



MINISTRY OF MINES AND ENERGY



Economic Benefits of Bioenergy Production and Use Including Rural Development

Session II – Bioenergy Policy

MARLON ARRAES J. LEAL

Coordinator - Renewable Fuels Department

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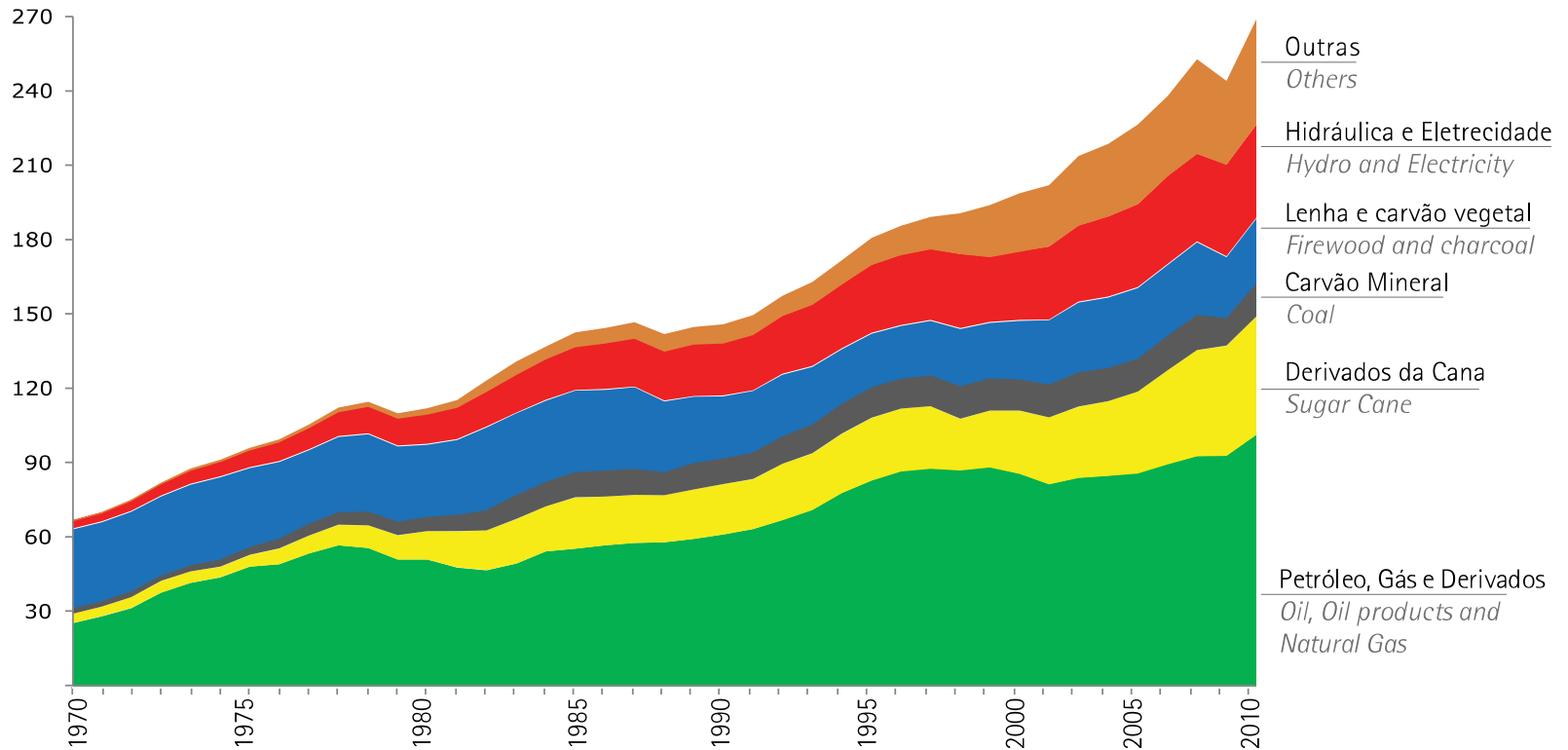


Brazilian Energy Mix Evolution

Domestic Energy Supply

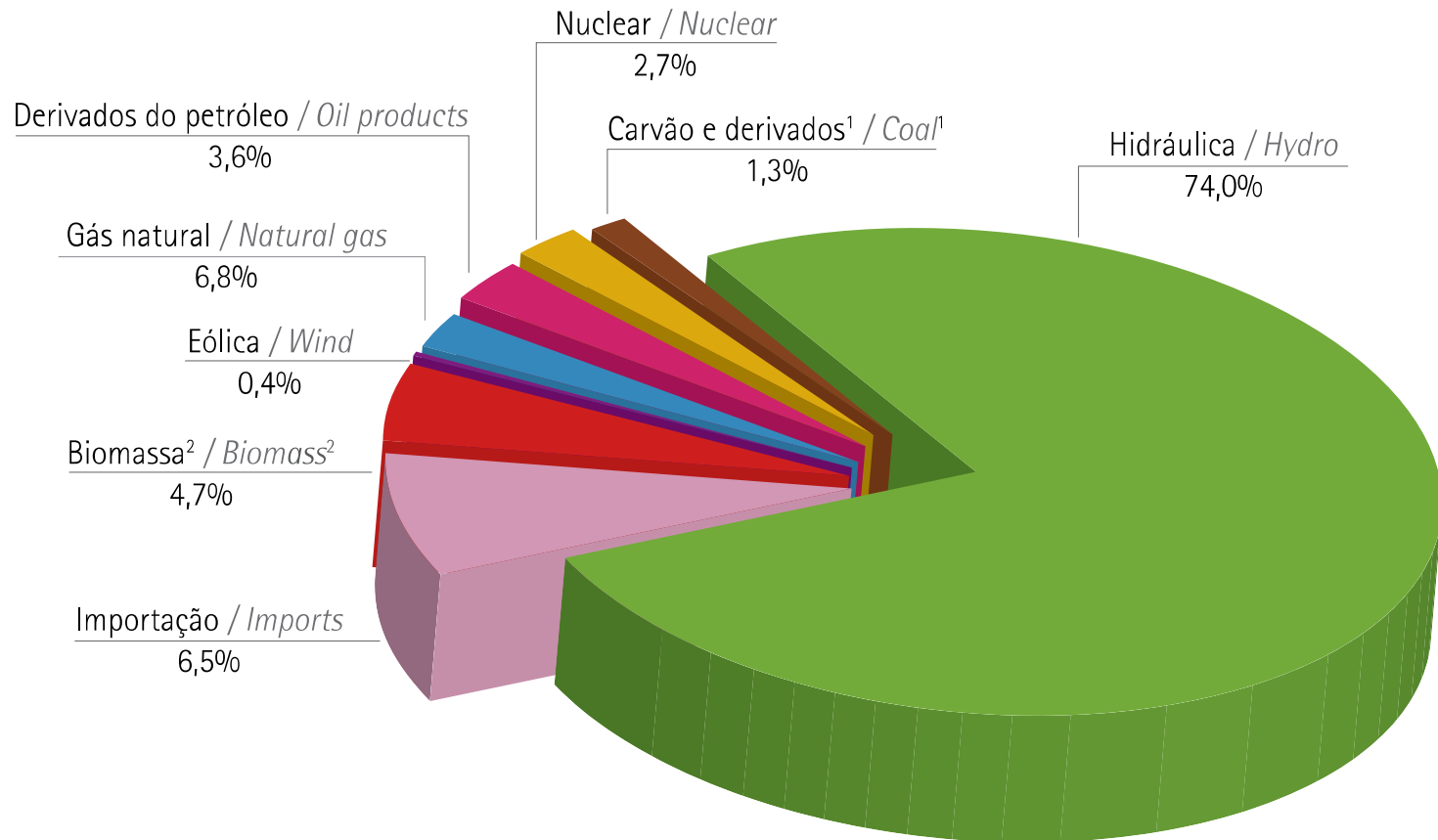
[10⁶ tep]

Renewable Energy (2010): 45.5%
14.0% Hydro
17.8% Sugarcane Products
9.7% Firewood and Charcoal
4.0% Others





Brazilian Electricity Supply by Source



Notas/ Notes:

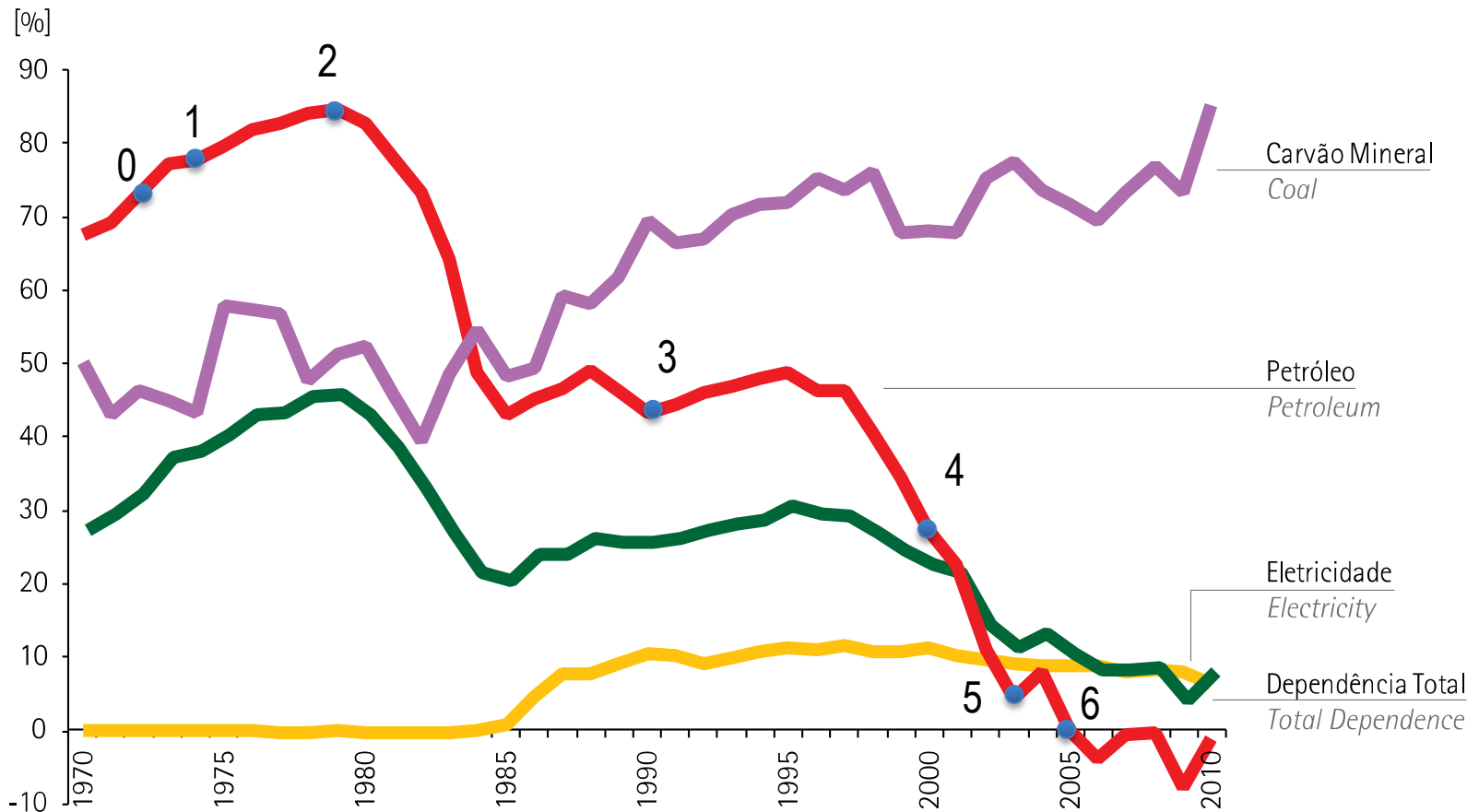
¹ Inclui gás de coqueria/ Includes coke gas.

² Biomassa inclui lenha, bagaço de cana, lixívia e outras recuperações/ Biomass includes firewood, sugar cane bagasse, black liquor e other wastes.



Let's Take a Look in History...

External Dependence on Energy

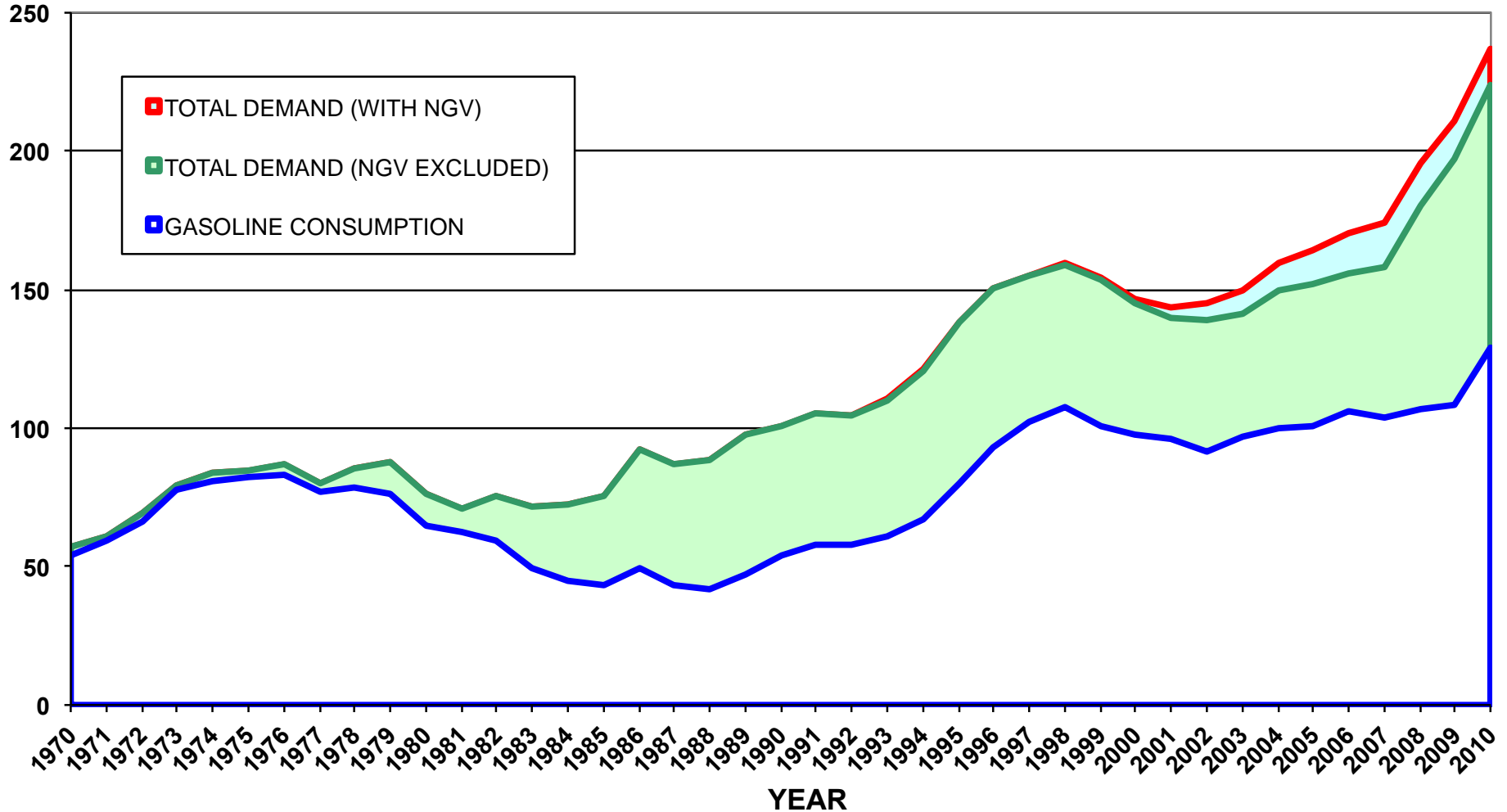




The Economic Consequences...

10⁶ BOE

FUEL DEMAND FOR OTTO-CICLE VEHICLES (LIGHT VEHICLES)





Brazilian Energy Policy

Objectives in Law:

- To increase biofuels' share in energy matrix
- To promote energy security as well lower foreign dependence
- To protect the environment and the consumer
- To stimulate free and healthy competition on energy sector



Examples of Public Policies

Lower taxation

Compulsory at gas
stations

Blending
mandates

Subsidy and
Subvention

CO2 Emission
Concerns

Consumer Sense



Biofuels in Brazil: The Example of Two Policies



The Agro-ecological sugarcane zoning in Brazil and, from this example, what can be done in other countries



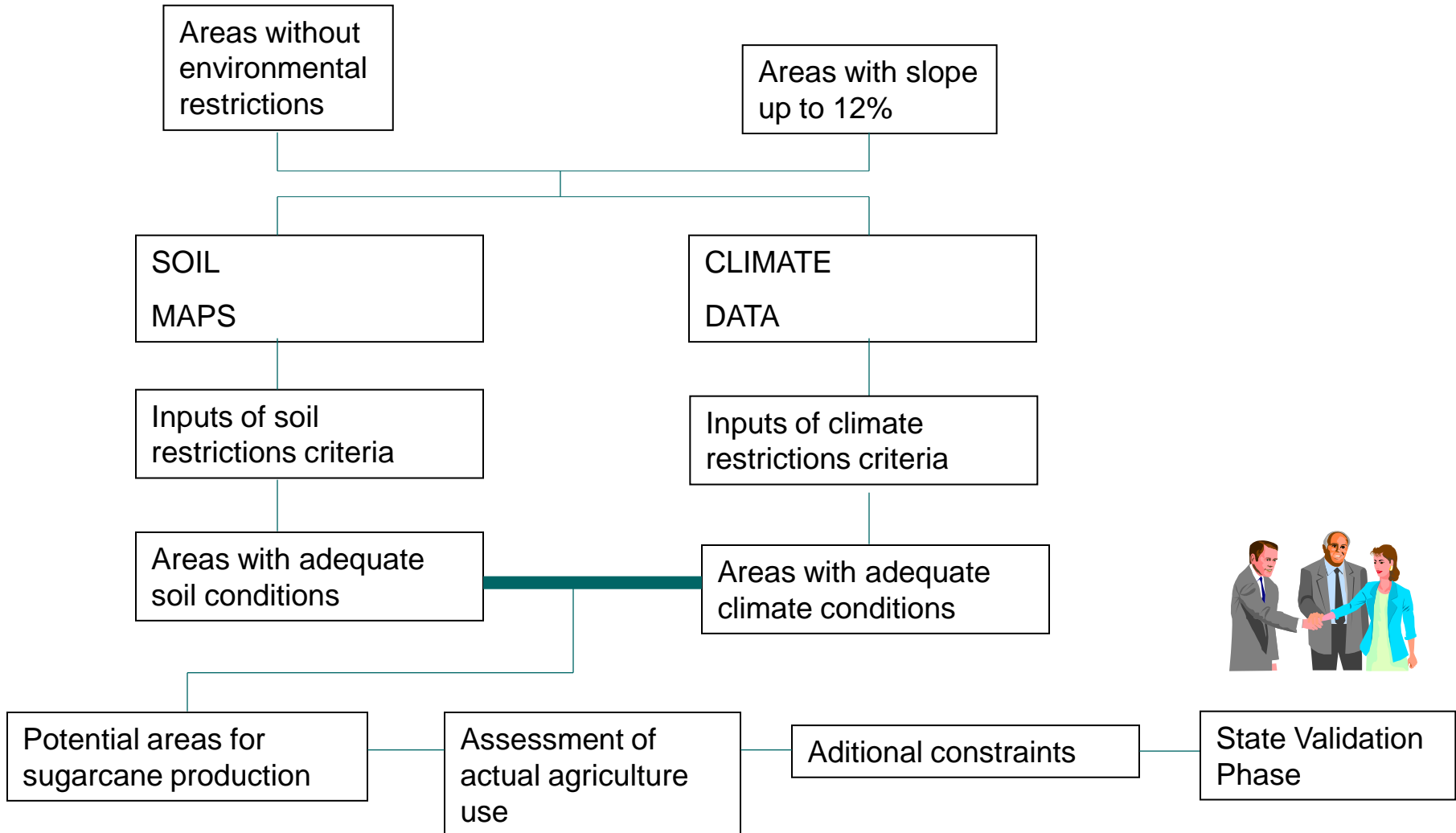
Brazilian Agro-ecological zoning: Rules to Guide the Sugarcane Expansion

- ✓ To indicate the potential areas for sugarcane expansion production without environmental restrictions and that are already used or degraded;
- ✓ To exclude the production of sugarcane in the biomes of Amazon, Pantanal and Upper Paraguay River Basin;
- ✓ To indicate preferably degraded or pasture areas, minimizing any competition with food production;
- ✓ To indicate potential areas with agricultural potential without full irrigation, considering climate, soil conditions and varieties to select areas where sugarcane production uses the least quantity of water possible;
- ✓ To indicate areas with slope up to 12% in order to allow the use of machines at the tilling. This will avoid new induced fire areas for sugarcane manual cut and orient the expansion with mechanical harvesting.

The Brazilian sugarcane agro-ecological zoning was coordinated by the Ministry of Agriculture, together with the Ministry of Environment, the Ministry of Mines and Energy and the Ministry of Finance, with technical assistance of EMBRAPA (Public Enterprise of Agriculture Research)



Brazilian Agro-ecological zoning: The areas selection

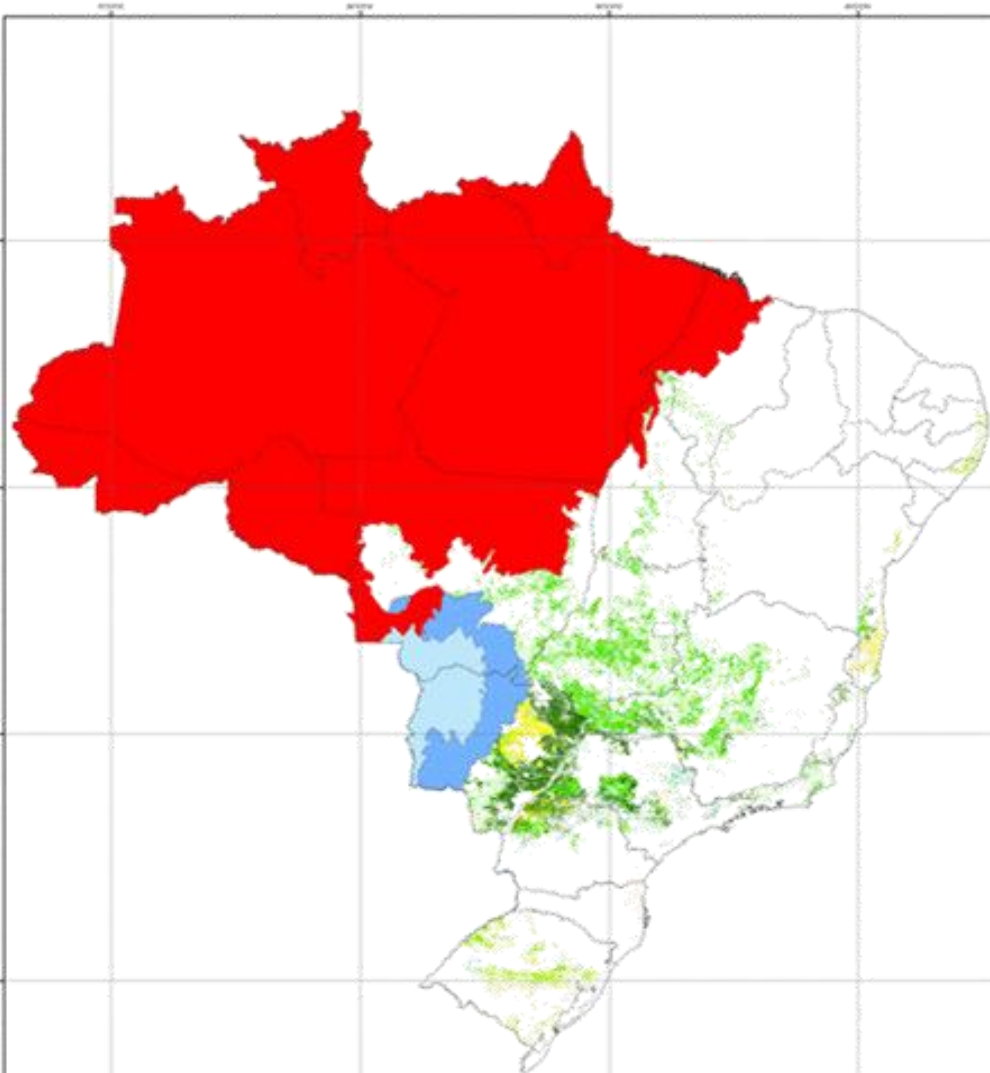




Brazilian Agro-ecological zoning:

The results

BRAZIL – Qualified Areas (P, R, M) in Livestock (Ap) and Agriculture (Ag)



Due to environmental reasons, the bill would effectively make 92.5% of Brazil's national territory off-limits for sugarcane farming and processing.

Key:

- Non-suited areas
- Amazon biome (Excluded Area)
- Pantanal biome (Excluded Area)
- High Paraguai Basin (Excluded Area)
- Preferential suitable area - Pasture Lands (Ap)
- Preferential suitable area - Agriculture Lands (Ag)
- Regular suitable area - Pasture Lands (Ap)
- Regular suitable area - Agriculture Lands (Ag)
- Marginal suitable area - Pasture Lands (Ap)
- Marginal suitable area - Agriculture Lands (Ag)

- Suitable areas identified sum up to 64 million hectares (or 7.5% of the territory)
- Currently, sugarcane for ethanol corresponds to 4 million hectares or 1% of arable lands.





Brazilian Agro-ecological zoning: The results



The Brazilian Government published in September, 17th 2009 the Decree N^o 6.961/2009 that:

“Approves the sugarcane agro-ecological zoning and determines the National Monetary Council¹ to establish the rules of financing/credit operations for the sugarcane sector in the terms of the agro-ecological zoning.”

¹ National Monetary Council is the Brazilian higher instance responsible for making the rules of credit and monetary policies. The council is presided by the Ministry of Finance



The Social Fuel Certificate as a Policy for Rural Development

Brazilian Biodiesel Program



The Social Fuel Certificate Strategy

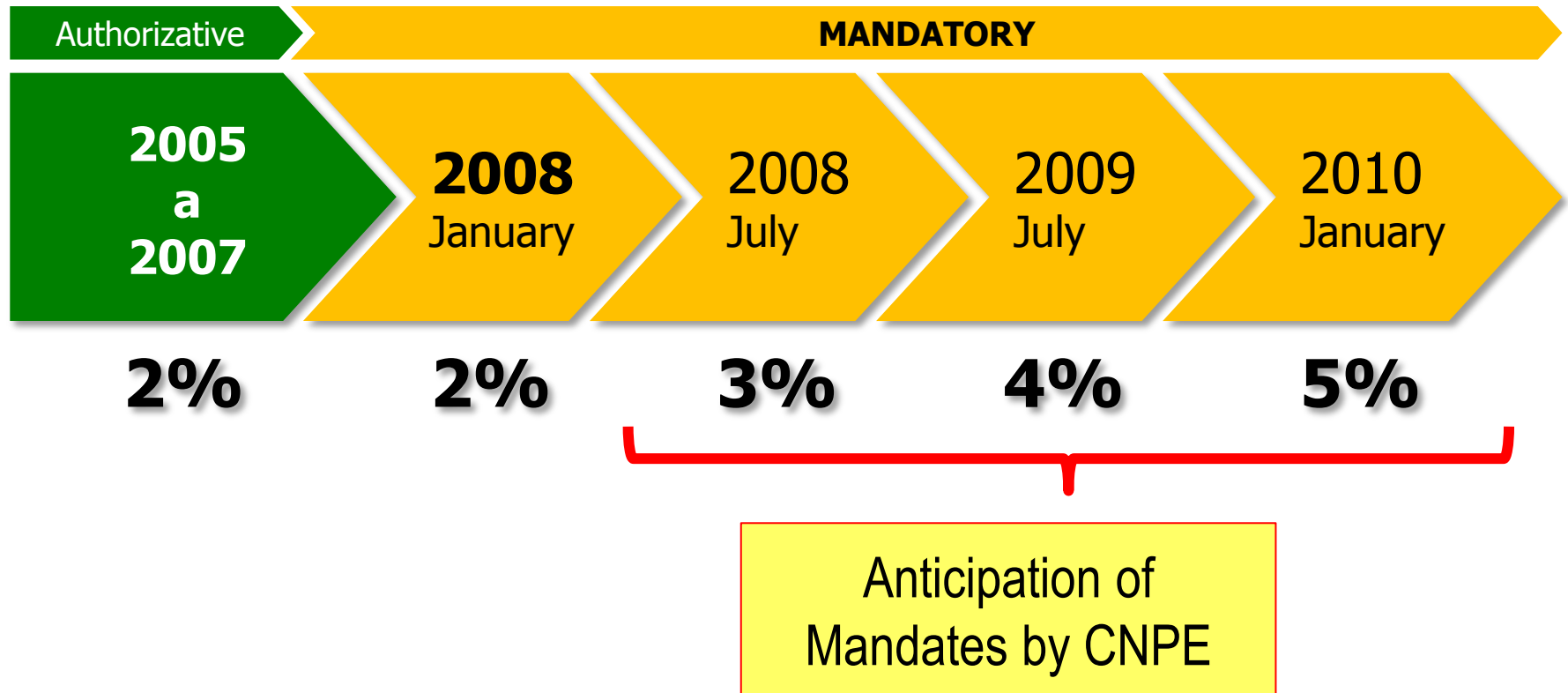
Instruments for strengthening small farming

- Rural credits with better interest rates
- Support to rural assistance
- “Social Fuel Certificate” for Biodiesel
 - i) Minimum oilseeds purchases must come from small farming
(30% for Northeast/Southwest/South and 15% for North and Midwest)
 - i) Contracts with small farming must be homologated by work unions
 - ii) Rural assistance and technical training for small farmers

Biodiesel producers need the SFC to take part in auctions.

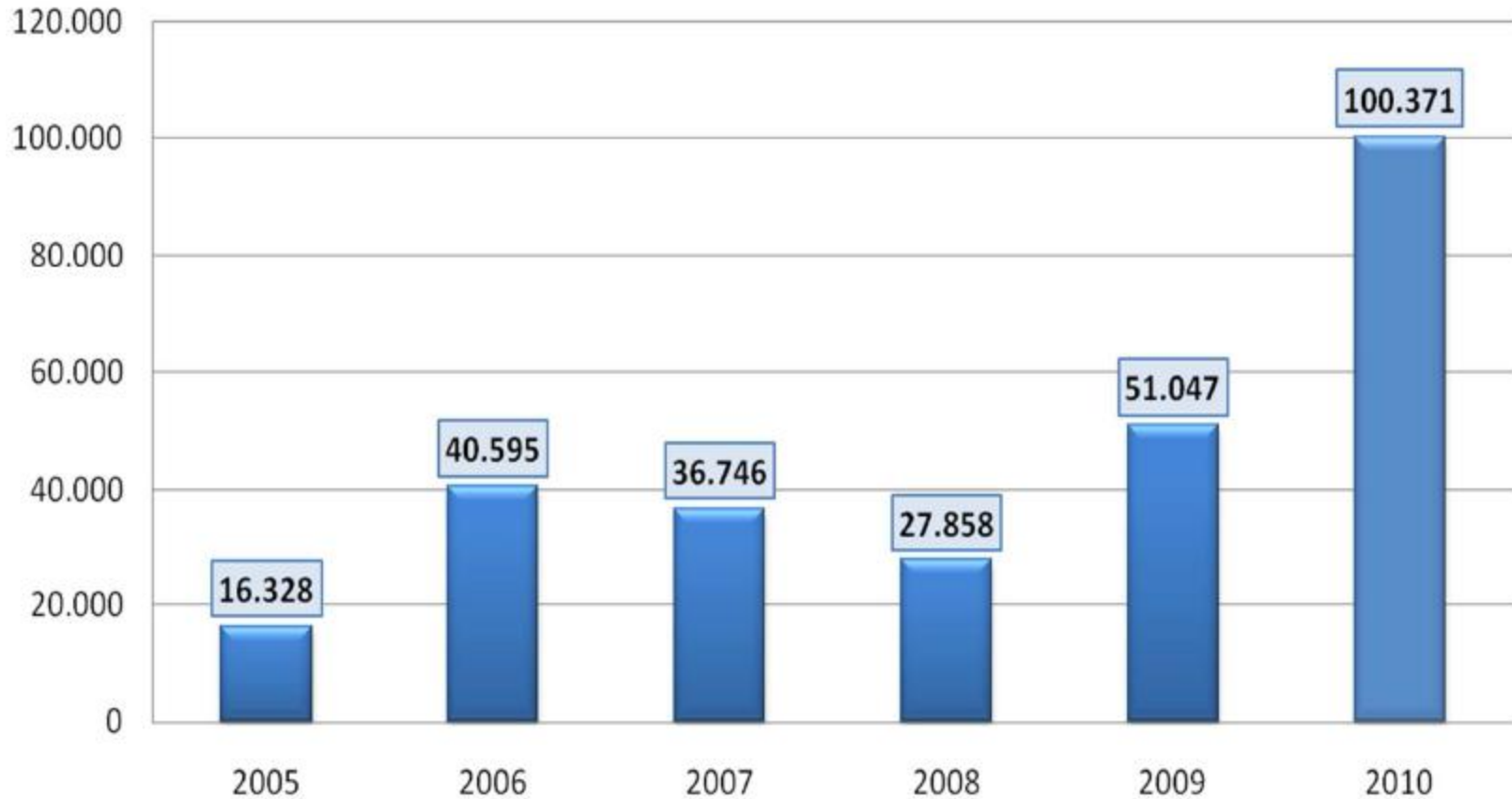


Biodiesel: National Program of Production and Use



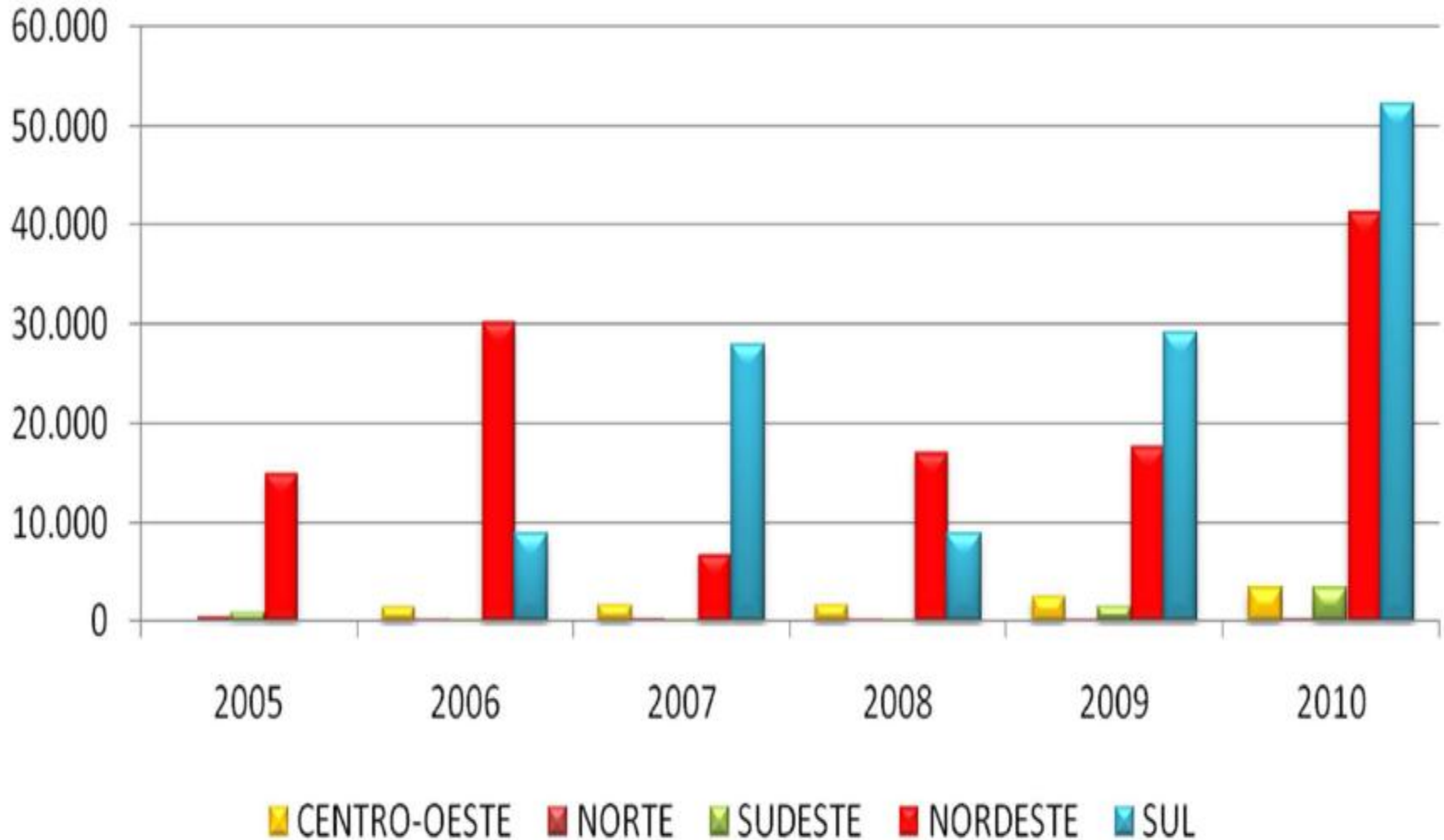


Number of Families Involved in our Biodiesel Program



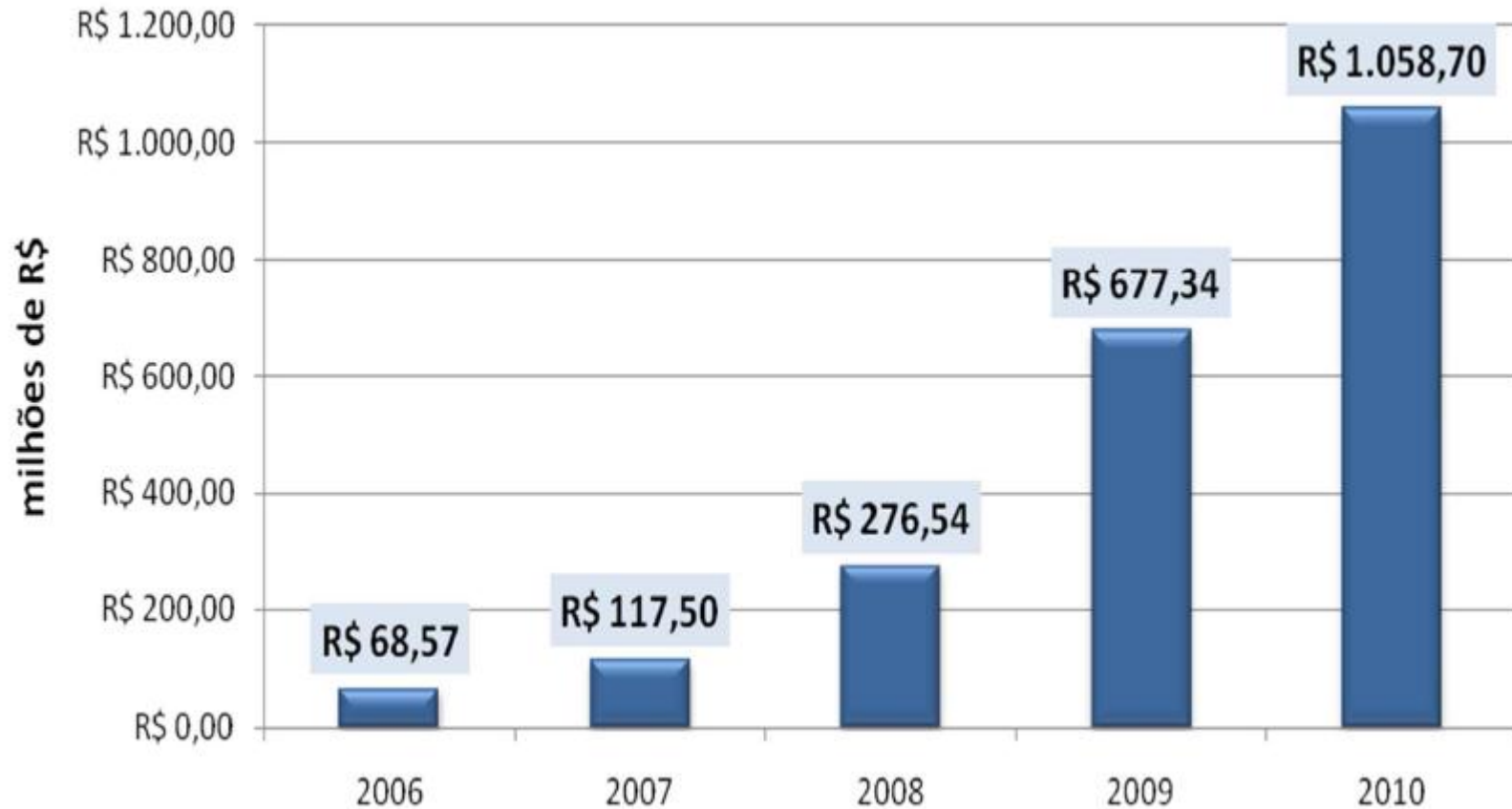


How they are distributed in our territory...



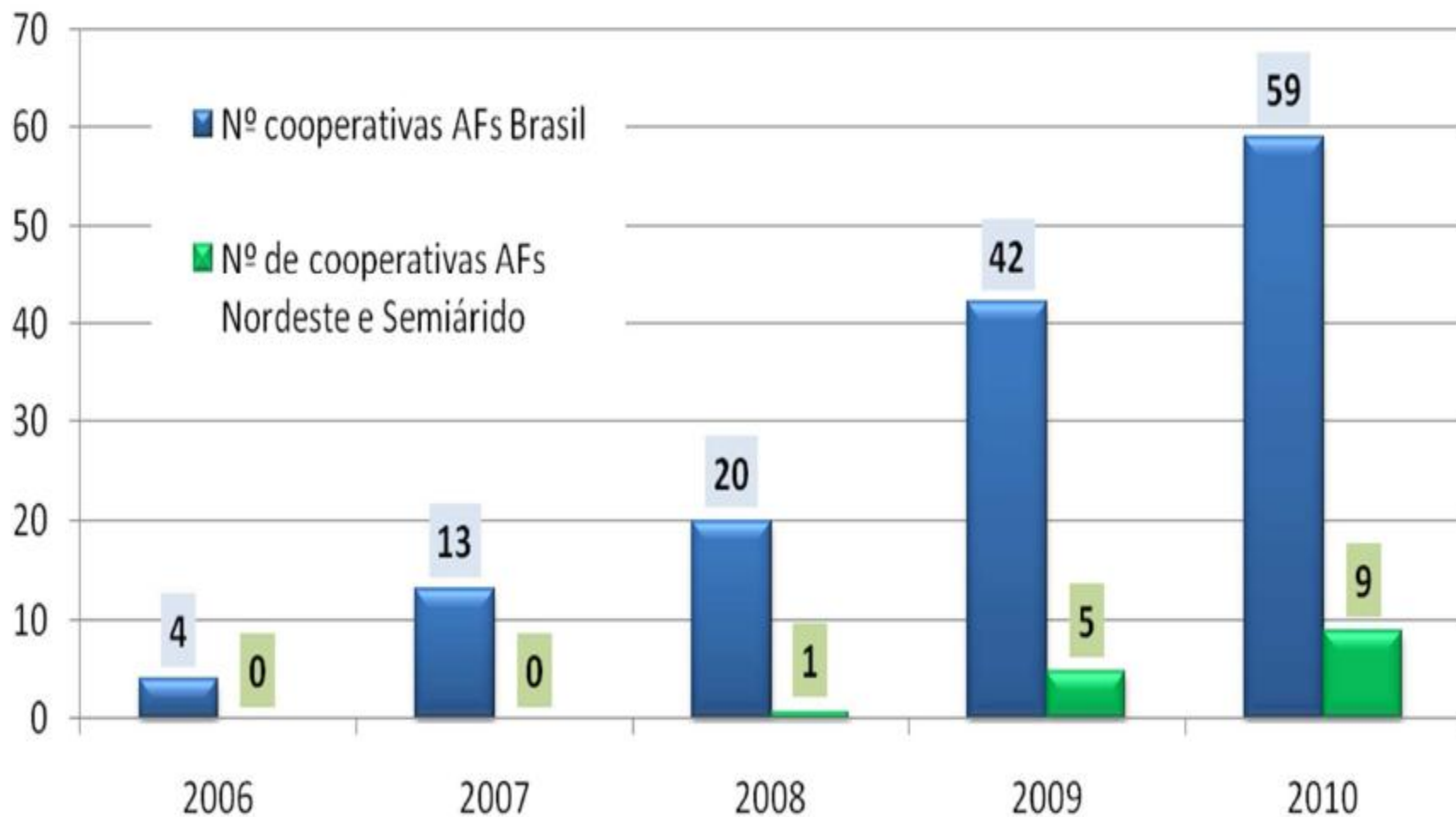


Total Value of Rural Families Economy





Increasing the number of Associations of Families...





Some Bioenergy Externalities...

- ✓ Renewable energy source
- ✓ Energy security
- ✓ Better CO₂ and pollutants emissions
- ✓ Income improvement at rural areas
- ✓ Bioenergy industry helps to deconcentrate energy markets
- ✓ It is much lower capital intensive than oil industry
- ✓ Bioenergy can be produced in a sustainable way worldwide while oil is concentrated in a few countries (and several of them with political instability)



The Government Role (as we see)

- Maintain the best environment for investments with a clear regulatory framework
- Articulate the different interests involved
- Assure the proper incentives to best practices
- Pursue the most sustainable path to expand the industry and promote development
- Give ways to assure and respect contracts
- Induce and facilitate the international trade
- Correct market distortions that might lead in long term to imbalances in economic activity



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THANK YOU

MARLON ARRAES J. LEAL
Renewable Fuels Department

marlon.arraes@mme.gov.br