manejo e conservação do solo: módulo erosão

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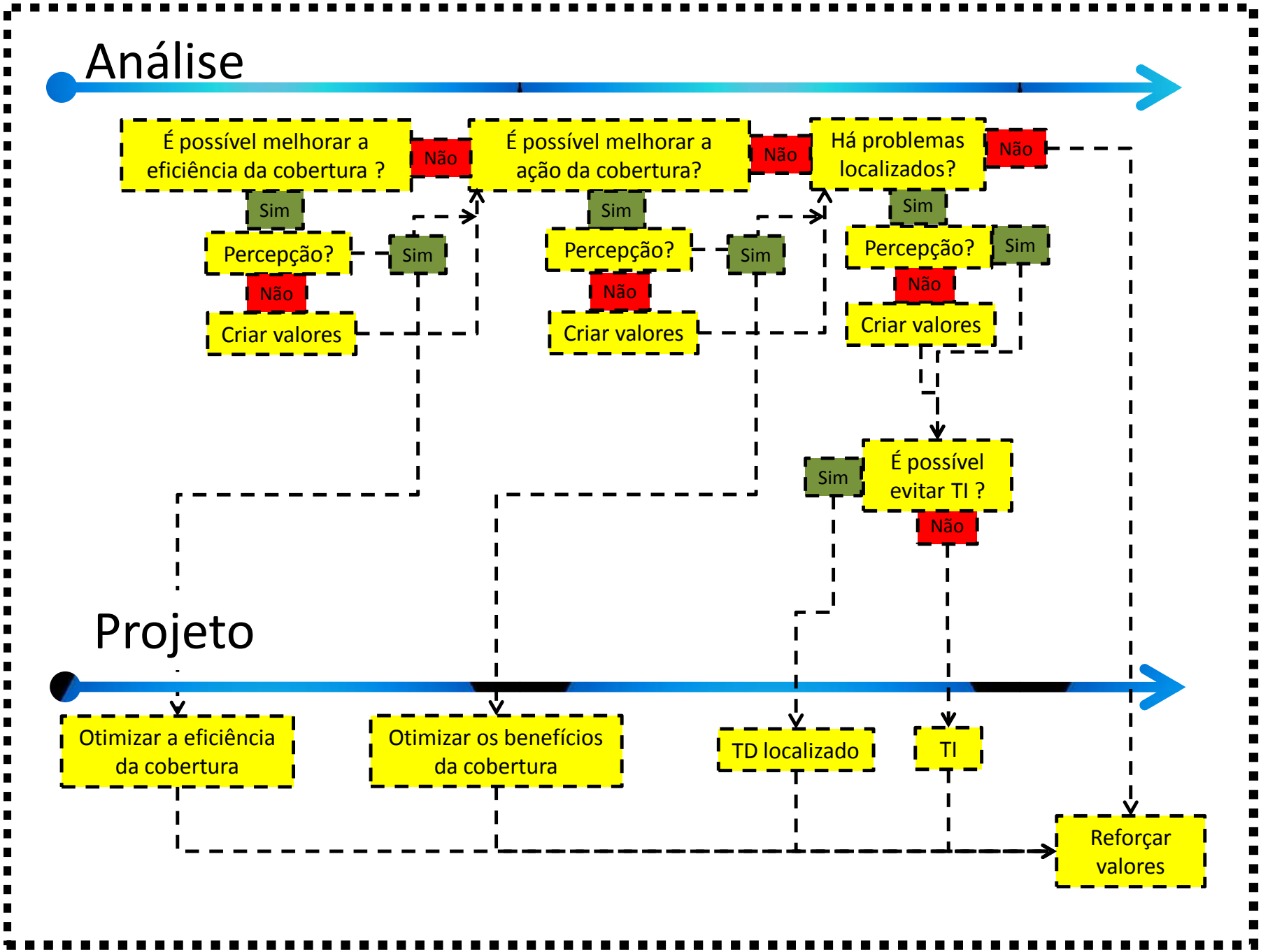
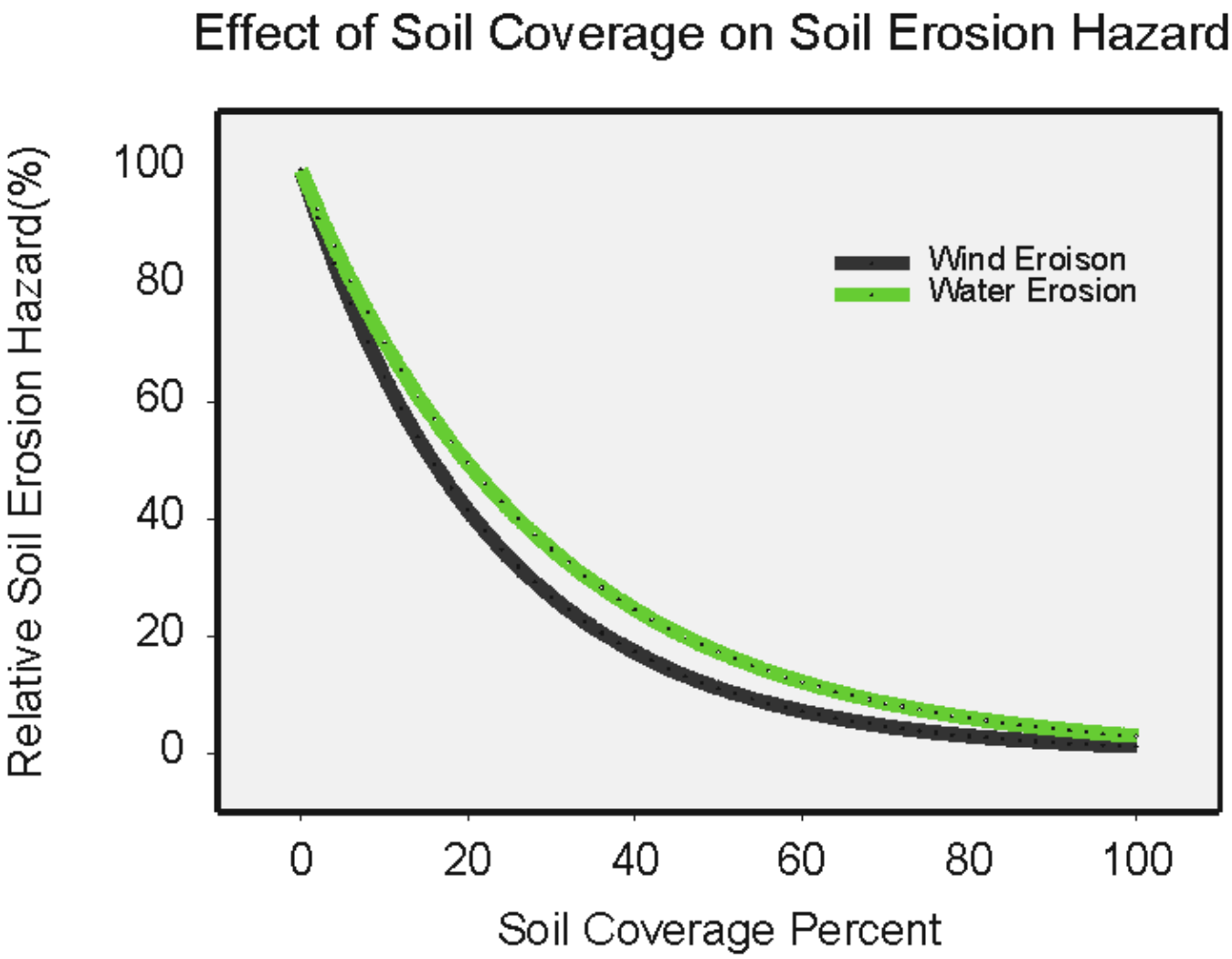
segundo semestre de 2011

cobertura do solo


Análise
É possível melhorar a eficiência da cobertura ?
Não
Sim
Percepção?
Sim
Não
Criar valores
É possível melhorar a ação da cobertura?
Não
Sim
Percepção?
Sim
Não
Criar valores
Há problemas localizados?
Não
Sim
Percepção?
Sim
Não
Criar valores
Sim
É possível evitar TI ?
Não
Projeto
Otimizar a eficiência da cobertura
Otimizar os benefícios da cobertura
TD localizado
TI
Reforçar valores


Effect of Soil Coverage on Soil Erosion Hazard
Relative Soil Erosion Hazard(%)
100
80
60
40
20
0
Wind Eroison
Water Erosion
0
20
40
60
80
100
Soil Coverage Percent

24/09/2006

08/10/2006

15/10/2006

25/11/2006

Controle da erosão por cobertura – práticas vegetativas

- **Florestas (áreas de preservação – APP + RL)**
- **Cultivo em faixas**
- **Plantas de cobertura**
- **Cobertura morta: cultivo mínimo**
- **Cobertura permanente: plantio direto, integração lavoura pecuária**
- **Agricultura familiar: diversidade de cultivos, cordões de vegetação...**
- **Pastagens**

Cultivo em faixas

Plantas de cobertura

Cobertura morta e plantio direto

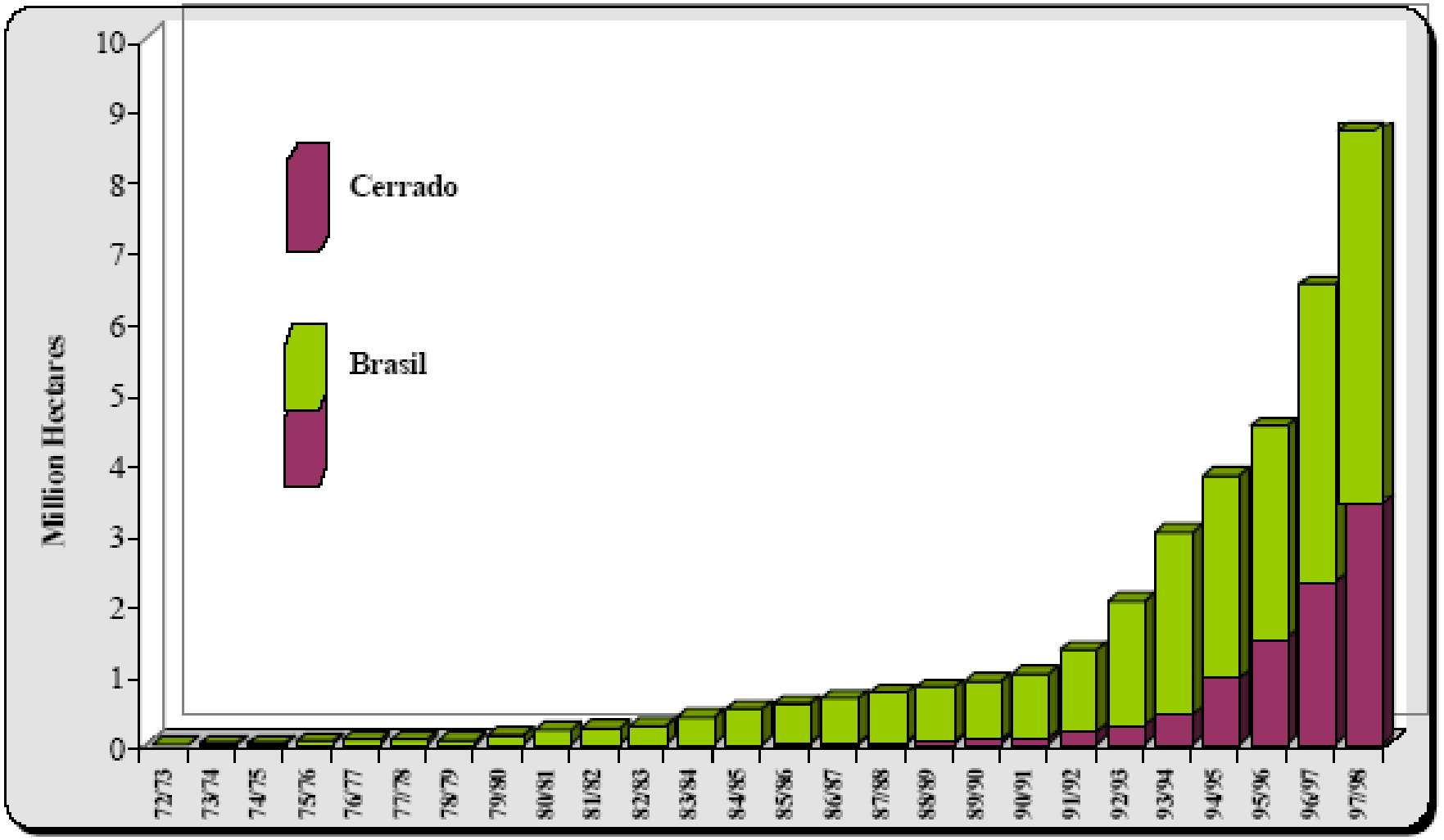


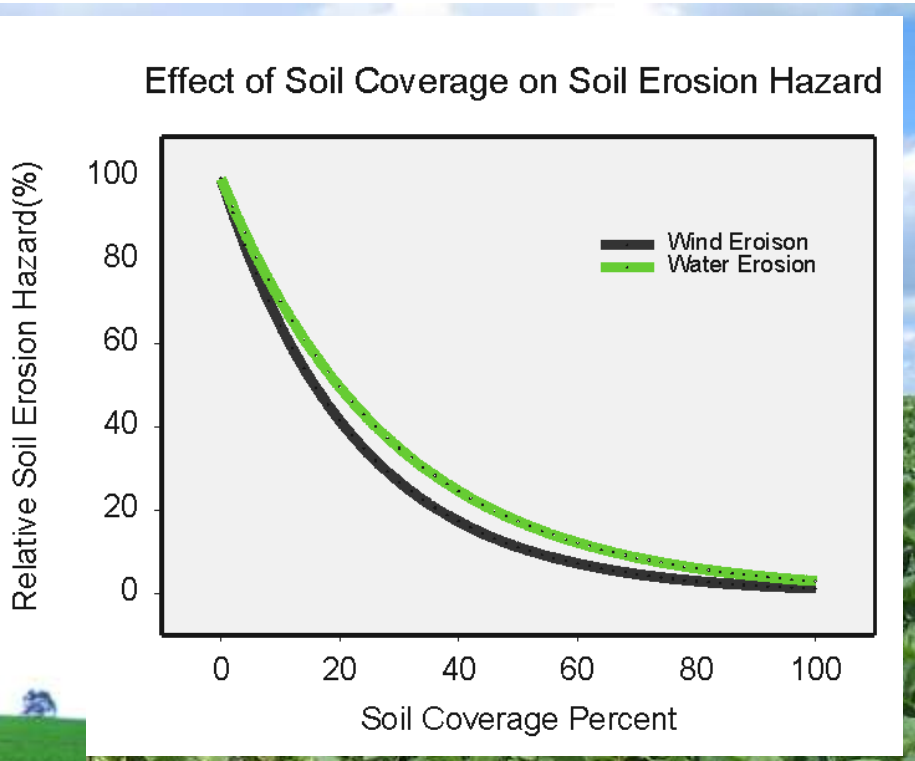
Figure 1. Expansion of the zero tillage area in Brazil and in the "Cerrado" region (tropical wet/dry savannahs) Sources: Brazil - FEBRAPDP and Cerrado - APDC

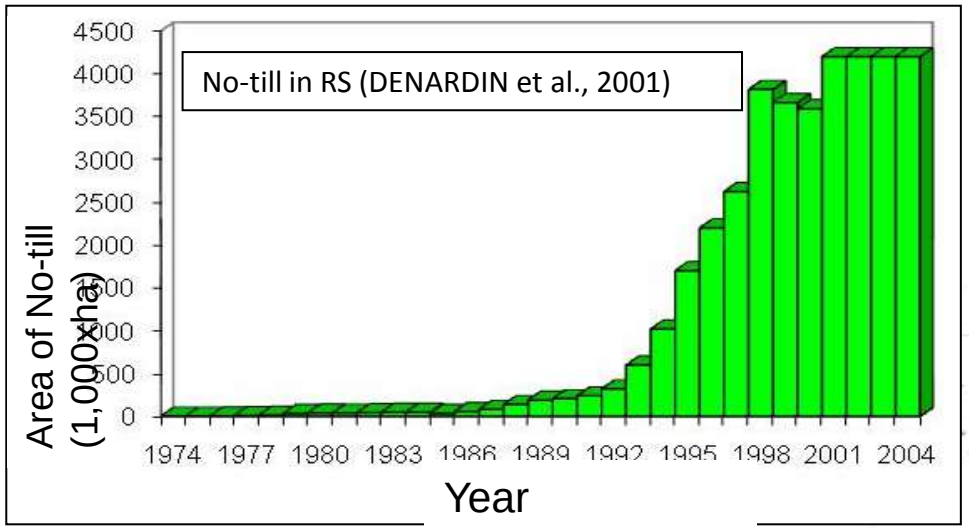
Landers, 2001

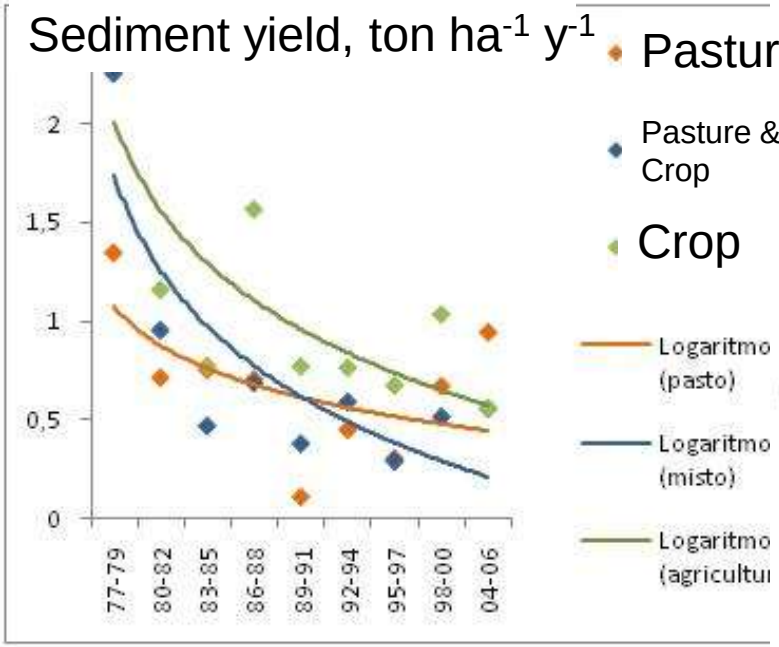
Country	Area under No- tillage in ha 2004/ 2005	%
USA [1]	25,304,000	22
Brazil [2]	23,600,000	60
Argentina (*) [3]	18,269,000	60
Canada [4]	12,522,000	12
Australia [5]	9,000,000	9
Paraguay [6]	1,700,000	65
Indo-Gangetic-Plains(**) [7]	1,900,000	
Bolivia [8]	550,000	
South Africa [9]	300,000	
Spain [10]	300,000	
Venezuela [11]	300,000	
Uruguay [12]	263,000	
France [13]	150,000	
Chile [14]	120,000	
Colombia [15]	102,000	
China [16]	100,000	
Others (Estimate)	1,000,000	
Total	**95,480,000**	

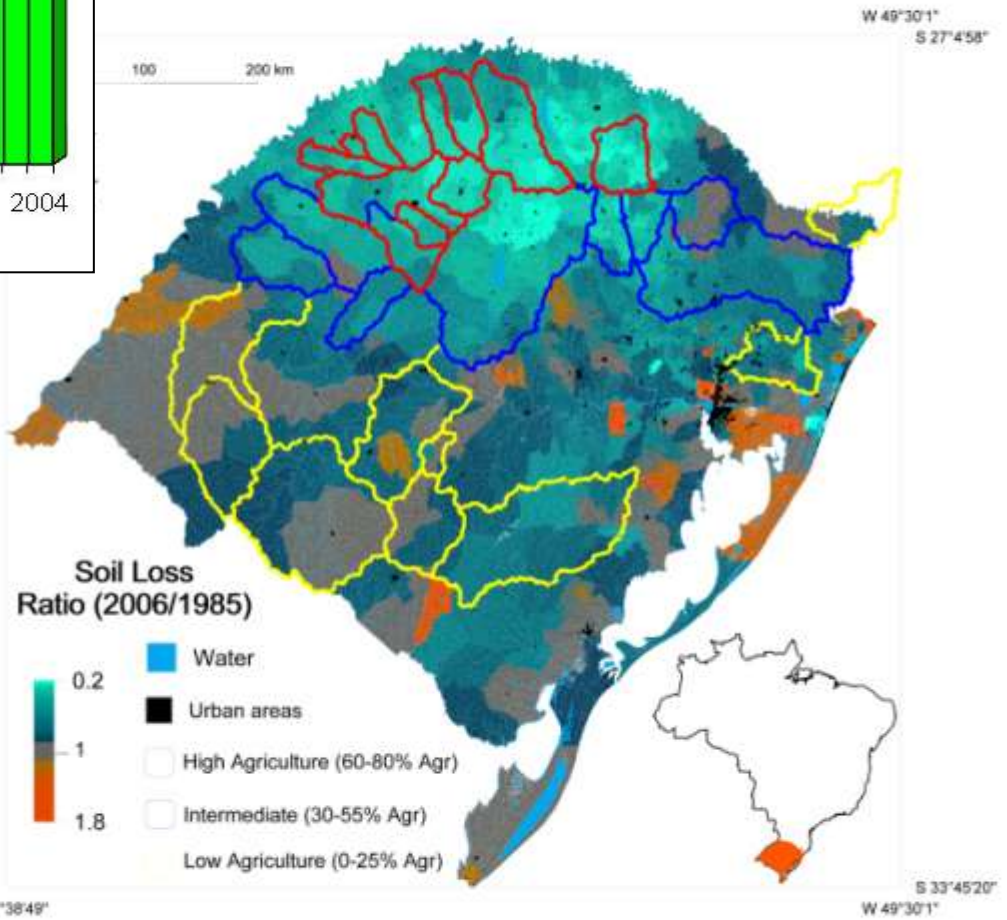
Source: 1) John Hassel CTIC, 2005; 2) FEBRAPDP, 2005; 3) AAPRESID, 2004; 4) Dr. Doug McKell, Soil Conserv. Council of Canada, 2004; 5) Bill Crabtree, WANTFA, 2005, 6) MAG – DEAG, Soil Conservation Program, 2005; 7) Dr. Peter Hobbs & Raj Gupta 2005; 8) Carlito Los, 2005, 9) Richard Fowler, 2003; 10) ECAF Homepage, 2005; 11) Rafael E. Perez, 2004; 12) Miguel Carballal AUSID, 2005; 13) ECAF Homepage, 2005; 14) Carlos Crovetto, 2005; 15) Fabio Leiva, 2005; 16) Li Hongwen, 2005;
(*) Preliminary information based on 40% of data collection for 03/04
(**) Includes four countries in South Asia, India, Pakistan, Bangladesh and Nepal

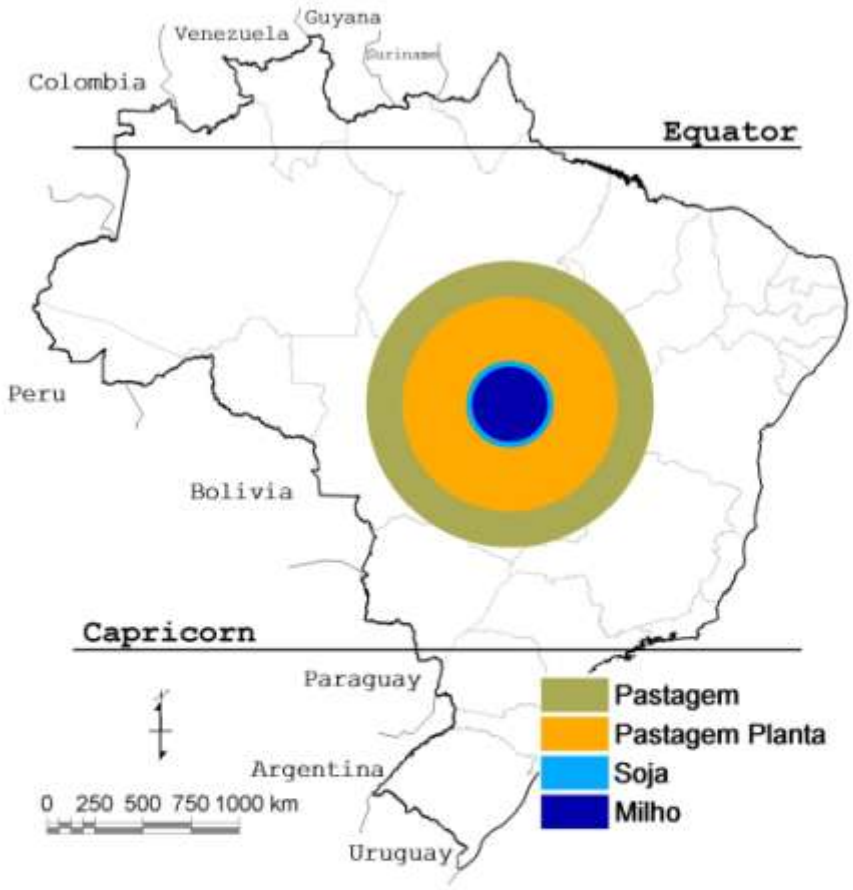
Derpsch, R., 2005: The extent of Conservation Agriculture adoption worldwide: Implications and impact. Proceedings on CD, III World Congress on Conservation Agriculture, October 3 – 7, 2005, Nairobi, Kenya.


Effect of Soil Coverage on Soil Erosion Hazard
Relative Soil Erosion Hazard(%)
100
80
60
40
20
0
Wind Eroison
Water Erosion
0
20
40
60
80
100
Soil Coverage Percent

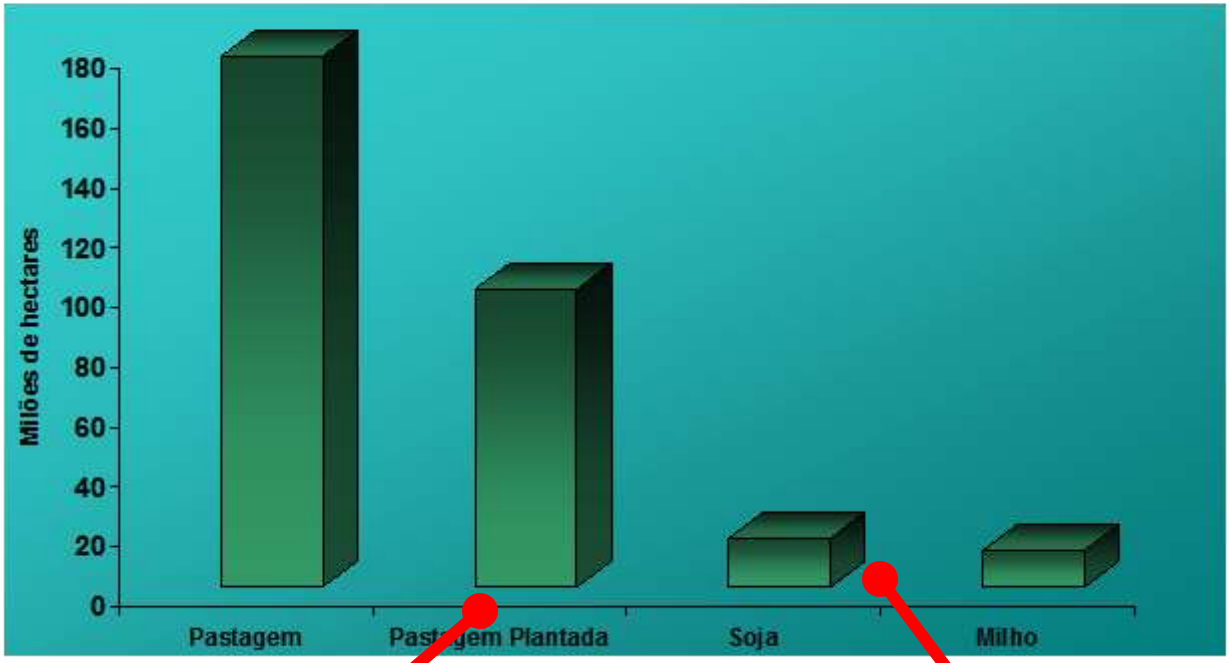

No-till in RS (DENARDIN et al., 2001)
Area of No-till (1,000xha)
4500
4000
3500
3000
2500
2000
0
1974 1977 1980 1983 1986 1989 1992 1995 1998 2001 2004
Year


Sediment yield, ton ha-1 y-1
2
1,5
1
0,5
0
77-79
80-82
83-85
86-88
89-91
92-94
95-97
98-00
04-06
Pasture
Pasture & Crop
Crop
Logaritmo (pasto)
Logaritmo (misto)
Logaritmo (agricultu


W 49°30'1"
S 27°4'58"
100
200 km
Soil Loss Ratio (2006/1985)
0.2
1
1.8
Water
Urban areas
High Agriculture (60-80% Agr)
Intermediate (30-55% Agr)
Low Agriculture (0-25% Agr)
S 33°45'20"
W 57°38'49"
S 33°45'20"
W 49°30'1"

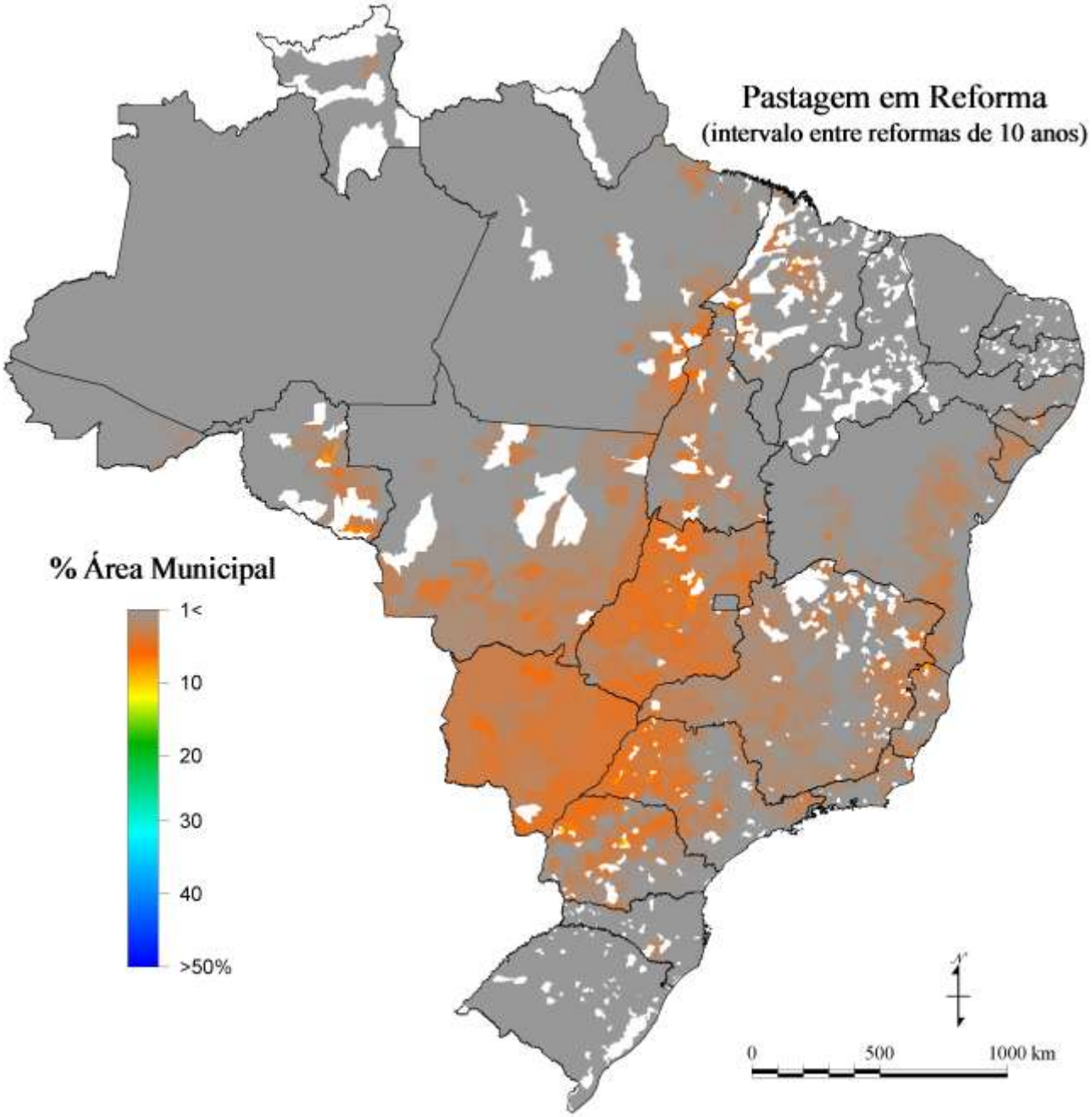

Guyana
Venezuela
Colombia
Equator
Peru
Bolivia
Capricorn
Paraguay
Argentina
Uruguay
0 250 500 750 1000 km
Pastagem
Pastagem Planta
Soja
Milho

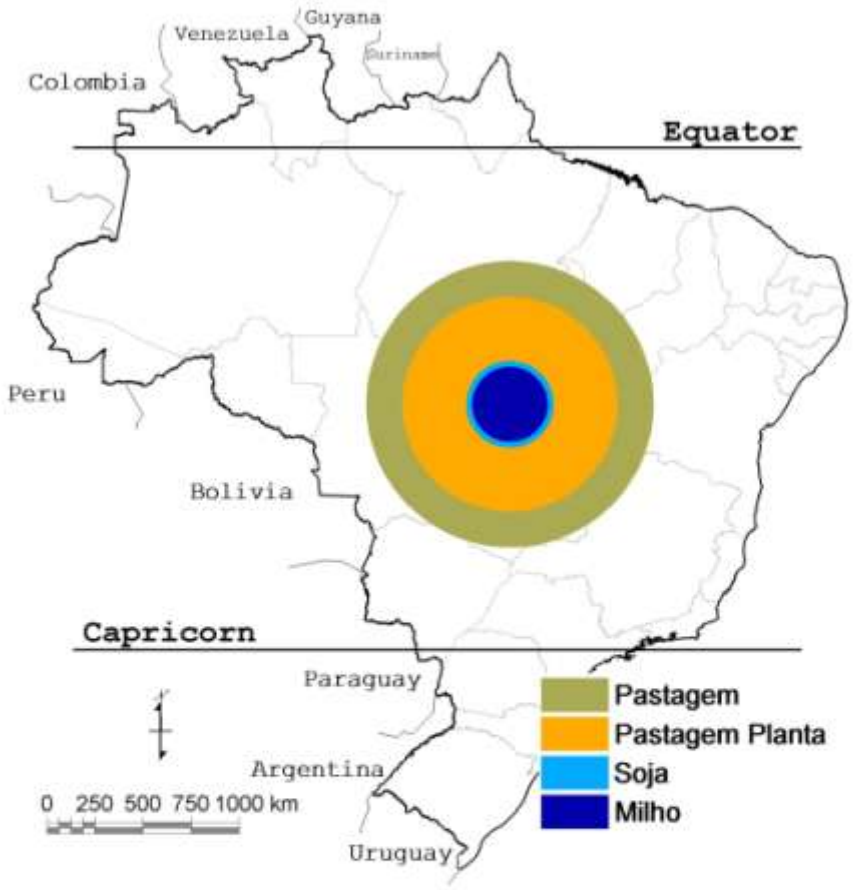
Uso da terra no Brasil (pasto 95/96, culturas 02)

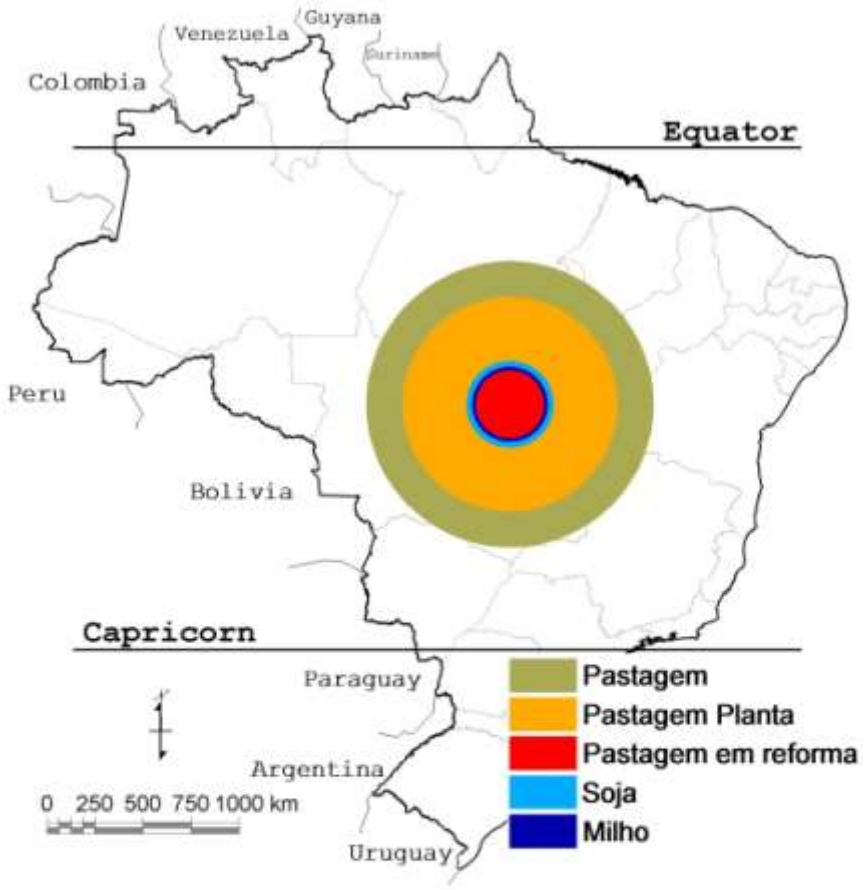


Renovação ou plantio de pasto

Canteiro coletor (valor padrão)


Pastagem em Reforma
(intervalo entre reformas de 10 anos)
% Área Municipal
1<
10
20
30
40
>50%
N
0
500
1000 km


Guyana
Venezuela
Colombia
Equator
Peru
Bolivia
Capricorn
Paraguay
Argentina
Uruguay
0 250 500 750 1000 km
Pastagem
Pastagem Planta
Soja
Milho


Guyana
Venezuela
Colombia
Equator
Peru
Bolivia
Capricorn
Paraguay
Argentina
Uruguay
0 250 500 750 1000 km
Pastagem
Pastagem Planta
Pastagem em reforma
Soja
Milho