

BRICS Network University



UNIVERSIDADE FEDERAL DE VIÇOSA
Federal University of Viçosa

Renewable Energy Graduate Program

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BRICS Network University : Energy

Energy Engineering +Renewable Energy

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**Sustainable Energy
Graduate Program**



- **Graduate Programs that support this Project**
- Forest Science,
- Agricultural Engineering and
- Plant Science



BRICS NU - Energy

Localization of the universities involved in this proposal



University that committed resources to this proposal:

UFV = Federal University of Viçosa

Partner universities/Proposal: Energy Engineering

UFSC = Federal University of Santa Catarina

UFRGS = Federal University of Rio Grande do Sul

UsP = University of São Paulo

BRICS NU – Renewable Energy

Description of the Graduate programs that support BRICS NU:

	Forestry Science	Agricultural Engineering	Plant Science
Started	1975	1970	1961
Faculty supervisors	26	26	40
Students: M	62	102	130
Students: D	60	60	70
Degrees awarded: M	739	702	1,071
Degrees awarded: D	225	350	482

www.posdea.ufv.br

www.posfitotecnica.ufv.br

www.poscienciaflorestal.ufv.br



• **Research Areas**

- a) Energy from Agricultural and Forest Biomass
- b) Solar Energy and
- c) Energy Systems Modeling.





a) Energy from Agricultural and Forest Biomass

(i) Solid: agricultural and forest biomass

(ii) Liquid: 1st and 2nd generation bioethanol, biodiesel crops and microalgae

(iii) Biogas: gasification and biodigestion

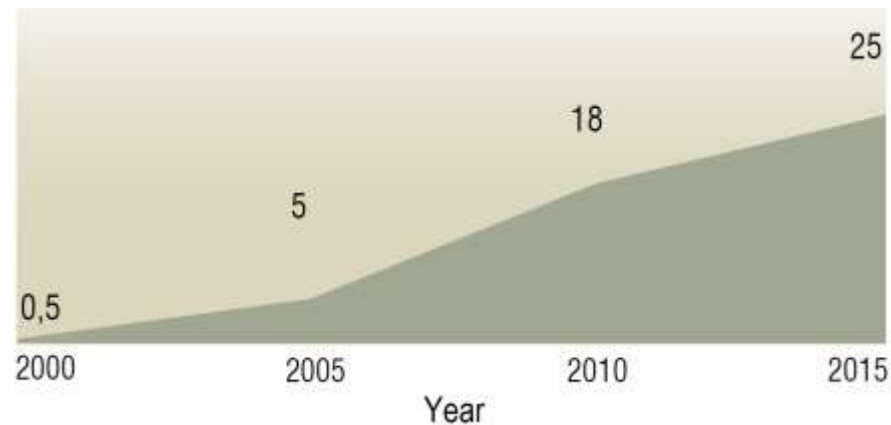
(iv) Energy crops, agricultural and forest production.





Sugarcane Breeding Program at Federal University of Viçosa

Evolution of total sugarcane land area (%) cultivated in Brazil with the varieties from Federal University of Viçosa





b) Solar Energy

Photovoltaic (systems and technology)

Thermal (water and space heating).

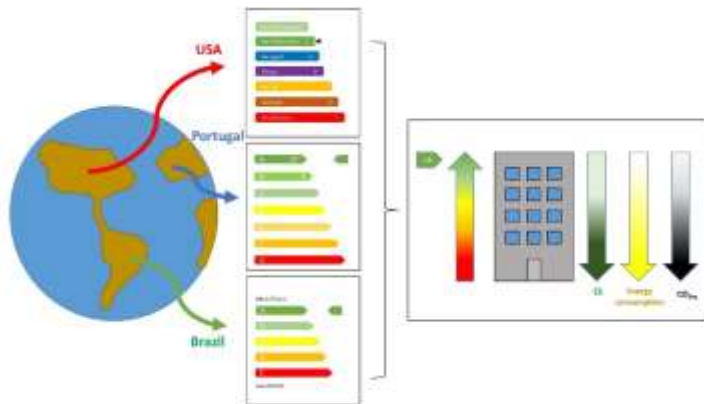




c) Energy Systems Modeling

Rationalization of energy use in processes

Climate, energy, eco-physiology relationships of bioenergy crops



Development of agroenergetic crop growth models

Sugarcane

Soybeans

Eucalyptus

Palms:

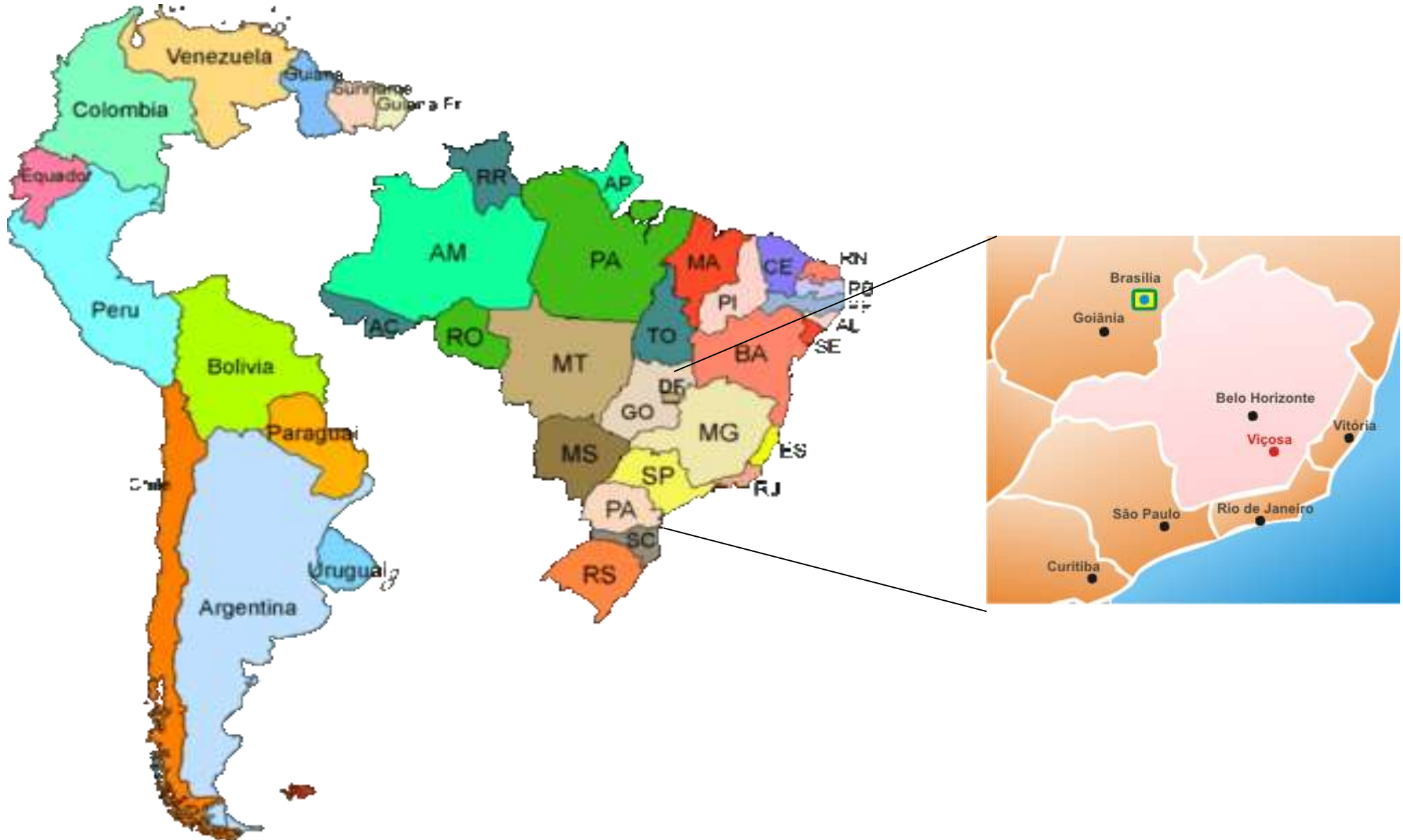
Acrocomia intumescens (macaúba)

Elaeis guineenses (dendê)





Where in the world is Viçosa?



Viçosa

Viçosa:

- population: 72.000
- climate: tropical – altitude
 - rainy summer, maximum 28°
 - dry winter, minimum 8°





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- Thank You
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