MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY

THE BIOENERGY POLICY IN BRAZIL

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ENERGETIC PERSPECTIVES

- Slow reduction of the world´s petroleum reservoir

- International energy consumption growth, including fossil fuels

- Greater use of nuclear, natural gas, charcoal and renewable sources in order to rebalance the energy market

- Net theory as a basis for global energetic planning

- Global climate change as a threat to the sustainability of the planet

ENVISIONS ON VEHICLES FUELS

- World preponderance of Otto and Diesel cycles engines, developed for liquid fuels

- The fleet renewal is a gradual process and not immediat

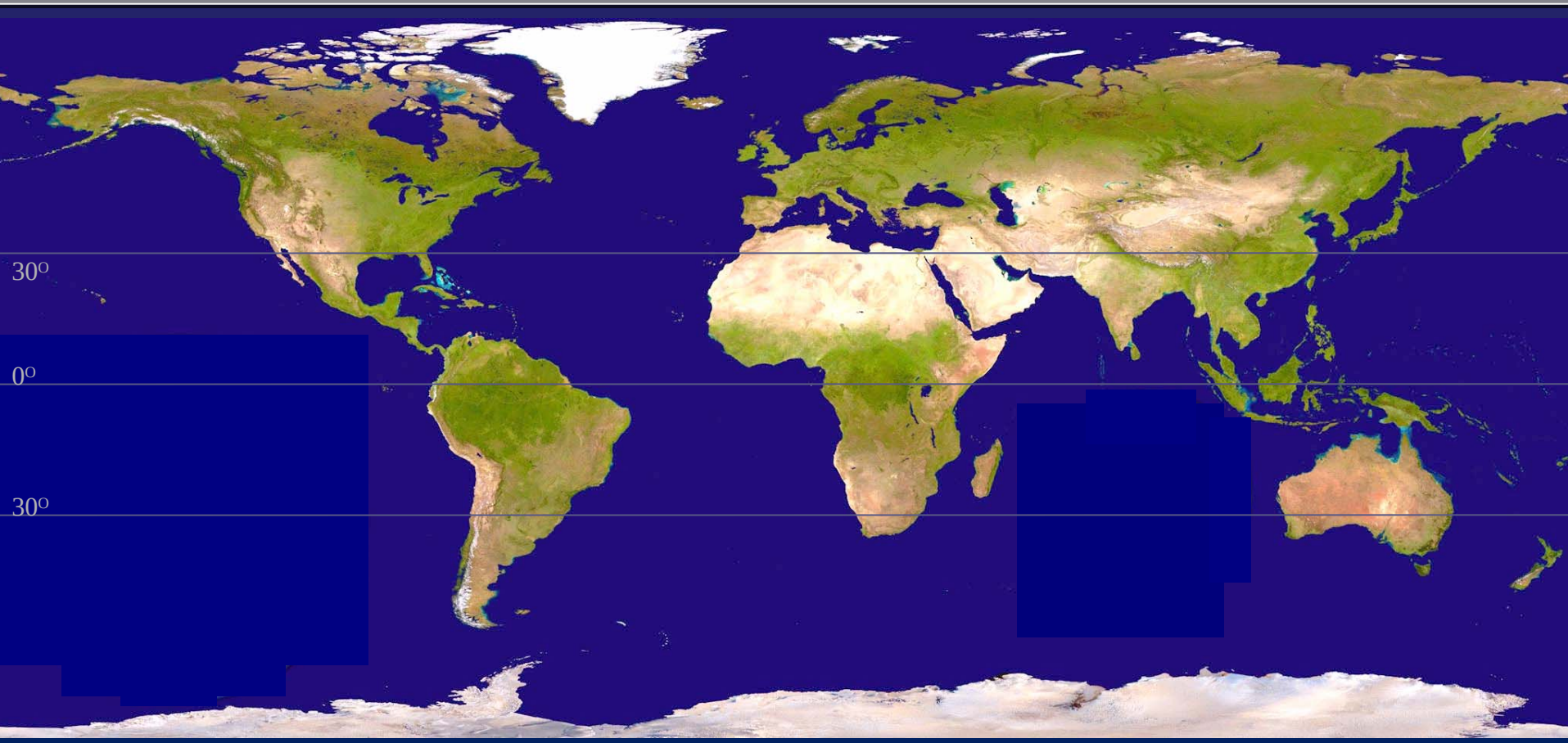
- New technologies such as hybrid vehicles, electric engines constitute a promise for the future, but their costs are still elevated in short term.

- Large scale hydrogen or electricity use as vehicle fuels will still take time and requests na energetic source for its production, not always renewable.

- Fuel production by the Fischer Tropsch process, using natural gas or biomass, may become competitive in the future.

- Birth of a new agricultural and energetic paradigm: Agrienergy

AGRIENERGY AS AN STRATEGIC OPPORTUNITY



- STRATEGIC OPPORTUNITY, MAINLY FOR DEVELOPING COUNTRIES
- GREATER DEMOCRACY IN ENERGY ACESS, WITH ENVIRONMENTAL SUSTAINABILITY
- CONTRIBUTION TO WORLD PEACE


Biodiesel

BRAZILIAN REGULATION FOR BIODIESEL

Law 11.097/2005: Establishes minimum biodiesel blend in diesel percentages and the evaluation of this new fuel in the market

Authorized	Mandatory	Mandatory
Potential market	Consolidated market	Consolidated market
800 million liters/ year	1 billion liters/ year	2,4 billion liters/ year

Fonte: MME

MAIN OLEAGINOUS PLANTS YIELD

Soybean (18-21%) 600Kg/ha

Sunflower (45-50%) 800Kg/ha

Castor Bean (45-55%) 1200Kg/ha

Jatropha Curcas (40-50%) 2500Kg/ha

African Palm (35-45%) 4500 Kg/ha

Obs: percentages values indicated refer to oil content in the entire grain or fruit.

Source: USP - ABIOVE


ETHANOL

THE BRAZILIAN EXPERIENCE WITH SUGAR CANE AND ETHANOL

1532: Martim Afonso de Sousa introduces Sugar Cane in Brazil

1925: First ethanol powered vehicle tested in Brazil

1975 ProAlcool

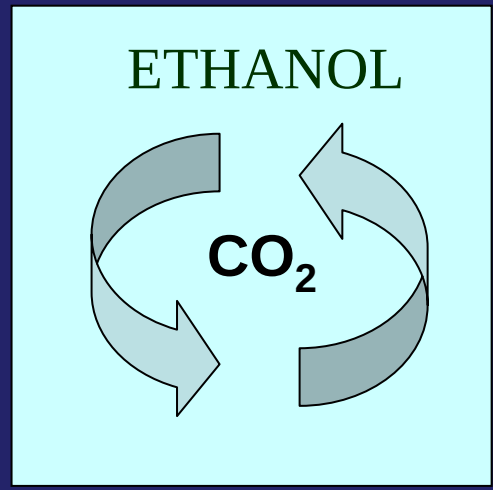
1979: First commercial ethanol vehicle launched in Brazil

2003: Launching of the *flex fuel vehicles*

SUGAR CANE ETHANOL COMPETITIVITY

- High yield: 6.500 L/ha (Brazilian average), with great growth potential using biotechnology and lignocelulosic hydrolisis

- Residues use in the productive process and high photosynthetic efficiency (C4 plant)



Raw material	Energy: output /input	Main countries
Wheat[1]	1.2	EU
Corn[1]	1.3 – 1.8	USA
Sugar beet[1]	1.9	EU and others
Sugar cane[2]	**8.3**	**Brazil**

[1] F.O. Licht, 2004.
[2] Macedo, I et al., 2004

SUGAR CANE INDUSTRY PERFOMANCE

		PRODUCTION		VARIATION	
		2006/07	2007/08	VOUME	%
Sugar Cane (MILLION t)	Total production	424,42	475,00	50,58	11,92%
	Destined to sugar	211,78	228,00	16,22	7,66%
	Destined to ethanol	212,64	247,00	34,36	16,16%
Sugar (million t)	Total production	30,40	32,86	2,46	8,09%
	Domestic Consumption	10,30	10,70	0,40	3,88%
	Exports (harvest)	18,90	22,16	3,26	17,25%
	Stock	3,17	3,17	0,0	0,00%
Ethanol billion L	Total production	17,83	20,68	2,85	15,98%
	Domestic Consumption	14,11	15,50	1,39	9,85%
	Exports (harvest)	3,40	3,80	0,20	11,76%
	Stock	0,21	1,59	1,58	757,14%

Source: MAPA – august 2007

FLEX FUEL VEHICLES

Domestic ethanol market propeller

• Today´s manufacturers: VW, GM, Ford, Fiat, Renault, Peugeot, Citröen and Honda.

• Together they represent more than 90% of light vehicles sold in Brazil

• In relation to gasoline, ethanol use significantly reduces the total emissions of main environmental pollutants

DOMESTIC MARKET SELF-REGULATION:

-Greater ethanol relation to gasoline price

-Smaller sugar price influence over ethanol

- Greater hydrated ethanol participation in the market

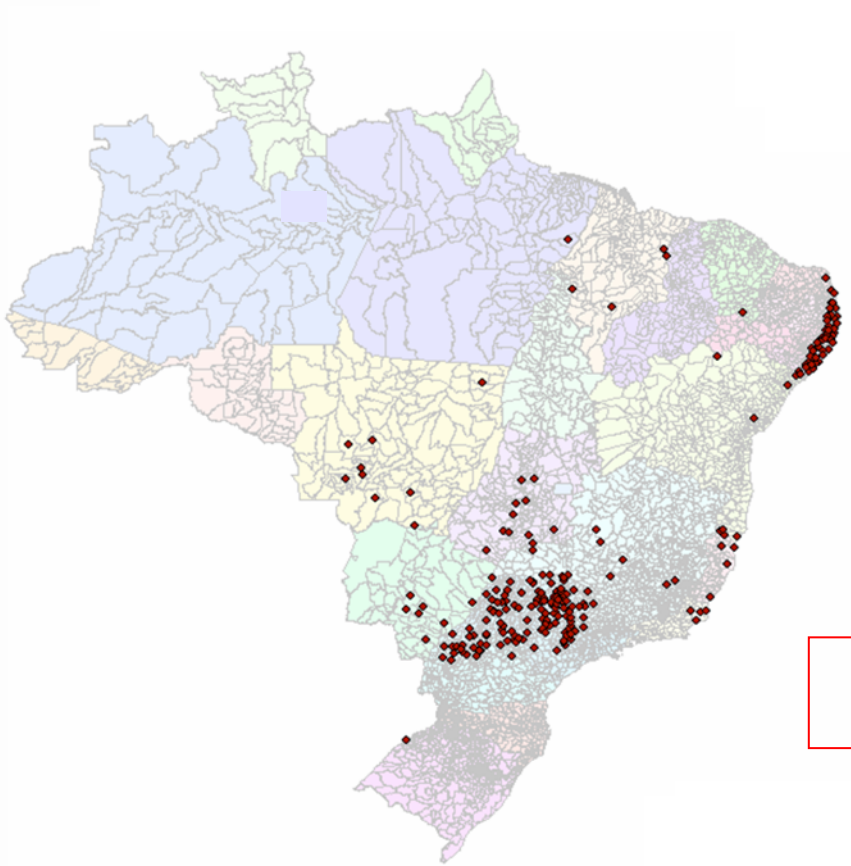
BRAZILIAN ETHANOL EXPORTS

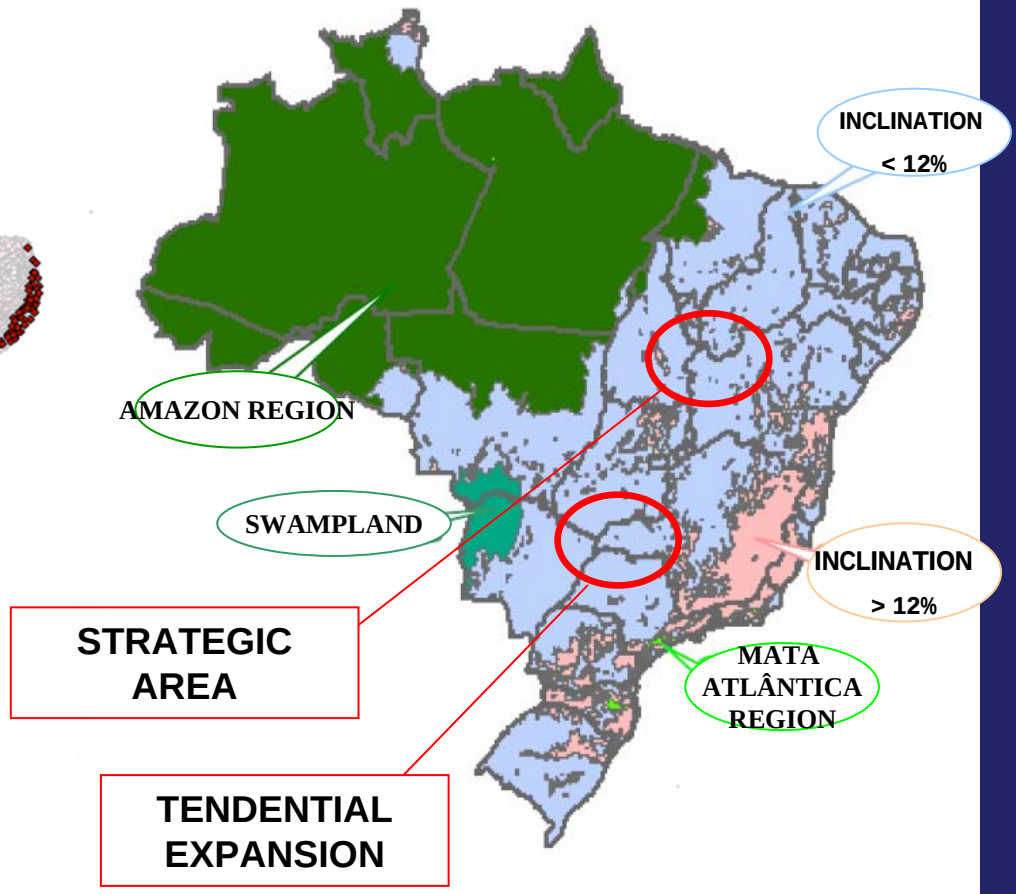
YEAR	MILLIONS US$ F.O.B.	LITERS (billions)	Average price US$/$m^3$
1997	54	0,146	370,09
1998	36	0,118	301,21
1999	66	0,407	161,70
2000	35	0,227	153,07
2001	92	0,346	266,57
2002	169	0,759	222,86
2003	158	0,757	208,56
2004	498	2,408	206,68
2005	766	2,592	295,31
2006	1605	3,428	468,20

Source: MDIC

The Brazilian government objective is to transform ethanol in an international commodity, together with other countries.

Sugar cane industries' location and expansion zone





Sugar cane industries:

Present number: 360 units

BRAZILIAN TERRITORY DISTRIBUTION

(million ha)

Amazon forest	360
Pasturage	220
Protected areas	55
Annual crops	47
Permanent crops	15
Cities, lagoons and roads	20
Cultivated forests	5
Subtotal	722
Other types of land use	38
Unexplored areas, areas still available for agriculture	91
TOTAL	851

Source: IBGE and Conab/MAPA

- Nowadays area with sugar cane in Brazill:

  6,5 million ha (< 1% of Brazilian territory)

- Previewed expansion till 2013:

  + 3 million ha

EXPANSION PERSPECTIVES

ESTIMATED NEW INDUSTRIES TILL 2010:

States	In the construction phase (2007/2010)	In the project phase (2007/2010)
ESPÍRITO SANTO		2
GOIÁS	9	9
MATO GROSSO	1	
MATO GROSSO DO SUL	5	14
MINAS GERAIS	7	11
PARANÁ	3	3
RIO DE JANEIRO		3
RIO GRANDE DO SUL		1
SÃO PAULO	20	8
BAHIA		4
MARANHÃO		1
RONDÔNIA	1	
SERGIPE	1	
TOTAL	47	56

Source: MAPA, based on industries´ information

FINAL MESSAGE

The key to biofuels lies on nature, it is life itself supplying energy for our lives, in a renewable and sustainable process.

THANK YOU!

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Ministério da Agricultura, Pecuária e Abastecimento

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