



CONSERVAÇÃO
INTERNACIONAL

Brasil



RCN CONFERENCE ON PAN AMERICAN BIOFUELS AND BIOENERGY SUSTAINABILITY

SOCIOENVIRONMENTAL ASPECTS OF
THE CULTIVATION OF PALM FOR
BIODIESEL PRODUCTION IN THE CENTER
OF ENDEMISM IN BELÉM – PA, BRAZIL

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Presentation Overview

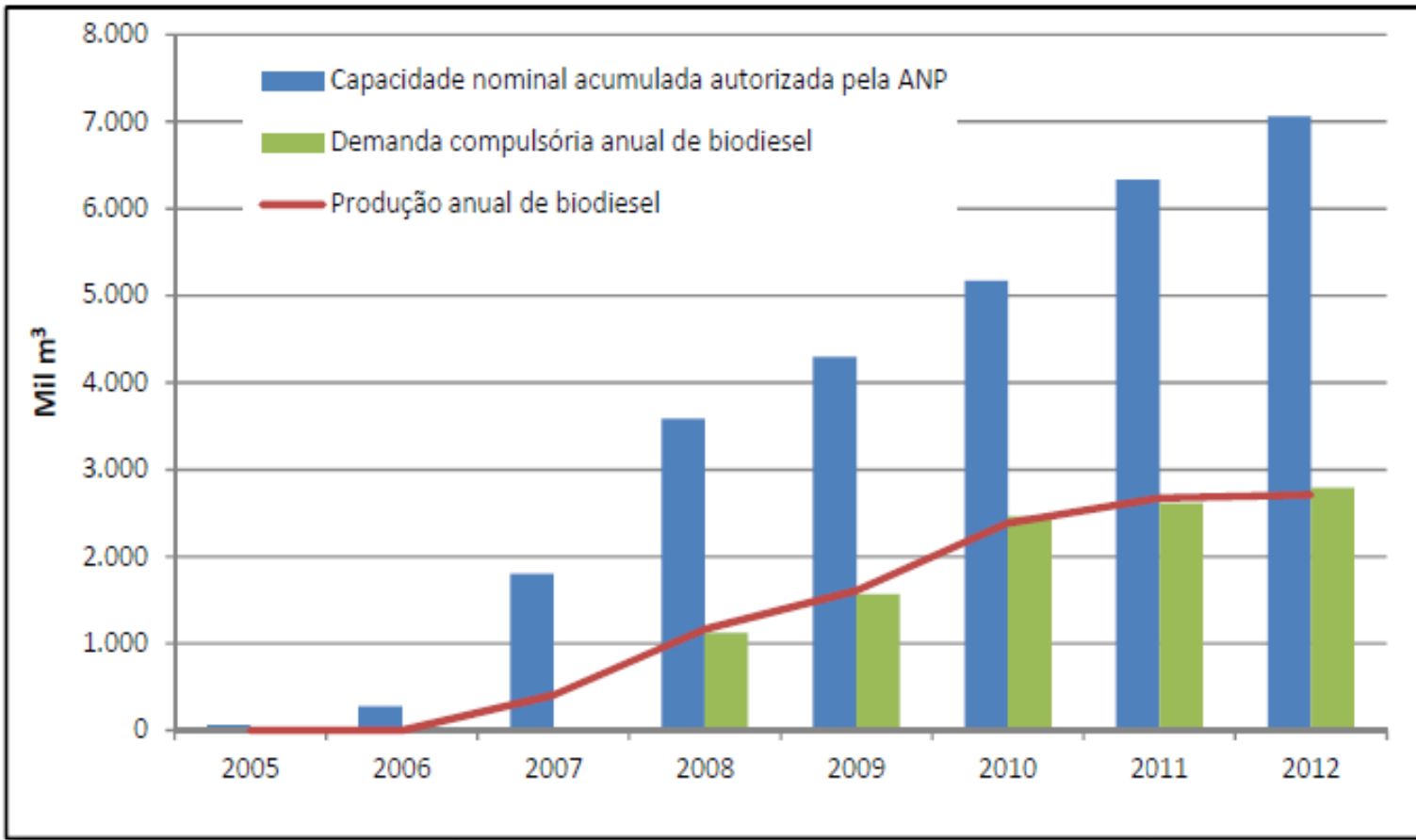
- Biodiesel in Brazil
- Palm oil production in Brazil
- Belém Endemism Center production
- Socioenvironmental aspects



Brazil and Bioenergy

- Since 1950
- National Program of Biodiesel Use and Production (PNPB)
- 2005 – 2011: production jumps from 736 m³ to 2,6 millions m³
- During this period the acreage of soybeans increased by 29.4% bringing the total to 24 million hectares, producing over 75 million tons of grain

Evolution of current production, compulsory demand and nominal capacity



Source: ANP, 2013

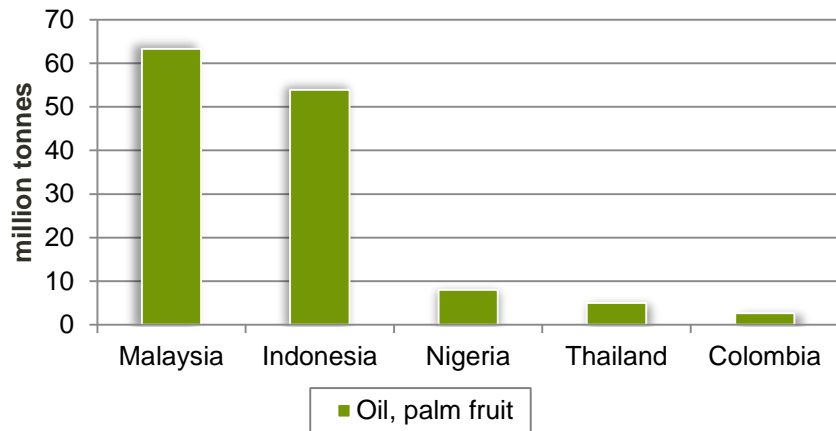
Palm oil for biodiesel production

- High productivity
- High potential to promote social inclusion
- Suitable for the soil and weather conditions of Brazil

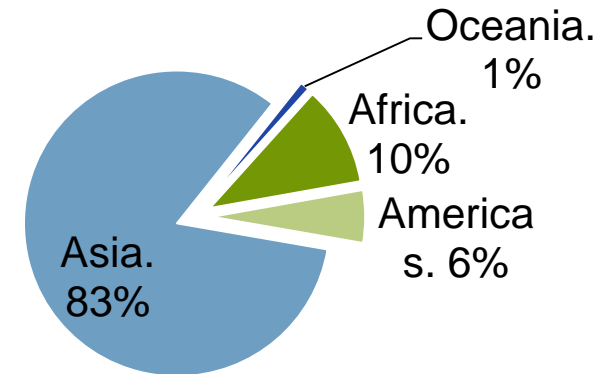


Palm oil in the World

Production of top 5 palm oil producers
Average 1992-2012



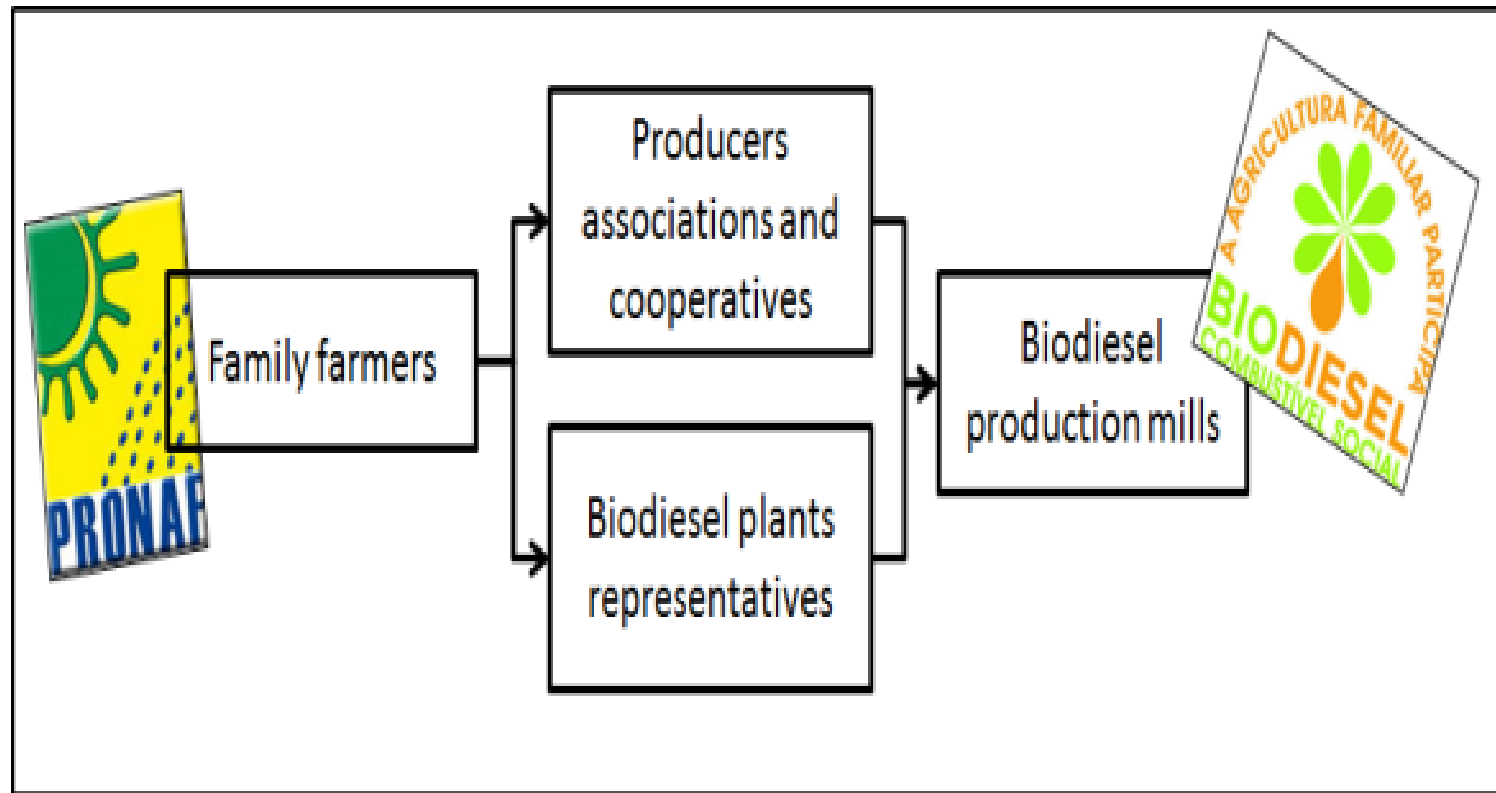
Production share by region
Average 1992-2012



Source: FAO 2012 - <http://faostat.fao.org>

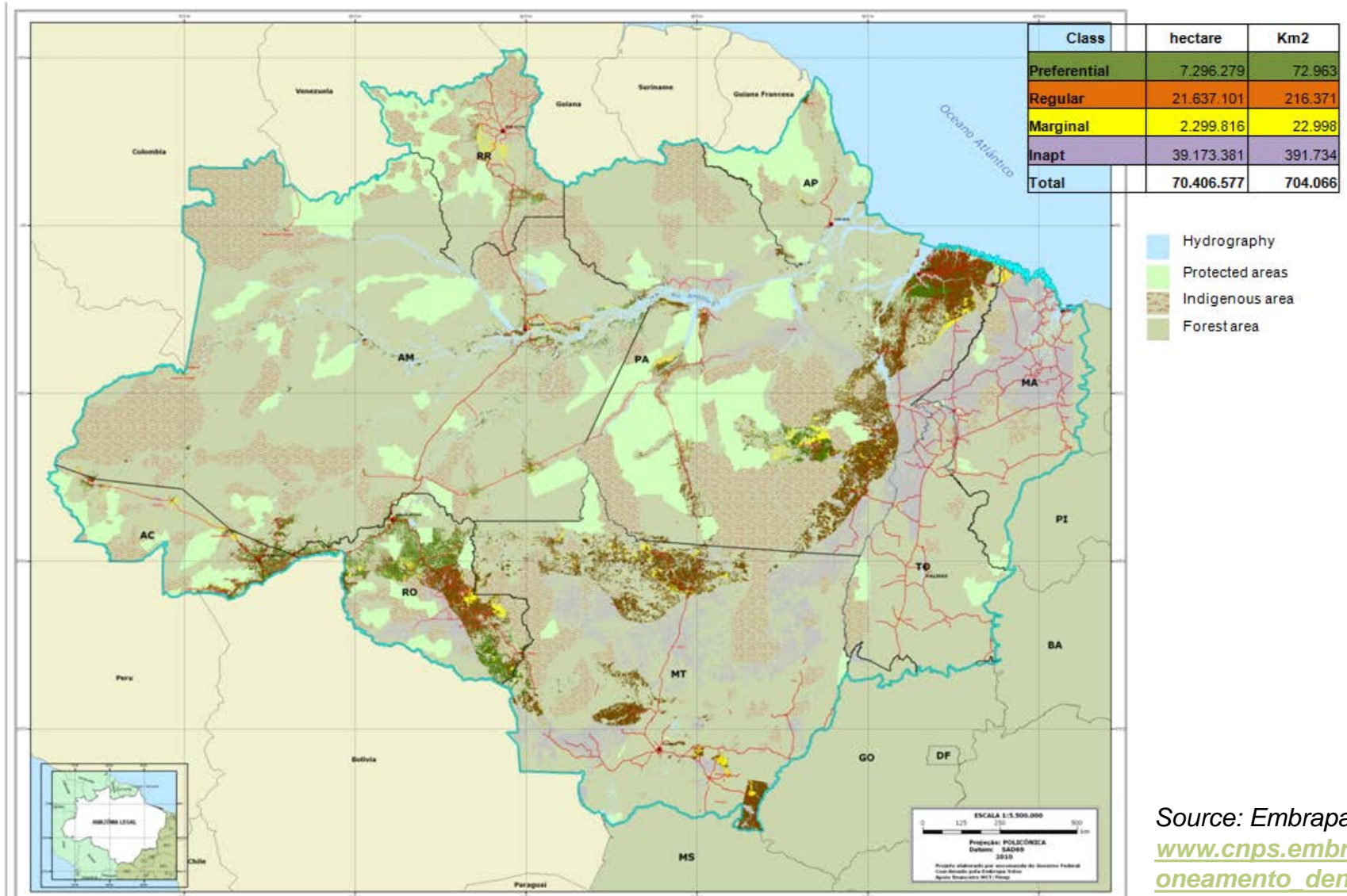


National Program of Biodiesel Use and Production & Social Fuel Seal



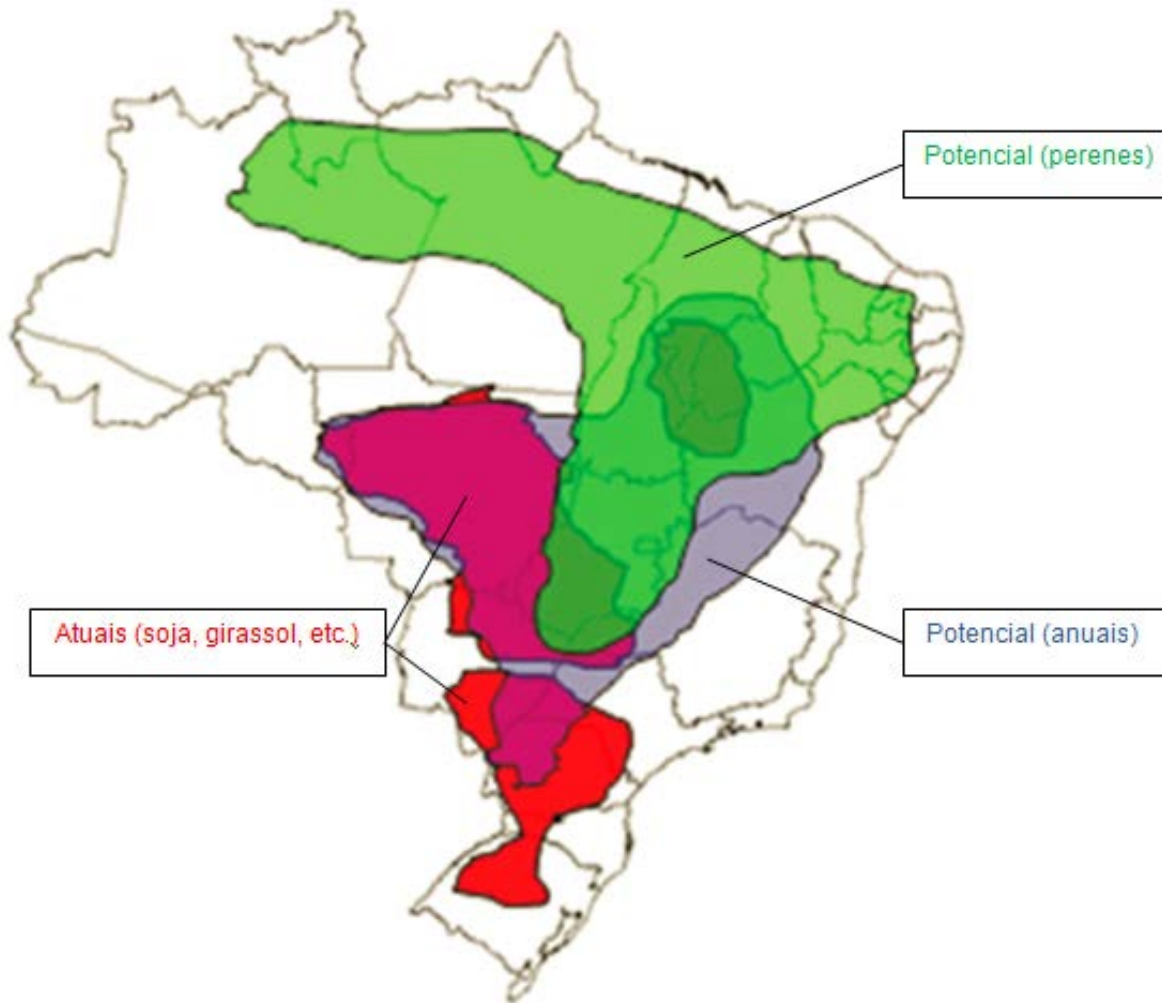
Source: Modified from César & Batalha 2013

National Program of Sustainable Palm Oil Production



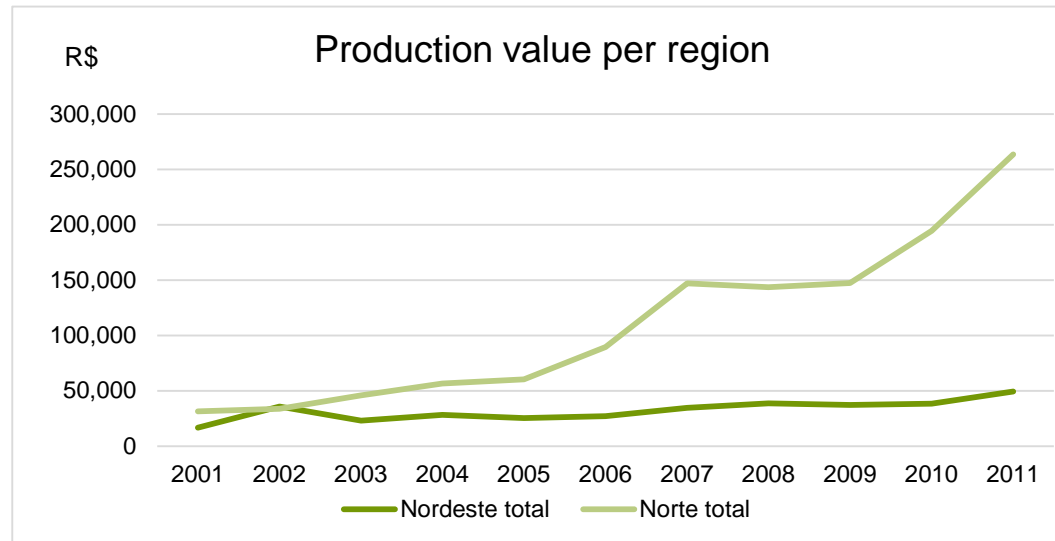
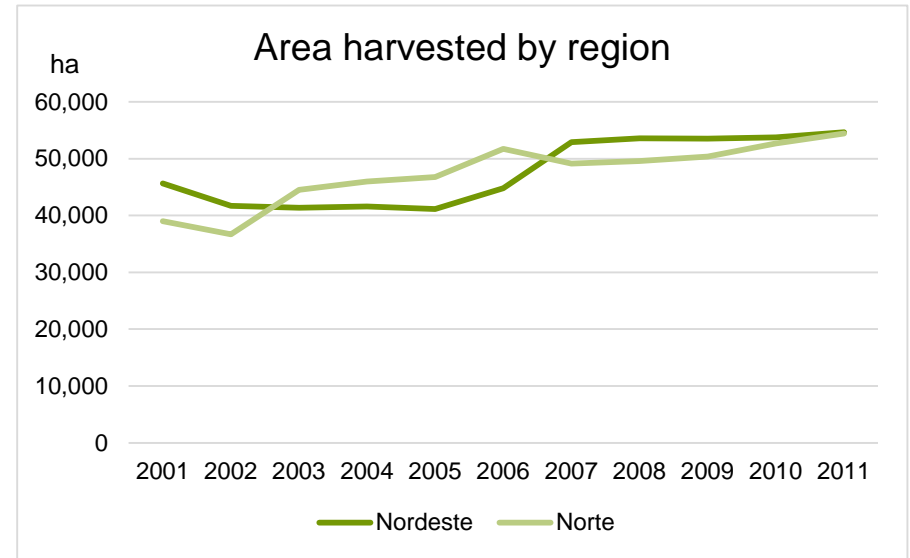
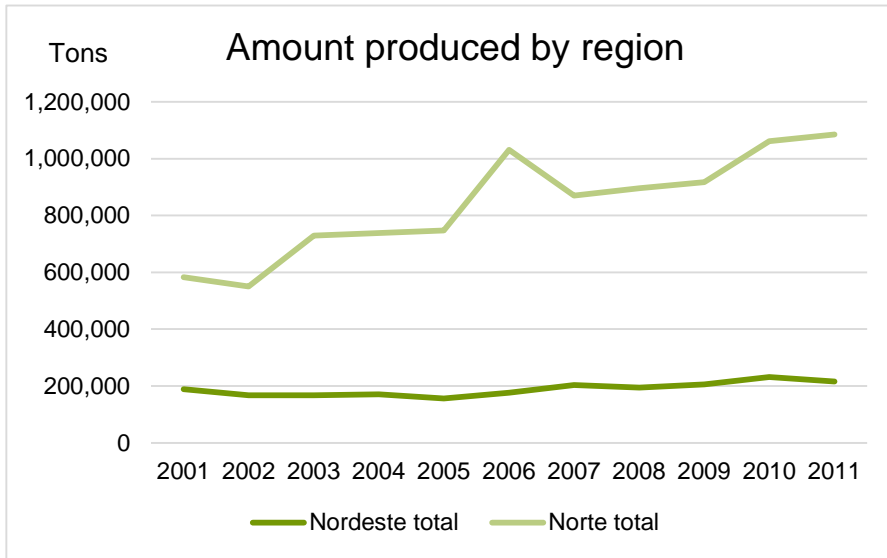
Source: Embrapa – 2010
www.cnps.embrapa.br/zoneamento_dende/

Palm oil expansion: suitable areas

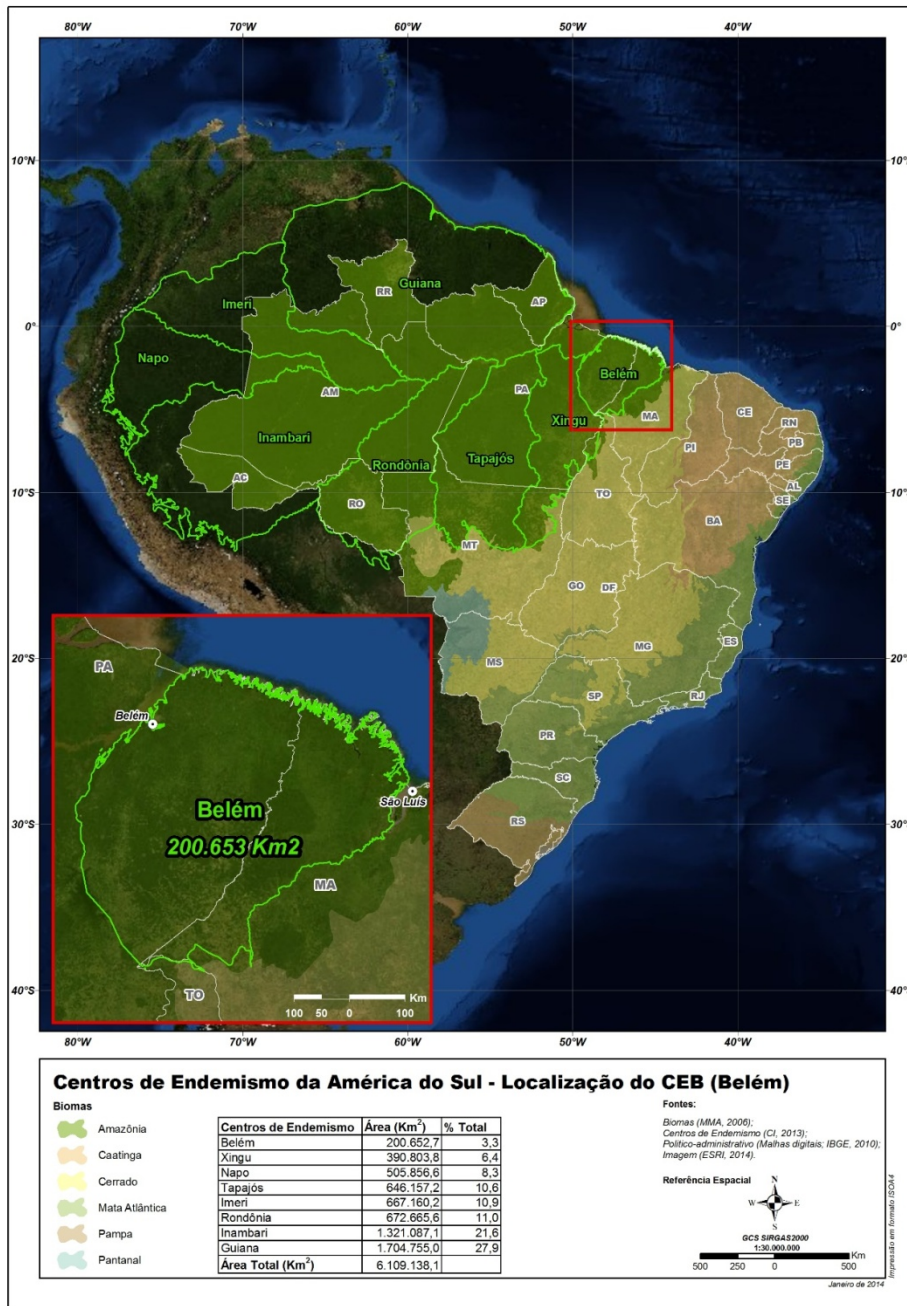


- 704.066 km² suitable for palm oil expansion
- 14% of Legal Amazon
- 250.513 km² in Pará state

Palm oil production in Brazil







- Identify and characterize the expansion areas of the palm in Belém Endemism Center
- Micro region of Tomé Açú: Acará; Concórdia do Pará; Moju; Tailândia; e Tomé-Açú

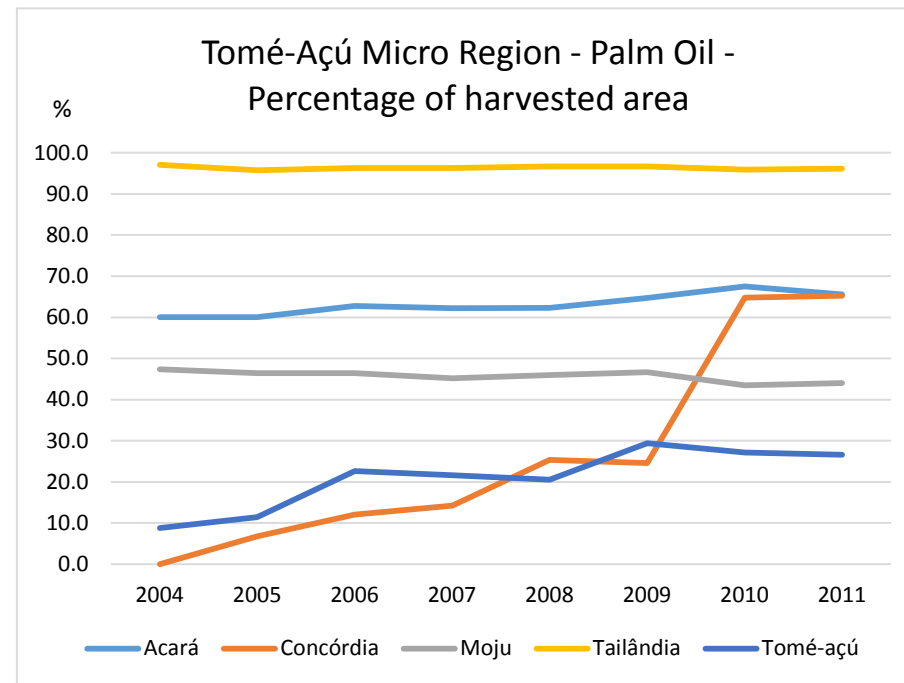
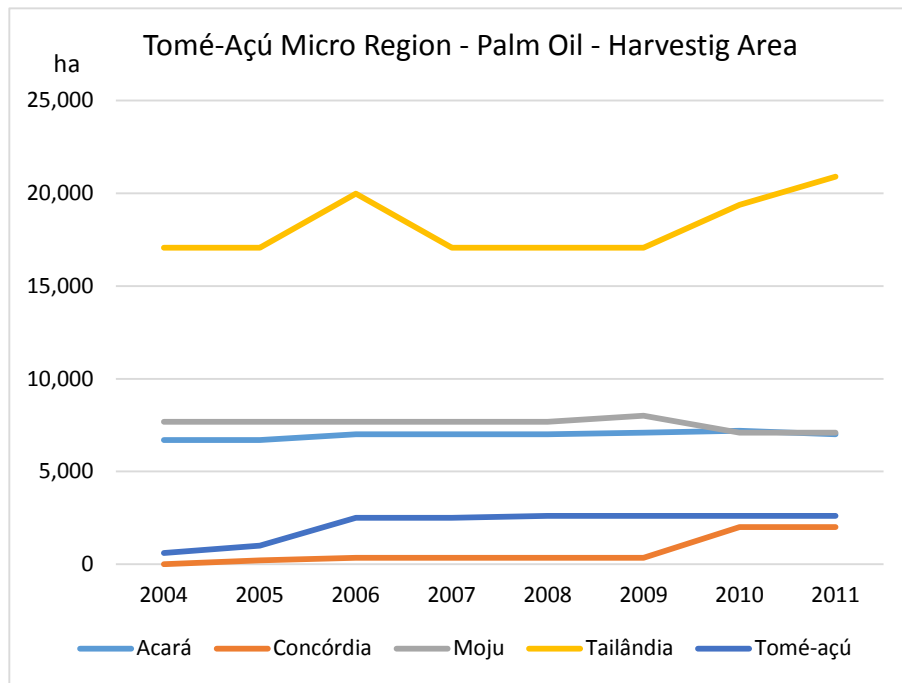


Belém Endemism Center

- Principal units of production of biodiesel from palm oil
- 140 thousand hectares, reaching almost 470 thousand hectares after the consolidation of expansion projects by 2020.
- 2010 – 2012: over 581 families (in 5,810 ha) added to the partnership programs of Banco da Amazônia
- It is estimate palm oil expansion enabled the inclusion of 2,191 new households (in 21,110 ha) in the last three years.



Belém Endemism Center Production



Source: Modified from IBGE, 2014

Field analysis

- 2 groups evaluated
 - interest group - producers of palm oil
 - control group - no palm producers
- Stratified samples
 - Not Productive palm (DNP) under 2 years of cultivation;
 - Palm Oil Production (DP) over 4 years of cultivation;
 - No producers Dende (ND);
 - No palm producers belonging to Quilombo community (CHI).

Preliminary findings

- 4 municipalities
 - Moju, Acará, Concórdia do Pará and Tomé-Açu
- 23 families interviewed
 - 15 with palm oil
 - 8 with other crops
- On average each family occupies **10 hectares** and can get an average of **R\$ 2,000 monthly** between the fifth and eighteenth year of life of the palm when it reaches the height of its productivity, totaling **R\$ 24,000 per year**
- Other crops: cassava, black pepper, urucum and others
- Companies partnerships: technical assistance, seedlings, fertilizers and transportation



Preliminary findings (cont.)

| Activity | DNP (%) | DP (%) | ND (%) | QUI (%) | Average (%) |
|-------------|---------|--------|--------|---------|-------------|
| Palm oil | 28,6 | 57,1 | 0,0 | 0,0 | 27,3 |
| Cassava | 42,9 | 28,6 | 20,0 | 66,7 | 36,4 |
| Other crops | 14,3 | 14,3 | 20,0 | 0,0 | 13,6 |
| Retirement | 0,0 | 0,0 | 60,0 | 0,0 | 13,6 |
| Pension | 14,3 | 0,0 | 0,0 | 0,0 | 4,5 |
| Employment | 0,0 | 0,0 | 0,0 | 33,3 | 4,5 |
| | 100 | 100 | 100 | 100 | 100 |

Main economic activity
of the family

| Motivation | DNP (%) | DP (%) | Average (%) |
|----------------------------|---------|--------|-------------|
| Long term income | 50 | 50 | 50 |
| Incentive of the community | 25 | 20 | 22 |
| Incentive from the company | 25 | 30 | 28 |
| | 100 | 100 | 100 |

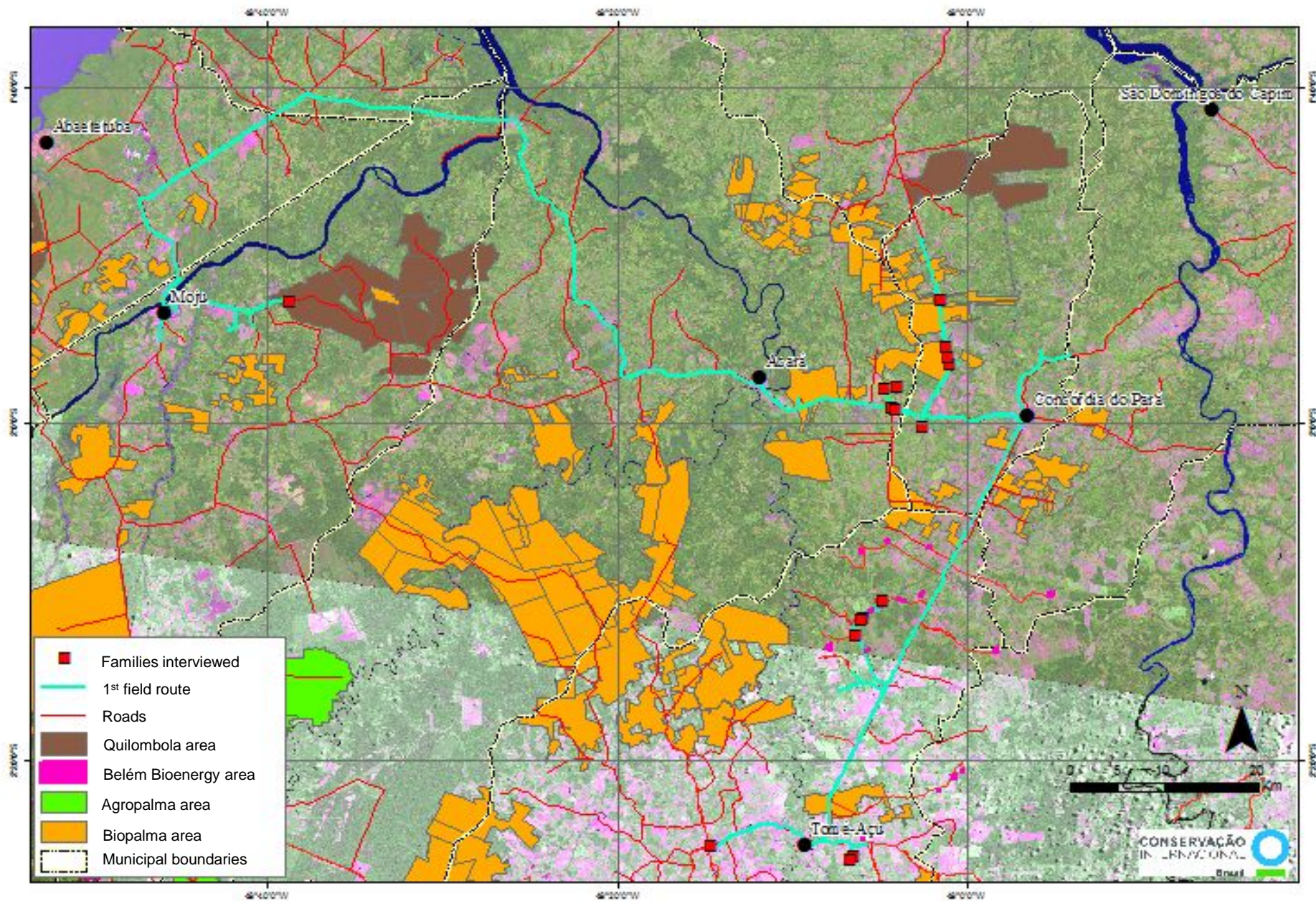
Main reason for growing
palm oil

Preliminary findings – Small farmers perception

- Time dedicated to other cultures
 - Palm oil is very time consuming
 - Is not a generalized view
 - Depends on how many family members participate in the production
- Employment
 - Number of persons employed increased due to the arrival of biodiesel companies
- Land prices increased
- Community structure
 - Motorcycles and brick houses
 - Small farmers became employees
- Social organization
 - Intend to form a cooperative to discuss contracts with companies
- Food prices
 - Cassava prices increased
 - Seen as a good thing for those who continue producing and selling because increased income

Preliminary findings – Small farmers perception

- Impact on quality of life
 - Varies with the number of people that the farmer sustains
- Production cost
 - Varies greatly depending on how many member of the family work in the production and how many are hired
- Ecosystems Services
 - Clean air
 - Climate
 - Water
- Use of agrochemicals
 - Impact on water quality
- Positive effects on the environment
 - Improved the climate because covered areas previously deforested
 - Decreases the number of burns because it is a long cycle crop
- Reasons for not producing palm oil
 - Labor intensive
 - Lack of information



THANK YOU!

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