National Commitment to improve labor conditions	Self-regulatory	    
<b>Private partnerships</b>	BONSUCRO certification	Self-regulatory/ market-based incentives	  
	Renovação Project		
	CONSECANA		
<b>Individual initiatives</b>	Eg: local partnerships, support to schools or hospitals, etc	CSR / Differentiation	

# THE SUSTAINABILITY PORTFOLIO: DIFFERENT TOOLS FOR DIFFERENT OBJECTIVES



# CONCLUSIONS

- There is no silver bullet for the sustainability challenge. We need the right tools for each objective. There is no one-fits-all.
- To consider different regional characteristics is essential...
- ... but to consider the characteristics of the different production-to-consumption chains are as important.
- Clear regulatory framework is the first priority (ex: land tenure, labor rights, energy policy, etc...)
- Innovative models are also needed: self regulatory commitments, third party certification, transparency tools, multi-stakeholder partnerships
- Each model has different potentials but also different limitations.
- We need a holistic strategic thinking: strive for the maximization of the outcomes for each sustainability program.



## FINAL REMARKS

- ❖ The sugarcane sector has been more and more involved in activities aiming to promote best social, environmental and economic practices in the industry.
- ❖ There are several types of initiatives (e.g. governmental, private, public-private partnerships), with different scopes (e.g. national, sectoral, individual) and application instruments (e.g. command and control, market-based incentives).
- ❖ UNICA, as an institutional representation, follows those initiatives aiming to create incentives for its member companies and enable their engagement.
- ❖ Partnerships with the government and other institutions, as well as NGOs, are positive in the sense that they increase the impact and credibility of these programs and projects.



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**Thank you!**

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