Bioeconomy in Forestry: Research Strategy and International Cooperation

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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
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).
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
Different 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/
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
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 of 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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