

Improving MRV for agricultural emission reductions in the livestock sector: A perspective from Brazil

Alexandre Berndt
November 07, 2016



Content:



Foto: William Kouri Filho

1. Activity data;
2. Emission factors;
3. Coordinated efforts;

Activity data: Brazilian statistics IBGE - National Census.



Emission factors: IPCC Tier 2 + Local EF.



MCTI- National Inventories:



(MCT, 2006)



(MCT, 2010)



(MCTI, 2013)



(MCTI, 2014)



(MCTI, 2016)

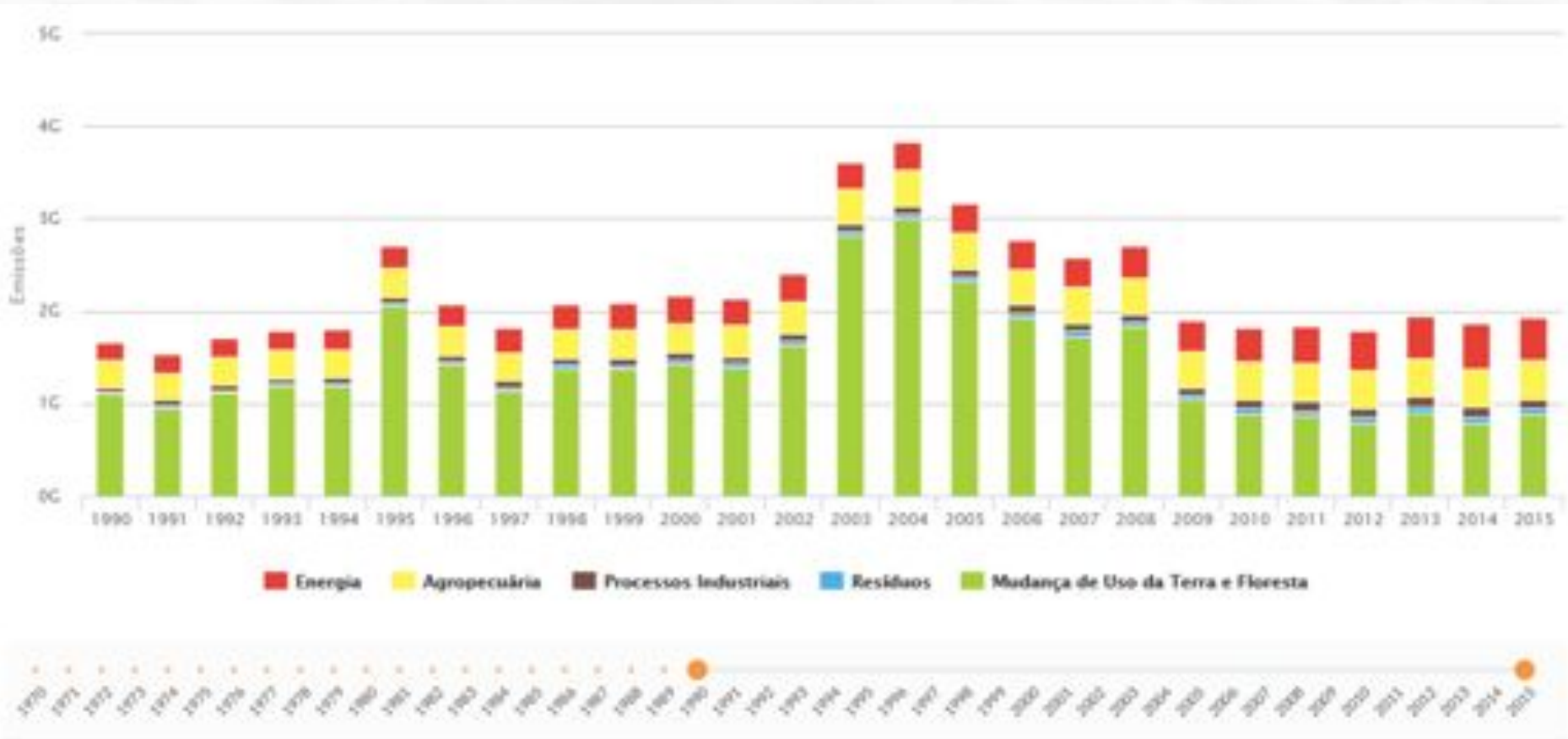
FIGURE I

Evolution of CO₂e emissions by different metrics, 1990 to 2010

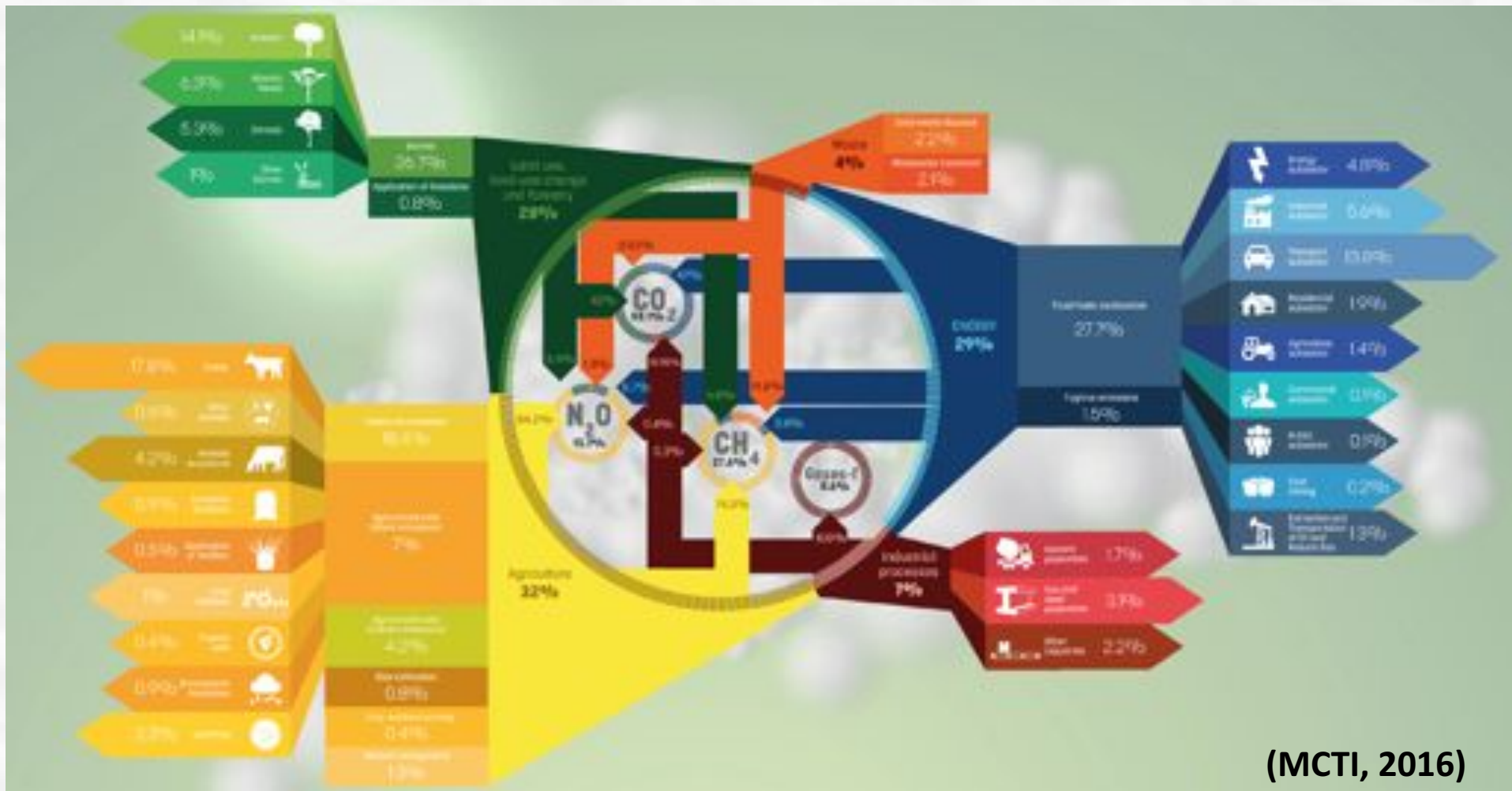
Brazilian Total Emissions



Brazilian emissions



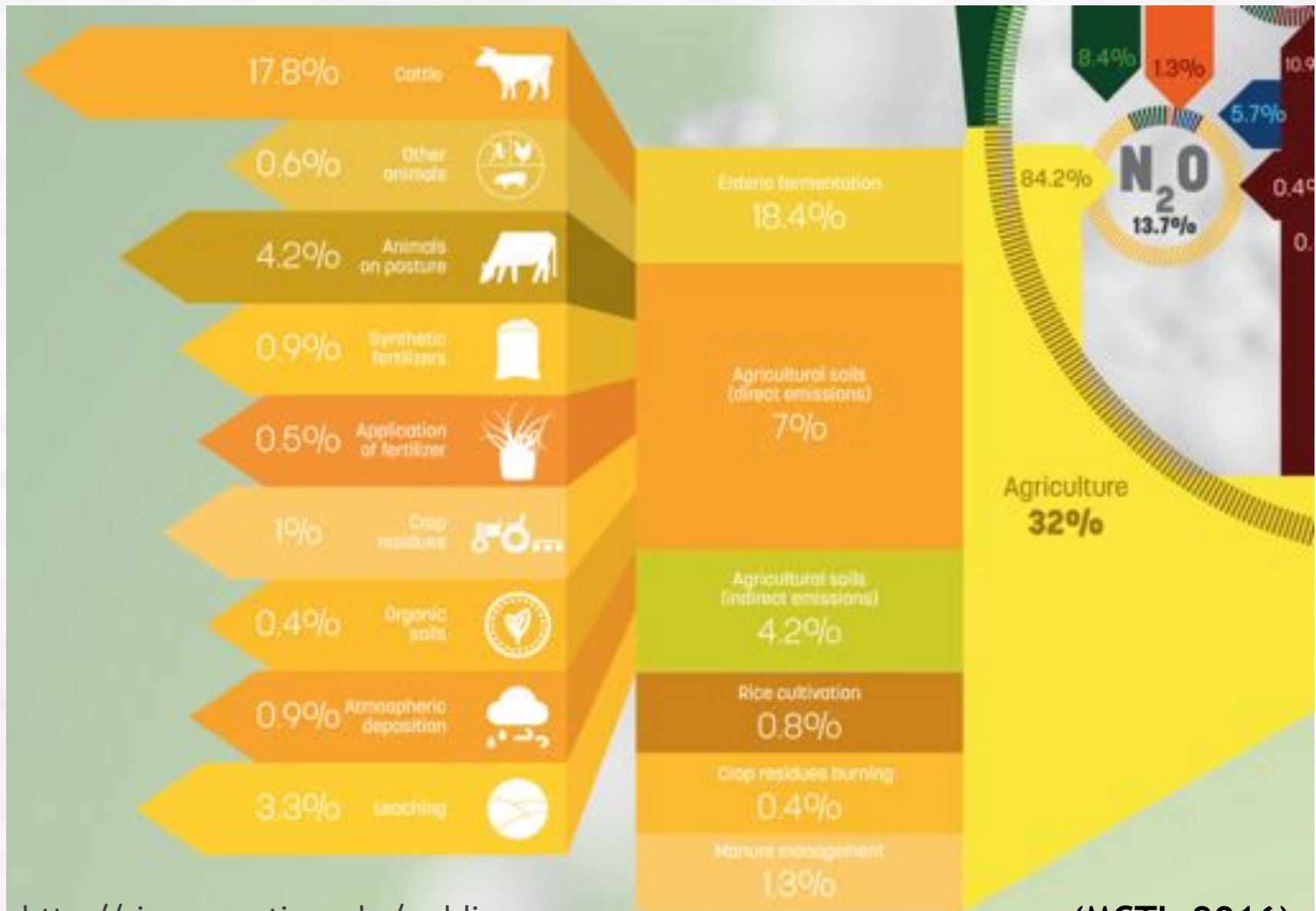
Brazilian emissions



(MCTI, 2016)

<http://sirene.mcti.gov.br/publicacoes>

Agriculture emissions



Coordinated efforts:

- ▶ National Policy on Climate Change;
 - ▶ Brazilian Forum on Climate Change (FBMC);
 - ▶ Brazilian Research Network on Global Climate Change (*Rede CLIMA*);
- ▶ Ministry of Science, Technology and Innovation (MCTI)
- ▶ Global Environment Facility (GEF);
- ▶ United Nations Development Programme (UNDP);



Coordinated efforts:

- ▶ Sectoral Plan for the Mitigation and Adaptation to Climate Change for a Low Carbon Emission Agriculture (ABC Plan);
 - ▶ Special line of credit;
 - ▶ Financial support for mitigation actions;
- ▶ ABC PLATFORM;
 - ▶ Converge data on GHG emissions from Agriculture;
 - ▶ Estimate the overall impact of the ABC PLAN.

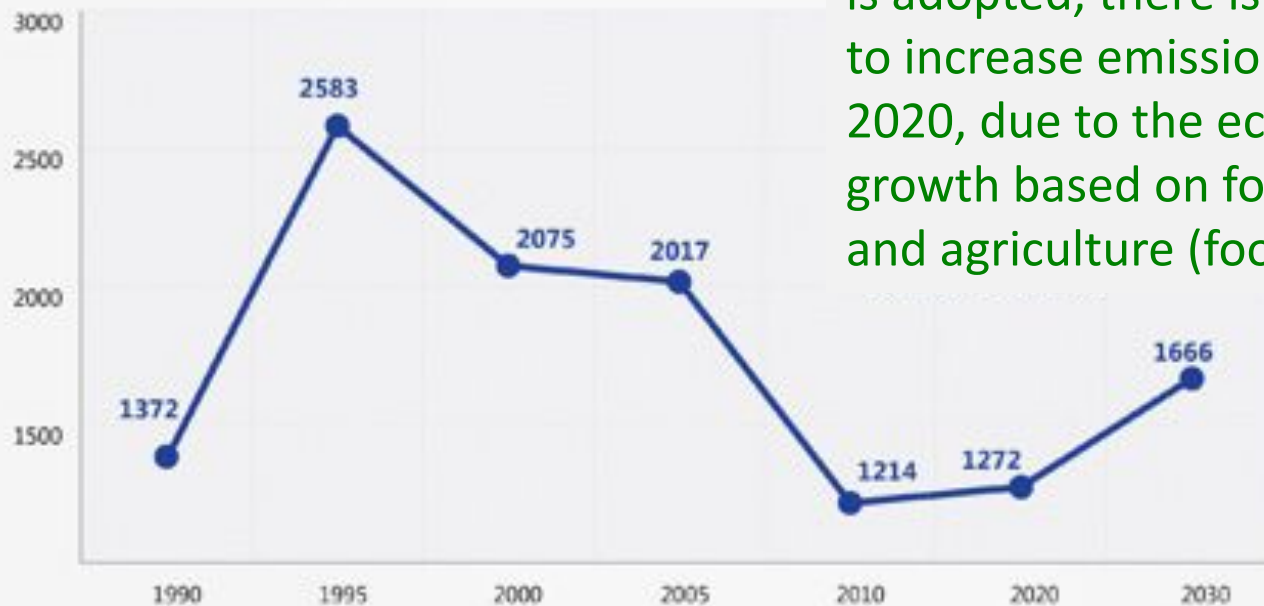
Motivation to measure GHG:

- INDC* presented at COP21 in Paris - Brazilian target for GHG reduction

À SEMELHANÇA DE OUTRAS INICIATIVAS, O IES-BRASIL CONCLUI:



GRÁFICO DE EMISSÕES (Mt CO₂e)



If no other mitigation strategy is adopted, there is a tendency to increase emissions after 2020, due to the economic growth based on fossil fuels and agriculture (food demand)

*Intended Nationally Determined Contribution

Production vs. expansion decoupling

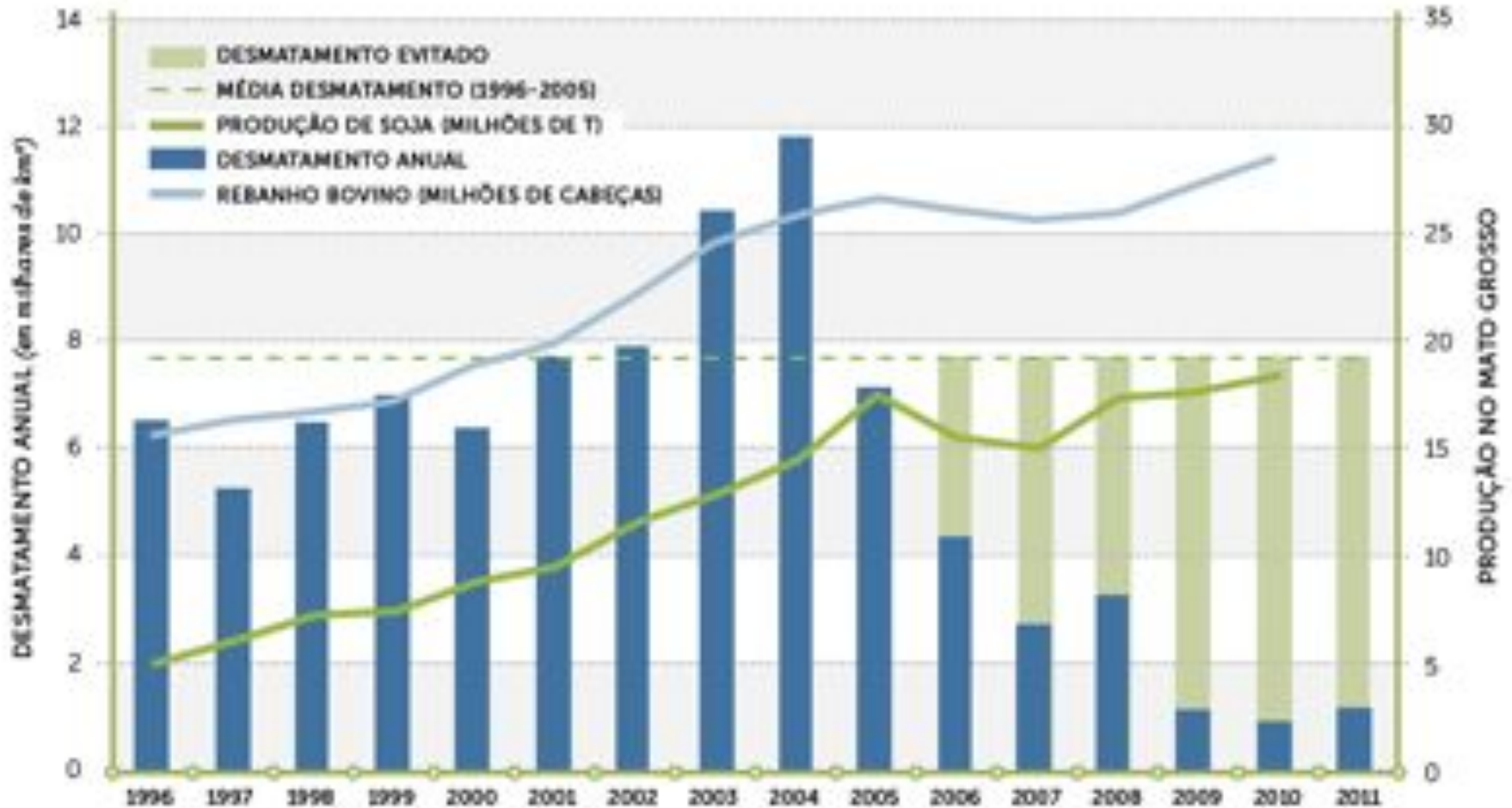


Figura 1: Desmatamento anual, produção de soja, e rebanho bovino em Mato Grosso (Dados do PRODES, IBGE)

Intensification can reduce emission intensity (until a certain level)



Notícias

07/06/16 | LPP Agricultura de Baixo Carbono

Pesquisa desenvolve conceito Carne Carbono Neutro para produção bovina



Carnes bovinas frescas, congeladas ou transformadas, para mercado interno ou exportação, poderão num futuro próximo receber um selo para certificar a sustentabilidade ambiental de sua produção. Registrada no Instituto Nacional da Propriedade Industrial (INPI), a marca "Carne Carbono Neutro" (CCN) será lançada oficialmente durante o 8º Simpósio Internacional sobre Gases de Efeito Estufa na Agropecuária (SIGEE), em Campo Grande (MS), entre os dias 7 e 9 de junho. A certificação ainda dependerá de negociações com os setores público e privado para a sua implantação e posterior transformação em selo.

A principal finalidade da marca-conceito CCN

**Neutral Carbon Label:
Integrated Systems: Agriculture + Livestock + Forest
≈ 10 to 20 trees to compensate 1 bovine AU**

Increasing beef production could lower greenhouse gas emissions in Brazil if decoupled from deforestation

R. de Oliveira Silva^{1,2*}, L. G. Barioni³, J. A. J. Hall¹, M. Folegatti Matsuura⁴, T. Zanett Albertini⁵, F. A. Fernandes⁶ and D. Moran²

Agricultural Systems 143 (2016) 86–96



Contents lists available at ScienceDirect

Agricultural Systems

journal homepage: www.elsevier.com/locate/agsy



Impact of the intensification of beef production in Brazil on greenhouse gas emissions and land use



Abmael S. Cardoso^a, Alexandre Berndt^b, April Leytem^c, Bruno J.R. Alves^d, Isabel das N.O. de Carvalho^d, Luis Henrique de Barros Soares^d, Segundo Urquiaga^d, Robert M. Boddey^{d,*}

^a Departamento de Zootecnia, Faculdade de Ciências Agrárias e Veterinárias, UNESP, 14884-900 Jaboticabal, SP, Brazil

^b Embrapa Pecuária Sudeste, Rodovia Washington Luiz, km 234, 13560-970 São Carlos, SP, Brazil

^c USDA-Agricultural Research Service, Northwest Irrigation and Soils Research Lab., Kimberly, ID 83241, USA

^d Embrapa – Agrobiologia, Rodovia BR 465, km 7, 23891-000 Seropédica, RJ, Brazil



Thank you!

alexandre.berndt@embrapa.br



*Brazilian Agricultural Research Corporation
Ministry of Agriculture, Livestock and Food Supply*