



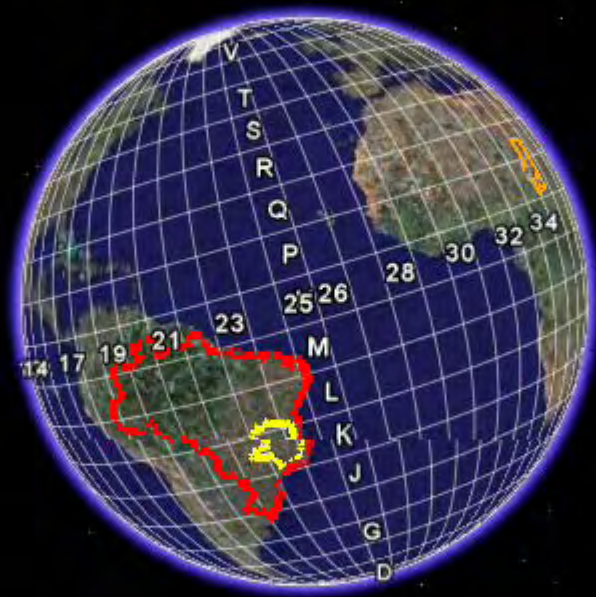
Wood energy from afforestation and reforestation: a case study from the pig iron and steel industry in the State of Minas Gerais, Brazil

José Carlos Carvalho

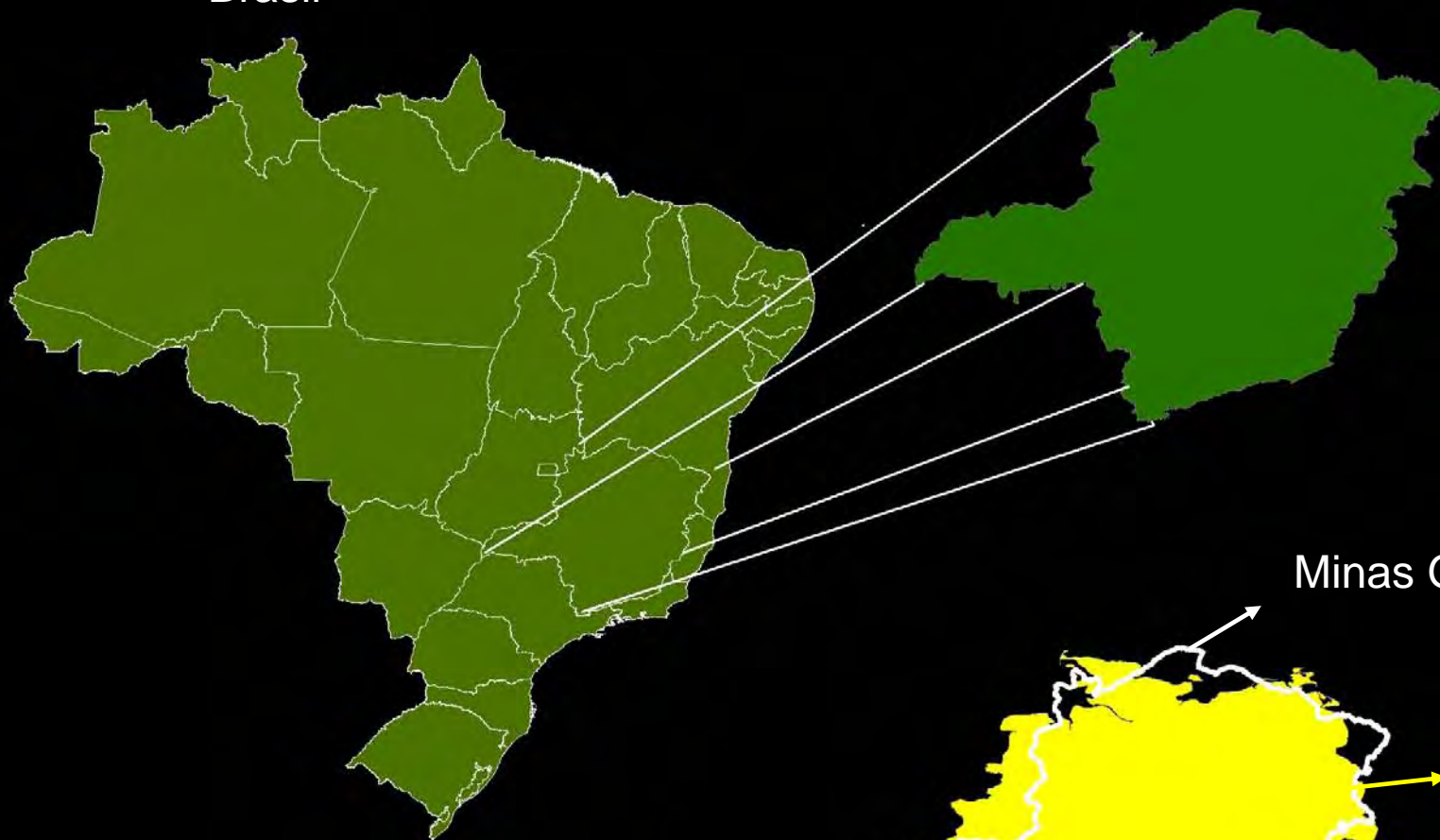
State Secretary for Environment and Sustainable Development, State of Minas Gerais, Brazil

17-19 May 2007, Hannover, Germany





Brasil

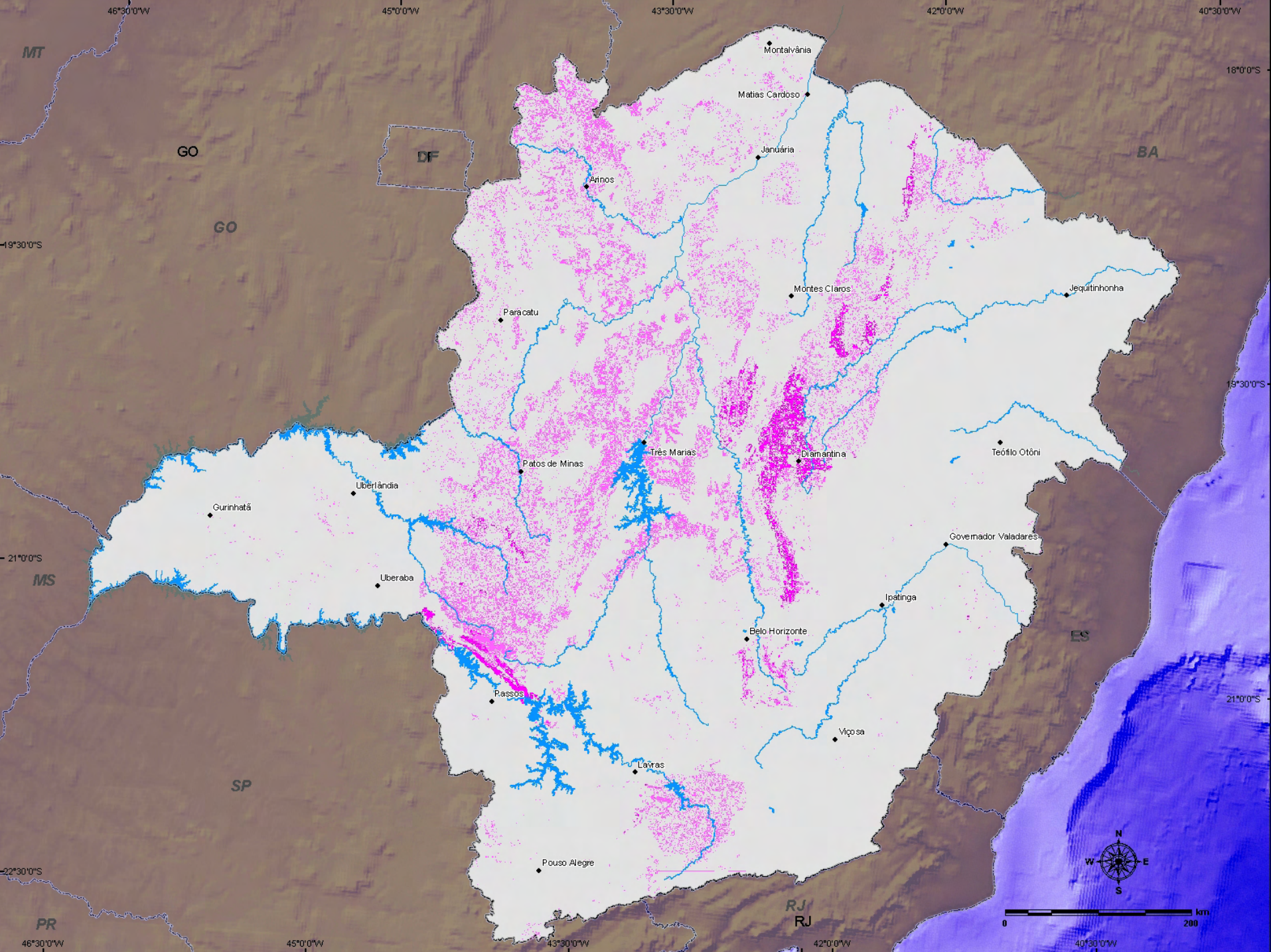


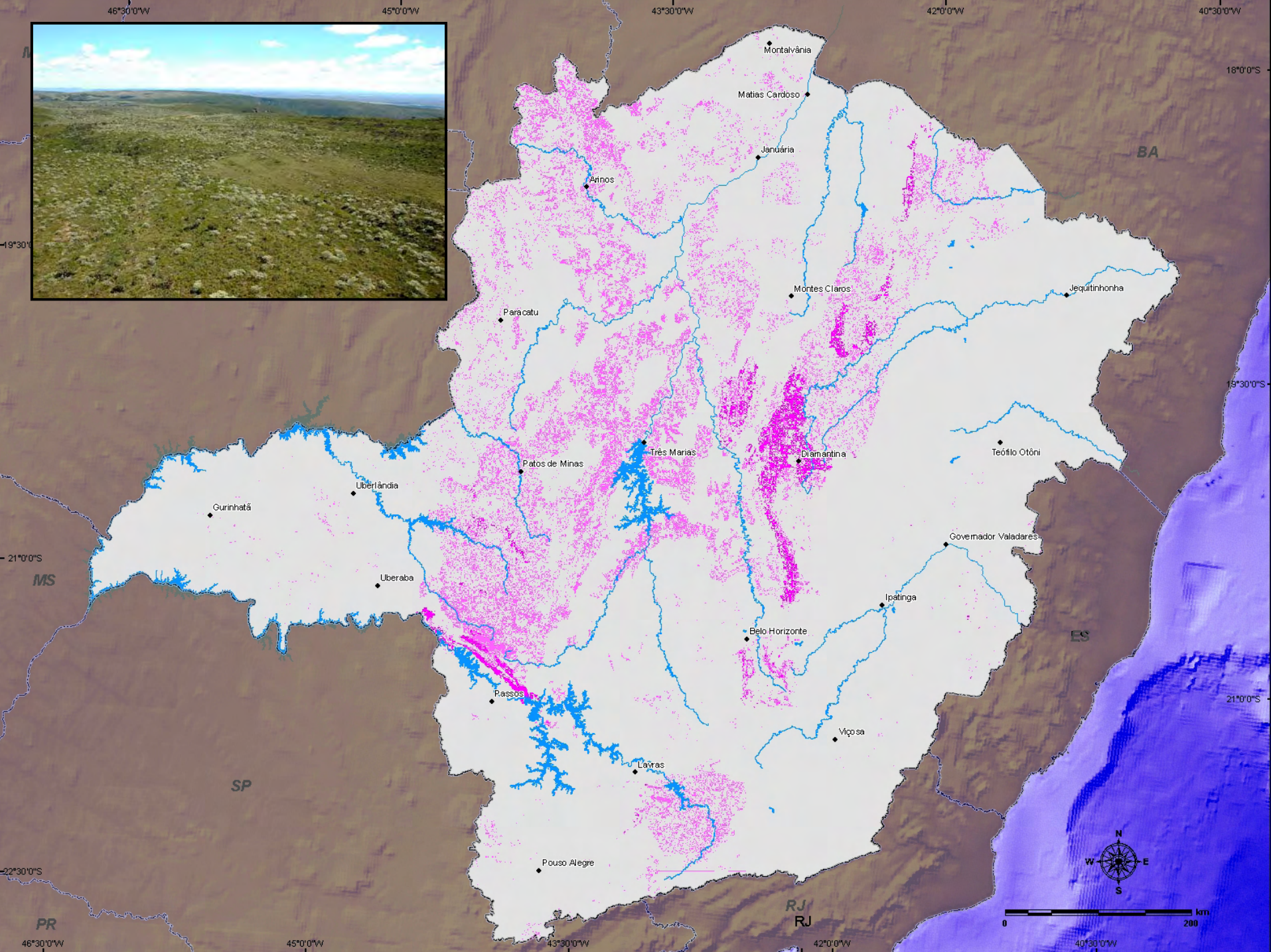
Minas Gerais

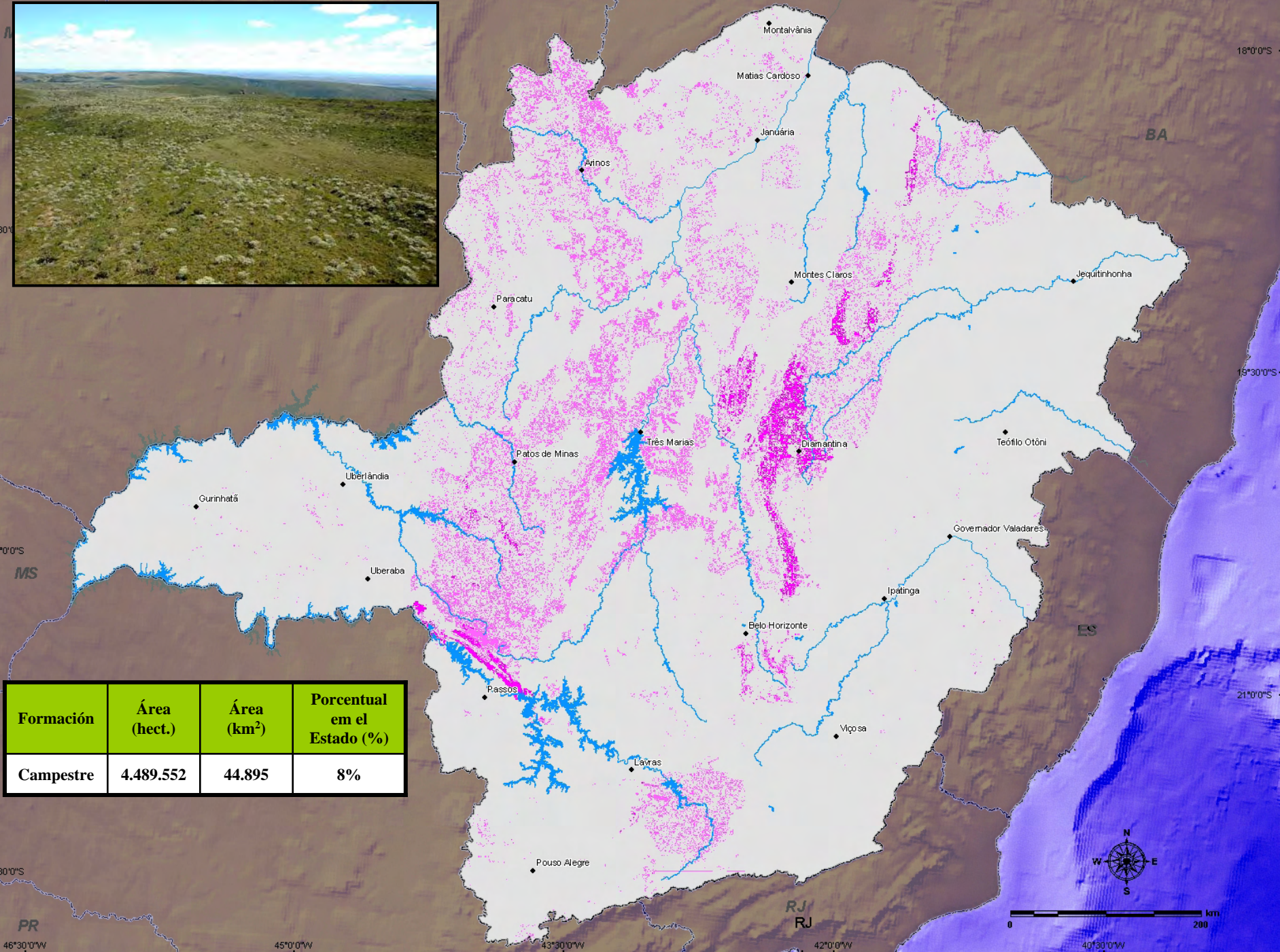
Germany



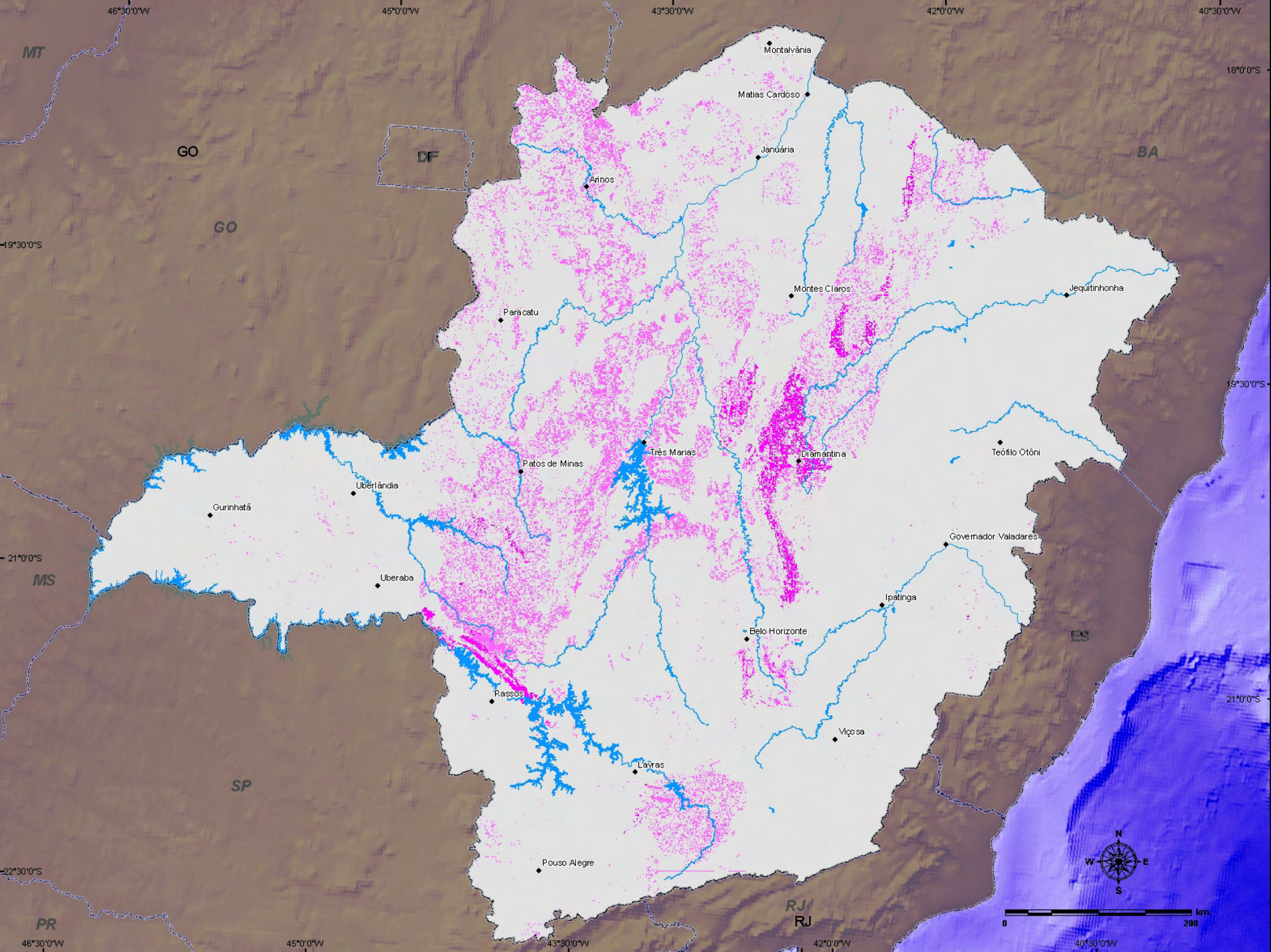
	Área (hect.)	Área (km ²)
Minas Gerais	586.55240	586.552,4
Germany	356.73300	356.733

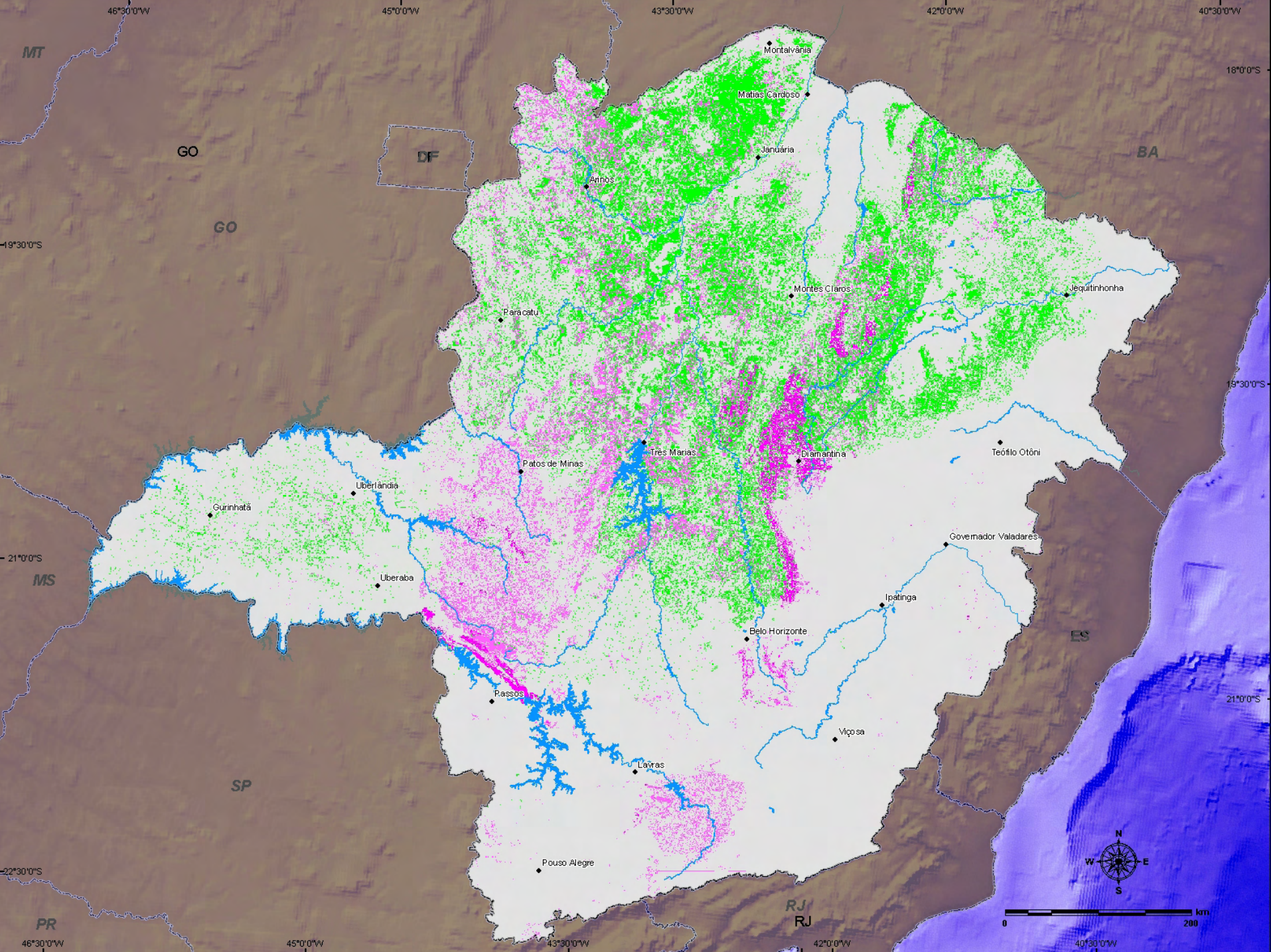


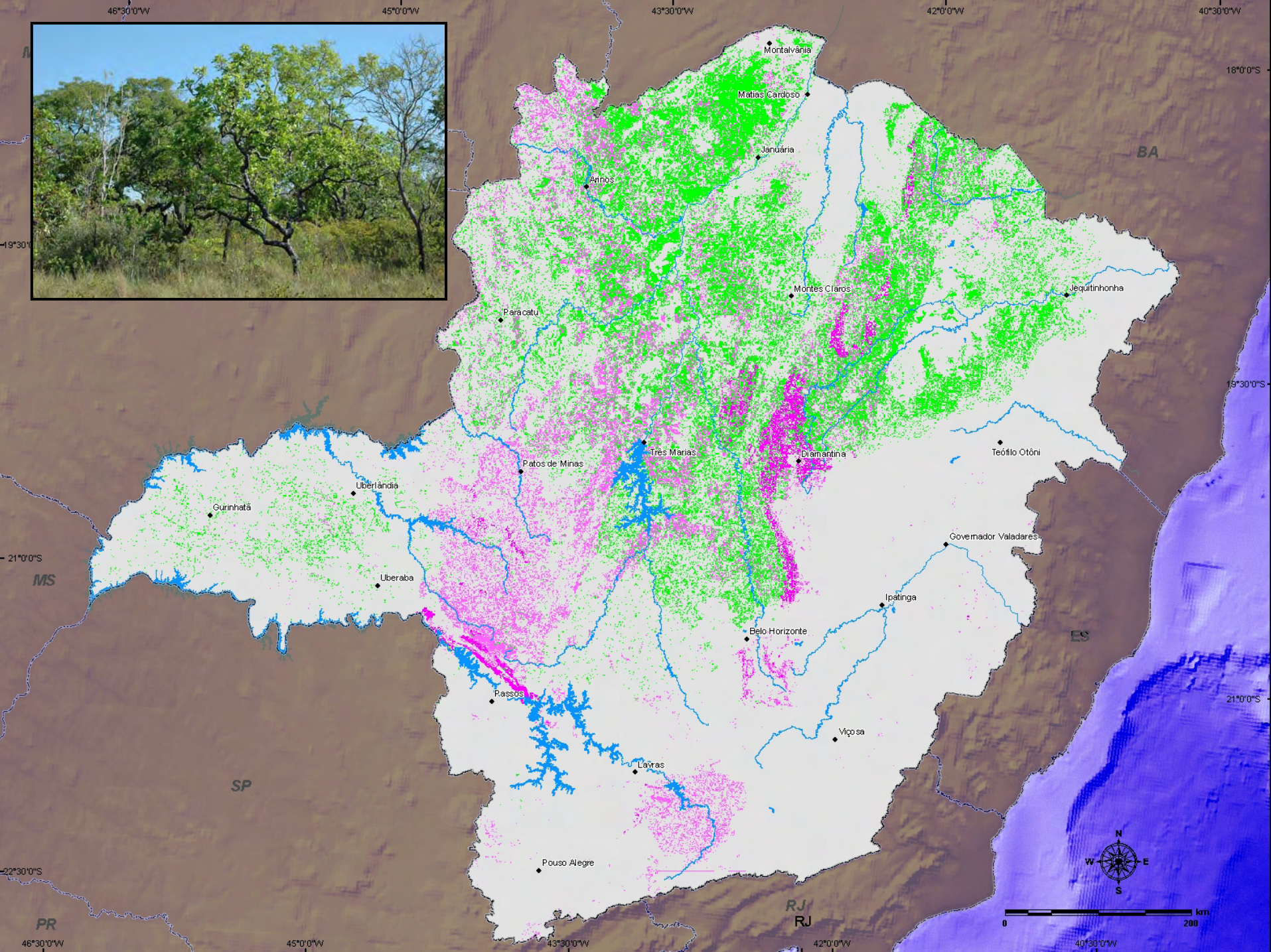


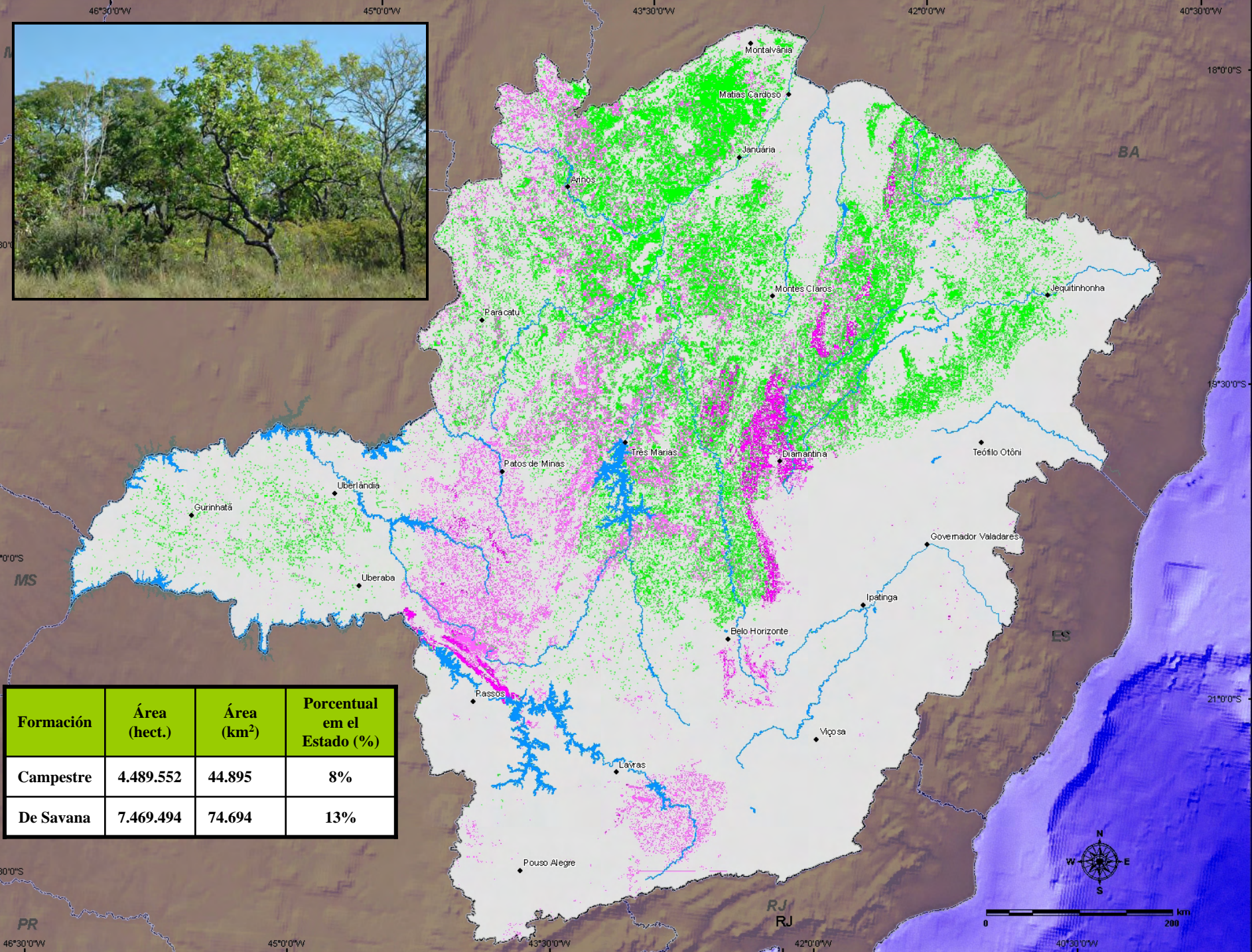


Formación	Área (hect.)	Área (km ²)	Porcentual em el Estado (%)
Campestre	4.489.552	44.895	8%

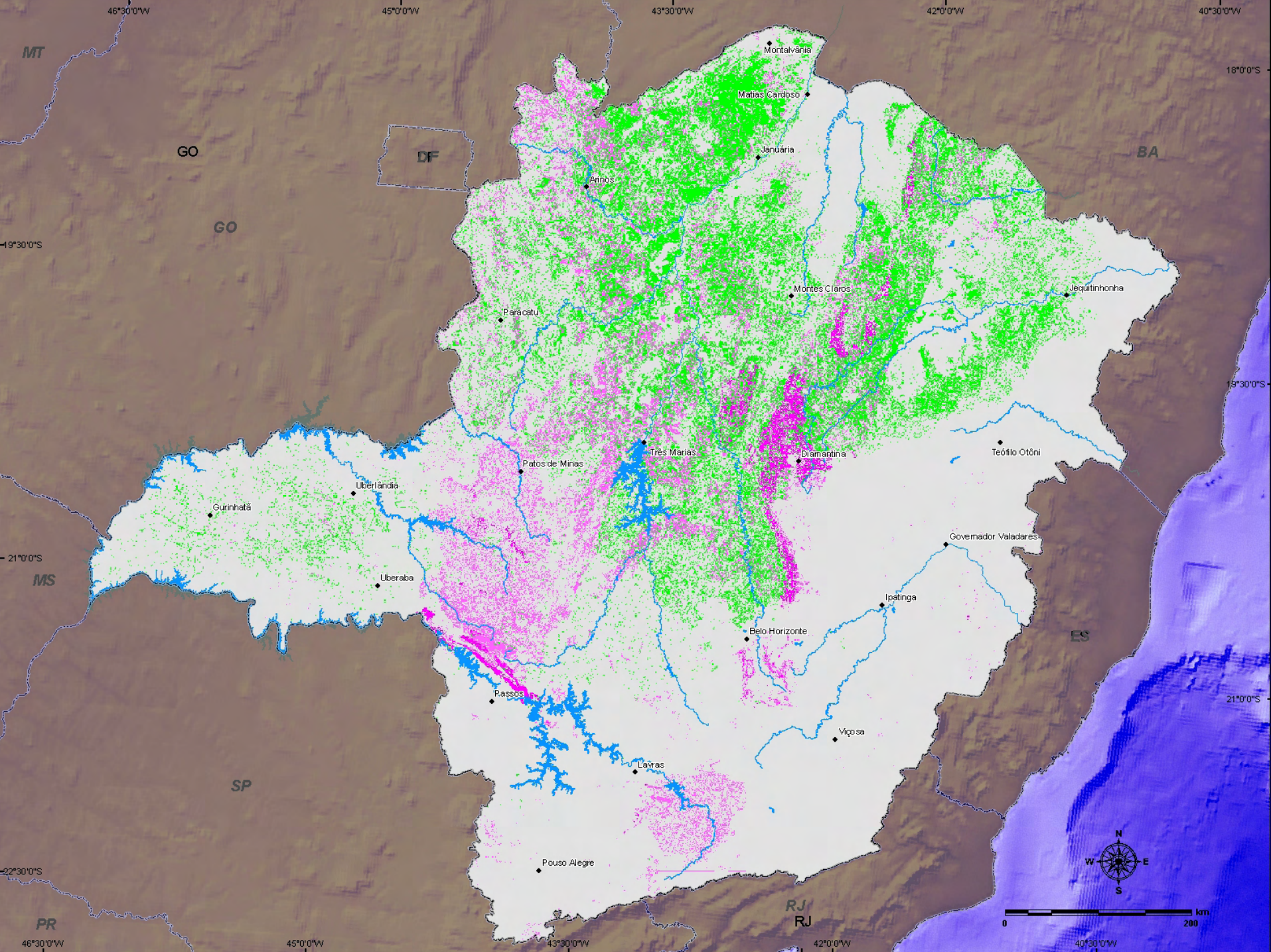


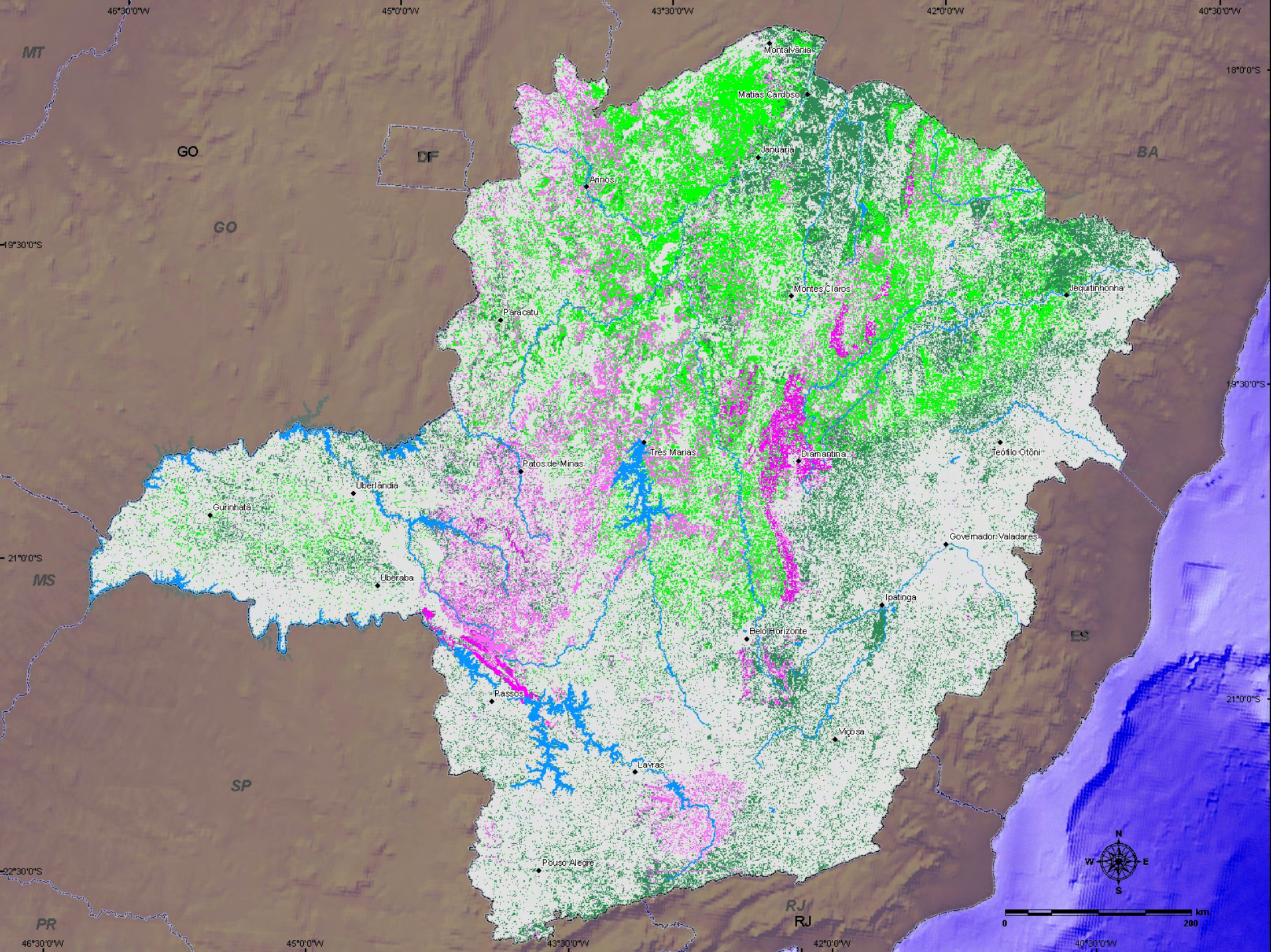


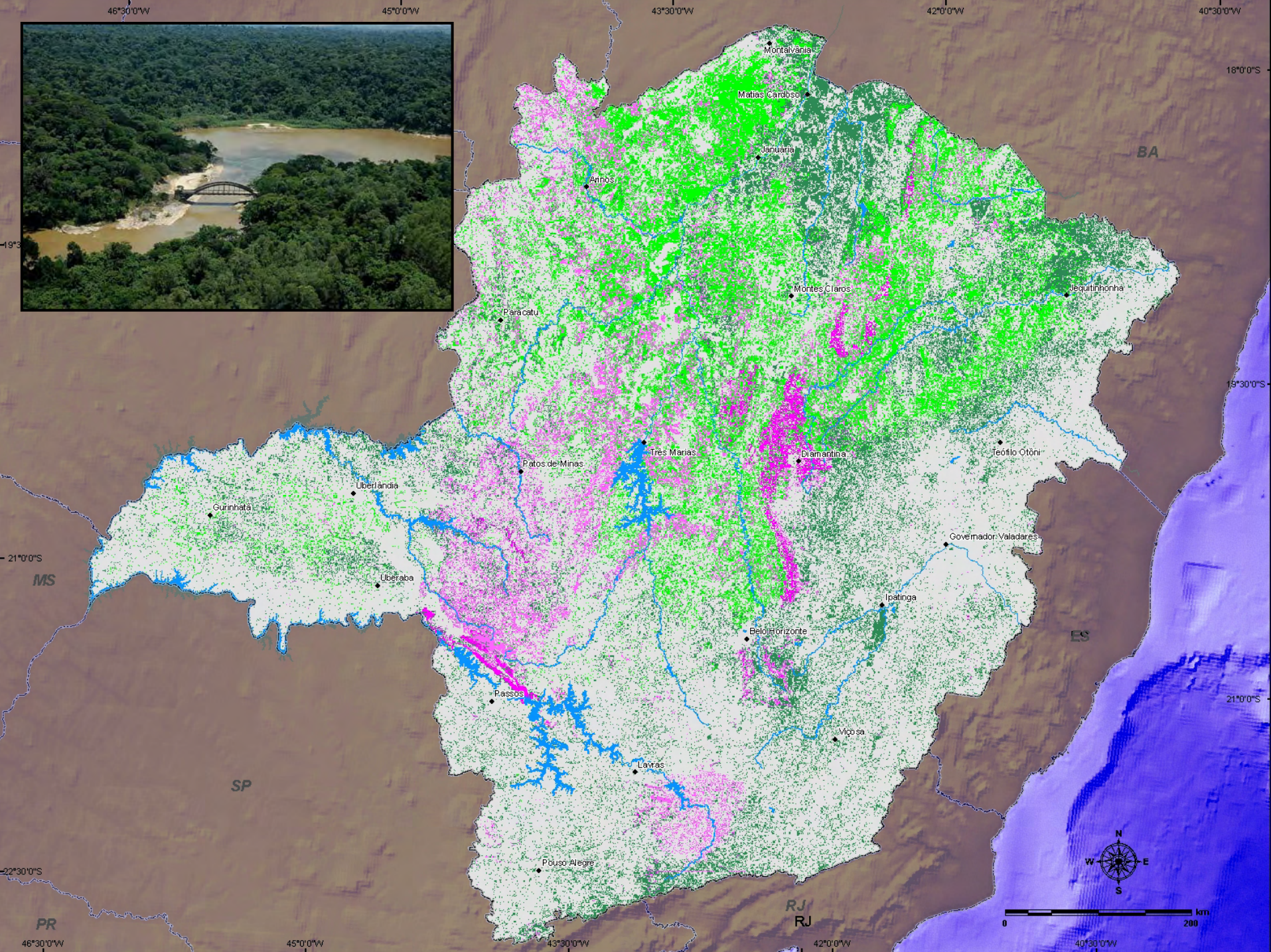




Formación	Área (hect.)	Área (km ²)	Porcentual em el Estado (%)
Campestre	4.489.552	44.895	8%
De Savana	7.469.494	74.694	13%

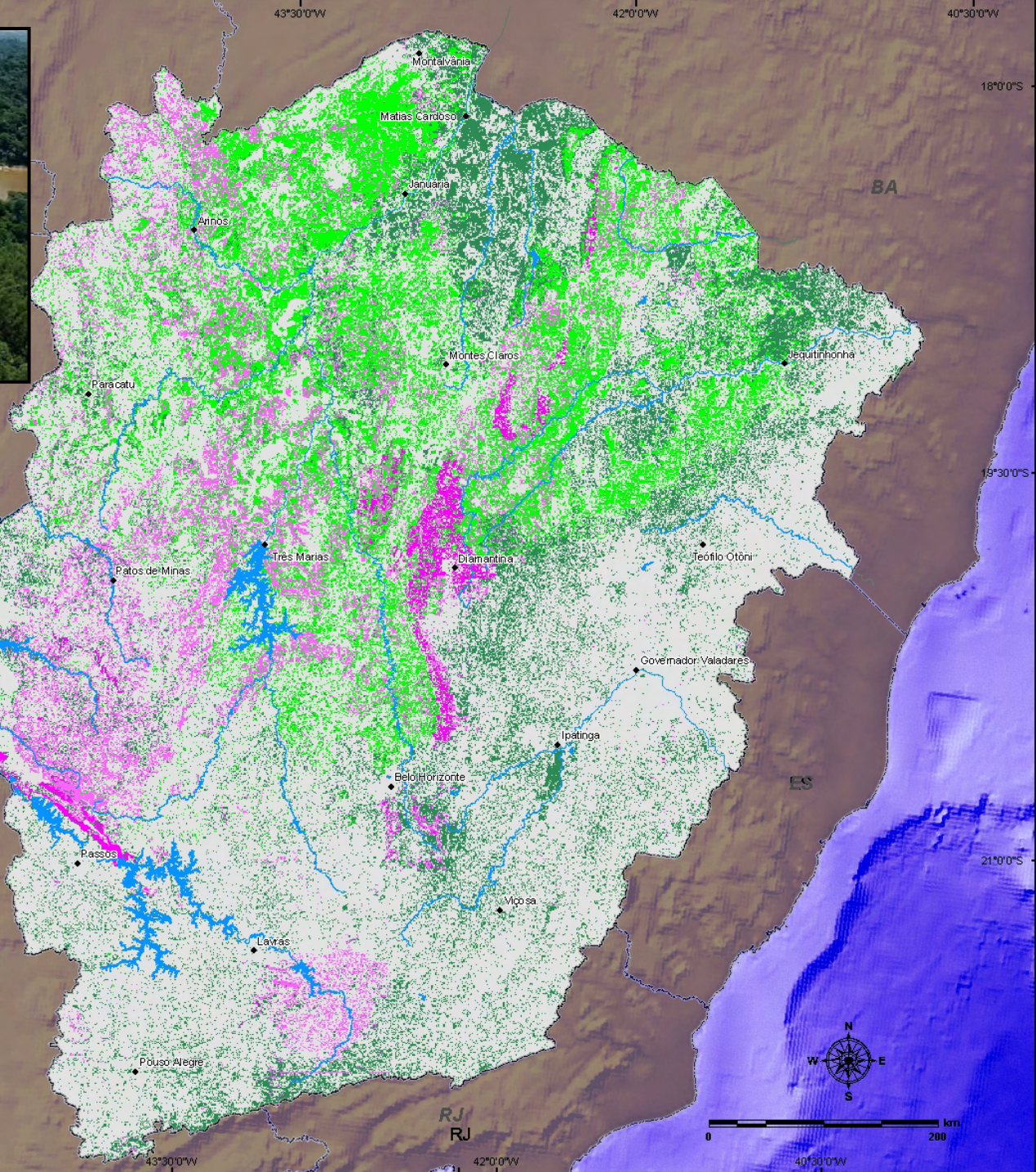


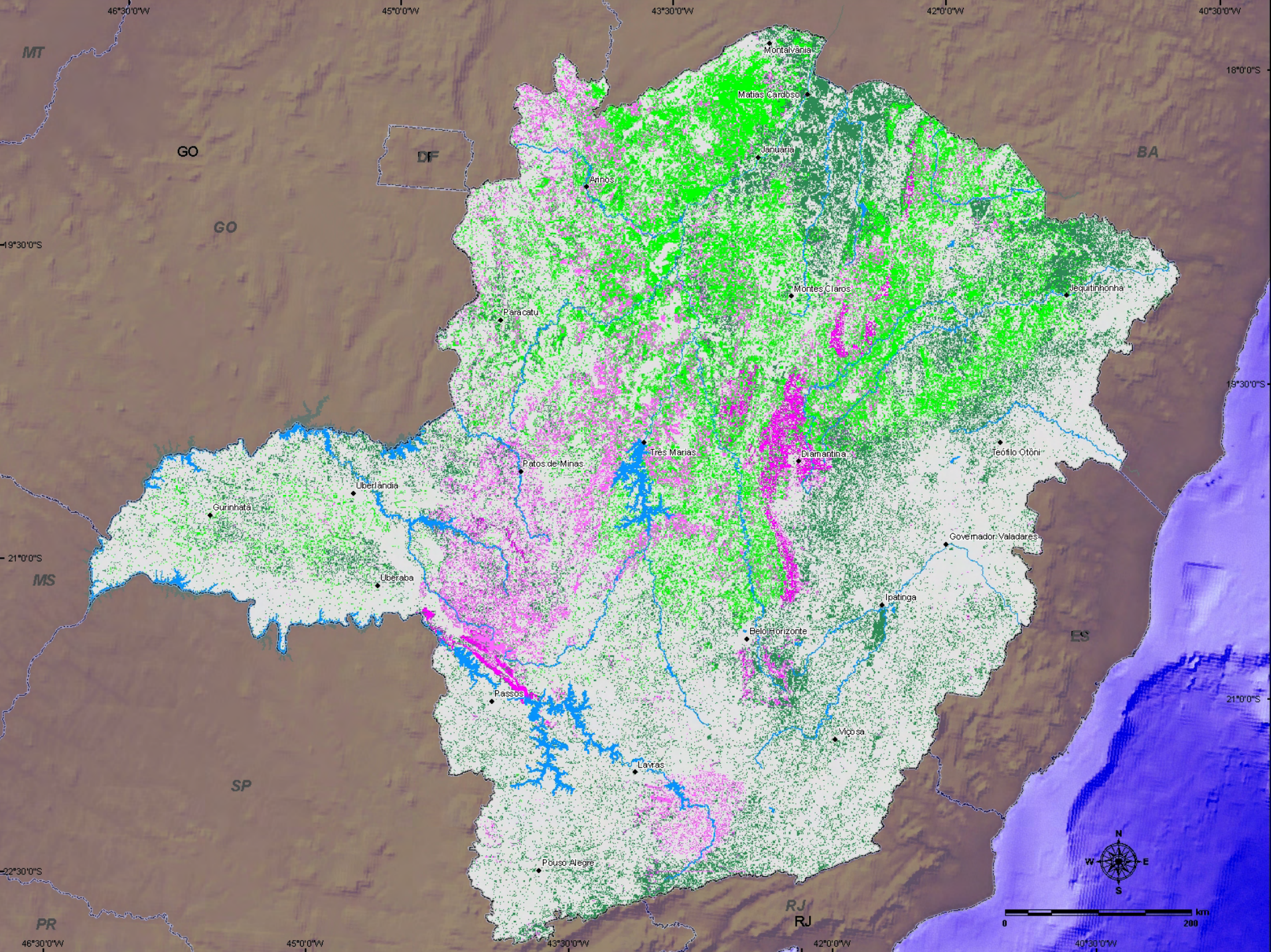


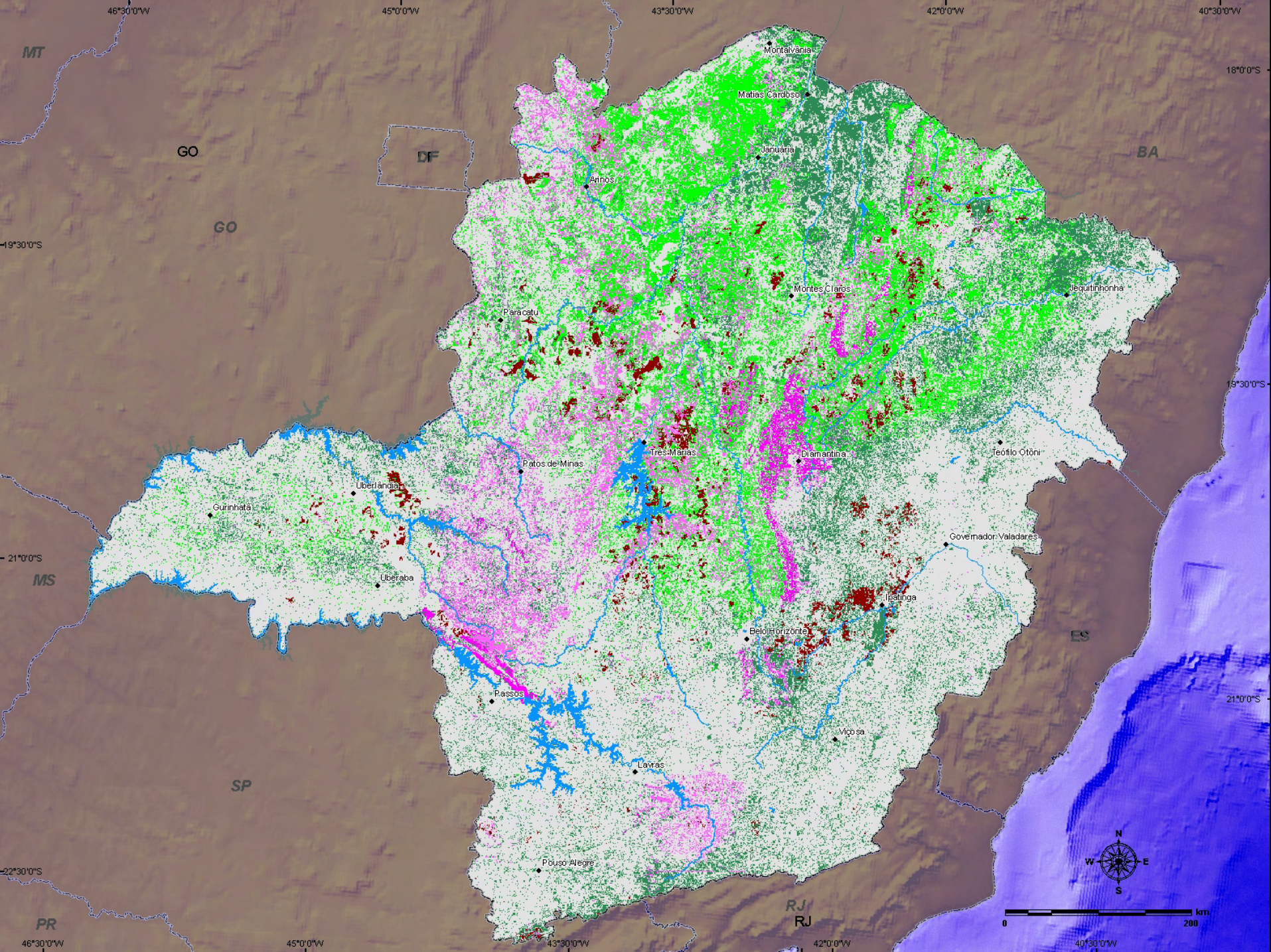


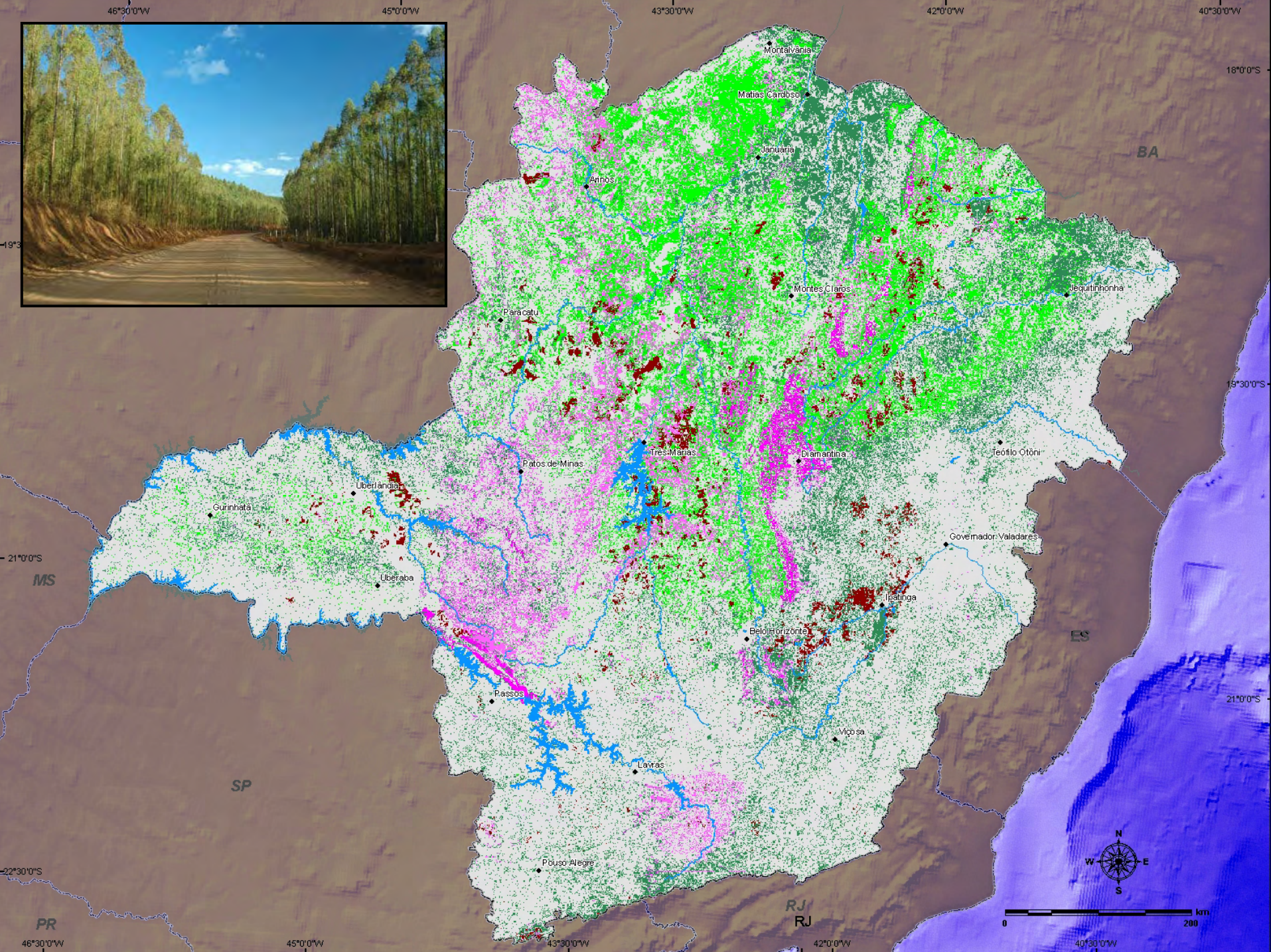


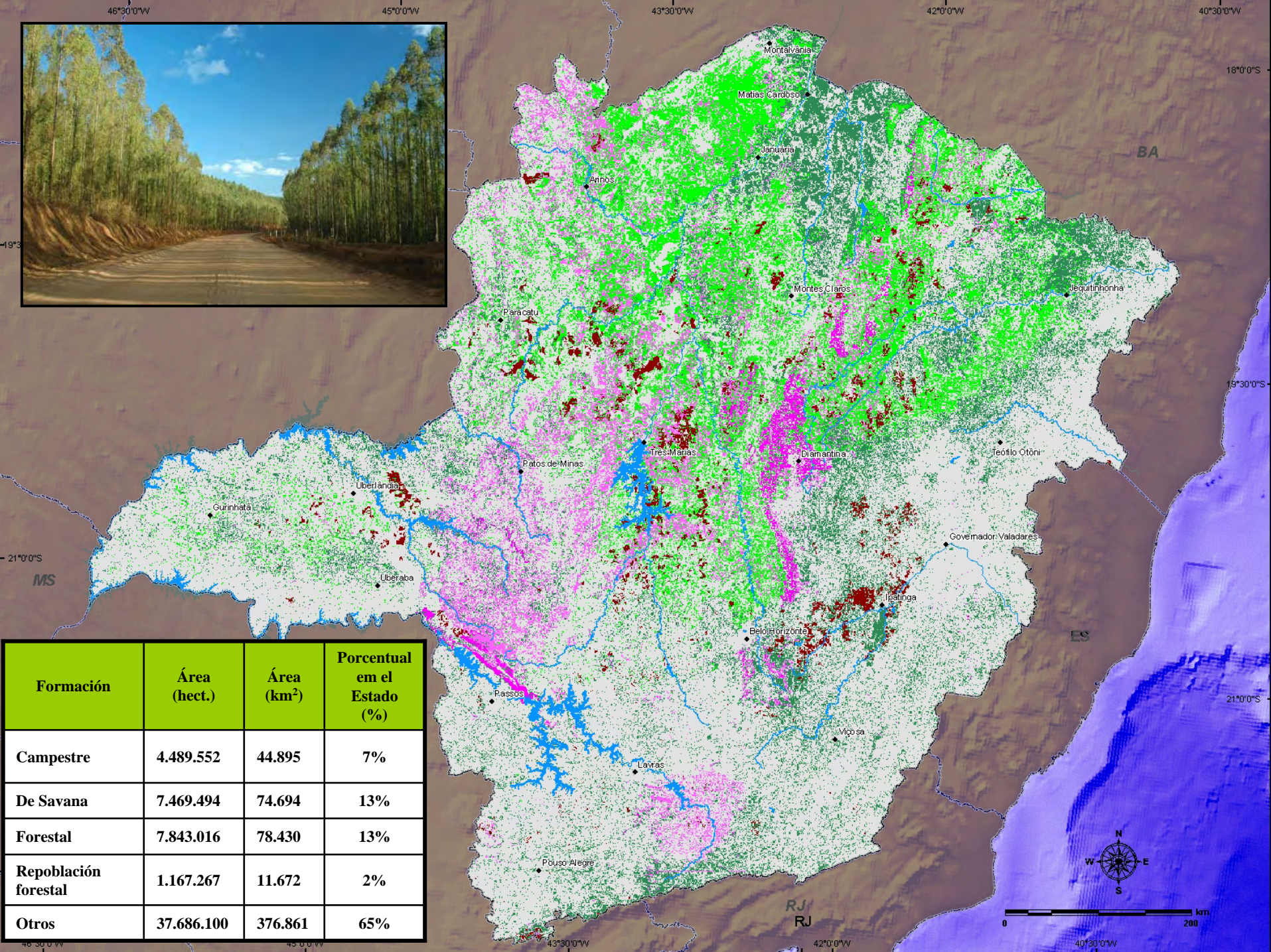
Formación	Área (hect.)	Área (km ²)	Porcentual em el Estado (%)
Campestre	4.489.552	44.895	8%
De Savana	7.469.494	74.694	13%
Forestal	7.843.016	78.430	13%











Formación	Área (hect.)	Área (km ²)	Porcentual em el Estado (%)
Campestre	4.489.552	44.895	7%
De Savana	7.469.494	74.694	13%
Forestal	7.843.016	78.430	13%
Repoblación forestal	1.167.267	11.672	2%
Otros	37.686.100	376.861	65%



State of Minas Gerais

Social-Geographic Informations

Population	19,8 millions
Area	588733 km2
Average Altitude	800 meters
pluviometric Index – North Region	800 mm/year
Index pluviometric – Southeast Region	1700 mm/year

Source: IBGE, FJP





State of Minas Gerais

Gross Domestic Product - 2005

Activities	Billions \$US	%
Farming	6,5	8,3
Industry	35,7	45,4
Mining	2,45	3,1
Transformation	22,0	27,9
Building Construction	7,4	9,5
Water and Electricity	3,9	4,9
Services	36,4	46,3
Total	78,65	100

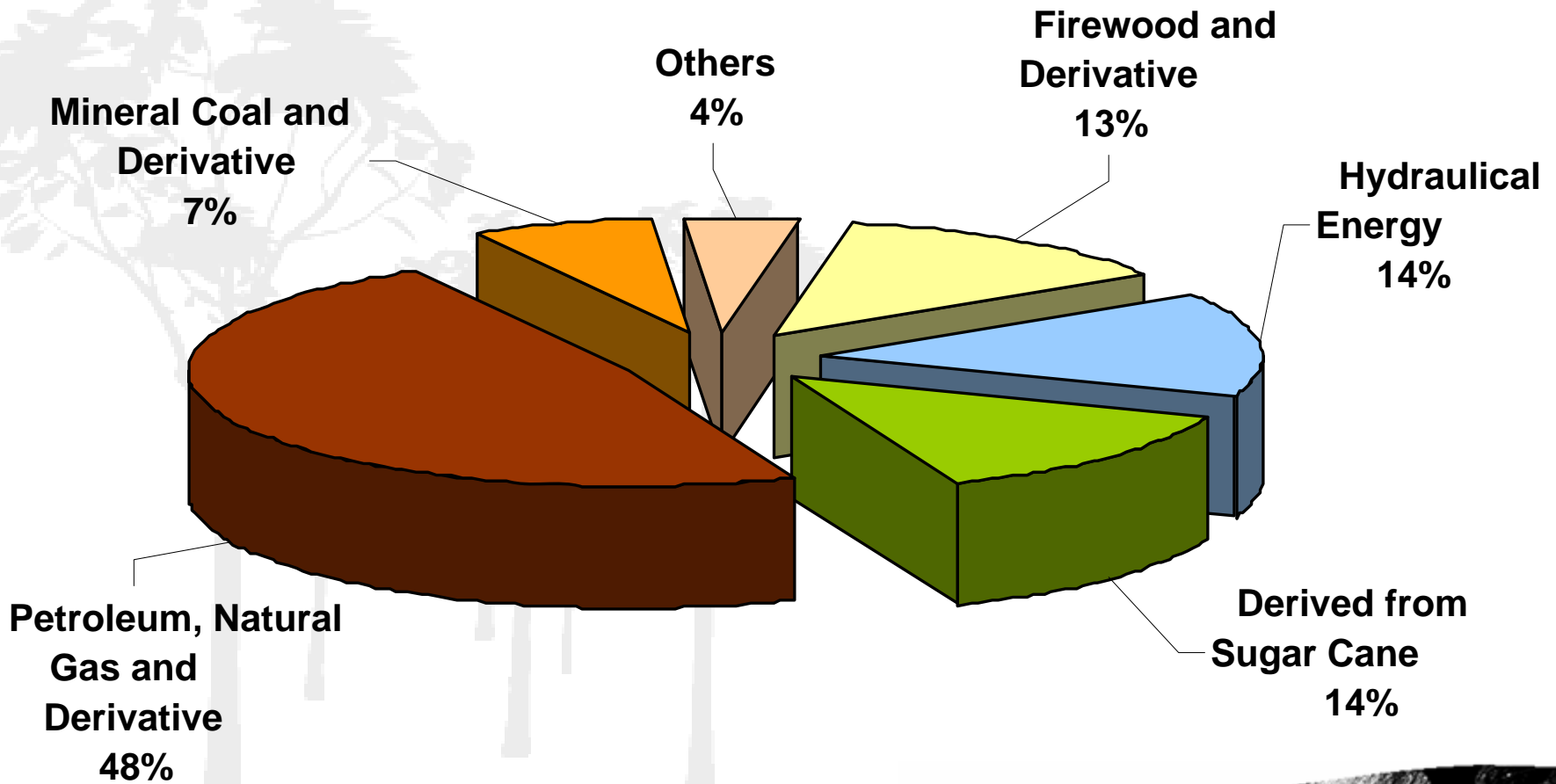
Source: FJP





BRAZIL

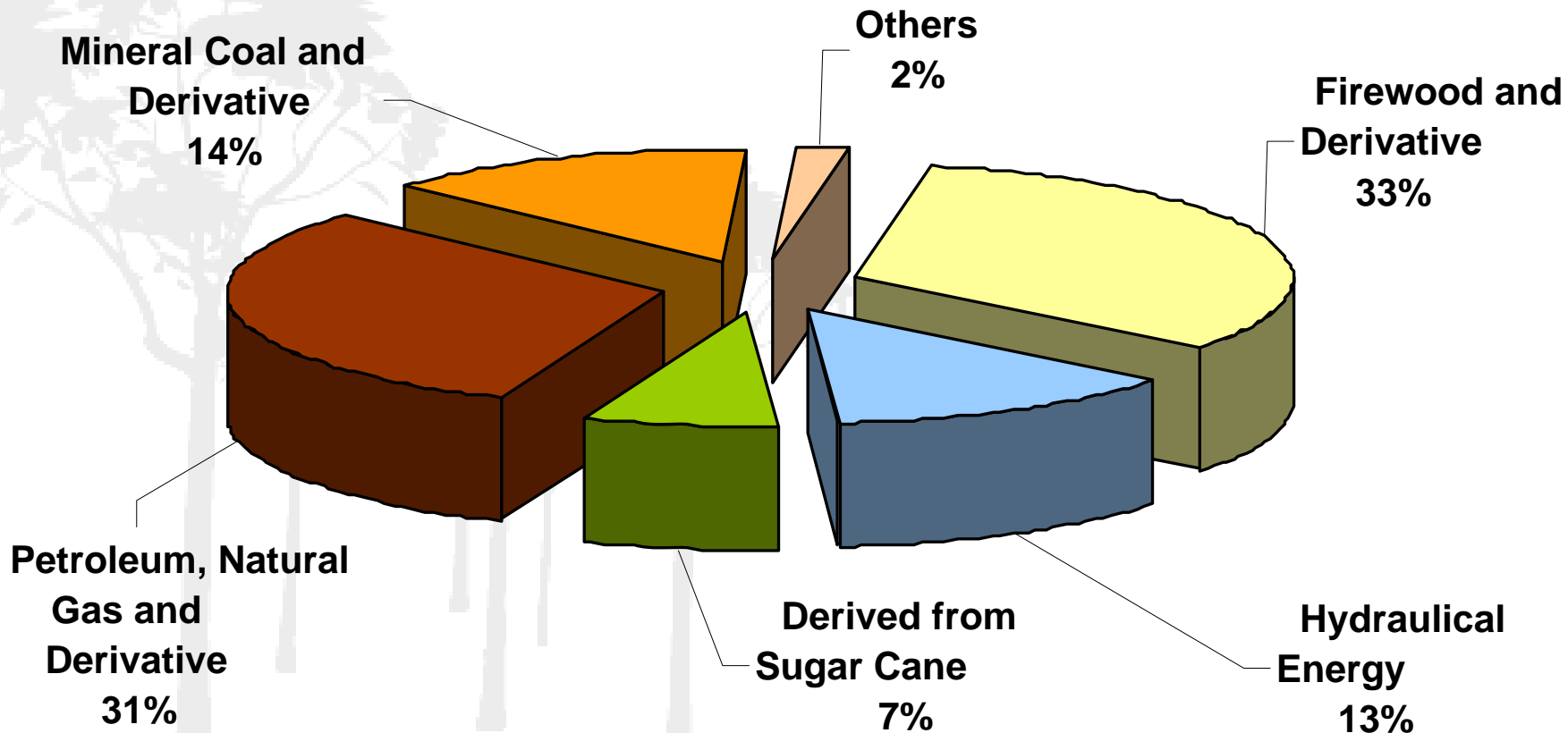
Consumption of Energy for Source - 2004





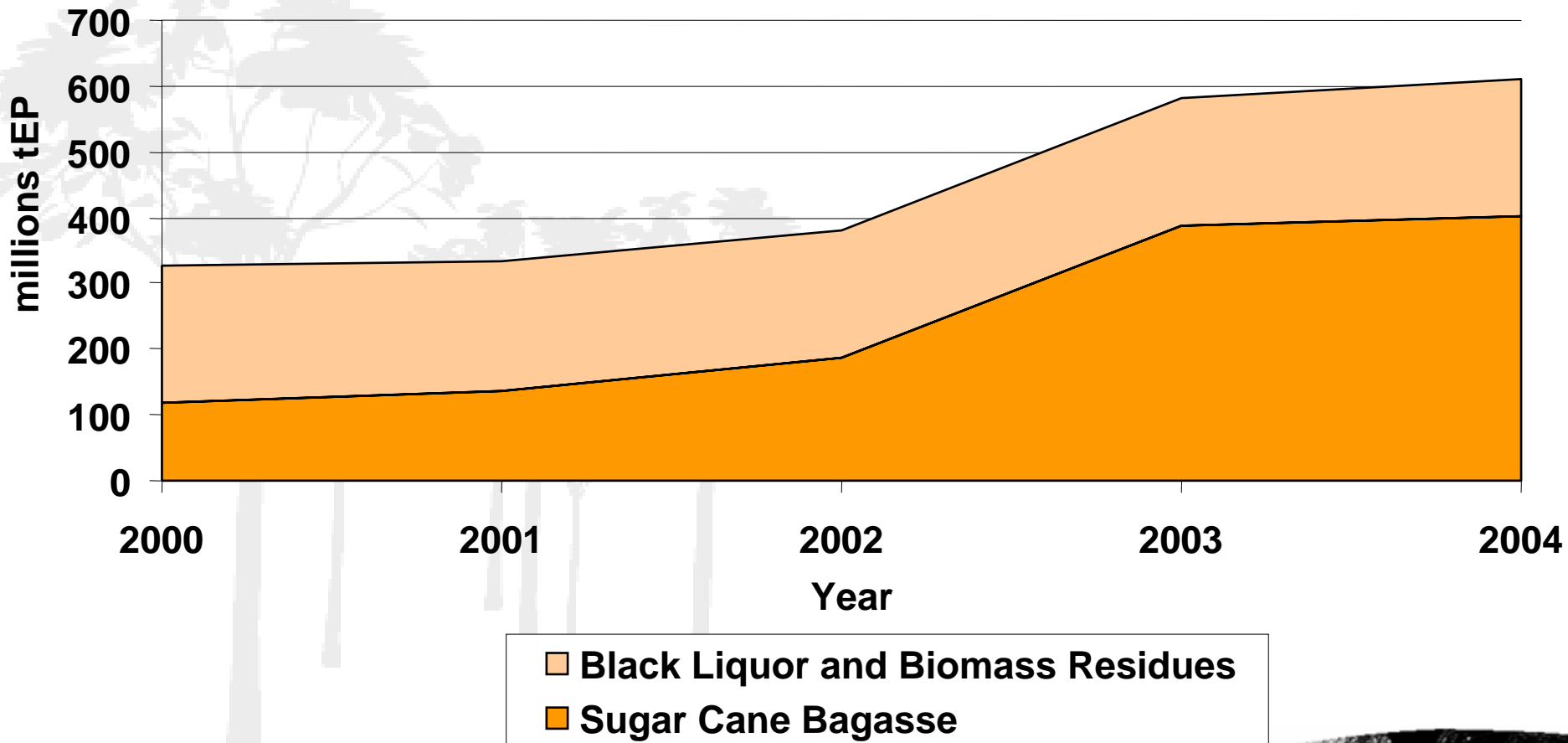
State of Minas Gerais

Consumption of Energy for Source - 2004



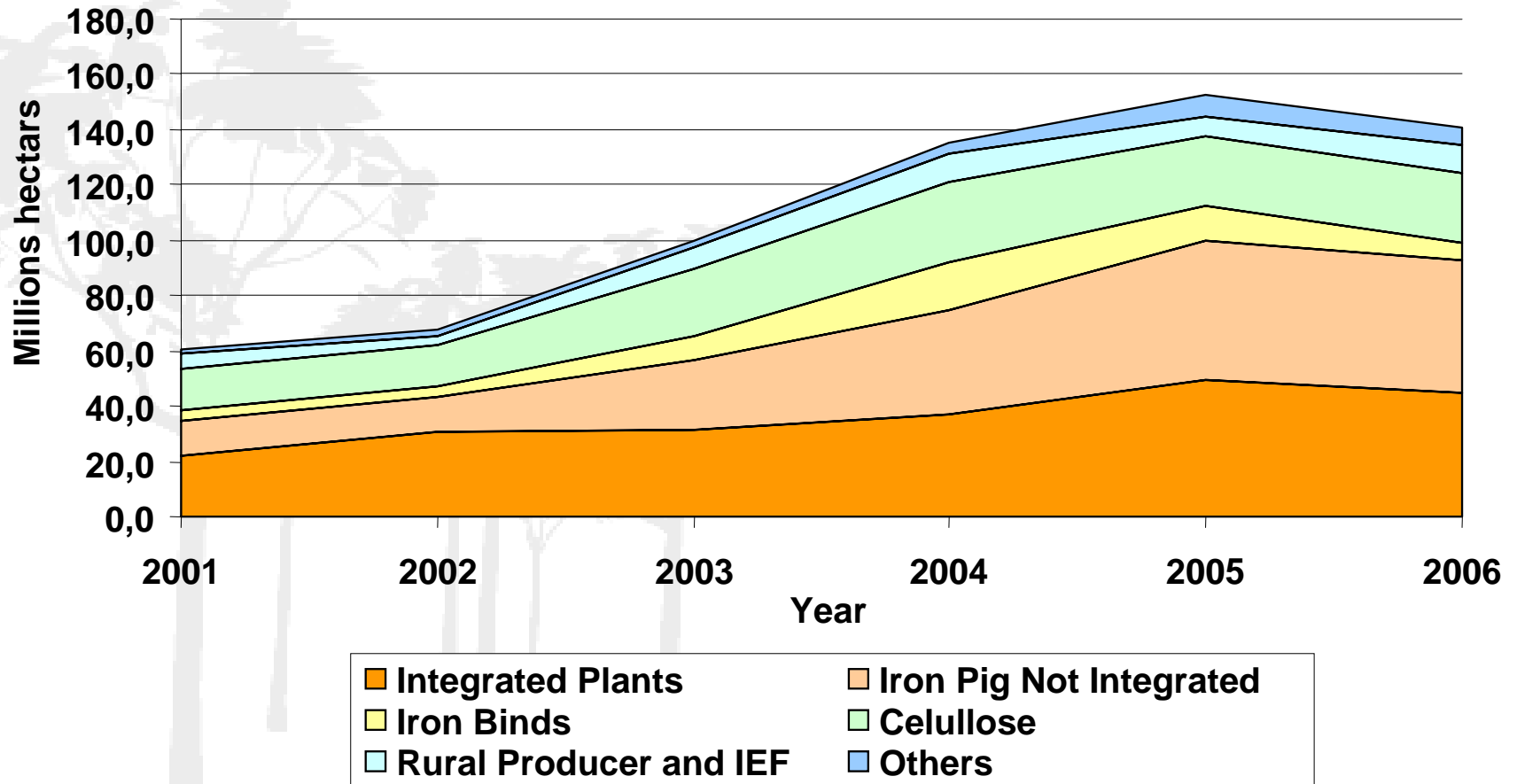


State of Minas Gerais Cogeneration of Autoproductive Power Plants Energy Consumption



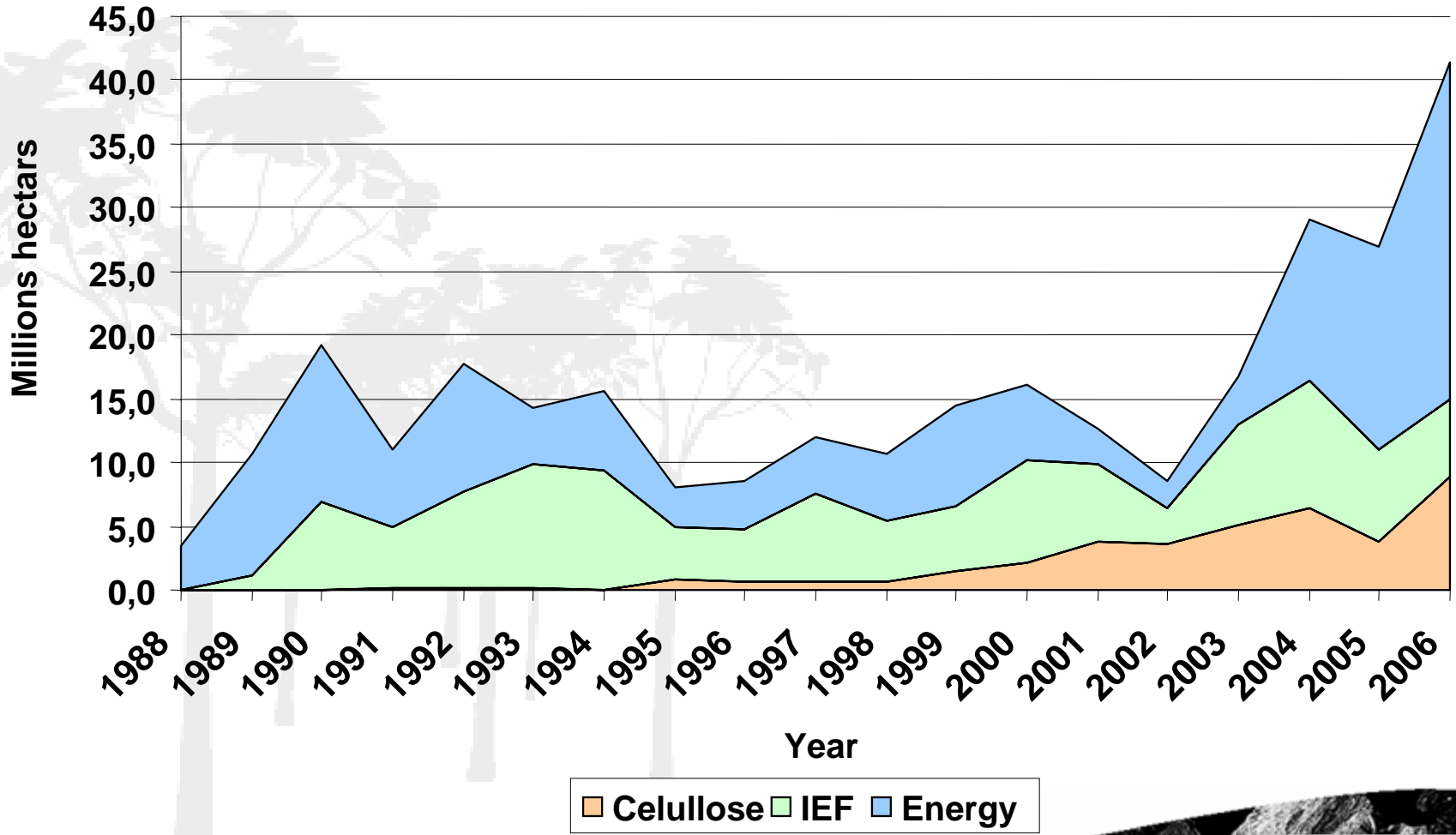


State of Minas Gerais Eucalyptus Plantation for the Sectors



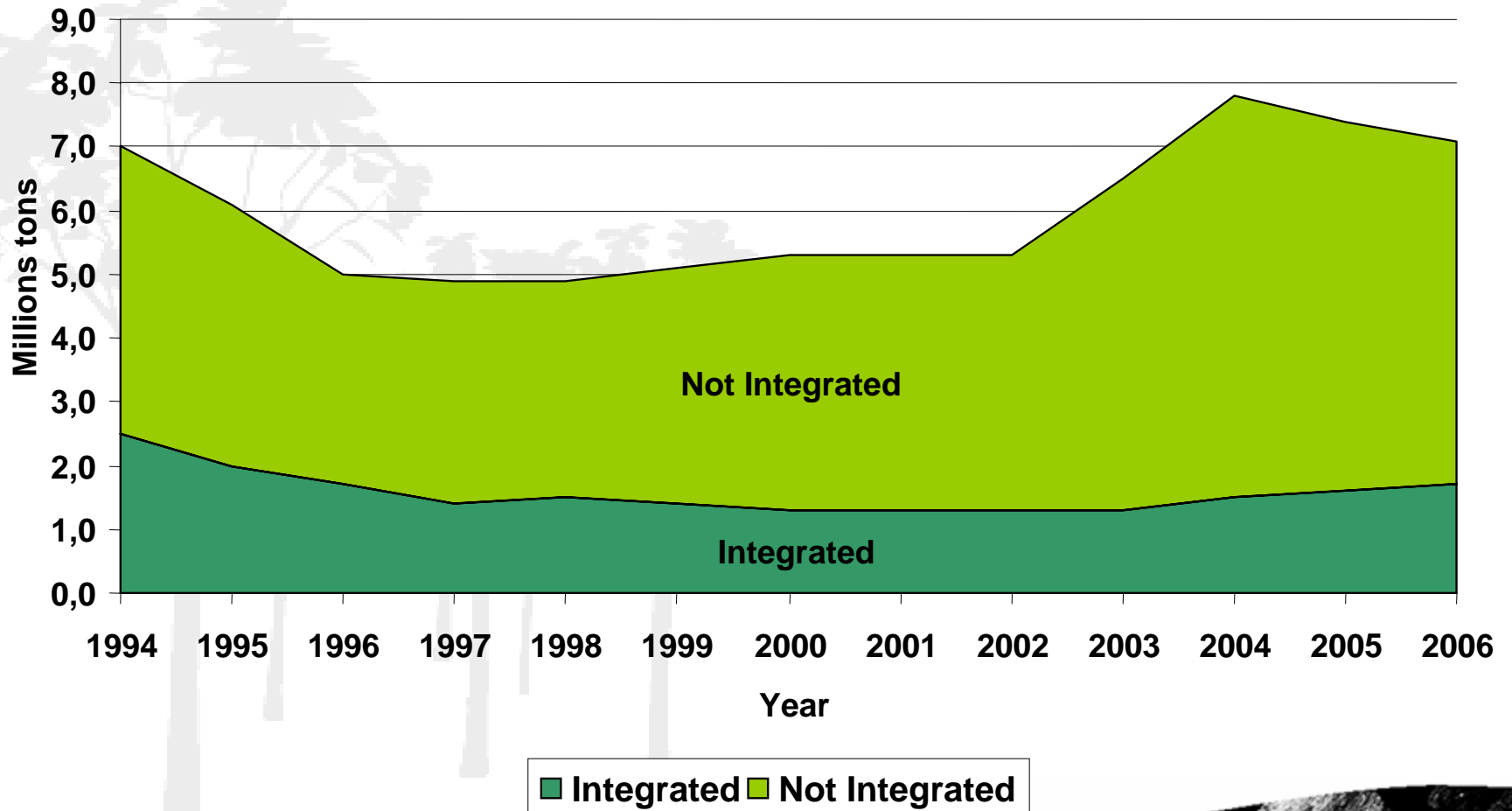


State of Minas Gerais Forest Fomentation





State of Minas Gerais Production of Iron Pig to Vegetal Coal





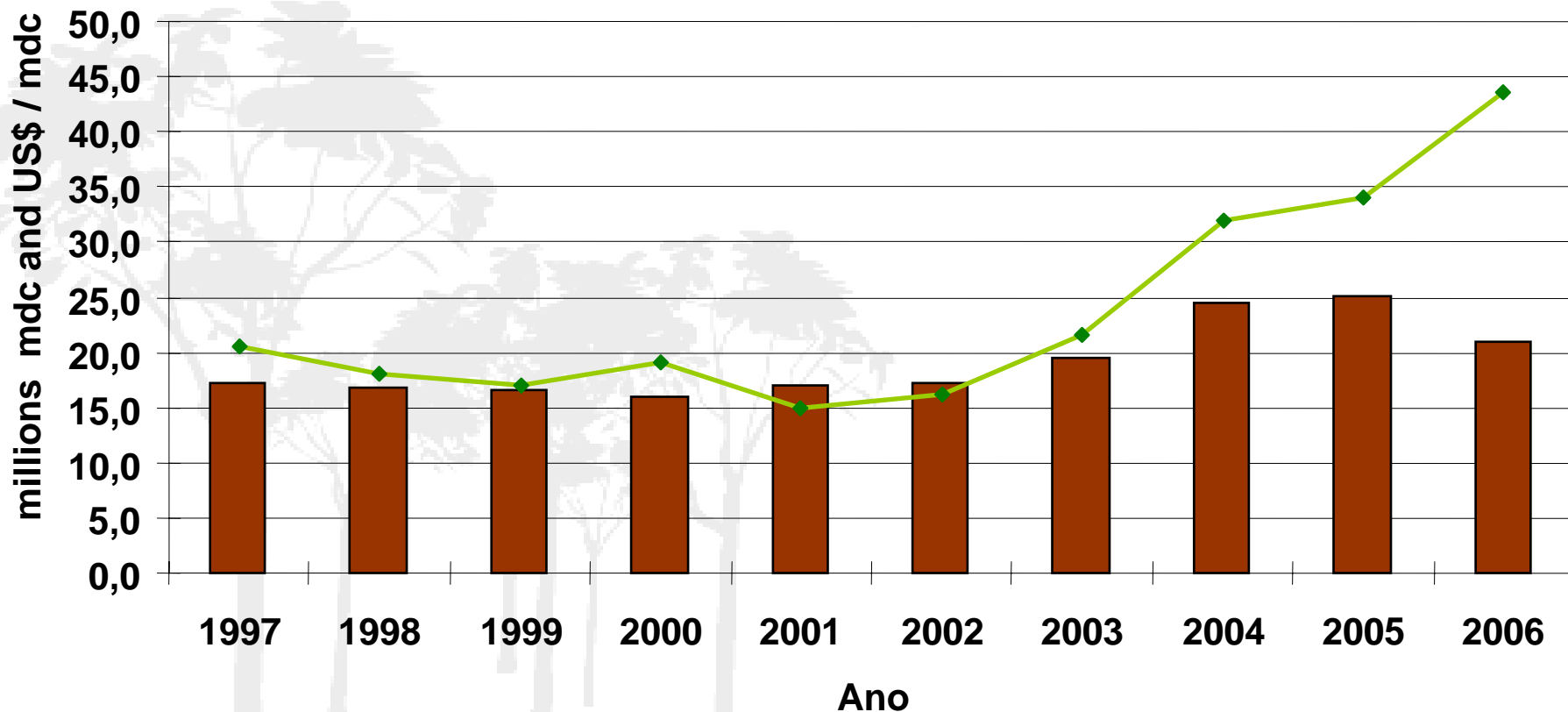
Iron Pig Producers - 2006

	Minas Gerais	Brasil	MG/BR %
Independent Plants			
Number of Kilns	105	154	68,2
Installed Capacity millions tons/year	8,0	13,9	57,6
Production in millions tons	5,3	9,5	55,8
Sales in Domestic Market - millions tons	3,1	3,5	88,6
Iron Pig Exportation - millions tons	2,2	6,0	36,7
Iron Pig Exportation - billions US\$ FOB	-	1,6	-
Integrated Plants			
Number of Plants	4	4	100,0
Production in millions tons	1,7	1,7	100,0

Source: Sindifer



State of Minas Gerais Consumption and Price of Vegetal Coal



Consumption millions mdc Price in US\$ / mdc



State of Minas Gerais Man Power used by the Forest Sector - 2006

	Number of Jobs			
	Direct	Indirect	Income Effect	Total
Forest Sector	94.100	368.000	222.170	684.270
Forest Plantations	42.300	169.200		
Timber Carbonization	47.600	190.400		
Combustible Timber	4.200	8.400		
Siderurgy	28.136	119.272	230.570	377.978
Integrated	8.068	32.272		
Iron Pig	11.100	51.200		
Iron Binds	8.970	35.800		
Celullose and Paper	10.600	42.400	46.000	99.000
Timber and Furniture	14.960	59.840	43.380	118.180
Panels	1.380	5.520		
Processed Timber	13.580	54.320		
Total	147.796	589.512	542.120	1.279.428

Source: AMS, Sindifer, Fiemg, empresas do setor.



Thank You!

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