SPATIAL ASSESSMENT OF POTENTIAL SUGARCANE STRAW TO ENERGY

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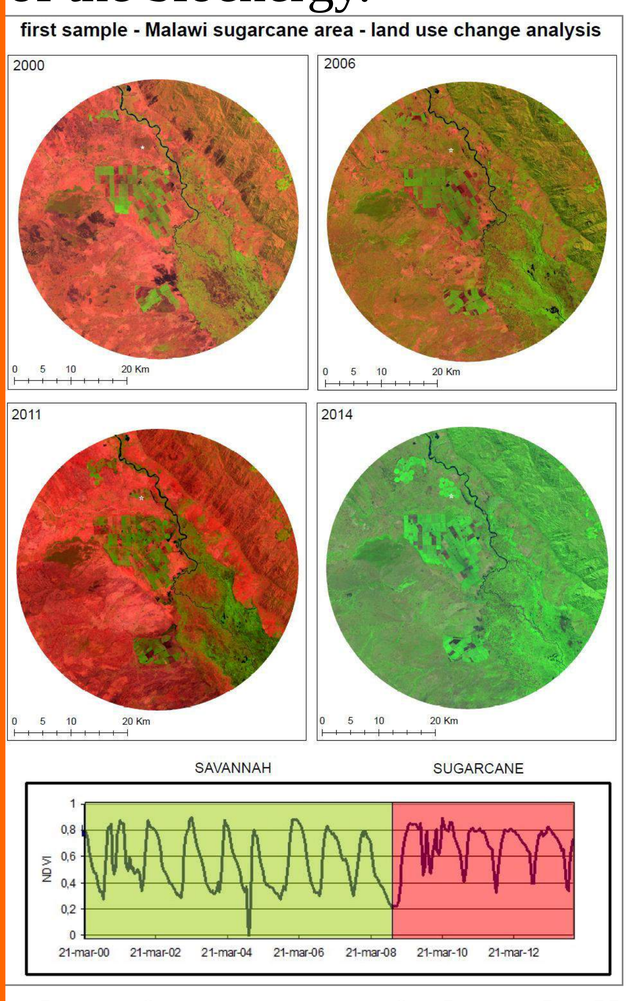
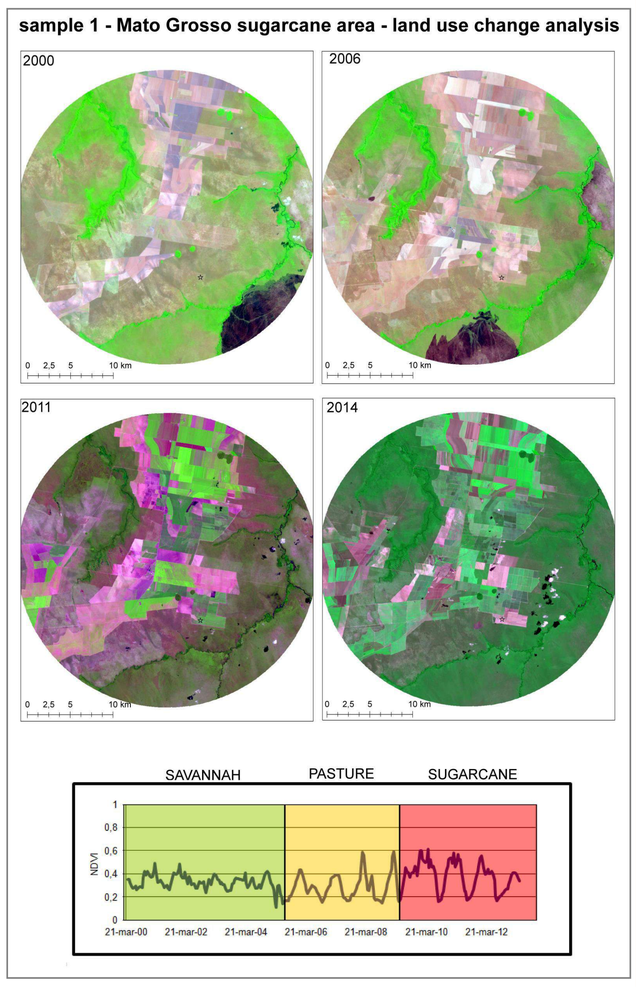
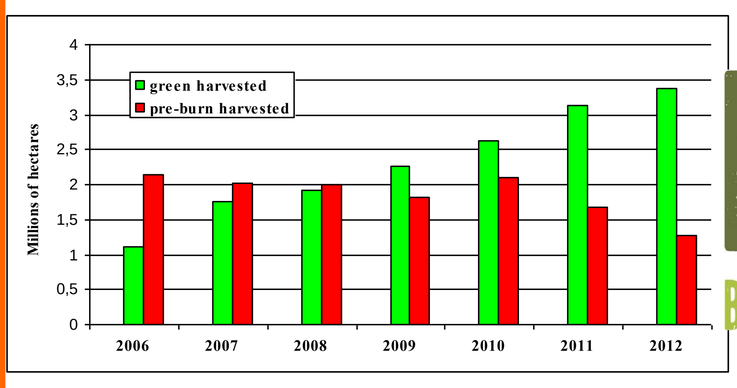
Overview: since the energy production advances on agricultural and non-agricultural areas (indirect land use change or land use change), the sugarcane sector has been facing some criticism concerning the ecological benefits of the bioenergy.





Therefore, one of the challenges of the sector has been technological investments to maximize the production in a sustainable way, for example, the increases of mechanical harvesting without burning (figure 3).



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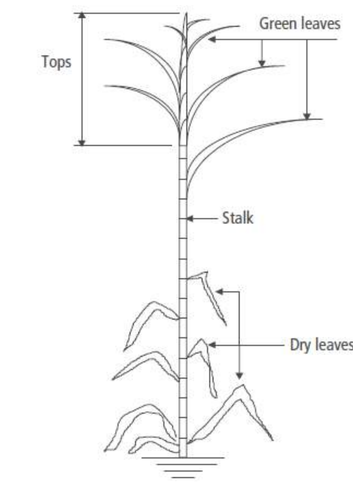
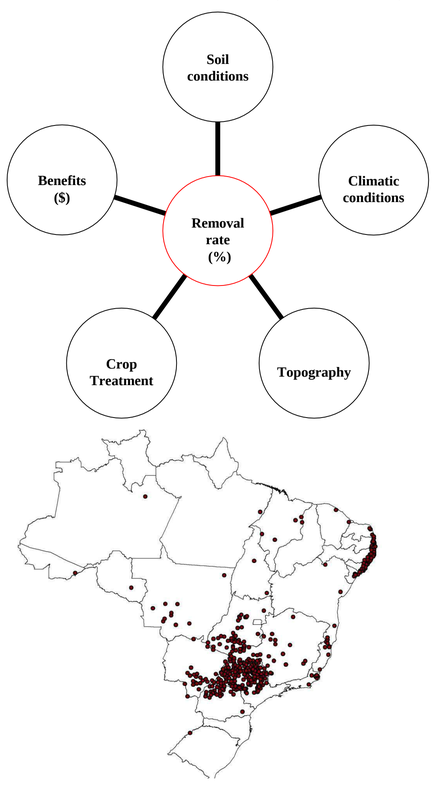
One of the gains from mechanical harvest is the possibility to retrieve the crop residues left on the field (straw) and use it to produce bioelectricity.

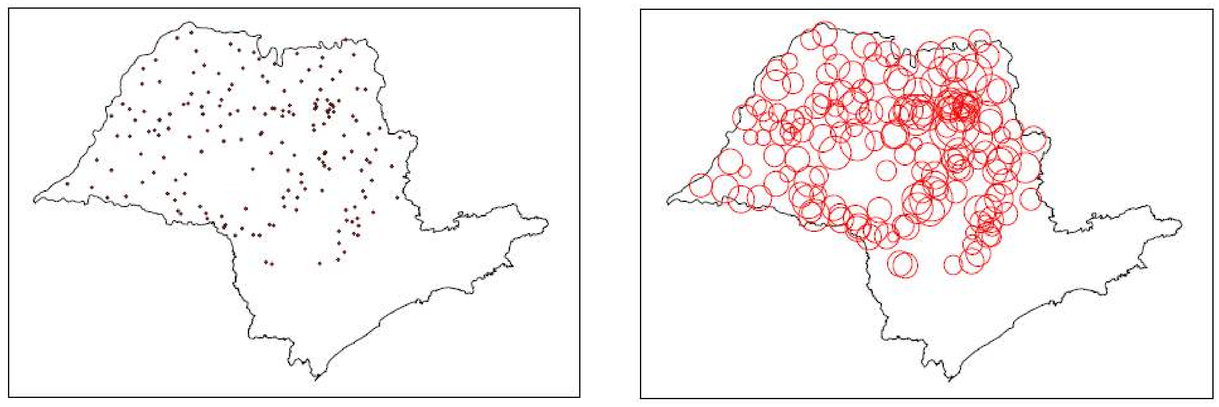


SAMPLE	HIGHER HEATING VALUE (MJ/kgDb
Dry leaves	17,4
Green leaves	17,4
Tops	16,4
Bagasse	18,1

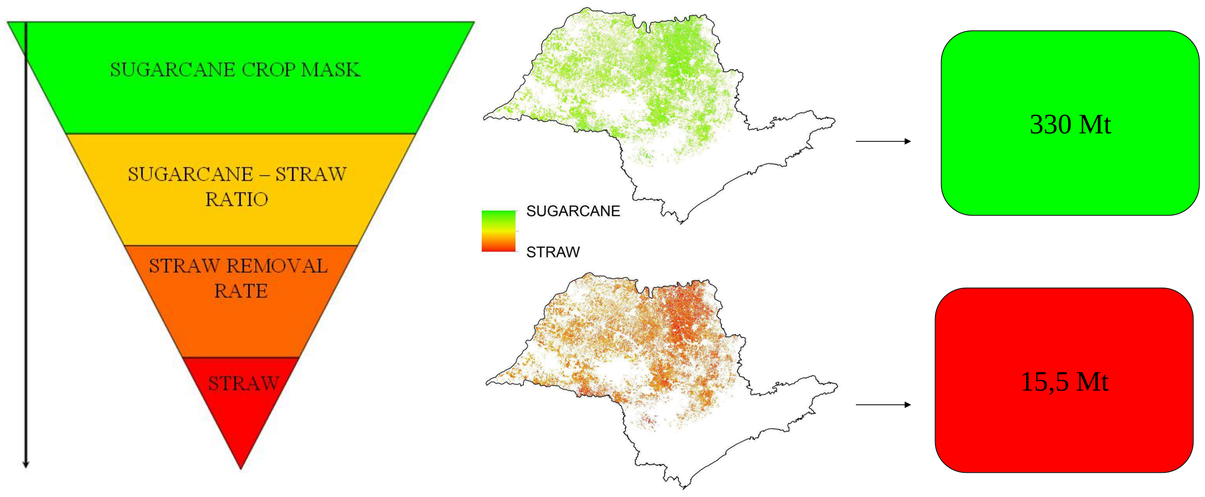


On that view, this study aims to provide the sugarcane straw to energy potential in the sugarcane mills (state of São Paulo), as well as associated potential costs in supply chain. This study is divided in five major steps and results are embedded into the following phases:

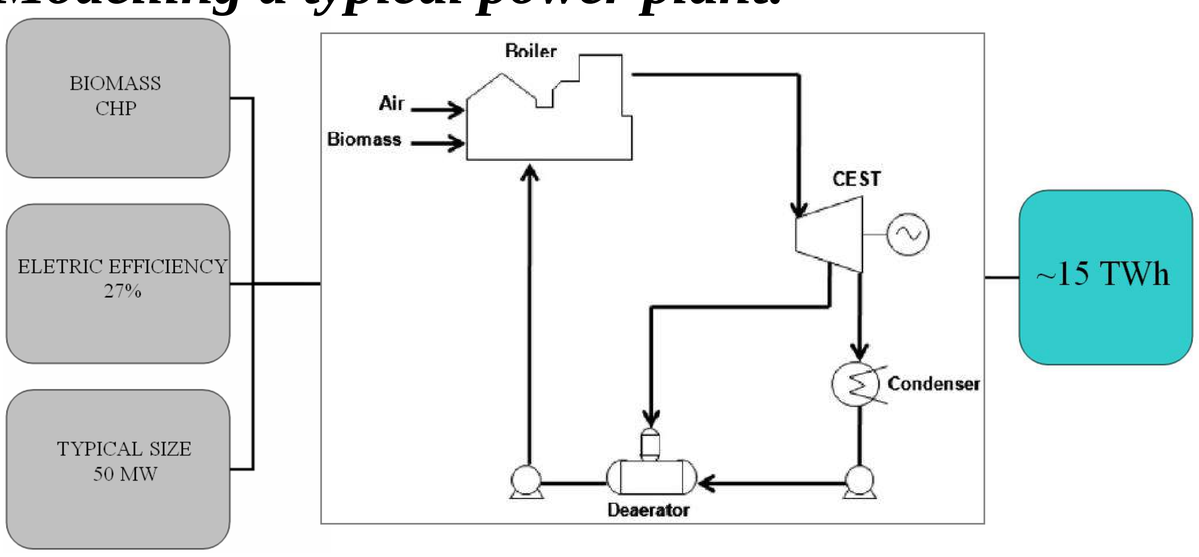
Radius of the mills (area of influence):



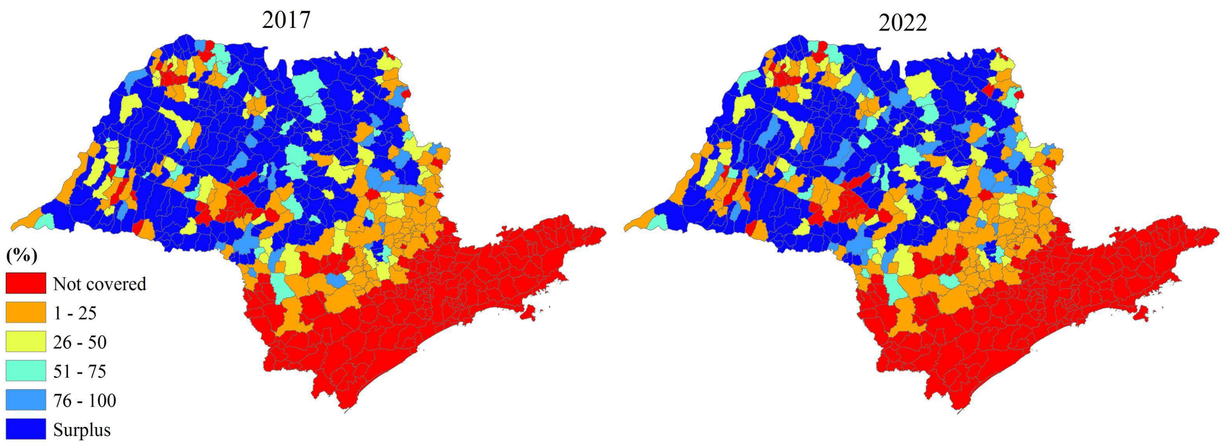
Straw availability:



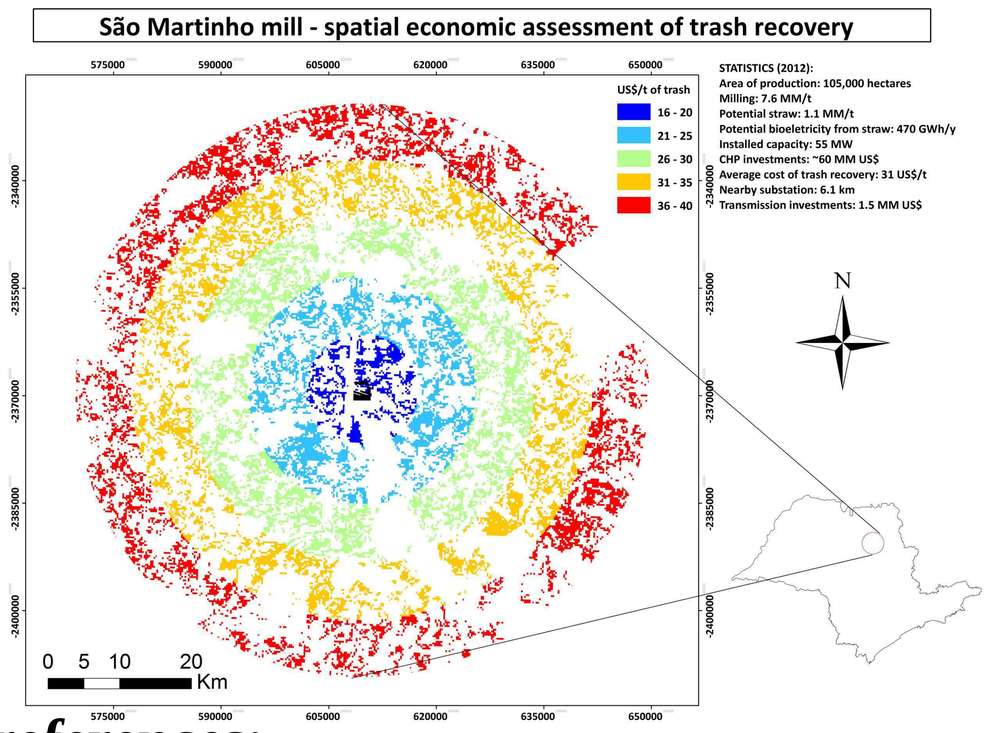
Modelling a typical power plant:



Scenarios (rate of energy consumption):*



Potential costs:



Main references:

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•SEABRA, J. E. A.; MACEDO, I. C. Comparative analysis for power generation and ethanol production from sugarcane residual biomass in Brazil. **Energy Policy**. v. 39, p. 421-428, 2011.