

66th
EAAP
ANNUAL MEETING



**INNOVATION
IN LIVESTOCK
PRODUCTION:
FROM IDEAS
TO PRACTICE**



**31 AUGUST - 4 SEPTEMBER 2015
WARSAW, POLAND**

Enteric methane emissions from beef cattle of different genetic groups in confinement in Brazil

Embrapa

Southeast Livestock

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Topics

Brazilian perspectives
Methane emissions



Brazilian meat perspectives

Increasing global demand

Professionalization

Increasing care for sustainability

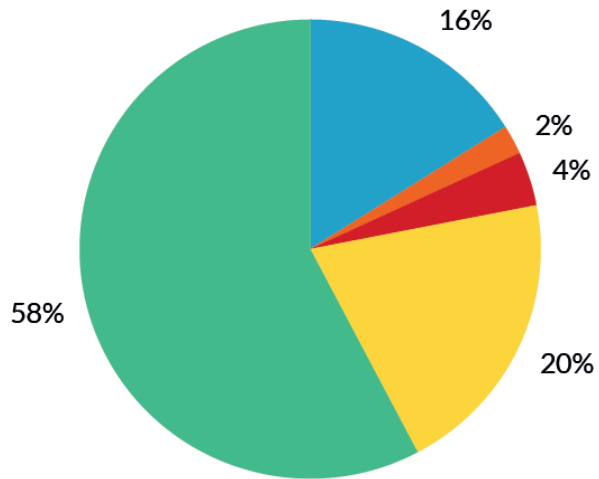
Increasing care for food quality

MCT I- 2nd National GHG Inventory (2010):



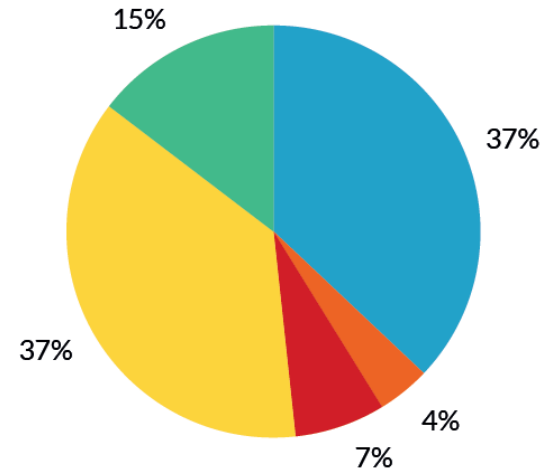
Emission Profile (2012):

Emissões CO₂eq em 2005



- Energia
- Tratamento de Resíduos
- Processos Industriais
- Agropecuária
- Uso da Terra e Florestas

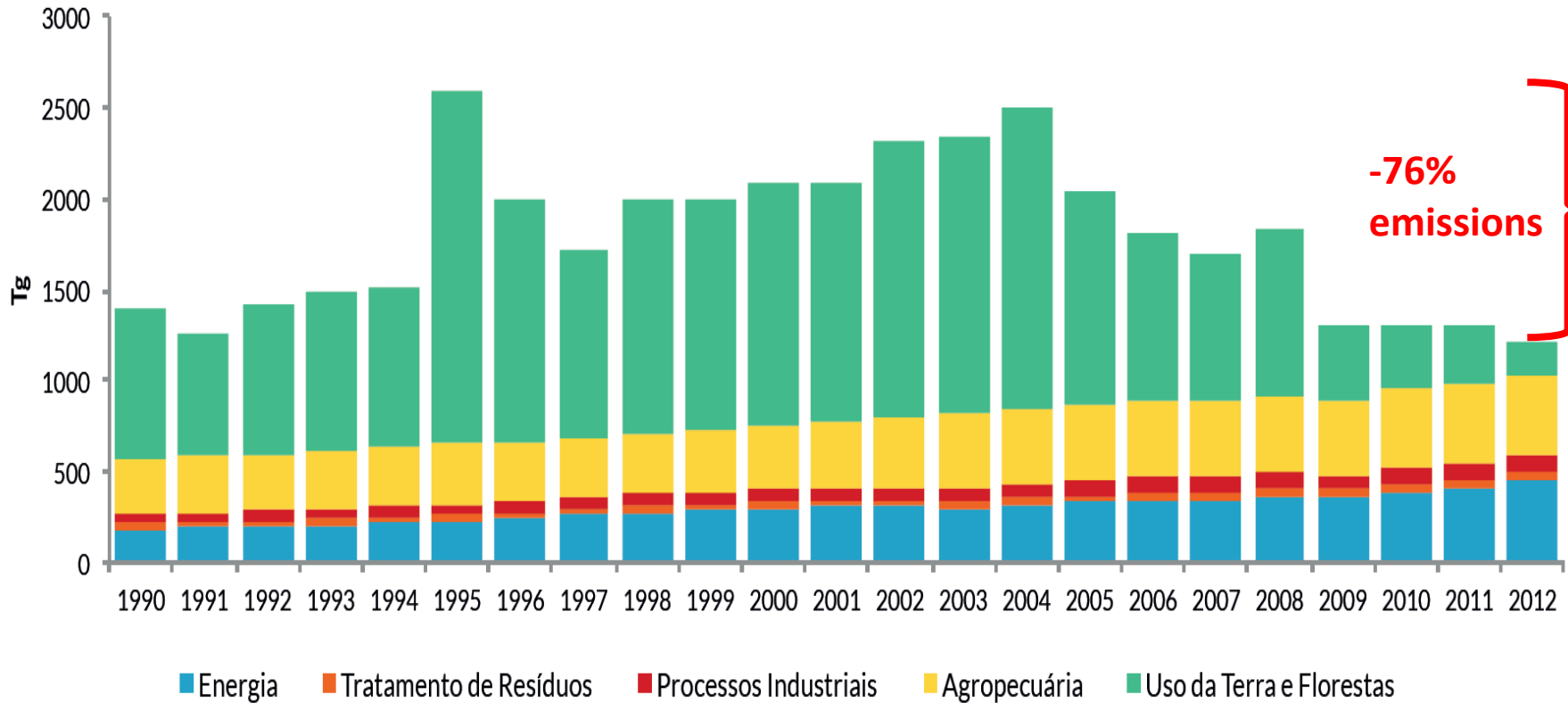
Emissões CO₂eq em 2012



- Energia
- Tratamento de Resíduos
- Processos Industriais
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Emission Profile (2012):

Emissões brasileiras de gases de efeito estufa
Período 1990-2012
em CO₂eq



Production vs. expansion decoupling

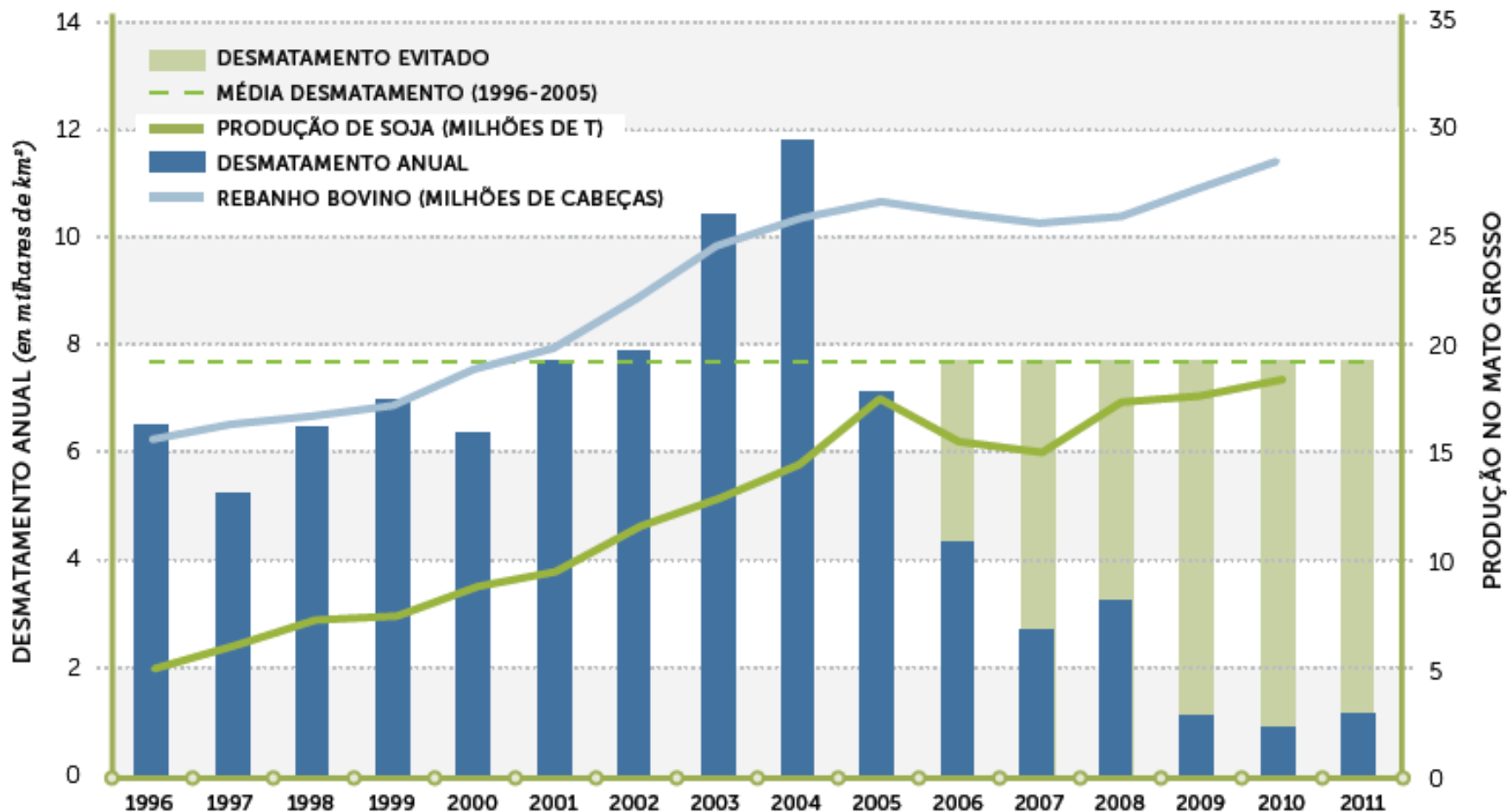


Figura 1: Desmatamento anual, produção de soja, e rebanho bovino em Mato Grosso (Dados do PRODES, IBGE)



Key message

Brazilian beef sector is determined to contribute to global food production sustainably and healthy.



Topics

Brazilian perspectives
Methane emissions



Objective

Measure methane of cross-bred beef cattle in confinement, using GreenFeed

Material and Methods

Animals:

45 steers,

Brangus (5/8 Angus, 3/8 Brahman)

Canchim (5/8 Charolais, 3/8 Zebu)

Bosmara (5/8 Africaner, 3/16 Hereford,
3/16 Shorthorn)

	Bull Breeds			
	Canchim	Bonsmara	Brangus	P
Days confined	95±13	92±13	94±17	0.9622
Initial weight (kg)	365±27	323±54	352±28	0.1783
Final weight (kg)	533±45	484±51	520±52	0.2782





Before feedlot



Nutritional value	
Dry matter	63%
Crude protein	12%
TDN	71%
Ca:P ratio	1.33

In the feedlot

Maize silage	43.0%
Grounded maize	48.3%
Soybean meal	3.7%
Bicarbonate	1.0%
Mineral premix	1.5%
Urea	1.0%





Results

No differences in
feedlot performance
nor emissions

Results

	Bull Breed			
	Canchim	Bonsmara	Brangus	P
CH₄ (g/d)	162.5±26.6	166.3±35.6	169.8±34.1	0.9160
CO₂ (g/d)	6138±698	6470±444	6382±680	0.6643
CH₄ (kg/yr)	59.3±9.7	60.7±13.0	62.0±12.5	0.9150
DWG (kg/d)	1.803±0.331	1.766±0.269	1.802±0.328	0.9762
DMI kg/d	11.6±1.0	11.3±1.1	12.3±1.5	0.3116
YM (%)	4.4±0.7	4.7±1.5	4.3±0.6	0.7213
FE (kg/kg)	6.5±0.8	6.4±0.5	6.9±0.9	0.4177



Conclusion

Crossbreed can be used to produce meat efficiently



Next steps

Rumen microorg.
Meat metabolomics
CH₄ mitigation

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- FAPESP (Grant 2012/50830-7)



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Thank you

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