

THE BRAZILIAN LAND COVER and LAND USE ACCOUNTS

Coordination of Natural Resources and Environmental Studies

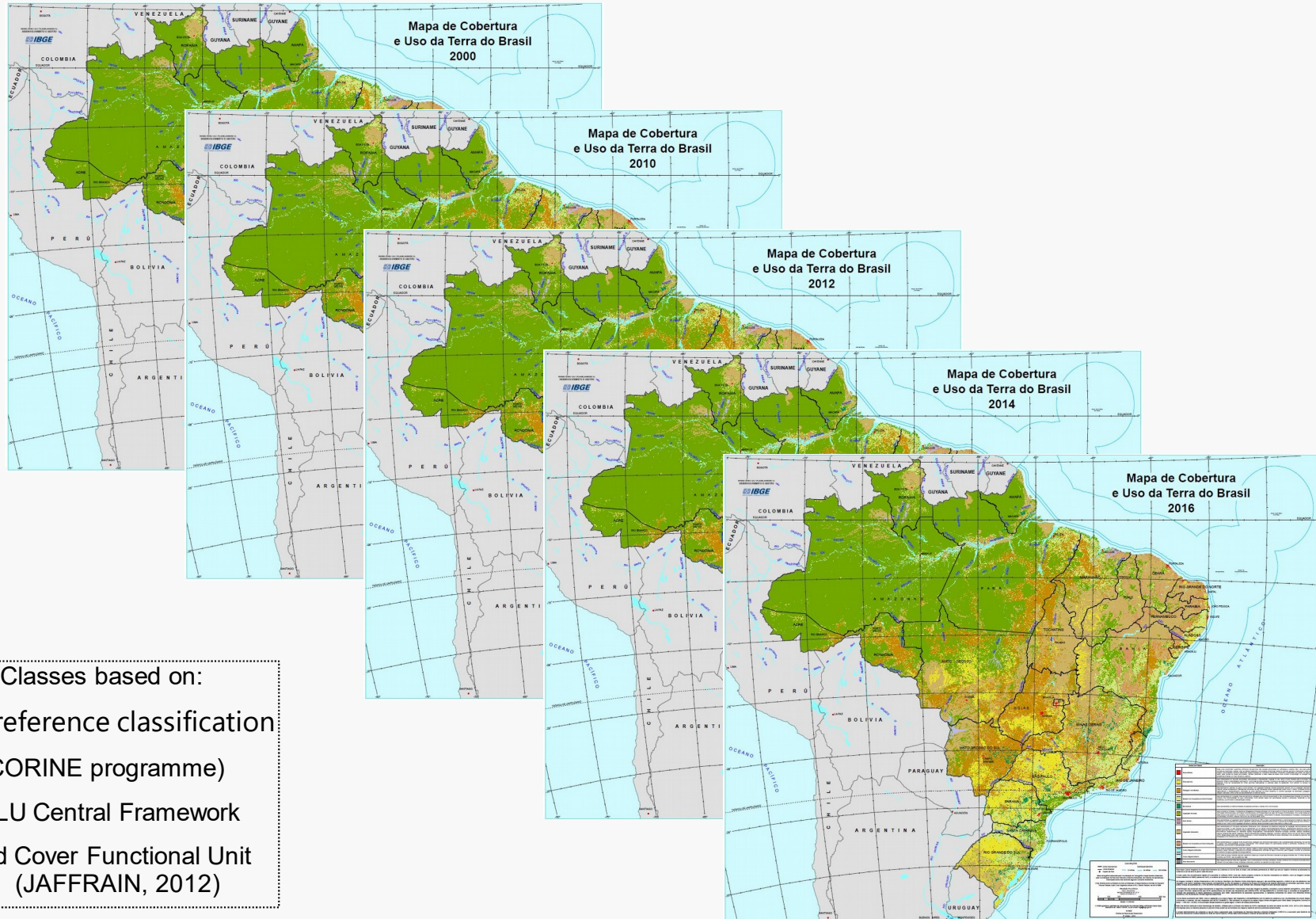
MONITORING LAND COVER LAND USE BRAZIL

Coordination of Natural Resources and Environmental Studies

MAIN PURPOSE

Monitor changes in land cover and land use in Brazil every two years, generating the Physical Account for Land Cover and Land Use, providing subsidies to other studies.

LAND COVER AND LAND USE BRAZIL 2000 - 2016



PHYSICAL ACCOUNT FOR LAND COVER/USE (stocks) 2000-2016 (km²)

CLASSES ESTOQUES	Área Artificial	Área Agrícola	Pastagem com Manejo	Mosaico de Ocupações em Área Florestal	Silvicultura	Vegetação Florestal	Área Úmida	Vegetação Campestre	Mosaico de Ocupações em Área Campestre	Corpo d'água Continental	Corpo d'água Costeiro	Área Descoberta
Estoque de abertura (2000)	34.567	458.975	885.186	847.721	50.543	4.017.505	34.297	1.834.153	234.729	128.749	222.461	3.680
Total de adições ao estoque	1.650	99.400	237.614	81.785	21.535	1.617	104	1.219	18.632	0	0	19
Total de redução do estoque	0	2.143	23.769	98.645	2.234	216.404	115	109.588	10.673	0	0	4
Estoque (2010)	36.217	556.232	1.099.031	830.861	69.844	3.802.718	34.286	1.725.784	242.688	128.749	222.461	3.695
Total de adições do estoque	513	28.329	36.210	24.164	8.310	722	62	723	10.285	0	0	8
Total de redução do estoque	0	793	9.135	24.367	2.083	36.610	140	32.570	3.621	0	0	7
Estoque (2012)	36.730	583.768	1.126.106	830.658	76.071	3.766.830	34.208	1.693.937	249.352	128.749	222.461	3.696
Total de adições ao estoque	731	42.328	22.634	15.303	6.566	1.950	206	1.447	6.092	0	0	4
Total de Redução do estoque	0	1.464	24.916	17.943	501	24.316	232	24.519	3.369	0	0	1
Estoque (2014)	37.461	624.632	1.123.824	828.018	82.136	3.744.464	34.182	1.670.865	252.075	128.749	222.461	3.699
Total de adições ao estoque	311	19.764	9.016	25.164	1.775	1.022	202	849	4.694	0	0	45
Total de Redução do estoque	0	627	13.947	9.255	265	25.685	102	10.656	2.306	0	0	0
Estoque final (2016)	37.772	643.769	1.118.893	843.927	83.646	3.719.801	34.282	1.661.058	254.463	128.749	222.461	3.744

PHYSICAL ACCOUNT and CHANGES MATRIX

2014-2016 (km²)

		Área Artificial	Área Agrícola	Pastagem com Manejo	Mosaico de Ocupações em Área Florestal	Silvicultura	Vegetação Florestal	Área Úmida	Vegetação Campestre	Mosaico de Ocupações em Área Campestre	Corpo d'água Continental	Corpo d'água Costeiro	Área Descoberta
Estoque de abertura (2014)		37.461	624.632	1.123.824	828.018	82.136	3.744.464	34.182	1.670.865	252.075	128.749	222.461	3.699
1. Adições ao estoque	Área Artificial	0	0	0	0	0	0	0	0	0	0	0	0
	Área Agrícola	14	0	307	126	73	0	0	0	107	0	0	0
	Pastagem com Manejo	58	10.059	0	2.644	1.040	0	0	0	146	0	0	0
	Mosaico de Ocupações em Área Florestal	78	2.777	5.211	0	167	1.022	0	0	0	0	0	0
	Silvicultura	2	156	69	38	0	0	0	0	0	0	0	0
	Vegetação Florestal	50	1.622	1.571	22.356	86	0	0	0	0	0	0	0
	Área Úmida	1	0	0	0	0	0	0	90	11	0	0	0
	Vegetação Campestre	35	4.106	1.509	0	345	0	202	0	4.430	0	0	29
	Mosaico de Ocupações em Área Campestre	74	1.044	349	0	64	0	0	759	0	0	0	16
	Corpo d'água Continental	0	0	0	0	0	0	0	0	0	0	0	0
	Corpo d'água Costeiro	0	0	0	0	0	0	0	0	0	0	0	0
	Área Descoberta	0	0	0	0	0	0	0	0	0	0	0	0
Total de adições ao estoque		312	19.764	9.016	25.164	1.775	1.022	202	849	4.694	0	0	45
2. Redução do estoque	Área Artificial	0	14	58	78	2	50	1	35	74	0	0	0
	Área Agrícola	0	0	10.059	2.777	156	1.622	0	4.106	1.044	0	0	0
	Pastagem com Manejo	0	307	0	5.211	69	1.571	0	1.509	349	0	0	0
	Mosaico de Ocupações em Área Florestal	0	126	2.644	0	38	22.356	0	0	0	0	0	0
	Silvicultura	0	73	1.040	167	0	86	0	345	64	0	0	0
	Vegetação Florestal	0	0	0	1.022	0	0	0	0	0	0	0	0
	Área Úmida	0	0	0	0	0	0	0	202	0	0	0	0
	Vegetação Campestre	0	0	0	0	0	0	90	0	759	0	0	0
	Mosaico de Ocupações em Área Campestre	0	107	146	0	0	0	11	4.430	0	0	0	0
	Corpo d'água Continental	0	0	0	0	0	0	0	0	0	0	0	0
	Corpo d'água Costeiro	0	0	0	0	0	0	0	0	0	0	0	0
	Área Descoberta	0	0	0	0	0	0	0	29	16	0	0	0
Total de redução do estoque		0	627	13.947	9.255	265	25.685	102	10.656	2.306	0	0	0
Estoque final (2016)		37.773	643.769	1.118.893	843.927	83.646	3.719.801	34.282	1.661.058	254.463	128.749	222.461	3.744

Census of Agriculture 2017 x Monitoring 2016

- Croplands
 - Census: 63,3 million hectares
 - Monitoring: 64,3 million hectares
 - Difference: 10.000 km²
- Managed/planted pasture
 - Census: 111,7 million hectares
 - Monitoring: 111,8 million hectares
 - Difference: 1.000 km²
- Silviculture/Planted Forests
 - Census: 8,5 million hectares
 - Monitoring: 8,3 million hectares
 - Difference: 20.000 km²



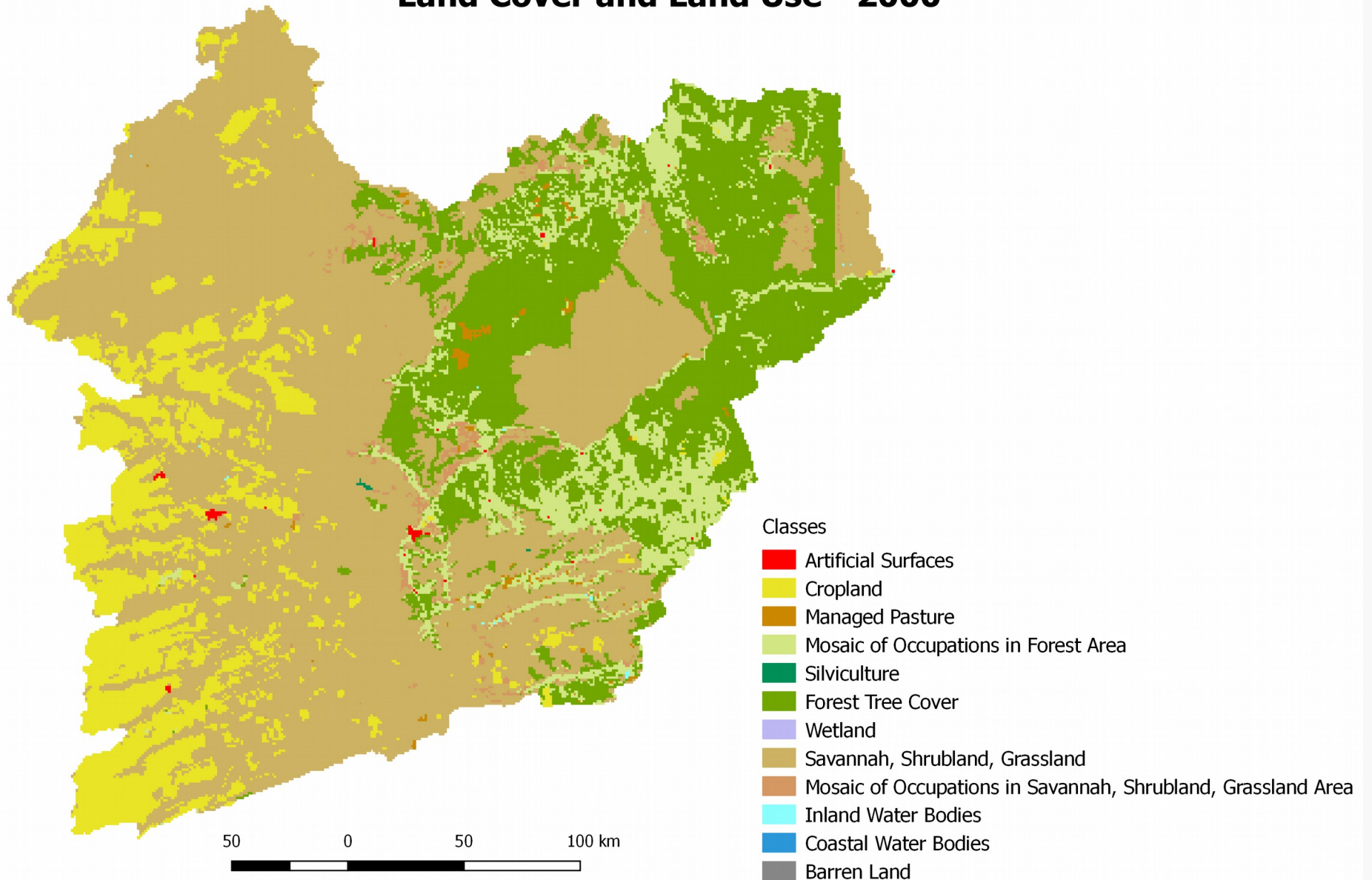
RIO GRANDE BASIN

Coordination of Natural Resources and Environmental Studies

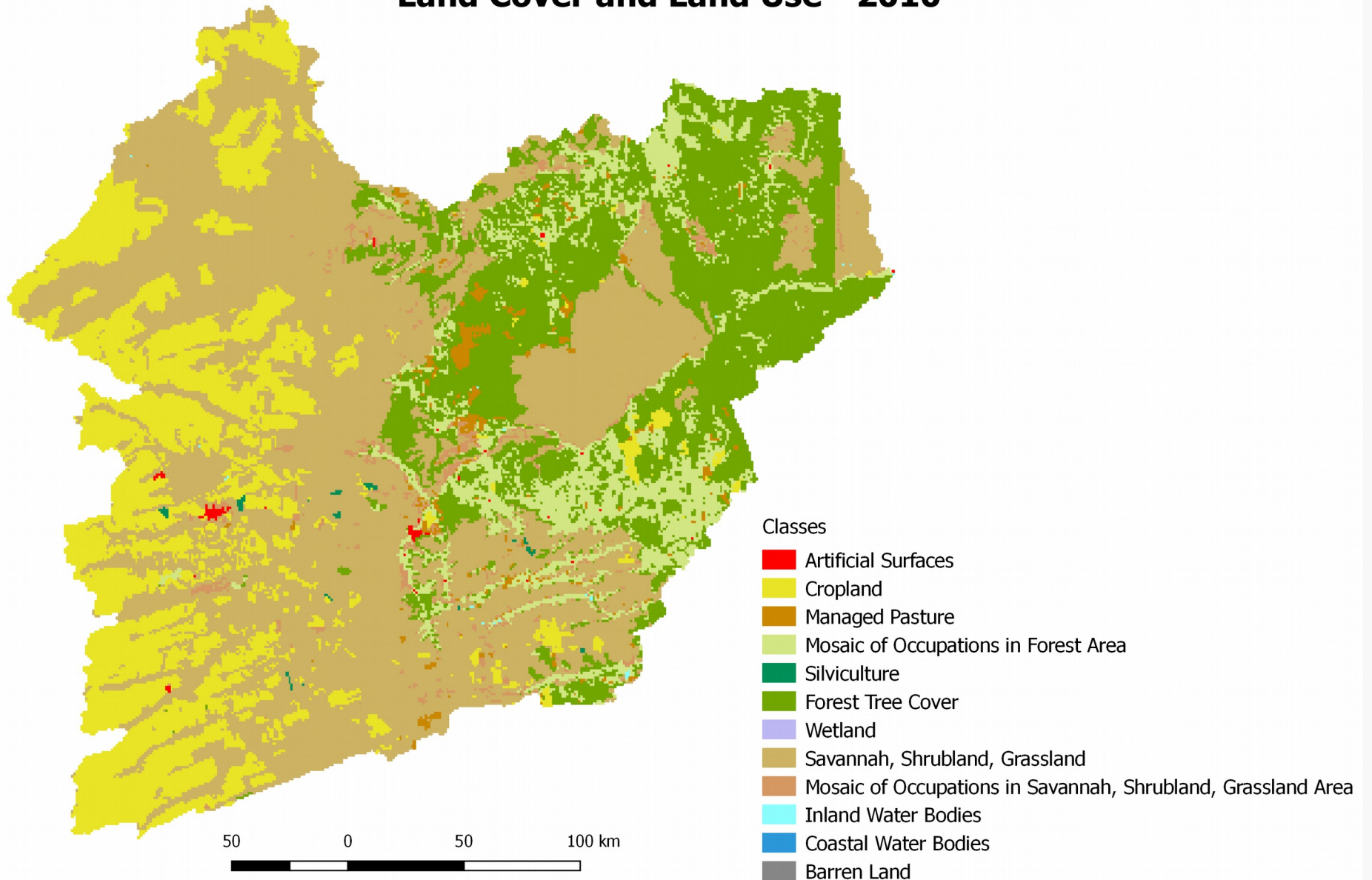
Rio Grande Basin in Brazil



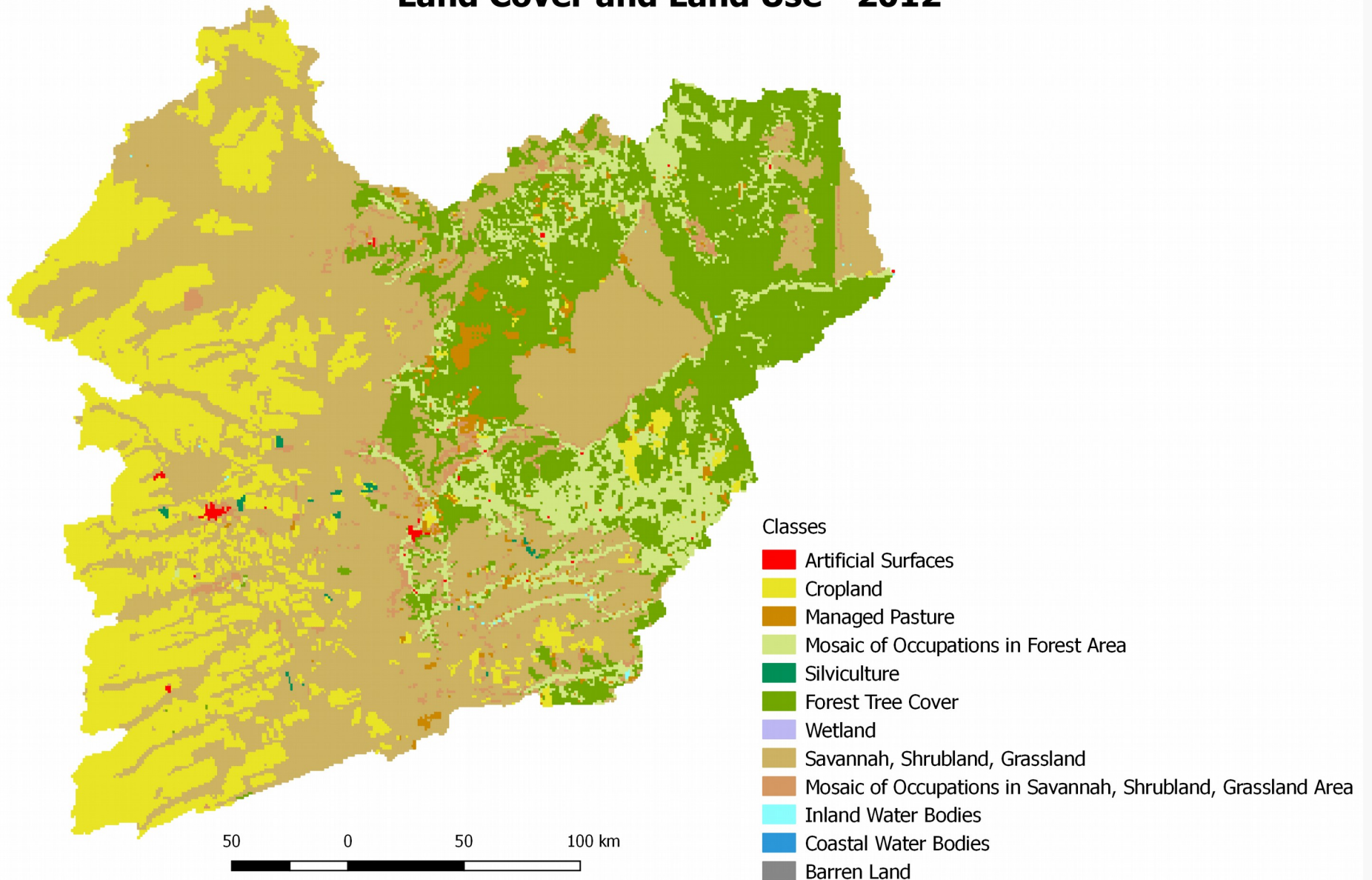
Rio Grande Basin Land Cover and Land Use - 2000



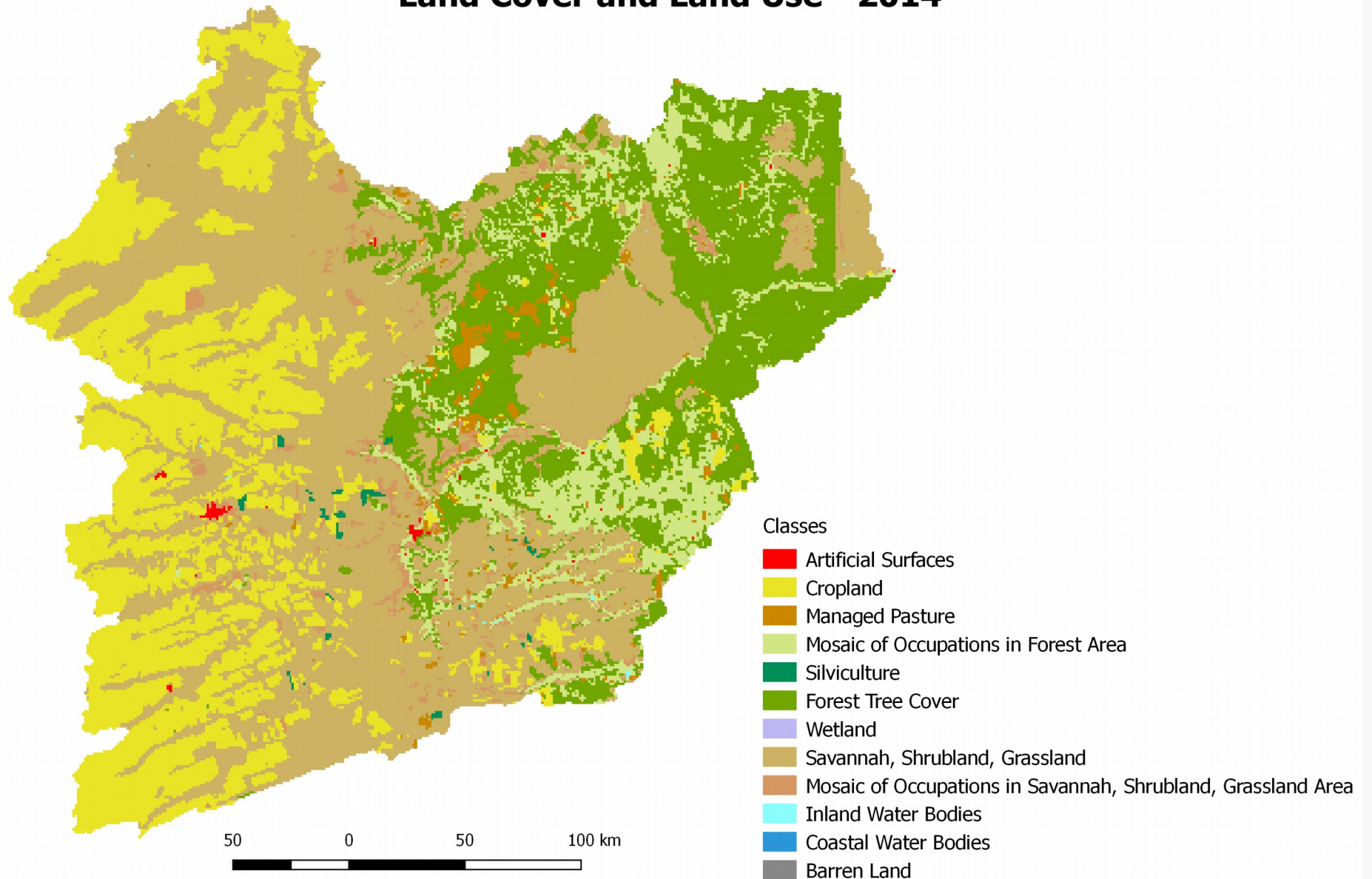
Rio Grande Basin Land Cover and Land Use - 2010



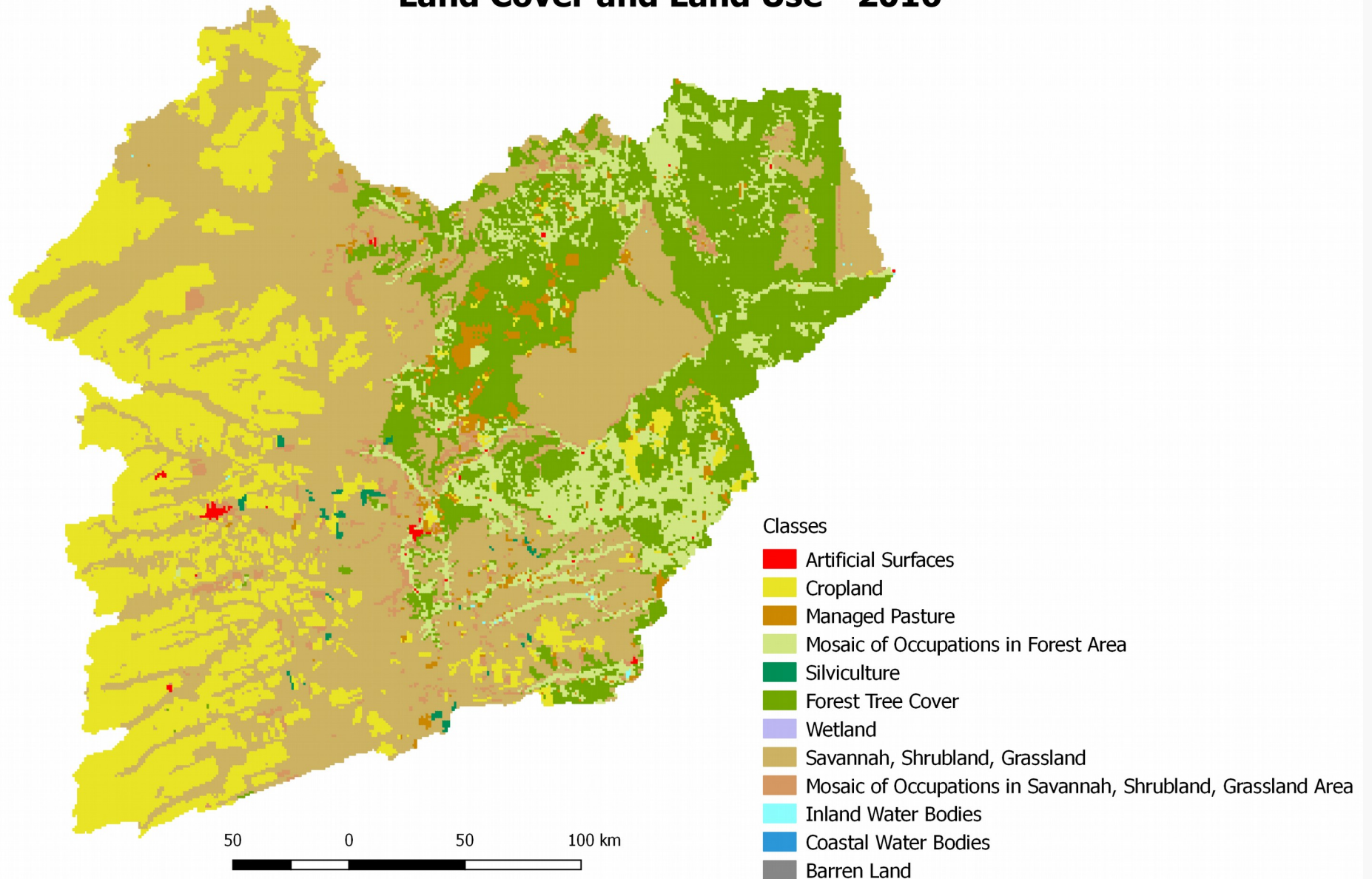
Rio Grande Basin Land Cover and Land Use - 2012



Rio Grande Basin Land Cover and Land Use - 2014



Rio Grande Basin Land Cover and Land Use - 2016



RIO GRANDE BASIN

Physical Account for Land Cover/Use (2000 – 2016 km²)

CLASSES STOCKS	Artificial Surfaces	Cropland	Managed Pasture	Mosaic of Occupations in Forest Area	Silviculture	Forest Tree Cover	Wetland	Savannah, Shrubland, Grassland	Mosaic of Occupations in Savannah/Shrubland/Grassland Area	Inland Water Bodies	Coastal Water Bodies	Barren Land
Stock (2000)	89	10488	304	6294	14	17290	0	41764	759	25	0	0
Total additions to stock	23	5073	584	604	82	16	0	1	388	0	0	0
Total reductions in stock	0	49	4	313	8	989	0	5366	42	0	0	0
Stock (2010)	112	15512	884	6585	88	16317	0	36399	1105	25	0	0
Total additions to stock	4	2080	59	107	25	13	0	0	214	0	0	0
Total reductions in stock	0	9	7	76	4	154	0	2252	0	0	0	0
Stock (2012)	116	17583	936	6616	109	16176	0	34147	1319	25	0	0
Total additions to stock	2	1074	188	75	101	0	0	0	236	0	0	0
Total reductions in stock	0	18	17	80	23	306	0	1214	18	0	0	0
Stock (2014)	118	18639	1107	6611	187	15870	0	32933	1537	25	0	0
Total additions to stock	8	150	63	162	18	11	0	0	119	0	0	0
Total reductions in stock	0	3	10	21	0	206	0	277	14	0	0	0
Stock (2016)	126	18786	1160	6752	205	15675	0	32656	1642	25	0	0

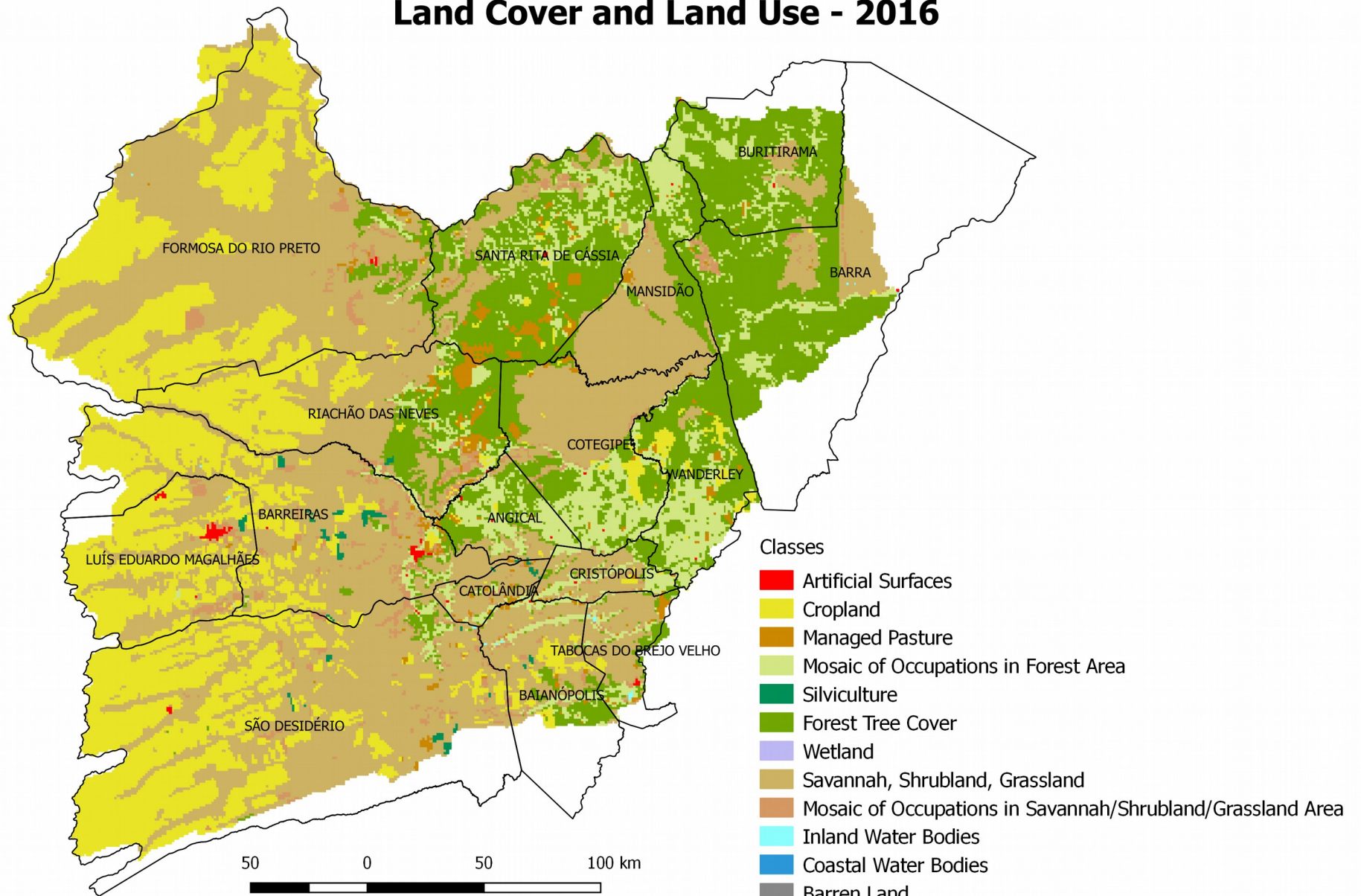
RIO GRANDE BASIN

Physical Account for Land Cover/Use and Changes Matrix (2014 -2016 km²)

Rio Grande Basin - PHYSICAL ASSET ACCOUNT AND CHANGE MATRIX FOR LAND (1 km ²)													
		Artificial Surfaces	Cropland	Managed Pasture	Mosaic of Occupations in Forest Area	Silviculture	Forest Tree Cover	Wetland	Savannah, Shrubland, Grassland	Mosaic of Occupations in Savannah/Shrubland/Grassland Area	Inland Water Bodies	Coastal Water Bodies	Barren Land
Opening stock (2014)		118	18639	1107	6611	187	15870	0	32933	1537	25	0	0
1. Additions to stock	Artificial Surfaces	0	0	0	0	0	0	0	0	0	0	0	0
	Cropland	0	0	2	0	0	0	0	0	1	0	0	0
	Managed Pasture	0	9	0	1	0	0	0	0	0	0	0	0
	Mosaic of Occupations in Forest Area	3	3	4	0	0	11	0	0	0	0	0	0
	Silviculture	0	0	0	0	0	0	0	0	0	0	0	0
	Forest Tree Cover	0	11	34	161	0	0	0	0	0	0	0	0
	Wetland	0	0	0	0	0	0	0	0	0	0	0	0
	Savannah, Shrubland, Grassland	0	127	14	0	18	0	0	0	118	0	0	0
	Mosaic of Occupations in Savannah/Shrubland/Grassland Area	5	0	9	0	0	0	0	0	0	0	0	0
	Inland Water Bodies	0	0	0	0	0	0	0	0	0	0	0	0
	Coastal Water Bodies	0	0	0	0	0	0	0	0	0	0	0	0
	Barren Land	0	0	0	0	0	0	0	0	0	0	0	0
	Total additions to stock	8	150	63	162	18	11	0	0	119	0	0	0
2. Reductions in stock	Artificial Surfaces	0	0	0	3	0	0	0	0	5	0	0	0
	Cropland	0	0	9	3	0	11	0	127	0	0	0	0
	Managed Pasture	0	2	0	4	0	34	0	14	9	0	0	0
	Mosaic of Occupations in Forest Area	0	0	1	0	0	161	0	0	0	0	0	0
	Silviculture	0	0	0	0	0	0	0	18	0	0	0	0
	Forest Tree Cover	0	0	0	11	0	0	0	0	0	0	0	0
	Wetland	0	0	0	0	0	0	0	0	0	0	0	0
	Savannah, Shrubland, Grassland	0	0	0	0	0	0	0	0	0	0	0	0
	Mosaic of Occupations in Savannah/Shrubland/Grassland Area	0	1	0	0	0	0	0	118	0	0	0	0
	Inland Water Bodies	0	0	0	0	0	0	0	0	0	0	0	0
	Coastal Water Bodies	0	0	0	0	0	0	0	0	0	0	0	0
	Barren Land	0	0	0	0	0	0	0	0	0	0	0	0
	Total reductions in stock	0	3	10	21	0	206	0	277	14	0	0	0
Closing stock (2016)		126	18786	1160	6752	205	15675	0	32656	1642	25	0	0

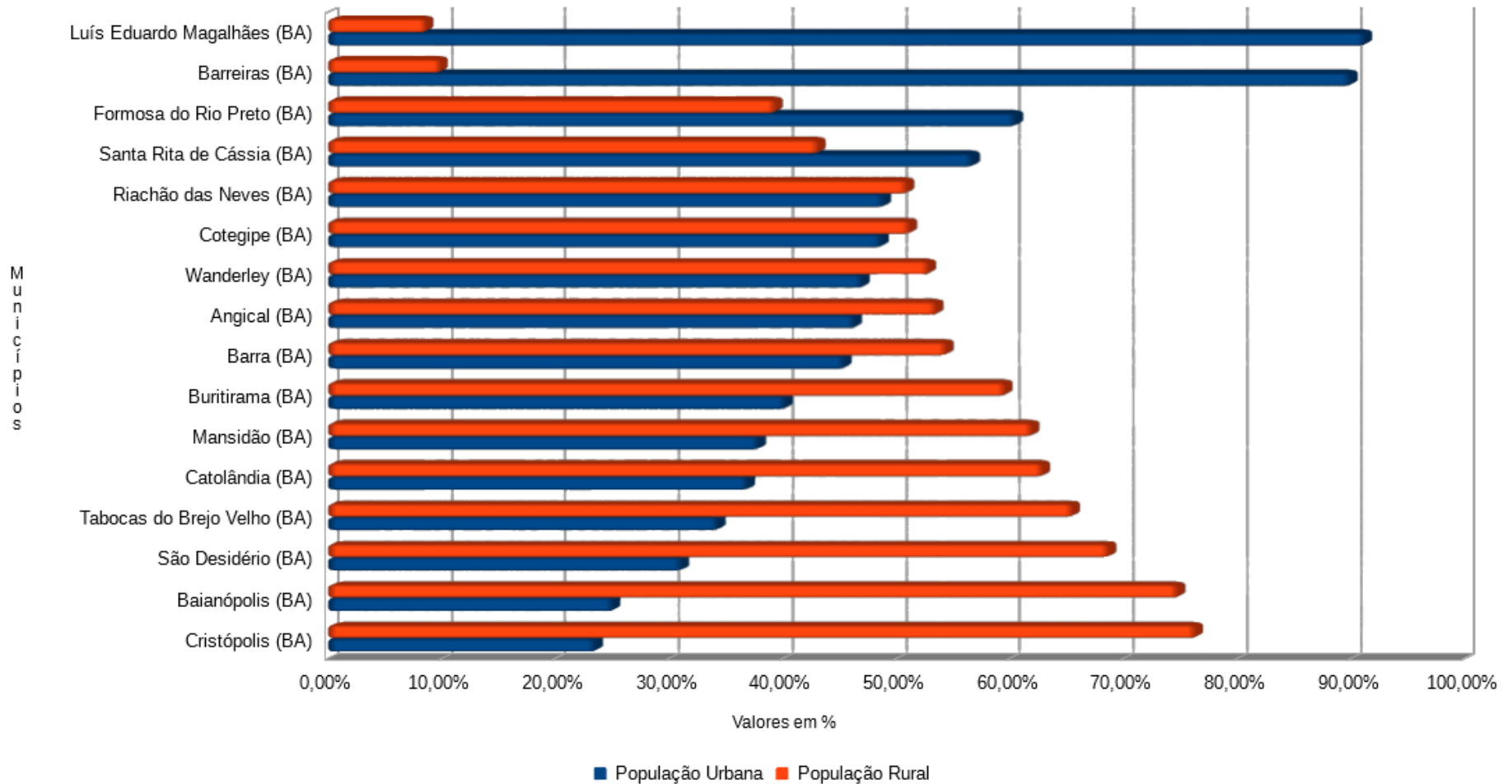
Experimental Ecosystem Accounting other possibilities (statistics and census)

Rio Grande Basin Land Cover and Land Use - 2016



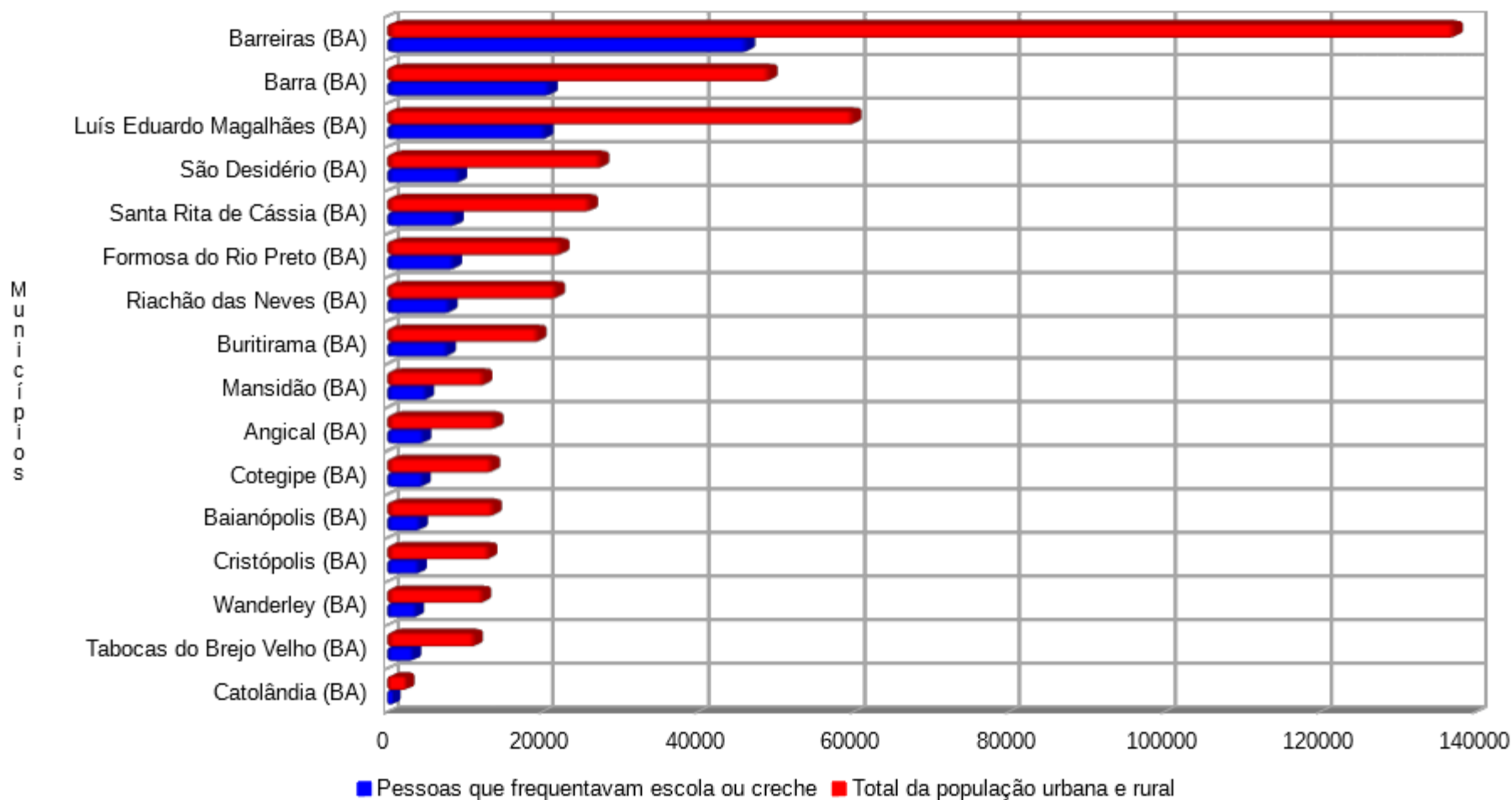
Population

População Urbana e Rural dos Municípios Inseridos na Bacia do Rio Grande/BA (2010)



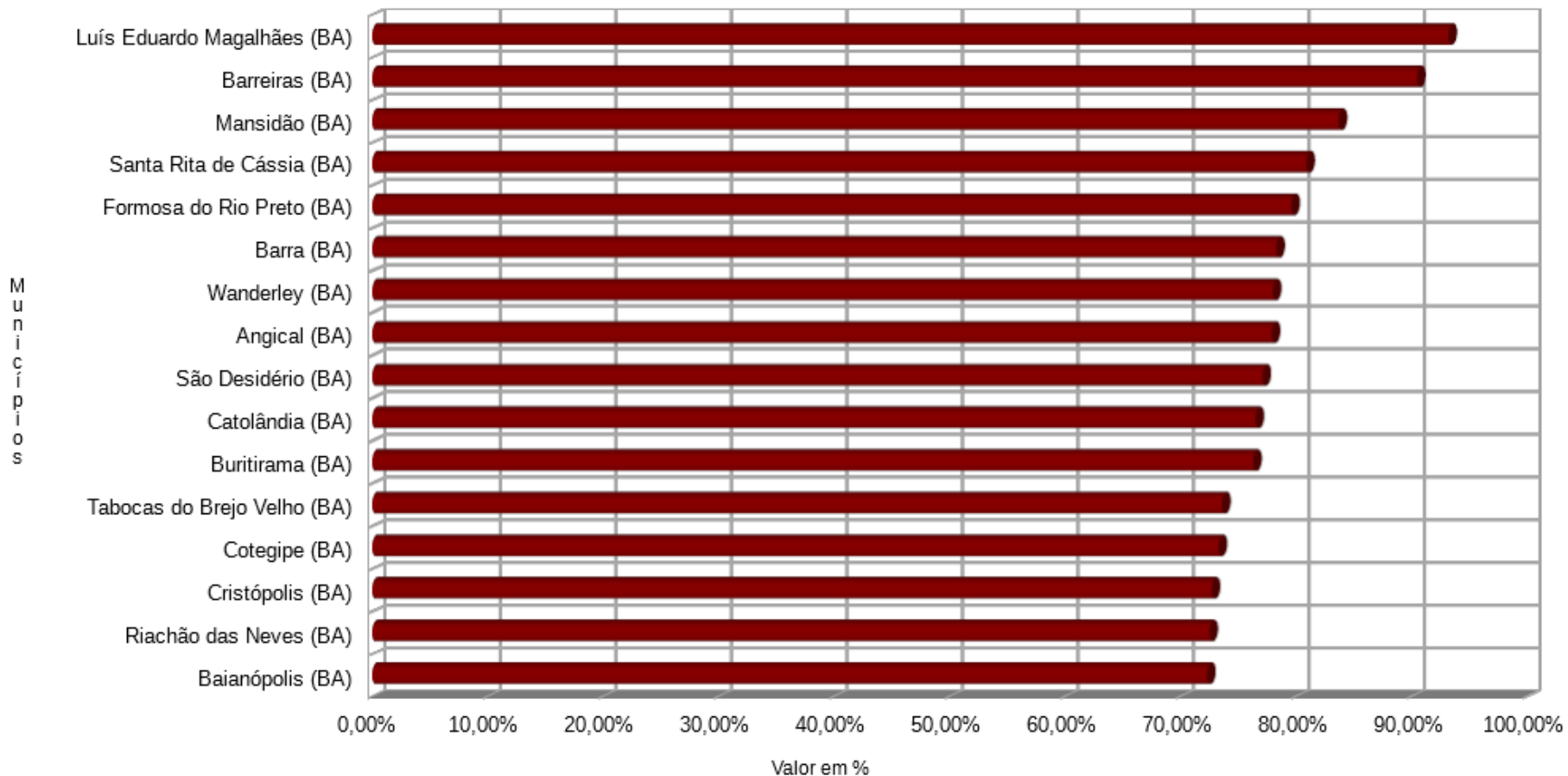
Education (school enrollment)

Escolaridade da População dos Municípios Inseridos na Bacia do Rio Grande/BA (2010)



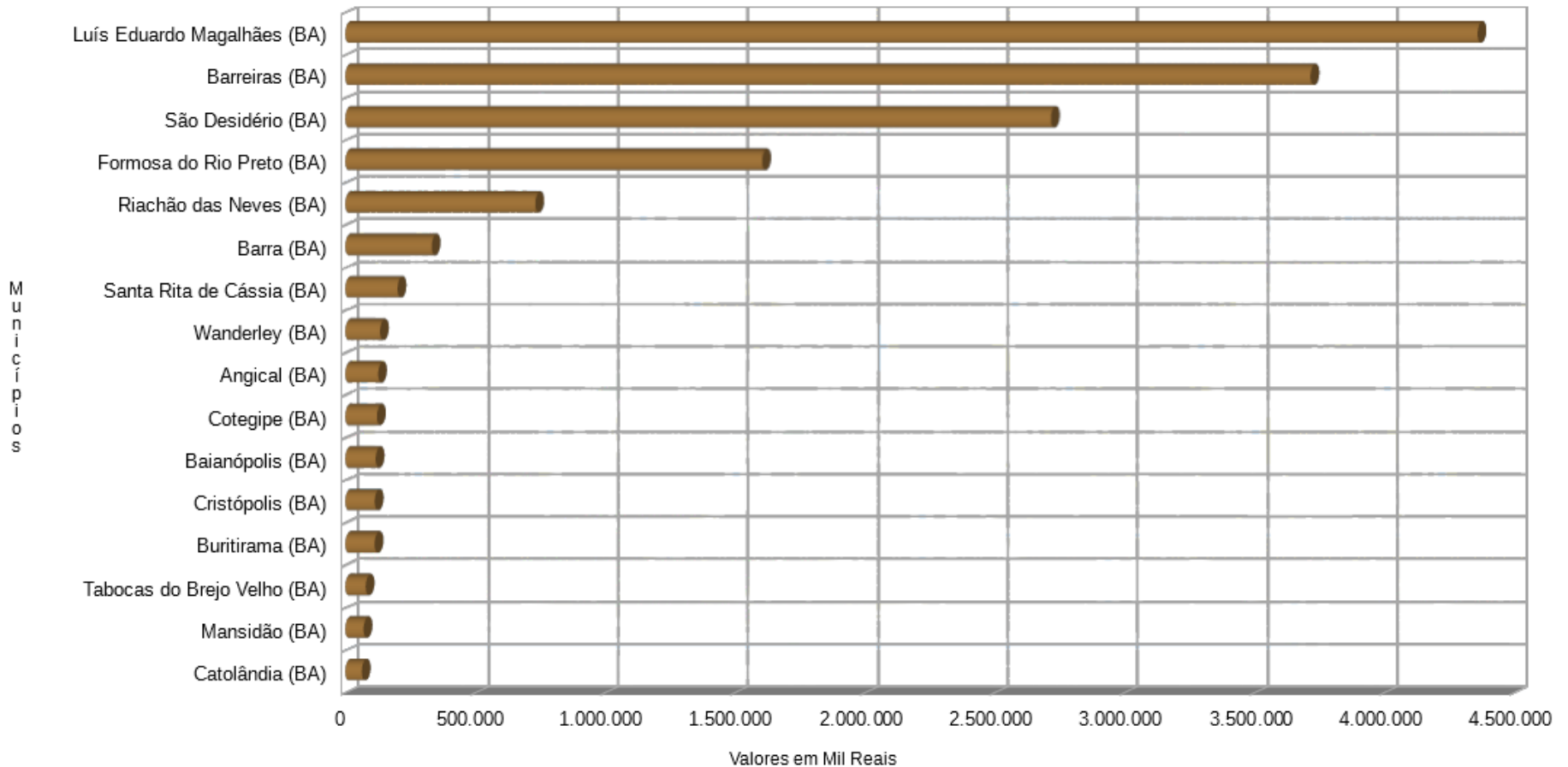
Education (literacy conditions)

Taxa de Alfabetização das Pessoas de 10 Anos ou Mais dos Municípios Inseridos na Bacia do Rio Grande/BA (2010)



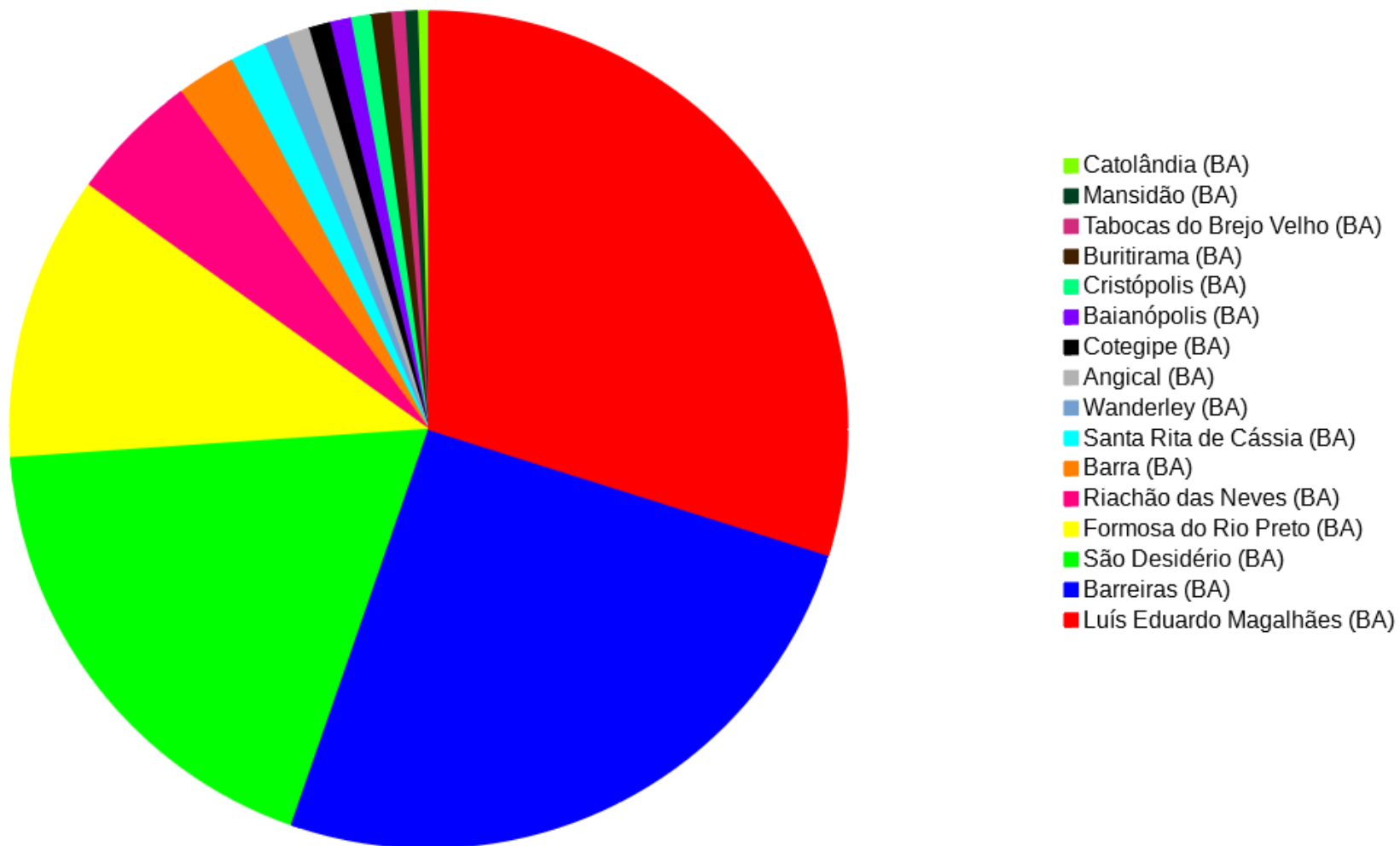
Gross Domestic Product of Municipalities

Produto Interno Bruto (Mil Reais) dos Municípios Inseridos na Bacia do Rio Grande/BA (2015)



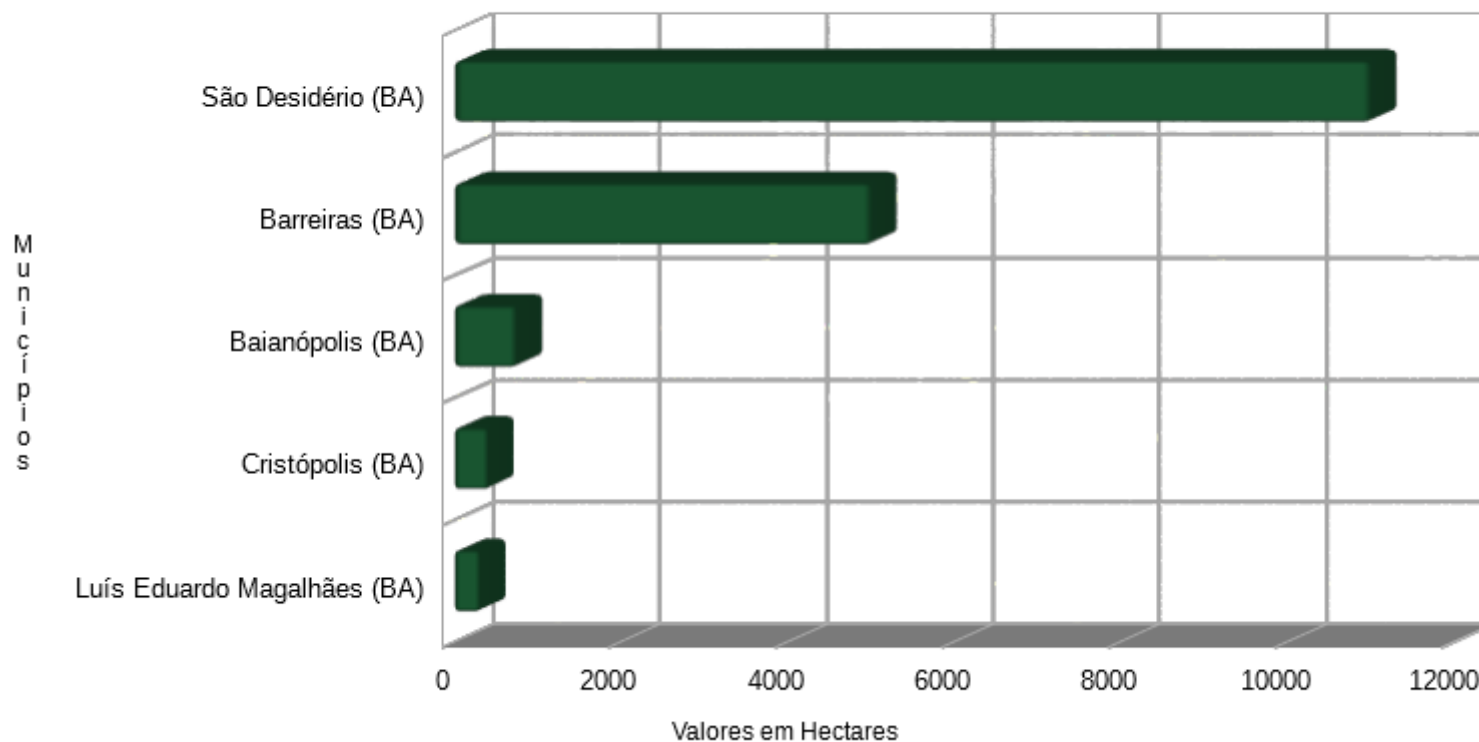
Gross Domestic Product of Municipalities

Produto Interno Bruto (Mil Reais) dos Municípios Inseridos na Bacia do Rio Grande/BA (2015)



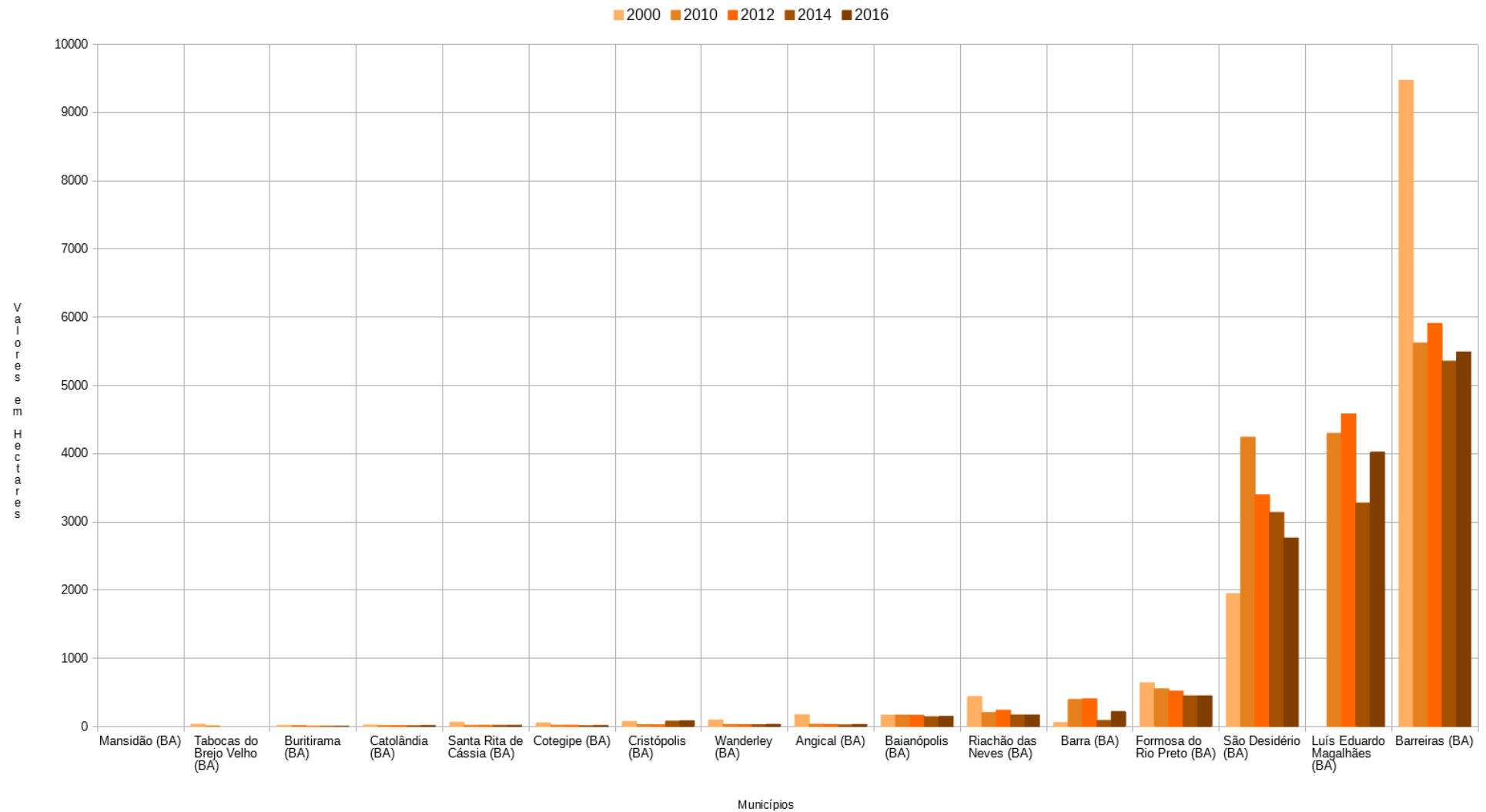
Silviculture

Área Total dos Efetivos da Silvicultura em Hectares Municípios Inseridos na Bacia do Rio Grande/BA (2016)



Permanent crops

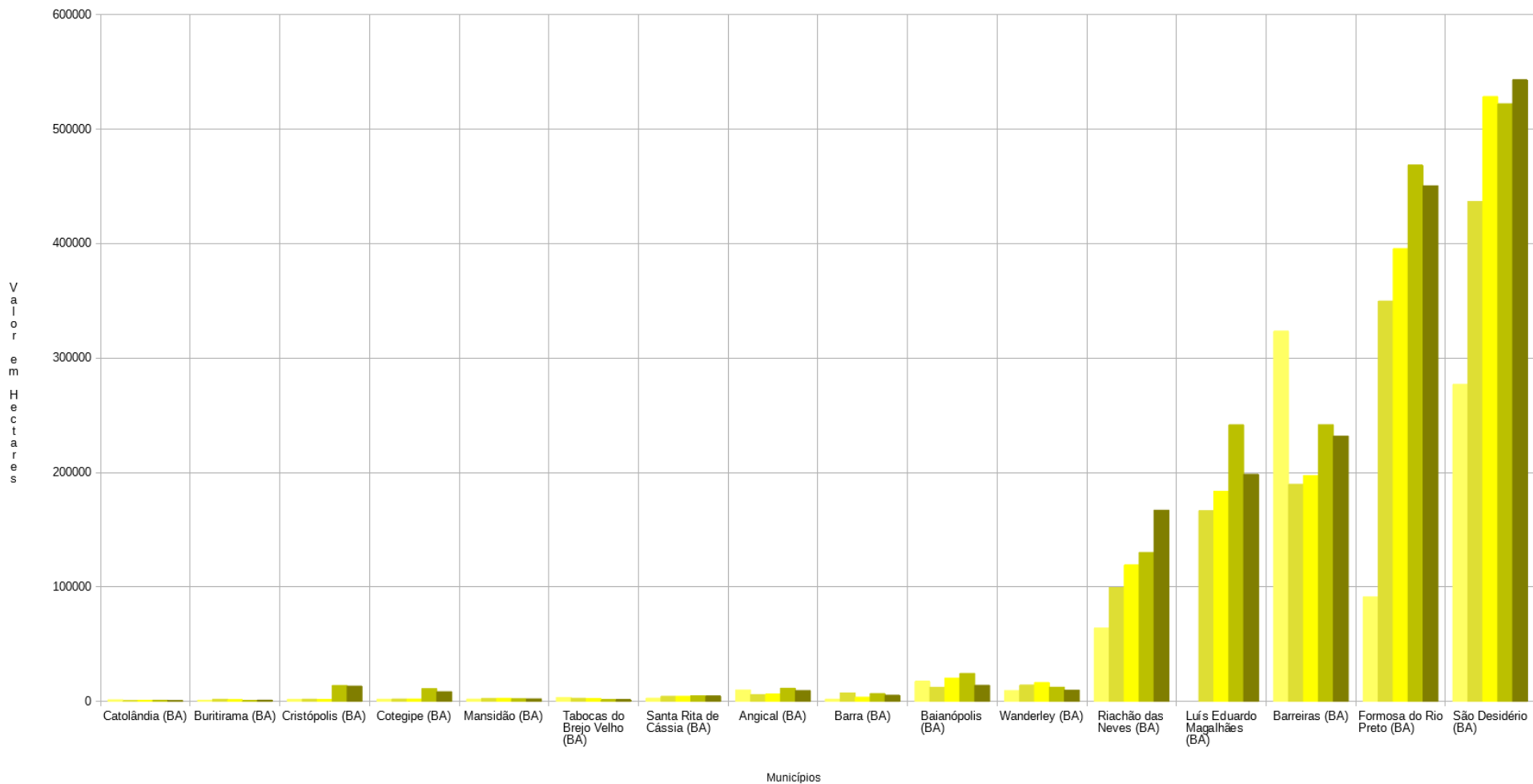
Área Destinada à Colheita de Lavouras Permanentes dos Municípios Inseridos na Bacia do Rio Grande/BA



Temporary crops

Área Plantada de Lavouras Temporárias dos Municípios Inseridos na Bacia do Rio Grande/BA

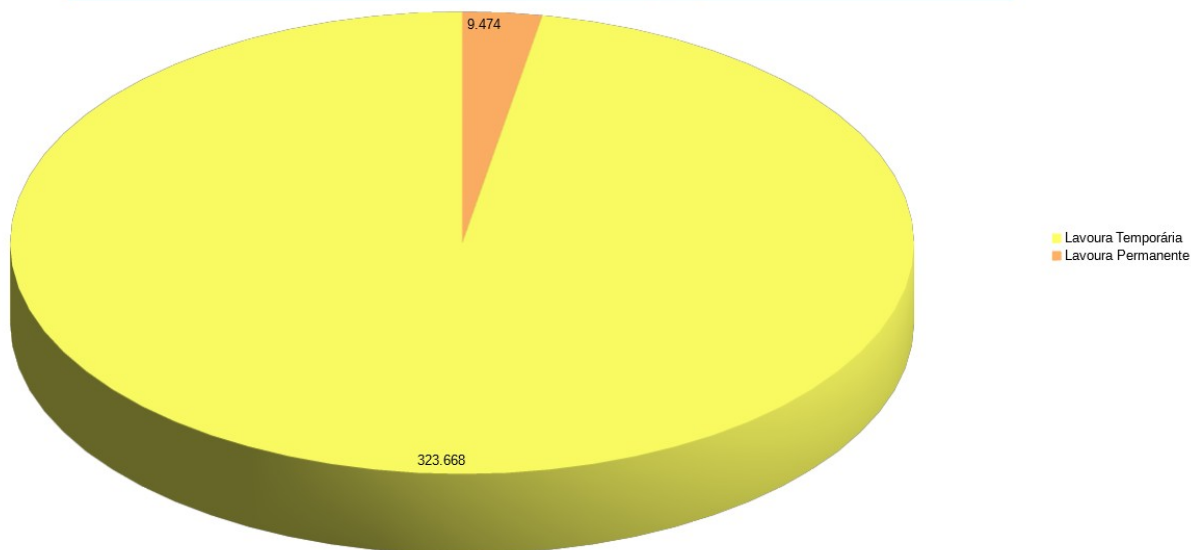
2000 2010 2012 2014 2016



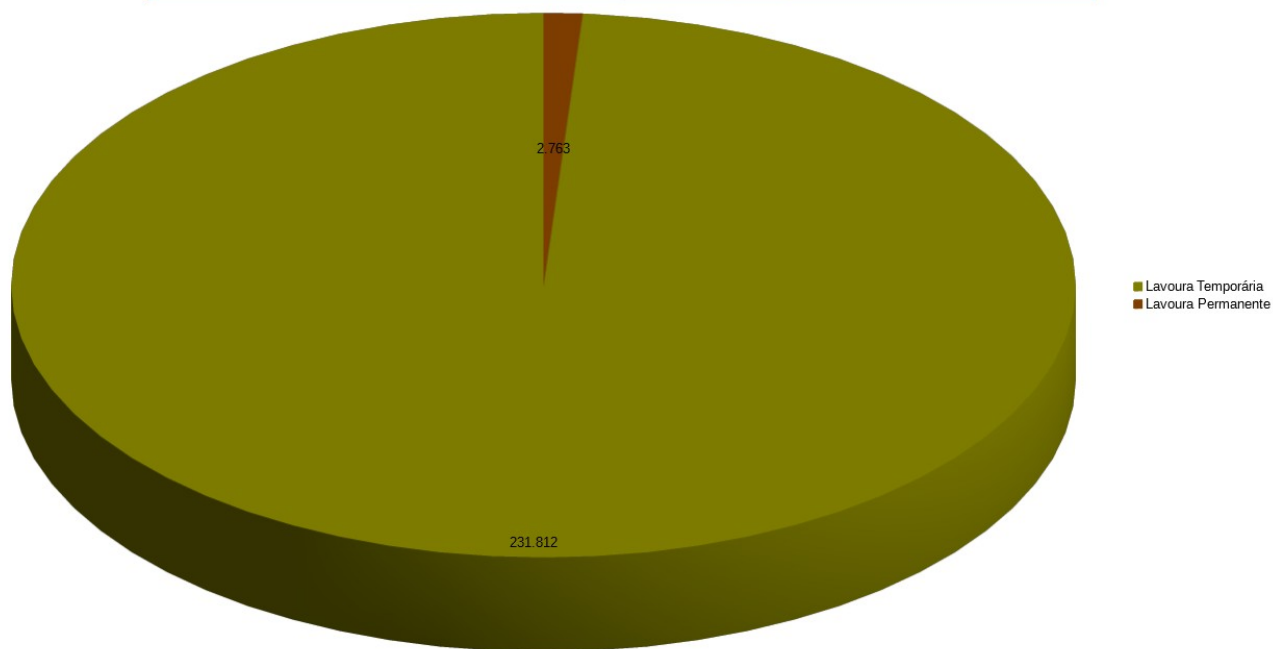
Temporary crops / Permanent crops 2000 - 2016

Barreiras - BA

Comparativo Entre Área Destinada à Lavoura Temporária e Área Plantada de Lavoura Permanente do Município de Barreiras-BA (2000)



Comparativo Entre Área Destinada à Lavoura Temporária e Área Plantada de Lavoura Permanente do Município de Barreiras-BA (2016)



Brazilian Census of Agriculture

final disclosure: july/2019



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