

O aquecimento global e o Brasil

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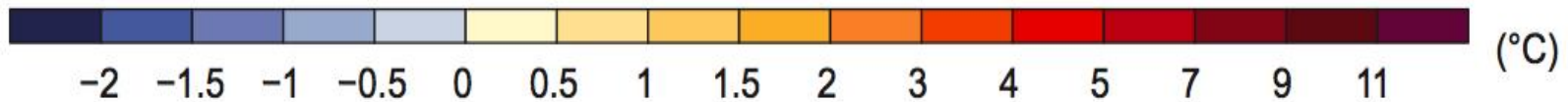
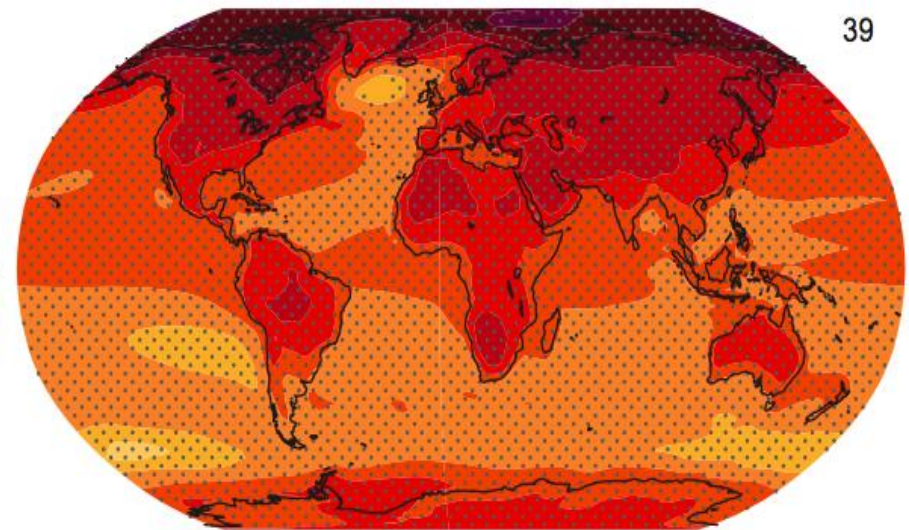
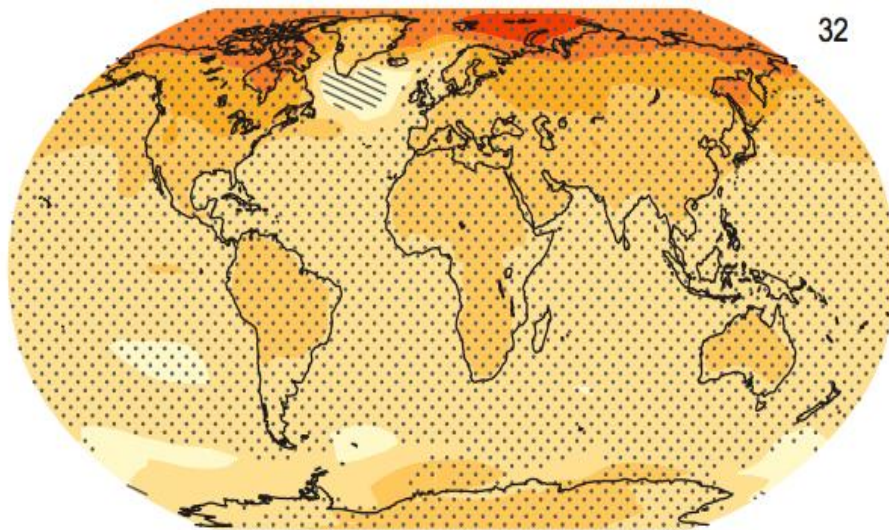
Em que mundo viverão nossos netos?

RCP 2.6

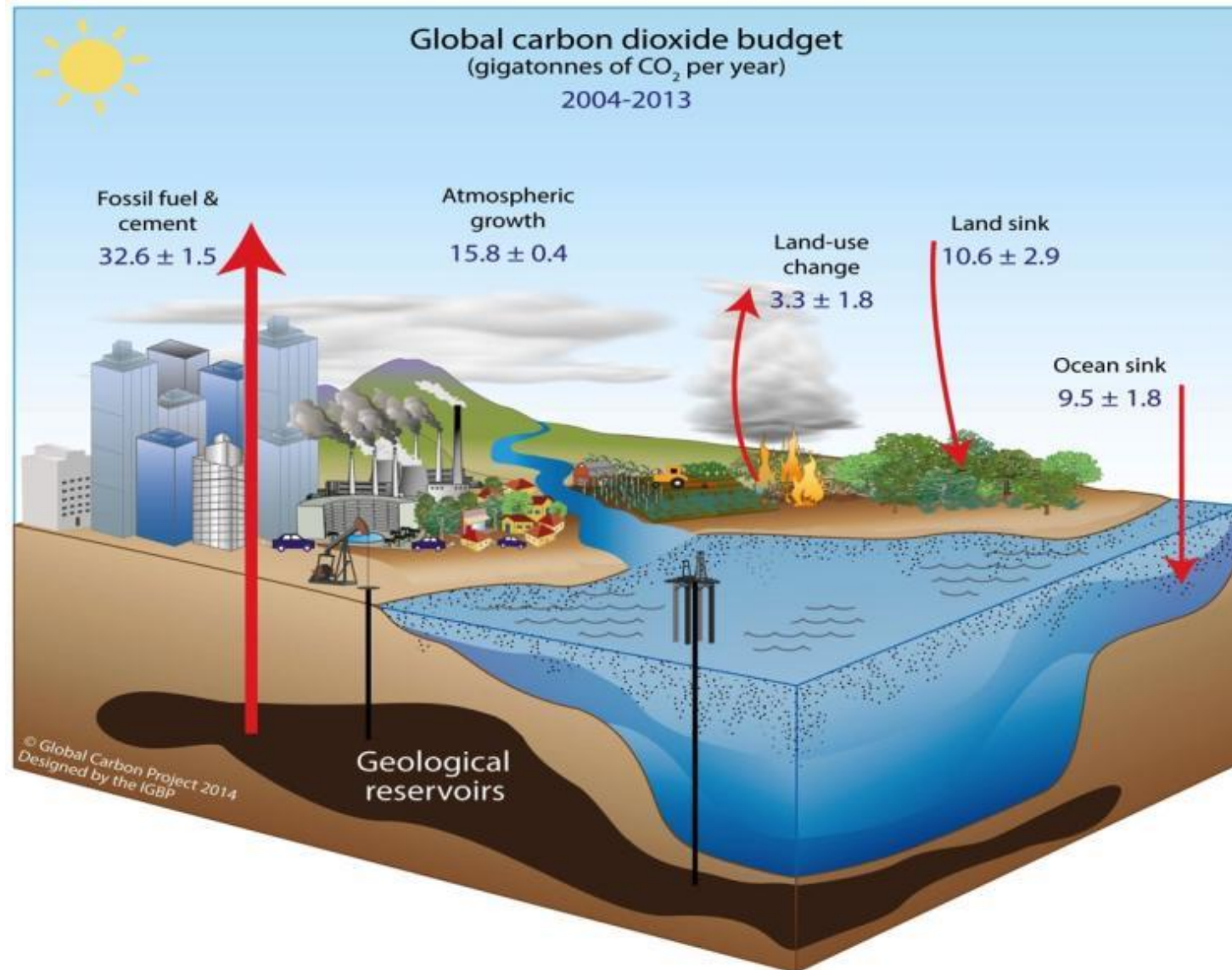
RCP 8.5

(a)

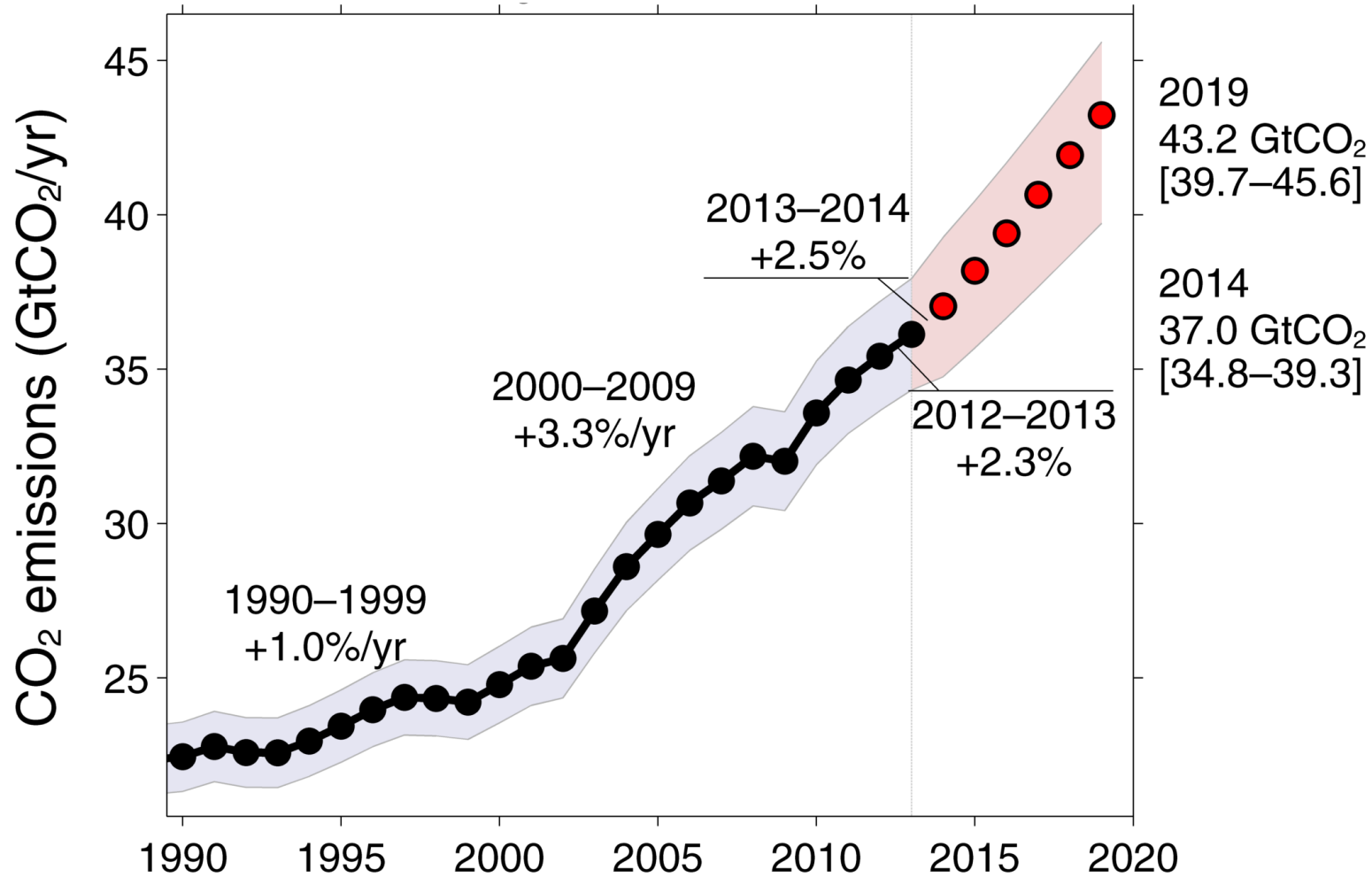
Change in average surface temperature (1986–2005 to 2081–2100)



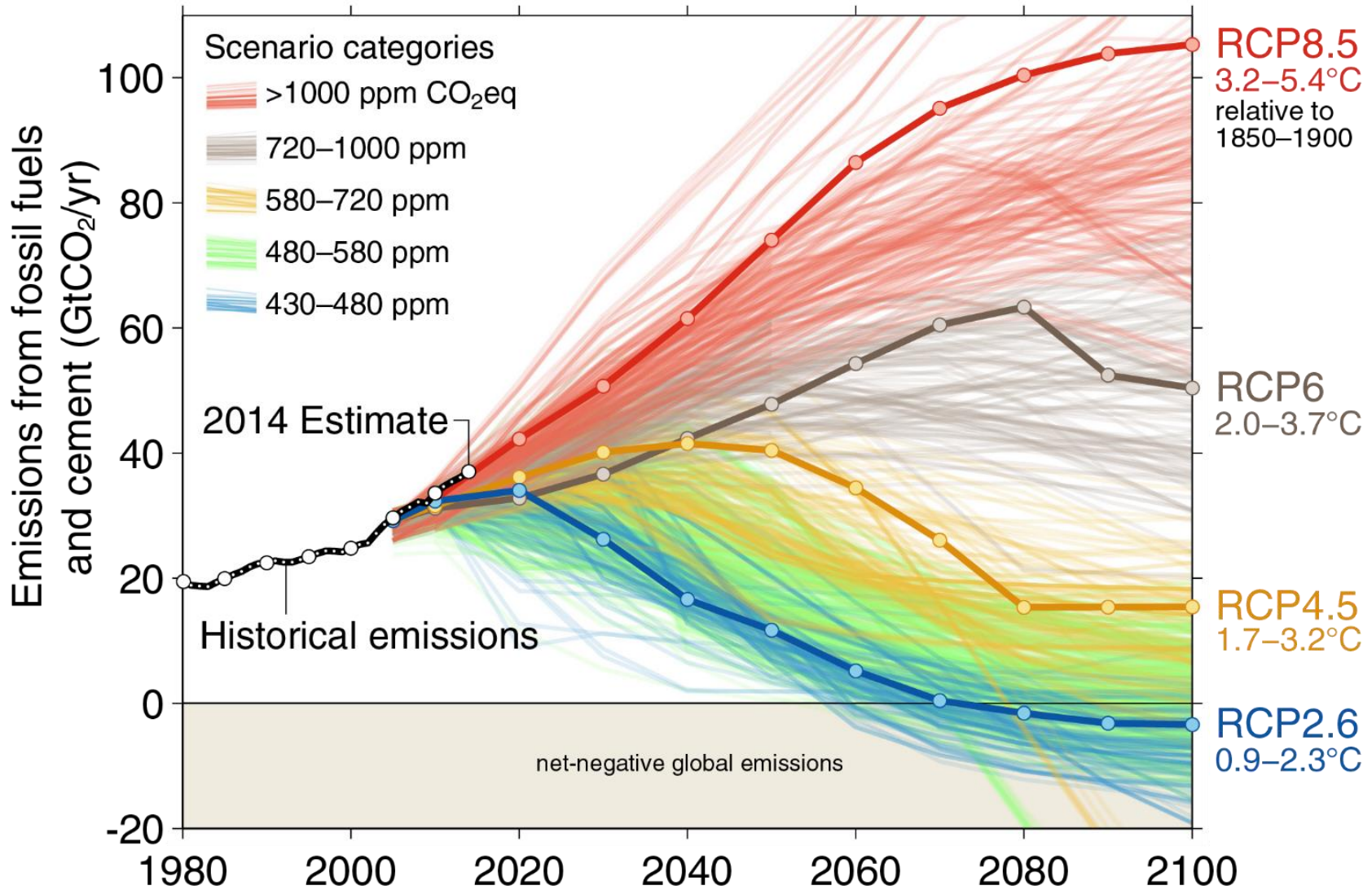
Ciclo de carbono global



Crescimento persistente de emissões

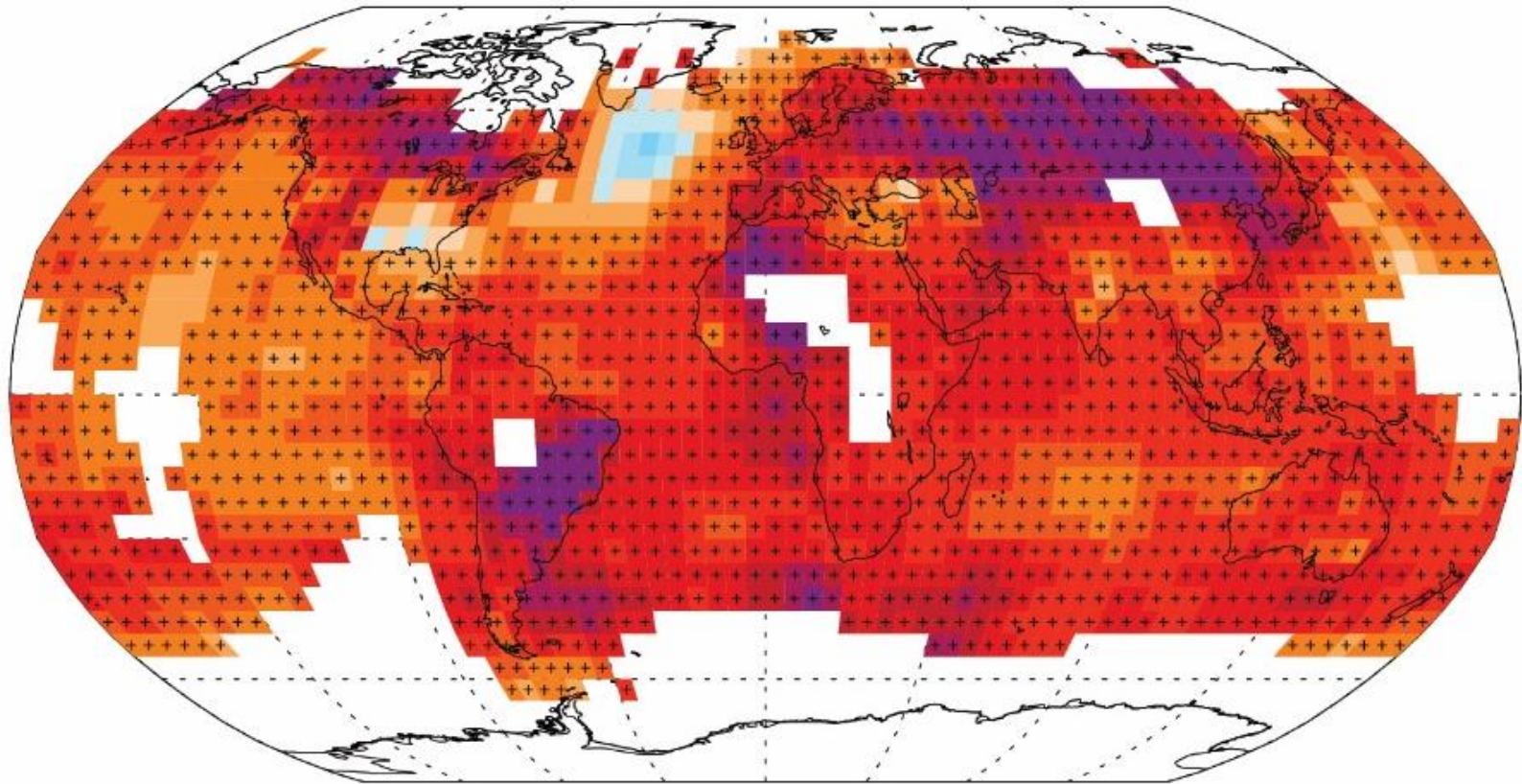


Em que mundo viverão nossos netos?



O que quer dizer 1° C a mais?

Observed change in average surface temperature 1901–2012



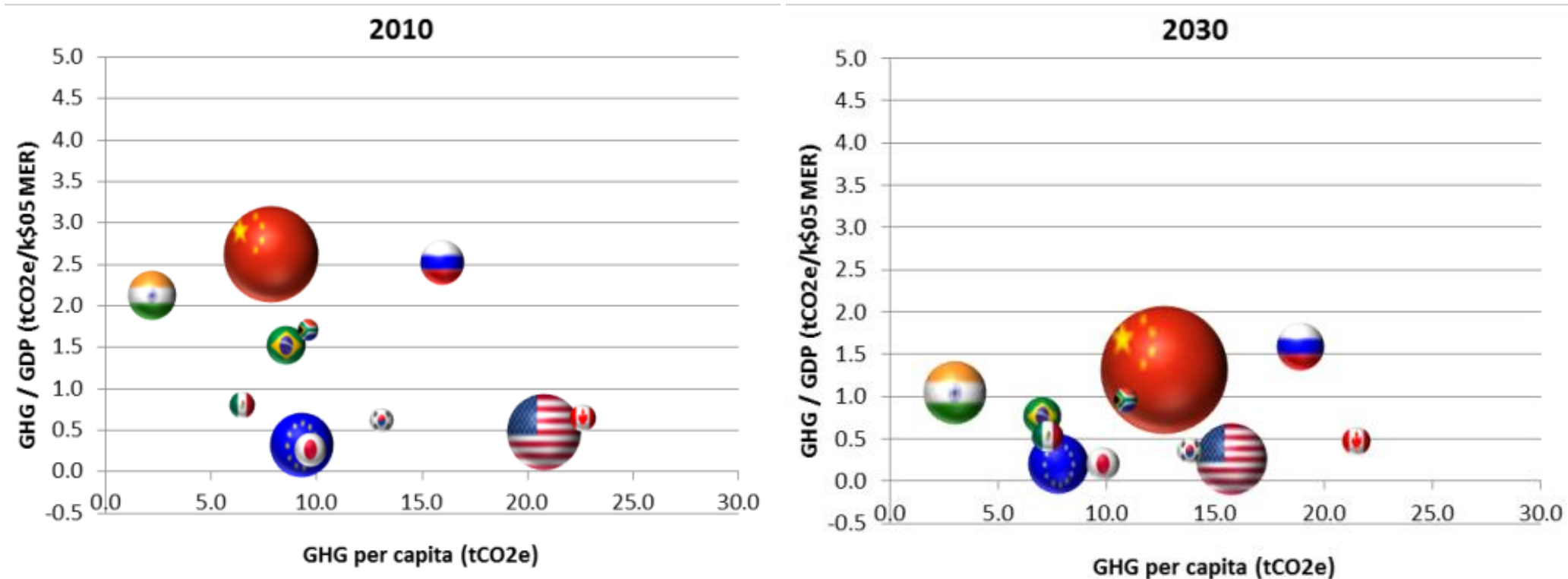
Trend (°C over period)

Escassez de água: bilhões serão afetados



Emissões em 2030 (business-as-usual)

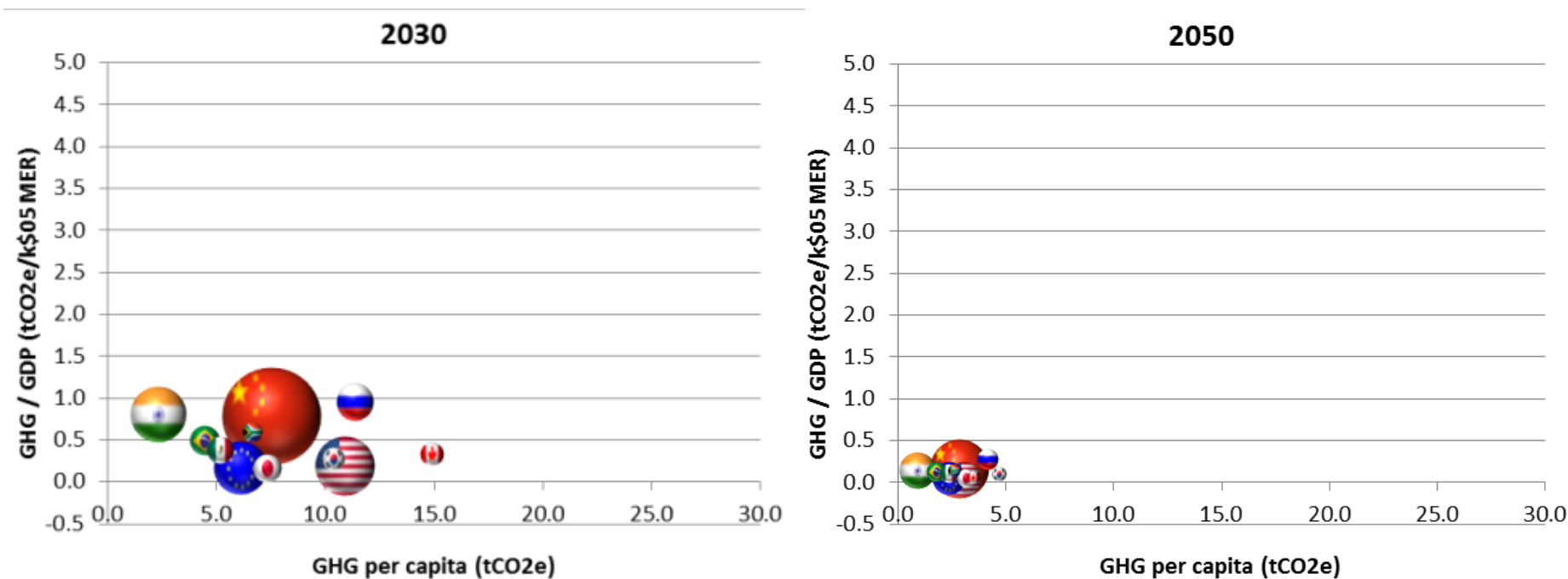
source: EC DG Climate Action



Emissões: GHG por intensidade de GDP vs. GHG per capita

O que é preciso fazer para ficar abaixo de 2° C?

source: EC DG Climate Action



Emissões: GHG por intensidade de GDP vs. GHG per capita

Brasil: economia do conhecimento da natureza

Controle do desmatamento



Tecnologia bioenergia

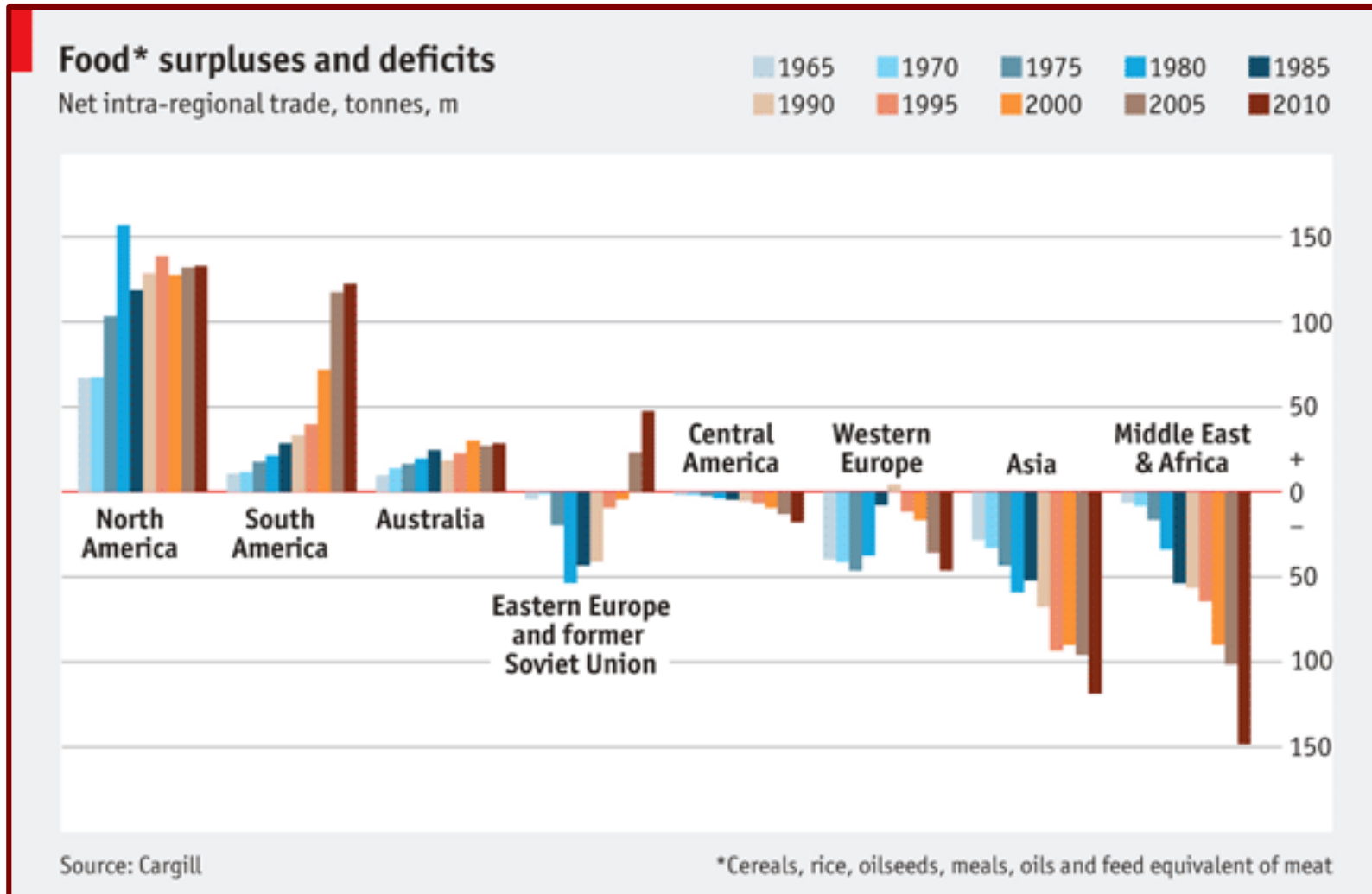


Agricultura tropical

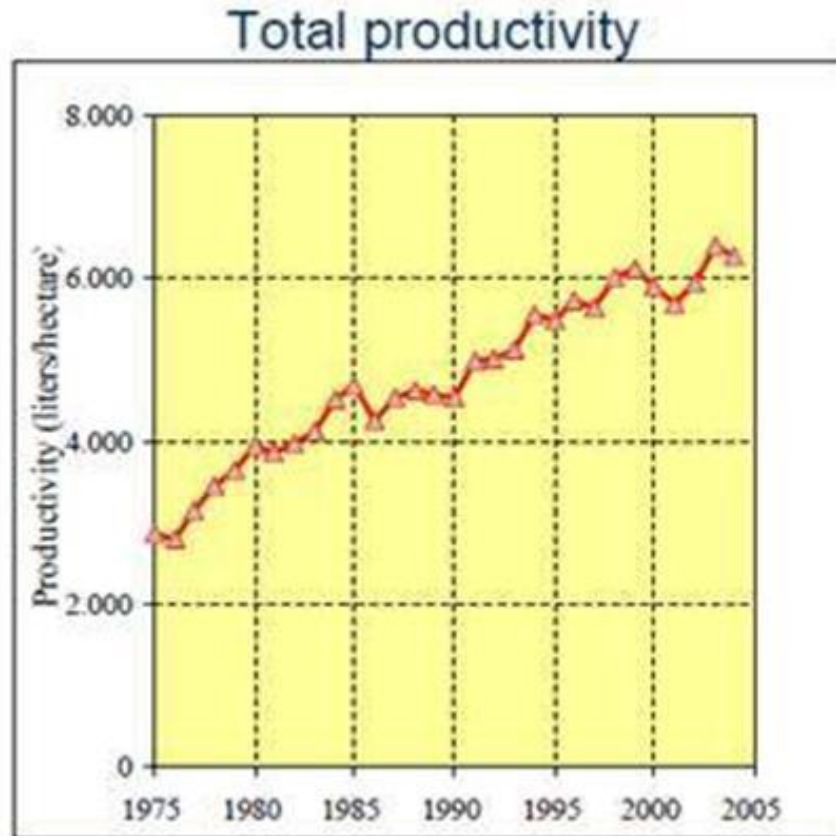


Energias renováveis

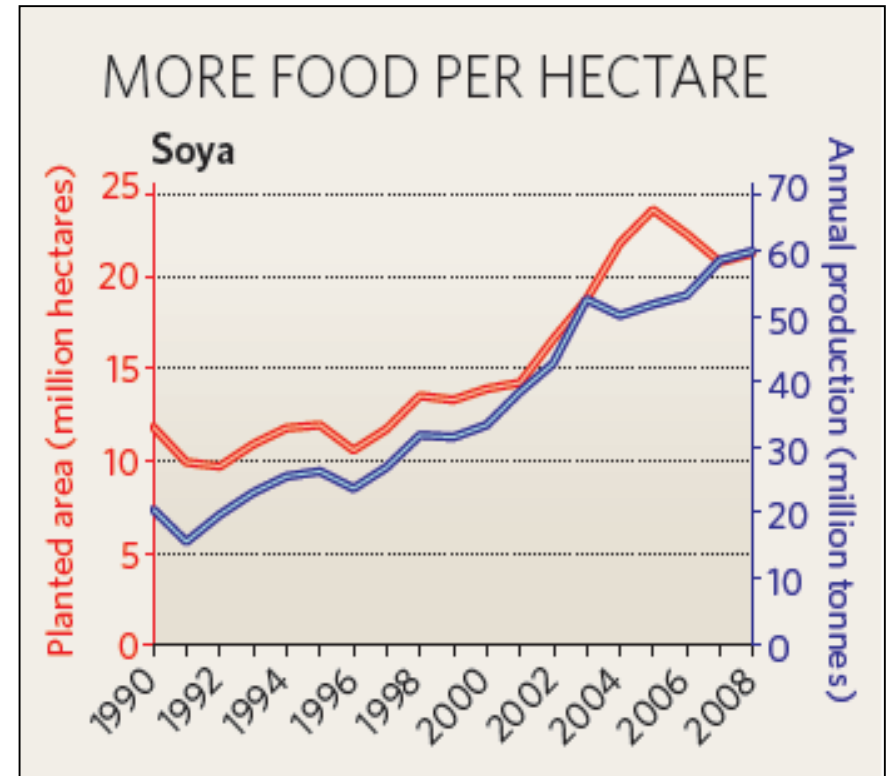
Tendências em Produção e Consumo Agrícola: 1965-2010



Impacto de P&D no etanol e soja

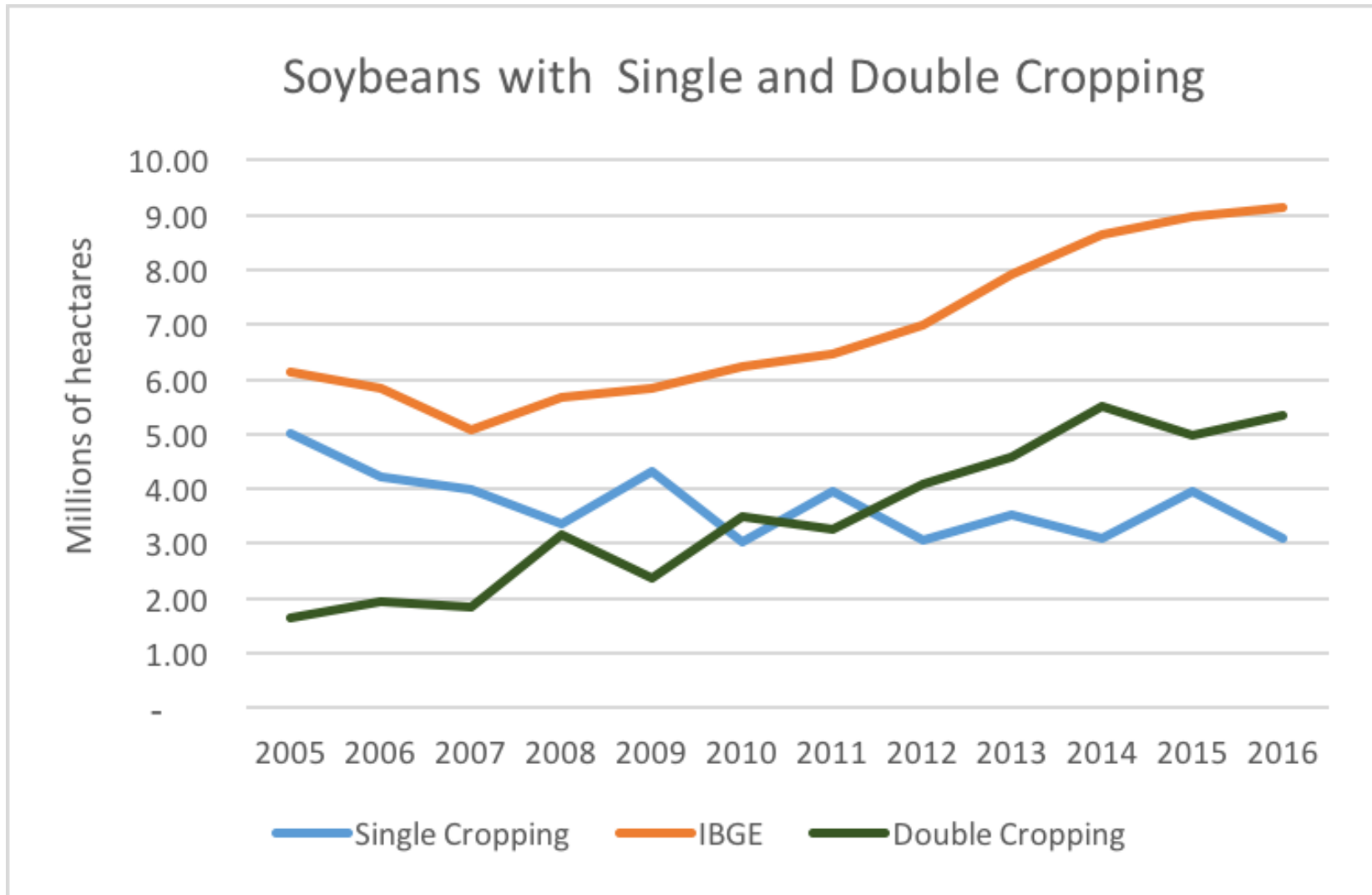


Ethanol: 2.800 litres/ha in 1975
6.000 litres/ha in 2005



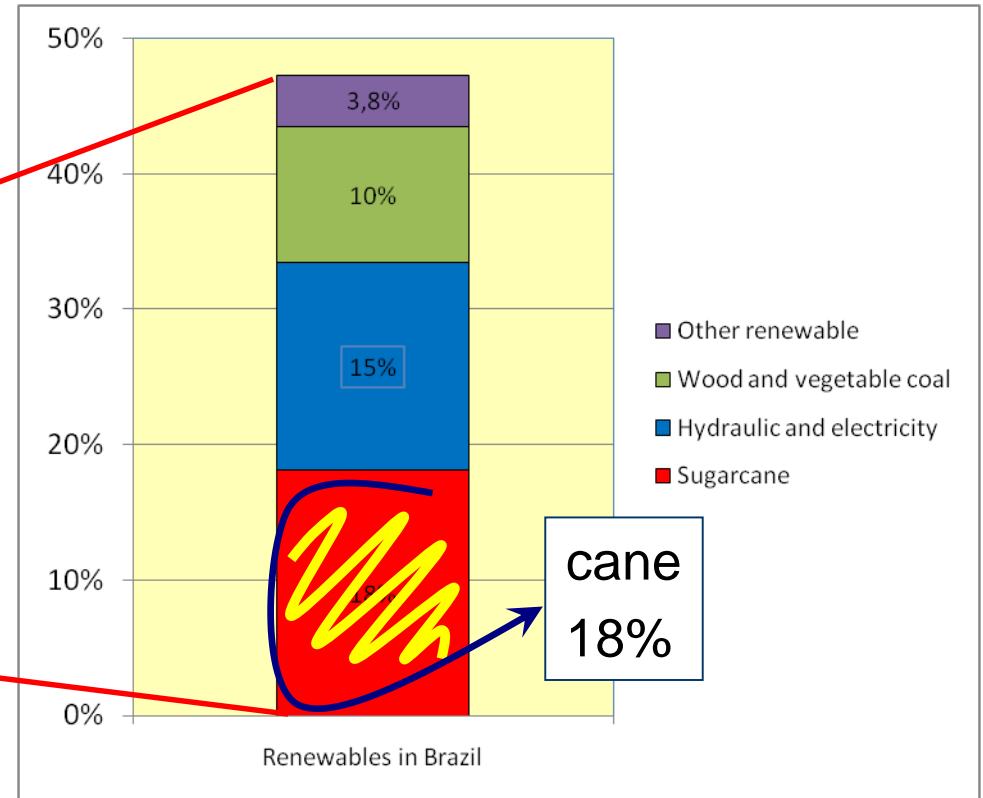
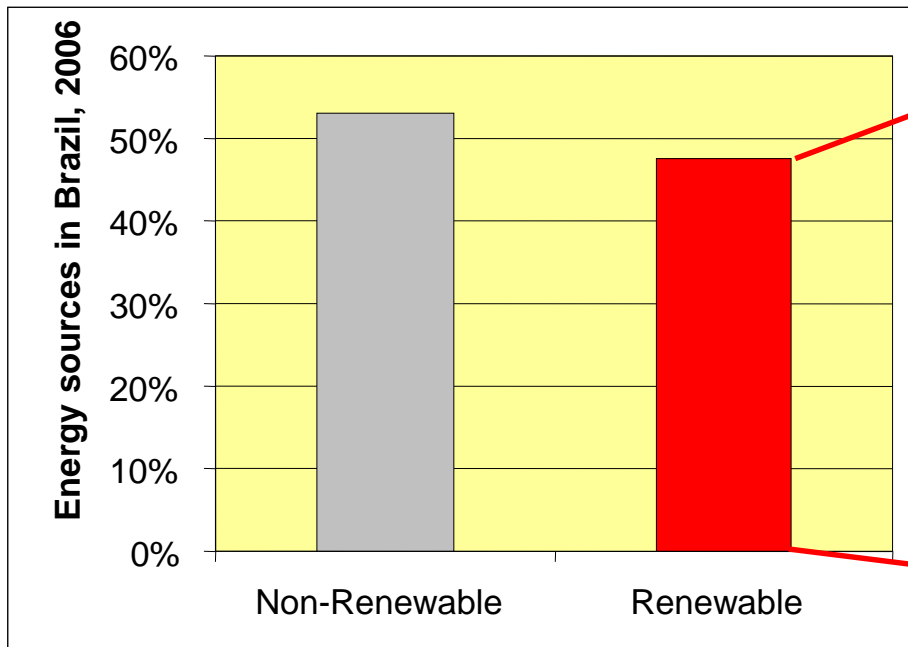
Soya: 600 kg/ha in 1990
2.700 kg/ha in 2008

Impacto de produtividade na agricultura



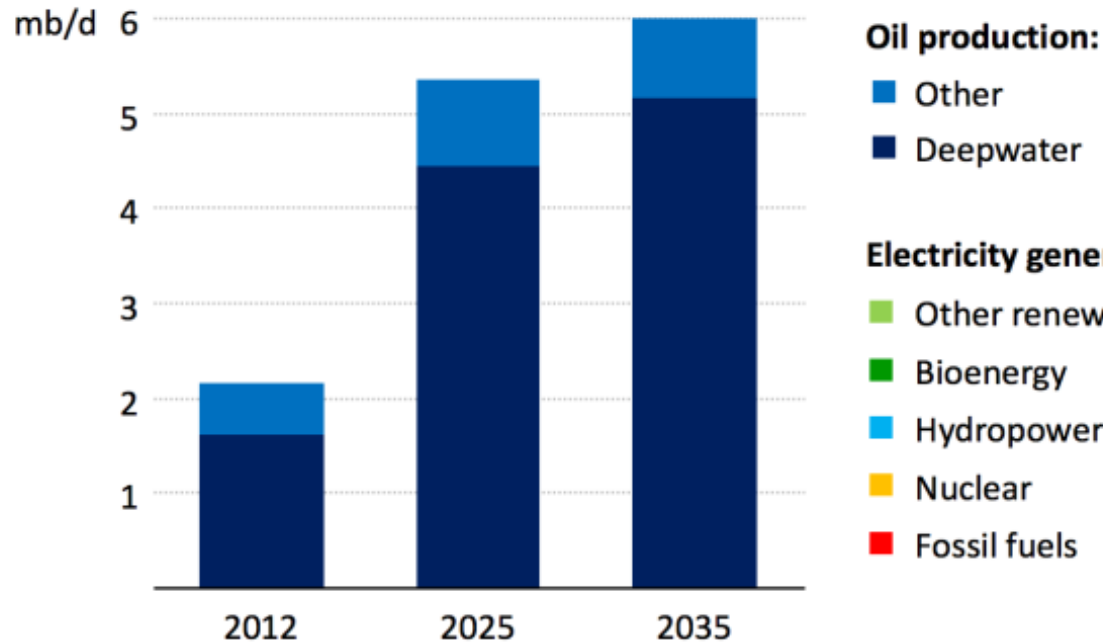
Brazil: 47% of energia renovável (2009)

18% de cana

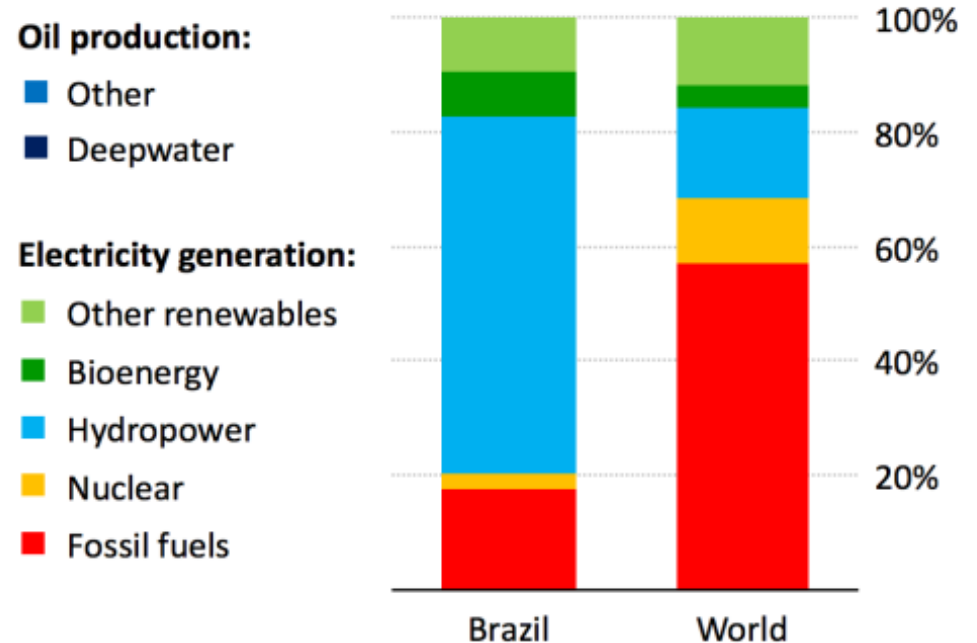


Pré-sal ou renováveis?

Brazil oil production

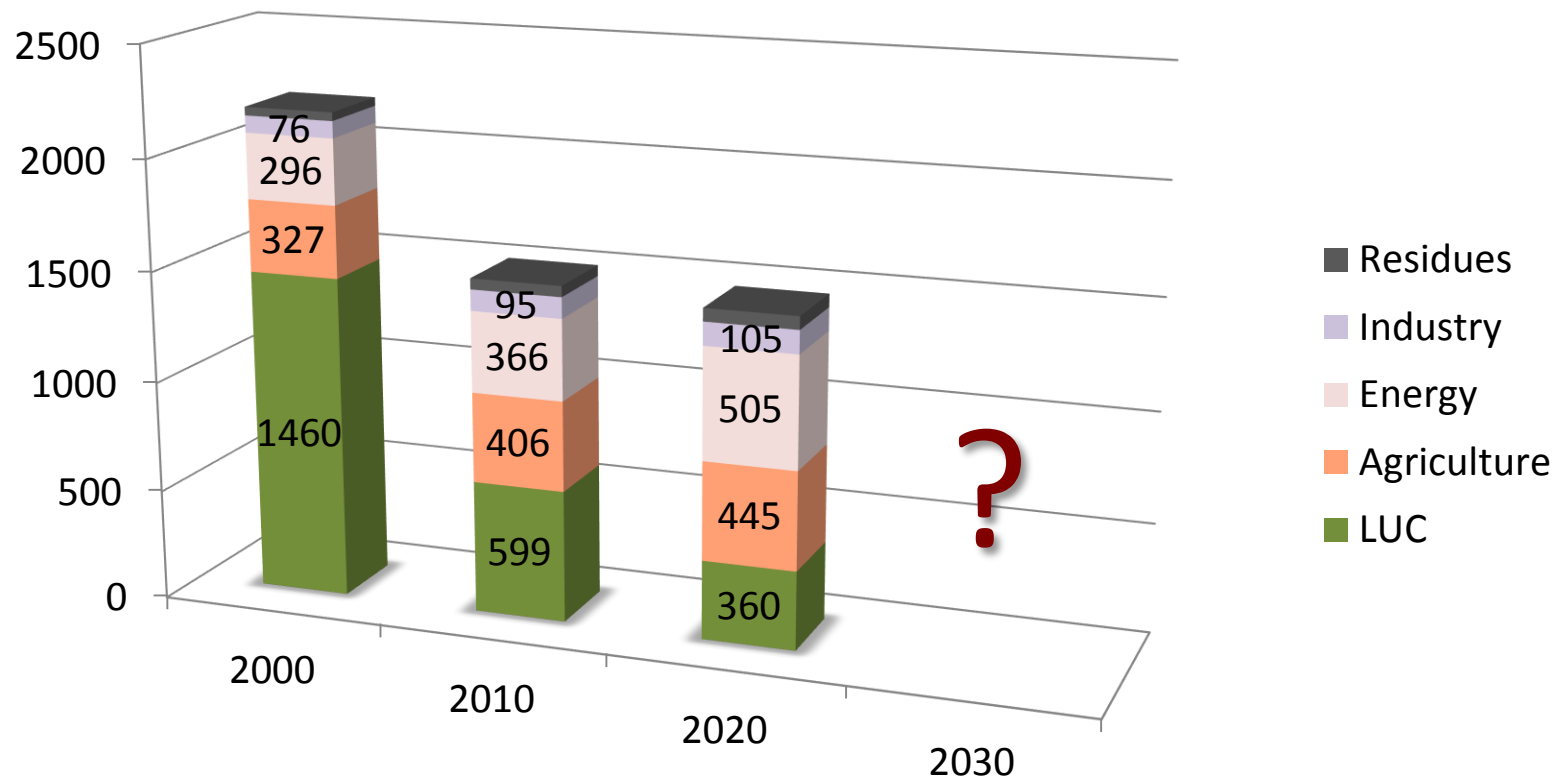


Electricity mix by fuel, 2035



Complex deepwater projects see Brazil joining the top ranks of global oil producers, while the domestic power mix remains one of the least carbon-intensive in the world

What are the likely trajectories on Brazilian emissions?



Redução de 75% em florestas, crescimento em energia e agricultura

Brasil e Acordo de Paris (1)

1. Energia:

- Biocombustíveis: **18%** da matriz energética Renováveis não-hidro para **30%** da matriz.
- **45%** da matriz energética com renováveis.

2. Amazonia

- fim do desmatamento ilegal e **zerar** emissões.

3. Código Florestal:

- Restaurar **12 Mha** de florestas.

4. Plano ABC:

- Restaurar **15 Mha** of pastagens
- Obter **5 Mha** of integração lavoura-pecuária-floresta.

Brasil e Acordo de Paris (2)

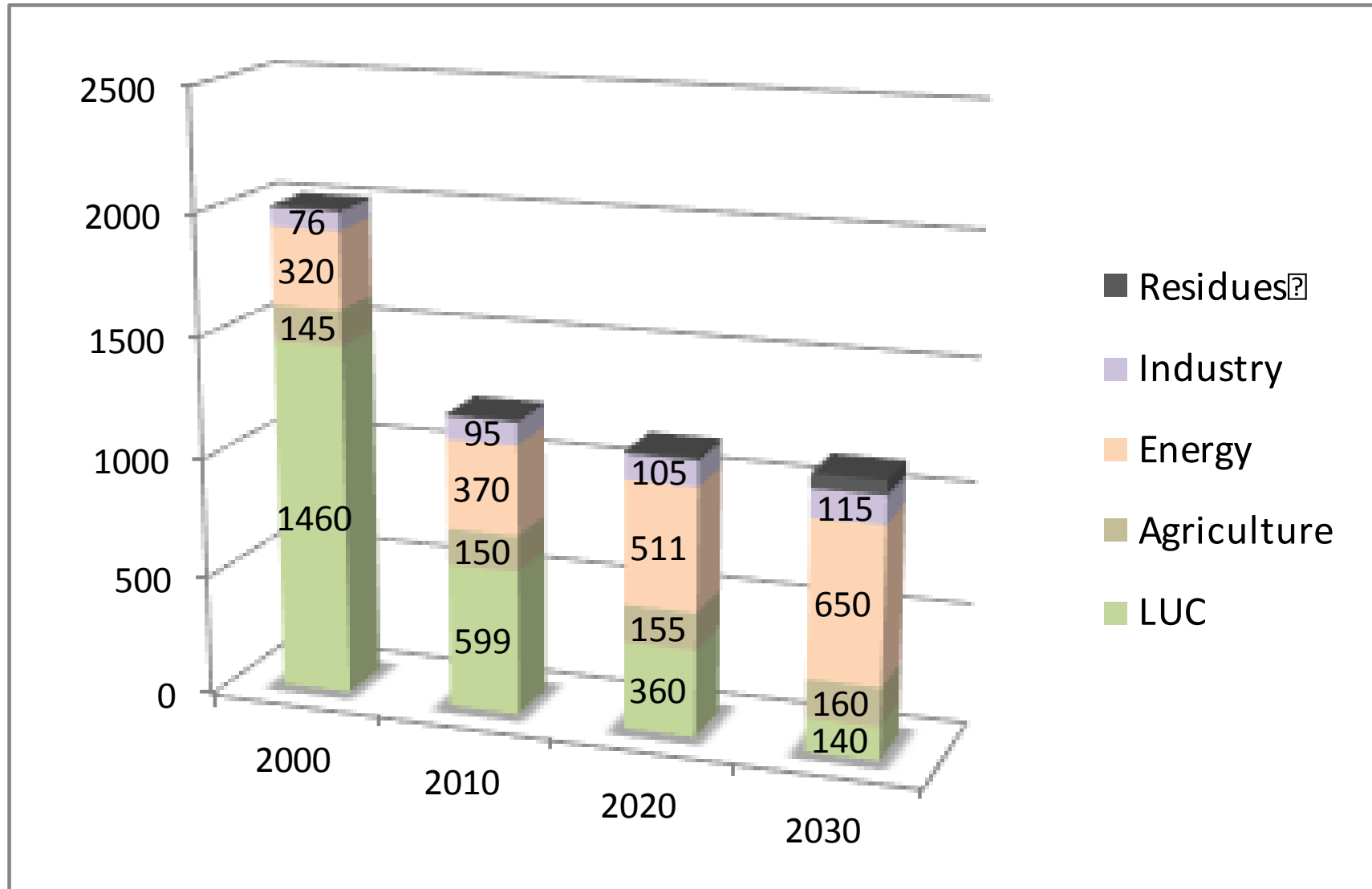
1. Indústria:

“promover novos padrões de tecnologias limpas e ampliar medidas de eficiência energética e de infraestrutura de baixo carbono”; .

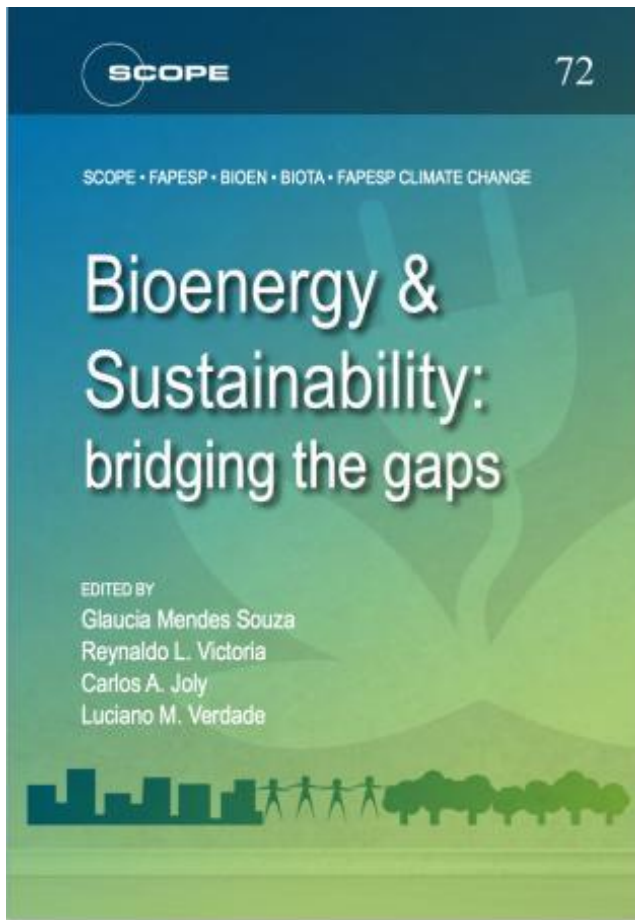
2. Transportes

“promover medidas de eficiência, melhorias na infraestrutura de transportes e no transporte público em áreas urbanas”.

Brasil pós-2020: novo perfil de emissões

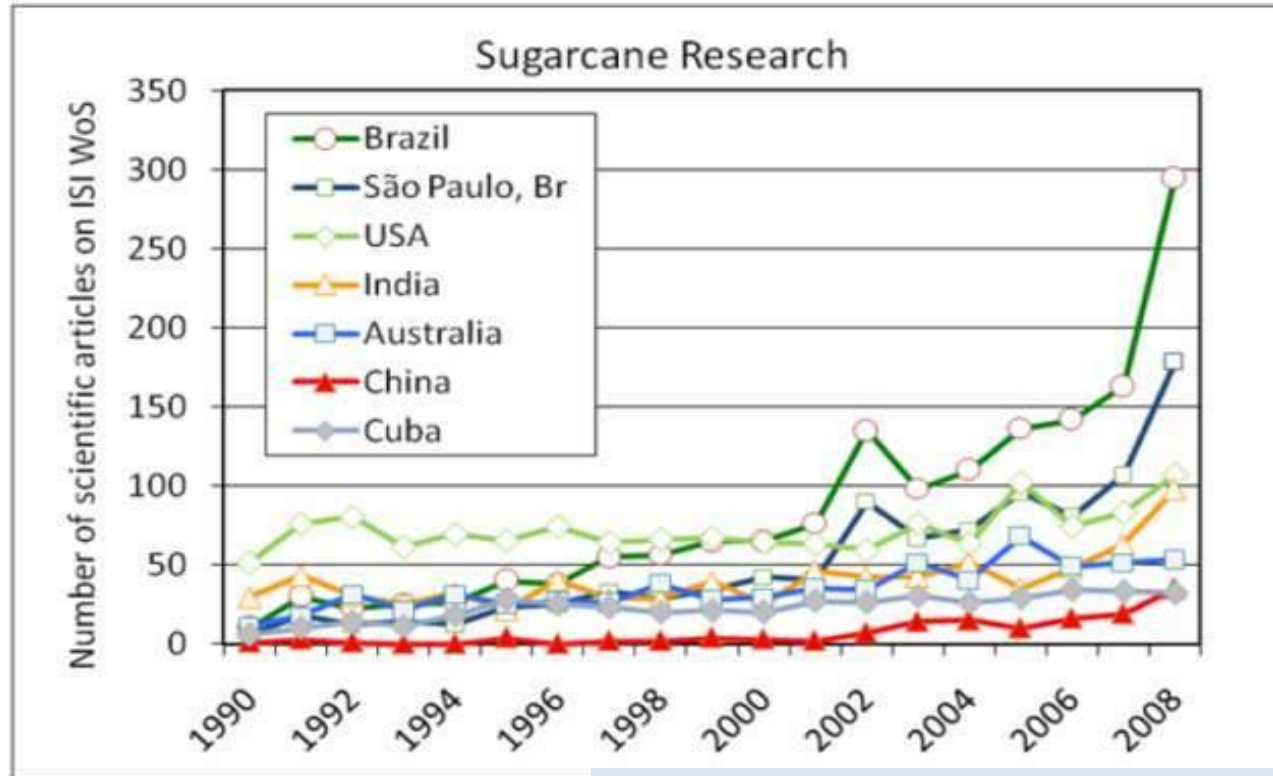


FAPESP: pesquisa em bioenergia



SCOPE report: <http://bioenfapesp.org/>

Pesquisa para suporte a bioenergias



fonte: CH Brito Cruz (FAPESP)

Brasil: potencia ambiental?

Quais os limites para produção de bioenergias: 84 → 148 → 212 → 381 ton/ha?

Review article

Sugarcane for bioenergy production: an assessment of yield and regulation of sucrose content

Alessandro J. Waclawovsky^{1,†,‡}, Paloma M. Sato^{1,‡}, Carolina G. Lembke¹, Paul H. Moore² and Glauca M. Souza^{1,*}

¹Departamento de Bioquímica, Instituto de Química, Av. Prof. Lineu Prestes, São Paulo, Brazil

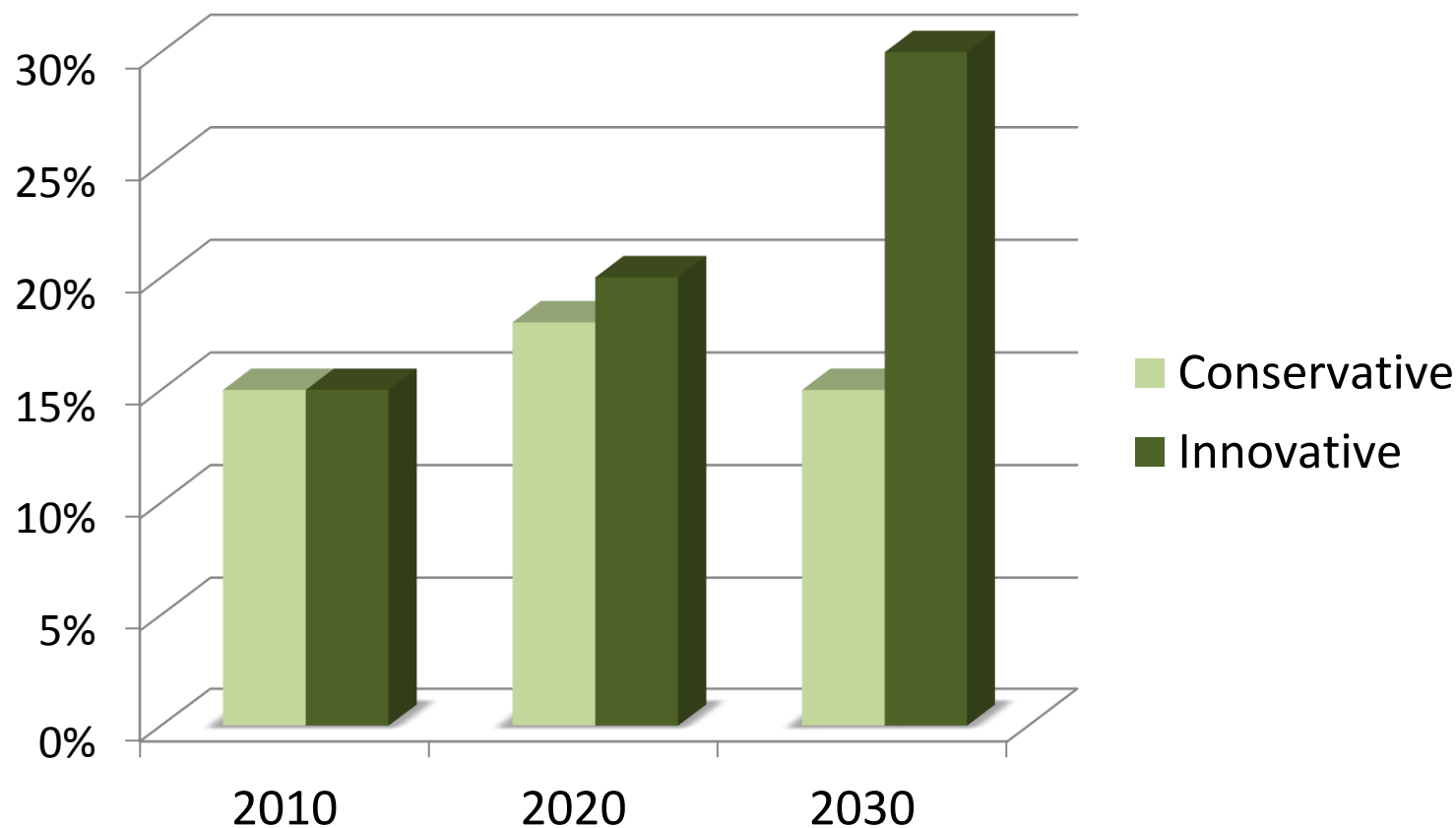
²Hawaii Agriculture Research Center, Kunia, HI, USA

Table 1 Average, maximum and theoretical sugarcane yields (Australia, Colombia, and South Africa) and total dry matter production

Type of yield	Cane yield	Biomass*	
	t/(ha yr)	t/(ha yr)	g/(m ² d)
Commercial Average	84	39	10.7
Commercial maximum	148	69	18.8
Experimental maximum	212	98	27.0
Theoretical maximum	381	177	48.5

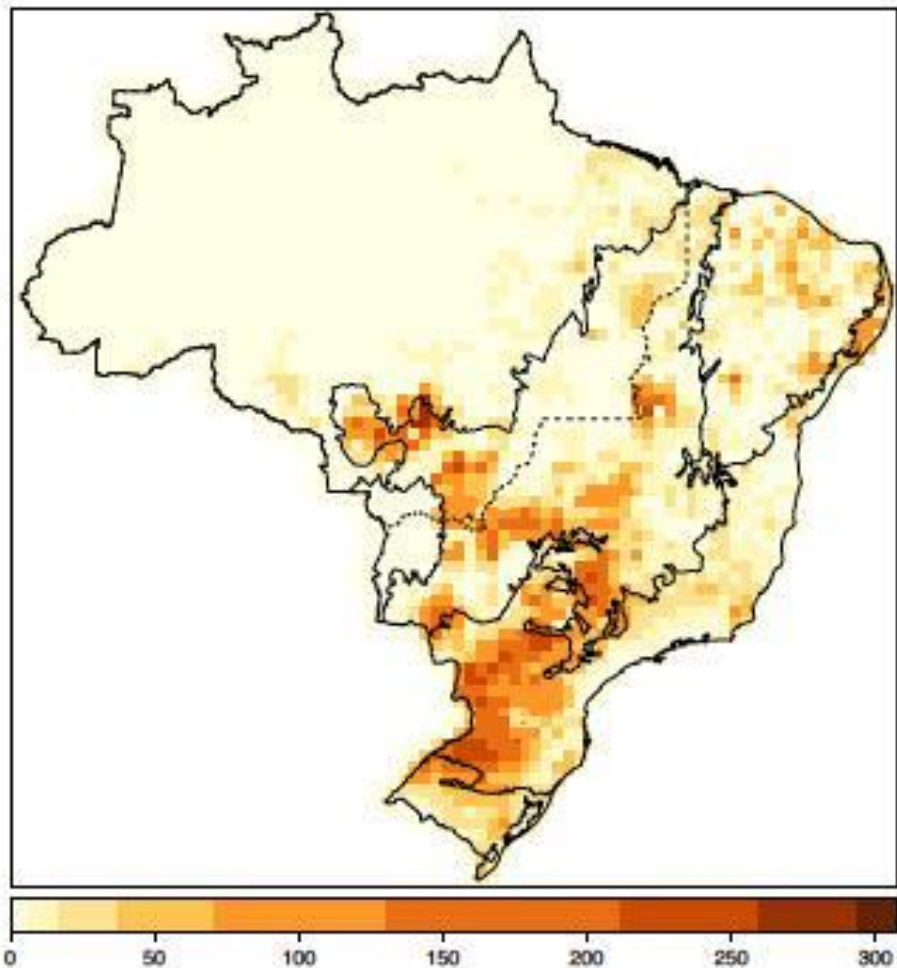


Inovação + políticas públicas = sustentabilidade

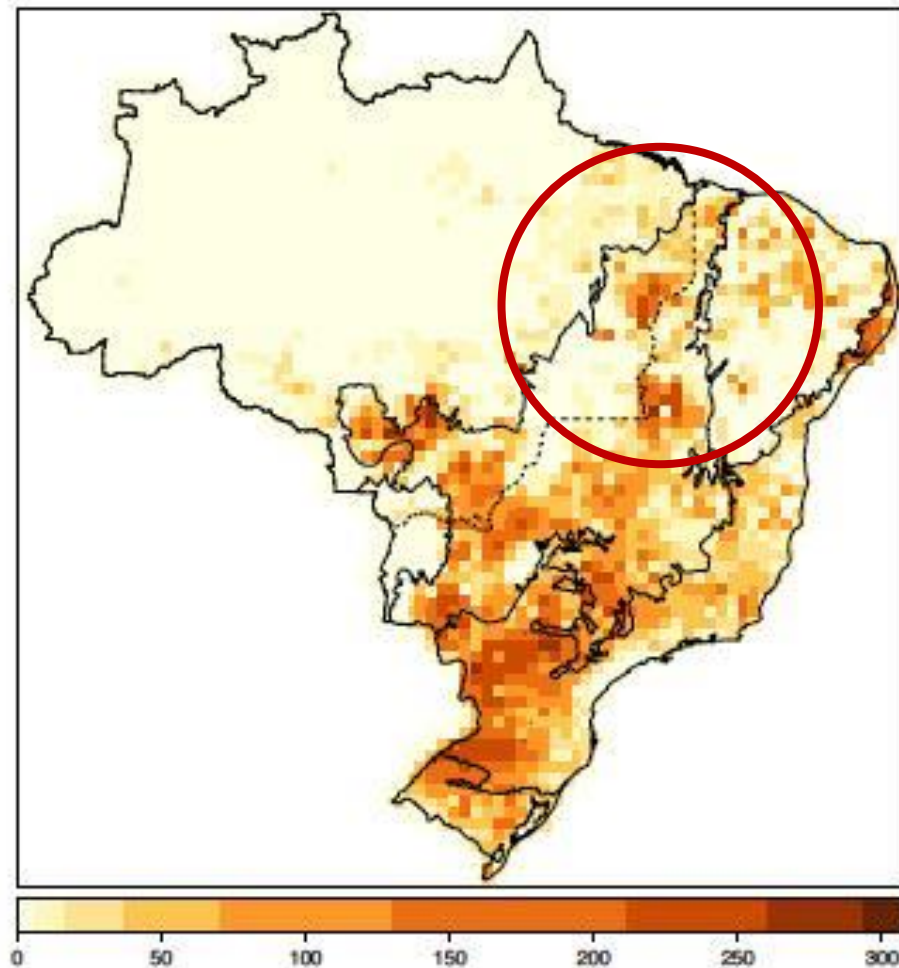


Com os incentivos corretos, biocombustíveis podem ser 30% da matriz energética

Trilema: produção, preservação, inovação



Agricultura 2010



Agricultura 2030