Brazil

Study of macro effects and the role NGOs can play to monitor these macro effects

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Project Design

Case studies in different parts of Brazil

Review of literature

Field trips

Interview with local stakeholders

List of possible macroeffects (Cramer framework)

Brazilian overview on the macroeffects in biomass for biofuel production

Brazil: its sugarcane and grains

Brazil has a total area of 851 million hectares of which 15.9 million are wetlands. Of the remaining (835.1 millions hectares)

Sugar cane (2007/2008): 6.96 million hectares, or 0.8% total and produced 496 millions of tons

Grain harvest's (2007/2008): 47 million hectares and produced 144 million tons

Soybean: 21.3 million hectares (45.3%);

Corn: 14.7 millionshectares (31.2%)

Biodiesel

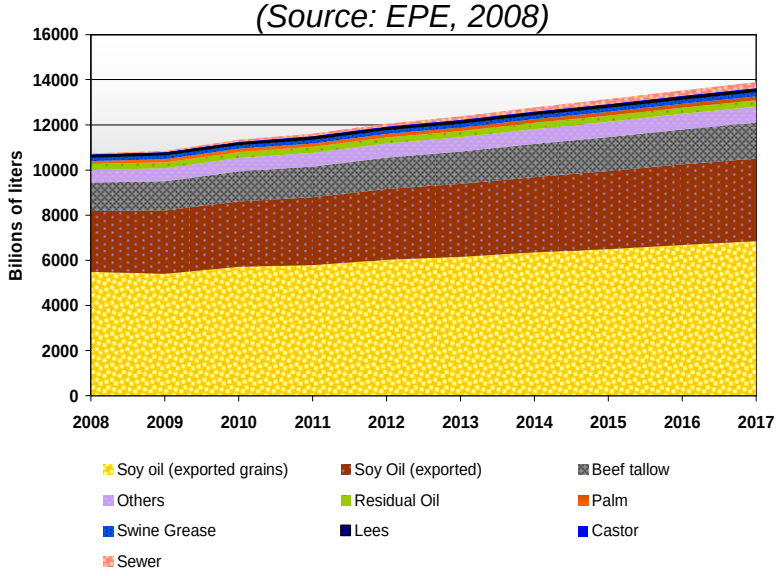
2004: National Programme for Production and Use of Biodiesel (PNPB)

'implement production and use of biodiesel while focusing on social inclusion and regional development, through income and job generation'

2005: minimum percentage of biodiesel to be added to diesel

Mandates a minimum percentage of biodiesel to be added to diesel: B4 (4% of biodiesel)

Potential offer of biodiesel in Brazil 2008-2017
(Source: EPE, 2008)



Ethanol

Proálcool (1975): reduce the country's dependence on foreign oil

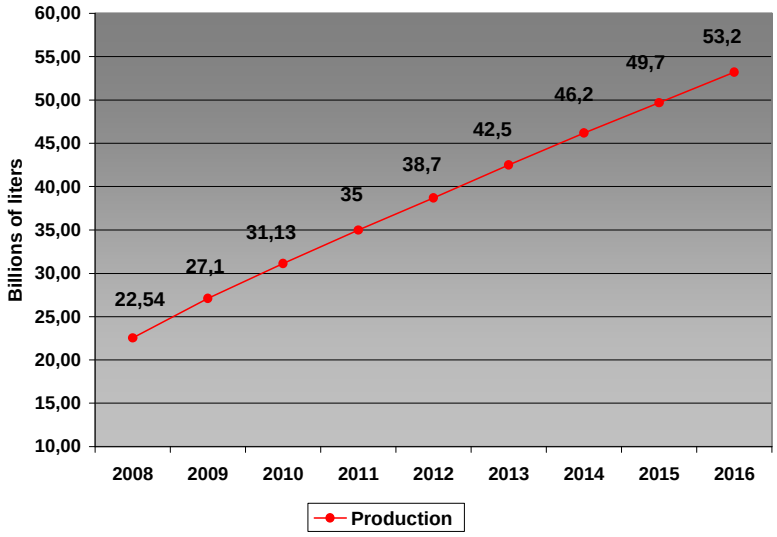
1994: increase to a 22-26% proportion of ethanol to gasoline, in order to reduce the release of greenhouse effect gases.

2003: arrival of the flexfuel engine

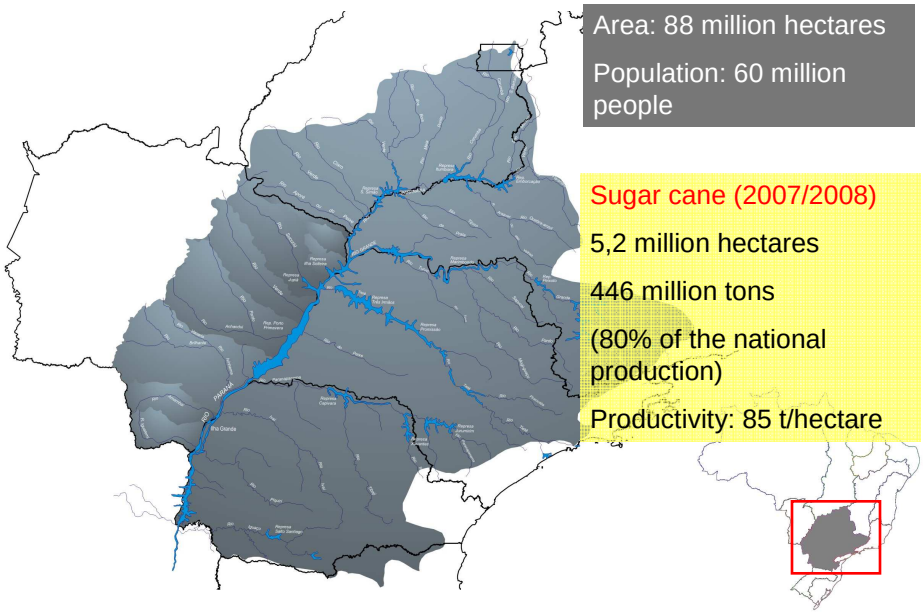
2008: about 94,2% of the 2.2 million cars sold in were flex-fuel: consumption of 26,68 billion liters of ethanol.

2013: 15 million cars are estimated to be running on ethanol demanding around 43 billion liters

Estimation of ethanol consumption in Brazil 2008-2016 (Source: EPE, 2008)



Parana River Basin and the sugar cane



Area: 88 million hectares

Population: 60 million people

Sugar cane (2007/2008)

5,2 million hectares

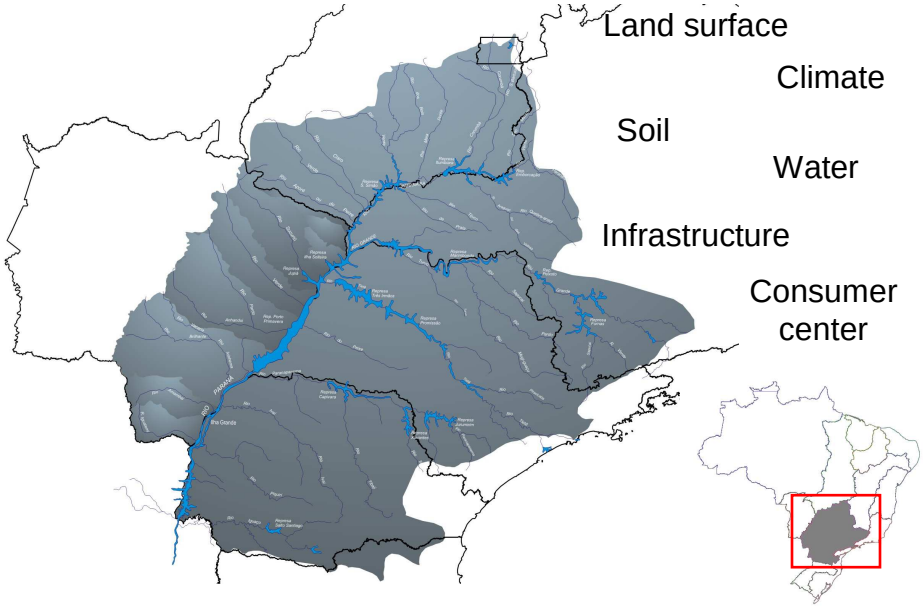
446 million tons

(80% of the national production)

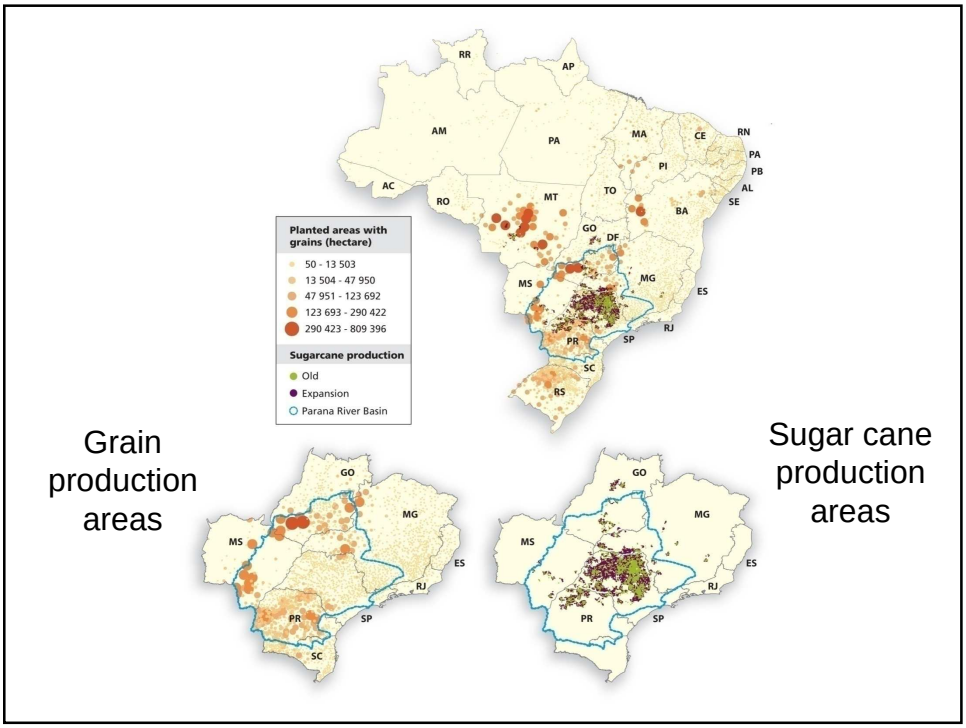
Productivity: 85 t/hectare

Source: National Company of Supply (Conab) and ECOA.

Parana River Basin attributes



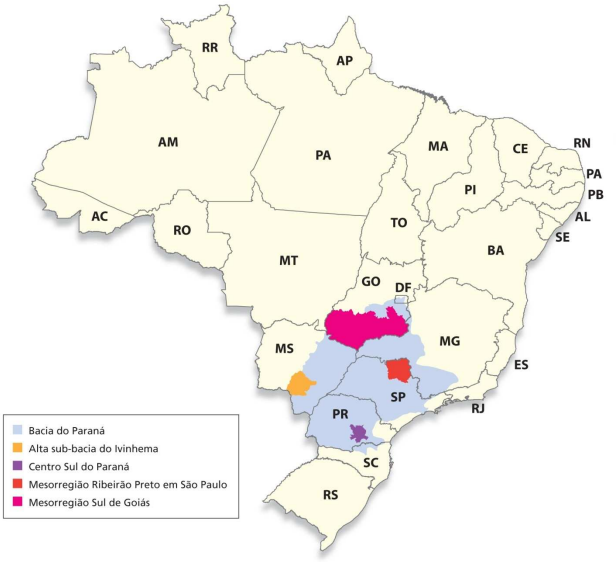
Source: National Company of Supply (Conab) and ECOA.



Grain production areas

Sugar cane production areas

Case study areas



Grains x Sugarcane in the south of State of Goiás

10,4 million of hectares area

15% of the Brazilian grains: 8,7 million tons of grains

In 3 years: sugar + 41% and grain -14%.

Relevant macroeffects

Grains x Sugarcane in the Ivinhema High River Basin

2.57 million hectares

2.7% of the Brazilian grain harvest: 3.92 million tons of grain

Expansion: large national and international corporations

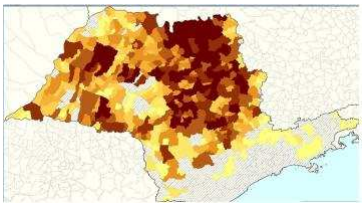
Crises effect: The Biodiesel project in Irati, Paraná

2008 Biggest biodiesel factory: 200 million euros / 600 million liters

Increase on land prices, change on ownership land, local investments, infrastructural changes

Work condition:

Sugarcane Industry in Sertãozinho, São Paulo



Economy is mostly dependent on the ethanol production

From migration to mechanization and the degradation work conditions sometimes imposed to the workers

Migration, conflicts, land prices, deforestation, contamination by agrochemicals

Biofuels production and the economic crisis

Decrease in capital flows for markets in general and specially in bioenergy: slowed the pace of expansion processes and even suspension of investments in the biomass energy sector

Some groups cancelled their investments and other filed requests for judicial recuperation.

Arrival of groups linked to the food industry to agroenergy area, such as Bunge

New investments for Biofuels in Brazil

Petrobras: 2009/2013: 1,9 billion euros (84% for biodiesel and 16% for ethanol)

2008: Growth Acceleration Plan (PAC) mainly projects on transport and energy

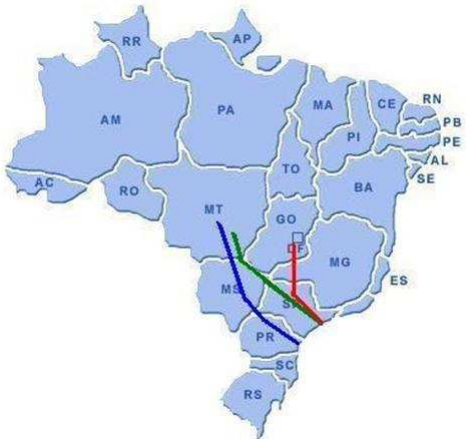
Biofuel:17,4 billion reais (6,6 billion euros)

Ethanol production: around 4,5 billion euros (69,61%)

Biodiesel production: 300 million euros (6,87%)

Transport of ethanol (Large network of pipelines): 1,5 billion euros (23,52%)

Projected pipeline for ethanol transport



(Red) – Senador Canedo (GO) to São Sebastião Port (SP) – 1150 Km

(Green) – Alto Taquari (MT) to Santos Port (SP) – 1120 KM

(Blue) – Nova Olímpia (MT) to Paranagua Port (PR) – 1630 Km

Macroeffects

New economic cycle of re-occupation/re-organization in rural areas

Occupation by sugar cane of high quality land with characteristics favorable to grain production

Emergence of some conflicts between grain and sugarcane segments over land

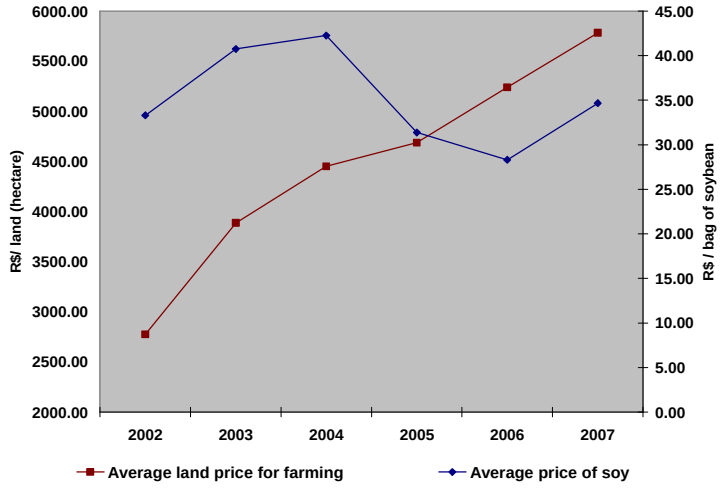
Sugarcane has taken over beef cattle land

Redesign of local and regional policies in areas of expansion

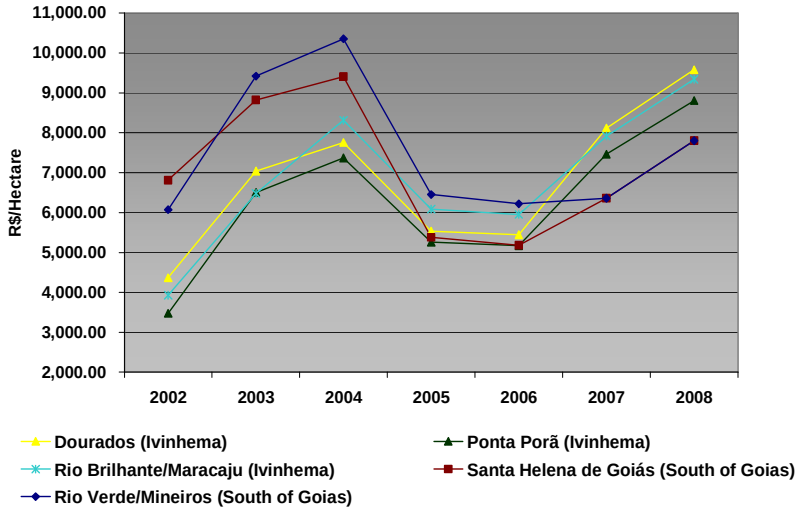
Biofuels and Land Price

Average price of land (hectare) for agriculture and bag of soybean in Brazil

(Source: FNP Institute and Advanced Studies in Applied Economics[20])

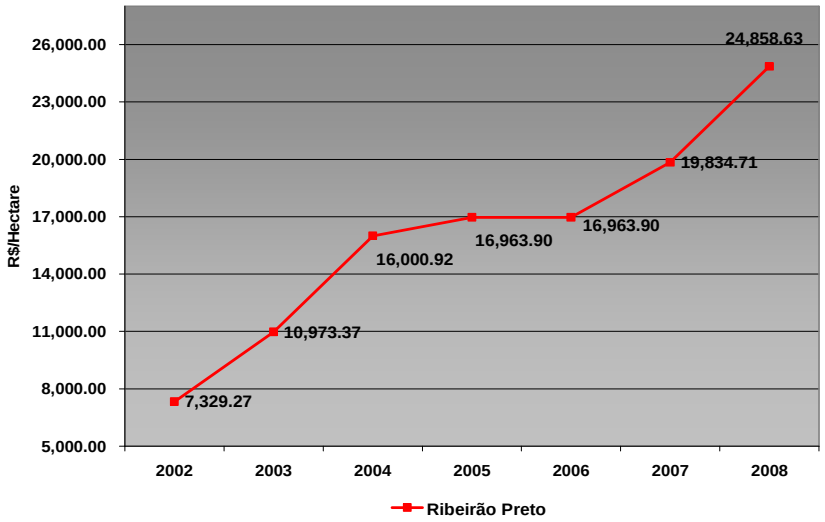


Average land price in major soybean-producing counties of the Ivinhema Upper Basin and mesoregion-south of Goiás State (Source: FNP Institute)

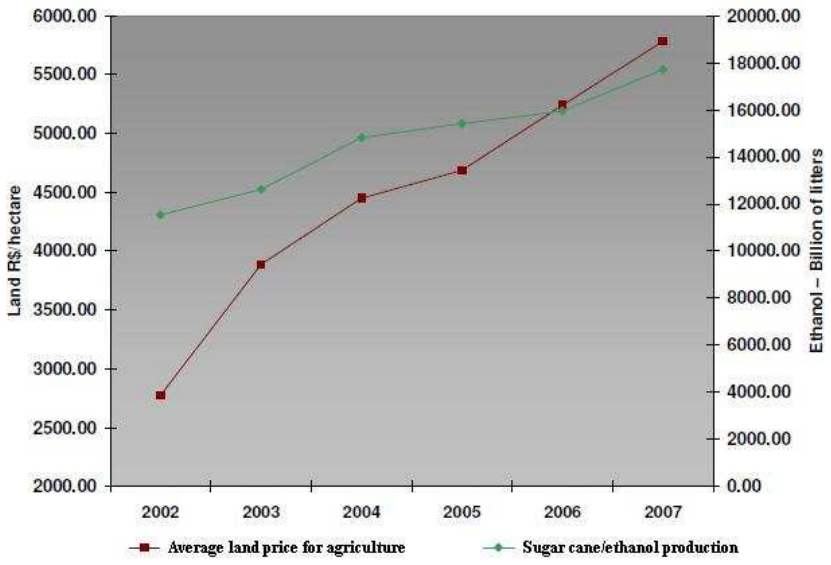


Average land price for farming in Ribeirão Preto

(Source: Institute of Agricultural Economy – IEA[21])



Average land price for farming and for ethanol production



Role of Civil Society Organizations

Are at the frontline dealing with all kinds of difficulties, while trying mostly to assure:

- better labor conditions

- respect to the environment and natural resources

- provide secure ground information about the real effects on biofuels production to orientate other studies and public policies building

Local CSO do not have enough strength to deal with impacts and need constructive and immediate assistance

Some initiatives and opportunities

To properly assess the transformations and develop effective intervention strategies regarding the macroeffects on biofuels production, stakeholders need to be better equipped to obtain access and effectively use key information, learn from each other, and work on exchange.

RedeBio

KNL Plate River Basin

Questions

Where is the available land for all the prospective expansion on biofuels?

How monitor and influence this reorganizational scenario of land in rural areas?

Is it possible to build a cooperative and collaborative approach among all stakeholders to address those impacts and future ones? How?

Thank you!

Cristiane Pires de Azevedo

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