



Bioeconomy in Forestry: Research Strategy and International Cooperation

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Buenos Aires, October 2019

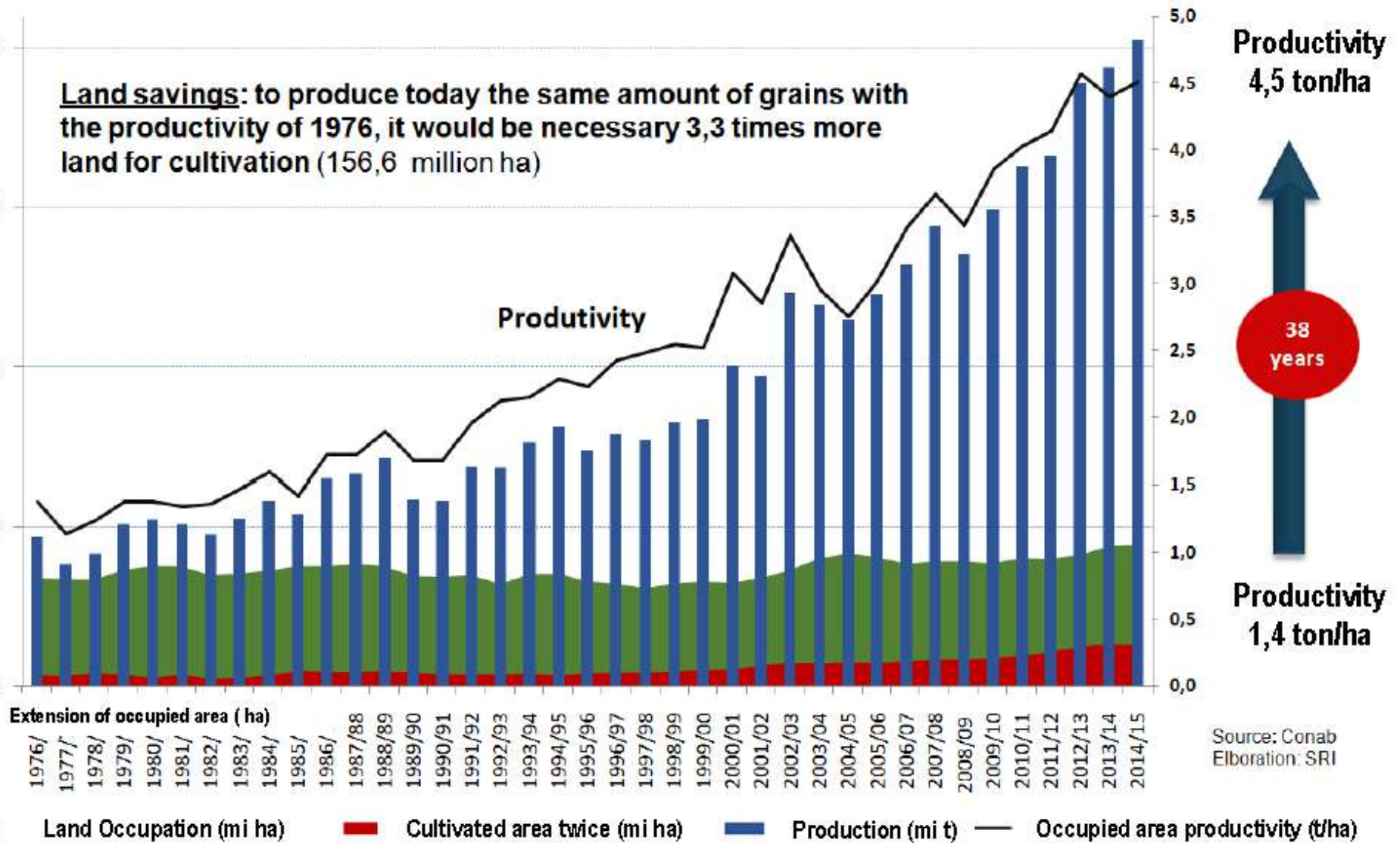


Some history

- In the 70's Brazil was a food importer
- No reference in tropical agriculture (and commercial forestry) to immediate adoption
- Large investment in research and extension services:
 - A National Research System with Embrapa + 23 State Institutes
 - A National System of Rural Extension with a central coordination and State Institutes
- 70 Federal Universities
- Investment in cooperatives

Tecnology: basis of agricultural development in Brazil

Land savings: to produce today the same amount of grains with the productivity of 1976, it would be necessary 3,3 times more land for cultivation (156,6 million ha)



Source: Conab
Elaboration: SRI

A Embrapa

- Government
- 10 thousand employees in Agriculture as a whole
- 3750 PhDs
- Annual budget of 1 billion dollars
- About 50% of agricultural research in Brazil

- Forestry is much smaller, may be 150 researchers working directly with that and 500 in forest related research.

46 Unidades da Embrapa

Unidades da Embrapa

Brasil



- | | |
|-------------------------------------|--|
| 1. Embrapa Clima Temperado | 28. Embrapa Arroz e Feijão |
| 2. Embrapa Pecuária Sul | 29. Embrapa Milho e Sorgo |
| 3. Embrapa Uva e Vinho | 30. Embrapa Gado de Leite |
| 4. Embrapa Trigo | 31. Embrapa Solos |
| 5. Embrapa Suínos e Aves | 32. Embrapa Agrobiologia |
| 6. Embrapa Florestas | 33. Embrapa Informática |
| 7. Embrapa Soja | Agropecuária |
| 8. Embrapa Agropecuária Oeste | 34. Embrapa Meio ambiente |
| 9. Embrapa Gado de Corte | 35. Embrapa Pecuária Sudeste |
| 10. Embrapa Pantanal | 36. Embrapa Instrumentação |
| 11. Embrapa Agrossilvopastoril | 37. Embrapa Monitoramento por Satélite |
| 12. Embrapa Rondônia | 38. Embrapa Gestão Territorial |
| 13. Embrapa Acre | 39. Embrapa Agroindústria de Alimentos |
| 14. Embrapa Amazônia Ocidental | 40. Embrapa Hortaliças |
| 15. Embrapa Roraima | 41. Embrapa Recursos Genéticos e Biotecnologia |
| 16. Embrapa Amapá | 42. Embrapa Agroenergia |
| 17. Embrapa Amazônia Oriental | 43. Embrapa Café |
| 18. Embrapa Cocais | 44. Embrapa Informação Tecnológica |
| 19. Embrapa Meio-Norte | 45. Embrapa Produtos e Mercado |
| 20. Embrapa Caprinos e Ovinos | 46. Embrapa Estudos e Capacitação |
| 21. Embrapa Agroindústria Tropical | 47. Embrapa Quarentena Vegetal |
| 22. Embrapa Algodão | |
| 23. Embrapa Semiárido | |
| 24. Embrapa Tabuleiros Costeiros | |
| 25. Embrapa Mandioca e Fruticultura | |
| 26. Embrapa Pesca e Aquicultura | |
| 27. Embrapa Cerrados | |

Difererent types of research centres – networked work

- Specialty centers: Forestry, Soy, Corn and so on
- By cross cutting theme: remote sensing, biotechnology, soils
- Eco-regionals
 - Cerrado
 - Amazon
 - Southern Fields
 - Pantanal



Cooperation Platforms

- Technical Cooperation as an arm of Brazilian government
 - Ministry of Foreign Affairs
- Scientific Cooperation
 - MOUs and Projects
- Cooperation Platforms with Annual Calls of Projects
 - Africa Brazil Agricultural Innovation Market Place
 - Latin America Agricultural Innovation Market Place

http://www.mktplace.org/

The screenshot shows the website's interface. At the top, there's a browser window with the URL www.mktplace.org/site/index.php. The website header features the MKTPLACE logo with the tagline "A partnership to enhance agricultural innovation and development" and a search bar. Below the header is a navigation menu with links for Home, WHAT WE DO, PROJECTS, EVENTS, MEDIA, CONTACT, and Sign In. The main content area is divided into "OUR PROJECTS" and "VIDEOS & PHOTOS". A world map displays numerous location pins, primarily concentrated in South America and Africa. To the right, a "CONTROL PANEL" section lists recent news items with their dates and times.

OUR PROJECTS **VIDEOS & PHOTOS**

CONTROL PANEL

News

- [M-BoSs Video](#) 24-11-2016 11:12:30
- [ATTENTION: List of M-BoSs approved projects is now available!](#) 24-11-2016 11:09:02
- [MKTPlace co-leaders host a workshop on biopesticide in Brazil](#) 14-11-2016 10:12:42
- [MKTPlace Solution Forum at the GSSD Expo 2016](#) 11-11-2016 13:03:32

So, we have experience and
are willing to cooperate, but
what about forest
bioeconomy research and
strategies?

Bioeconomy forest research

- Research portfolios define scope of research
- Three main lines:
 - Products from the forest, specially non-timber forest products
 - Effort to establish production systems
 - New products from traditional products
 - Functional foods
 - Chemicals
 - New uses for waste in the forest industry
 - Processing of sawdust
 - Products from lignin in kraft processes

Non forest timber products

- Book from Forest Service, though Embrapa participates
- Key question is how we organise people to deliver quality products to society at competitive prices and acceptable quantities
- New value chains



Bioeconomia da Floresta

A Conjuntura da Produção Florestal
Não Madeireira no Brasil



New products from traditional products – yerba mate example

- Well established silviculture and market for tea, yerba (yerba or tereré)
- Selection of plants with high caffeine contents
- Management systems for new purpose yerba
 - Management rotation, stand density, hot x cold systems, shelf life etc
- Inclusion of yerba in cattle, pig and chicken feedstock as a functional aliment
- Extraction os saponins and other composts

Adding value to a value chain, the case of use of lignin and bio-oil

- Current use is energy
- Question: what can we do with lignin and bio-oil of Eucalypts and Pines to add value?
 - pesticides, both with active principle and as a dilution agent
 - Glues
 - Sugars
- Chemistry and nanotechnology
- What is the cost and economicity of such products

How do we cooperate

- We have a central department in Brasilia for international cooperation: led by, Dr. Eliane Covolan (eliane.covolan@embrapa.br)
- Each research center has an international cooperation officer, I am the one at Embrapa Forestry. Erich Schaitza (erich.schaitza@embrapa.br)

Comment

- No money for financing research
- Need to go to the market:
 - Partnership with forest companies specially in pre-commercial technologies
 - Design of international projects with support of Northern Hemisphere cooperation – triangular cooperation in South – south cooperation

Thank you

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