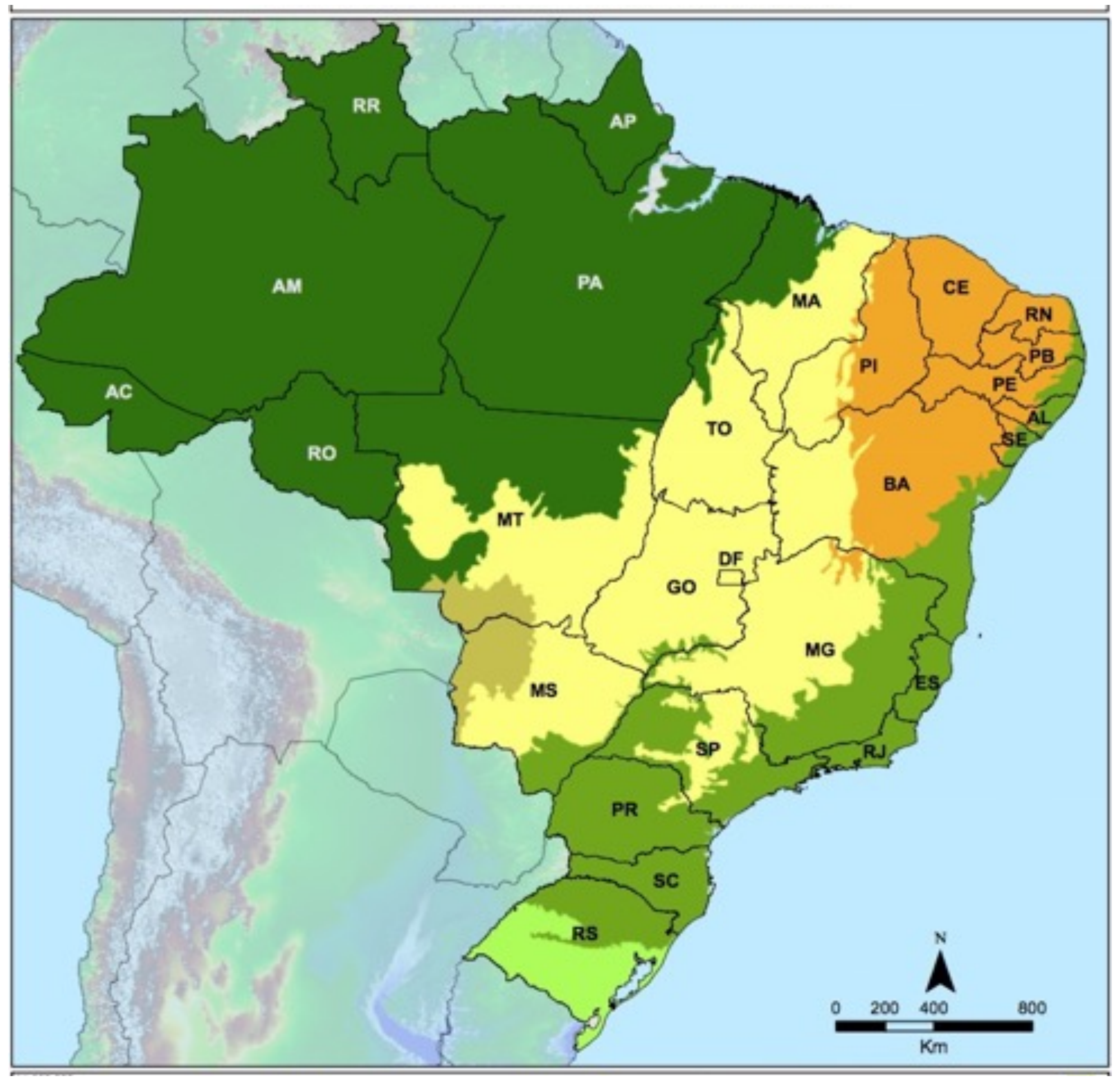

SMART INFRASTRUCTURE
LESS CONVERTION
LET'S TALK ABOUT THE
CERRADO
INPA
INSTITUTO NACIONAL DE PESQUISAS DA AMAZÔNIA
INPUT

TOPICS

* PRESENT CERRADO: LAND USE AND LAND COVER TYPES
* DYNAMIC OF AGRICULTURE 2000-2014
* PATTERNS OF AGRICULTURE EXPANSION AND CLIMATE RISK
* ROLE OF INFRASTRUCTURE DESIGNING TERRITORIES
* OPPORTUNITIES FOR AGRICULTURE AND CONSERVATION

CERRADO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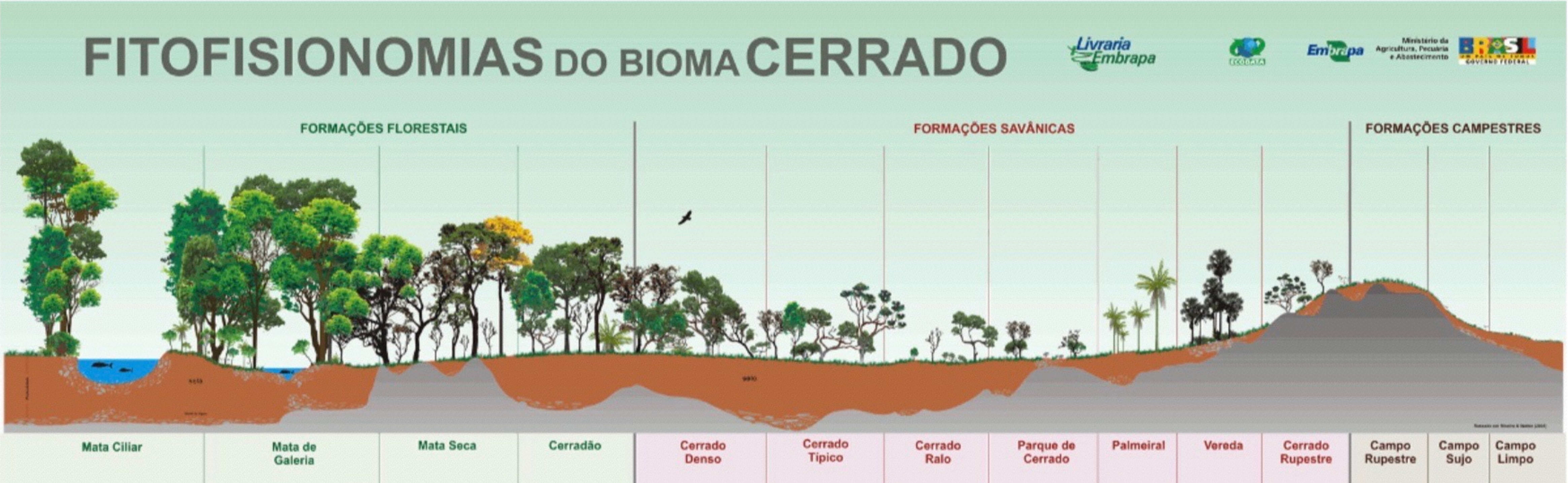
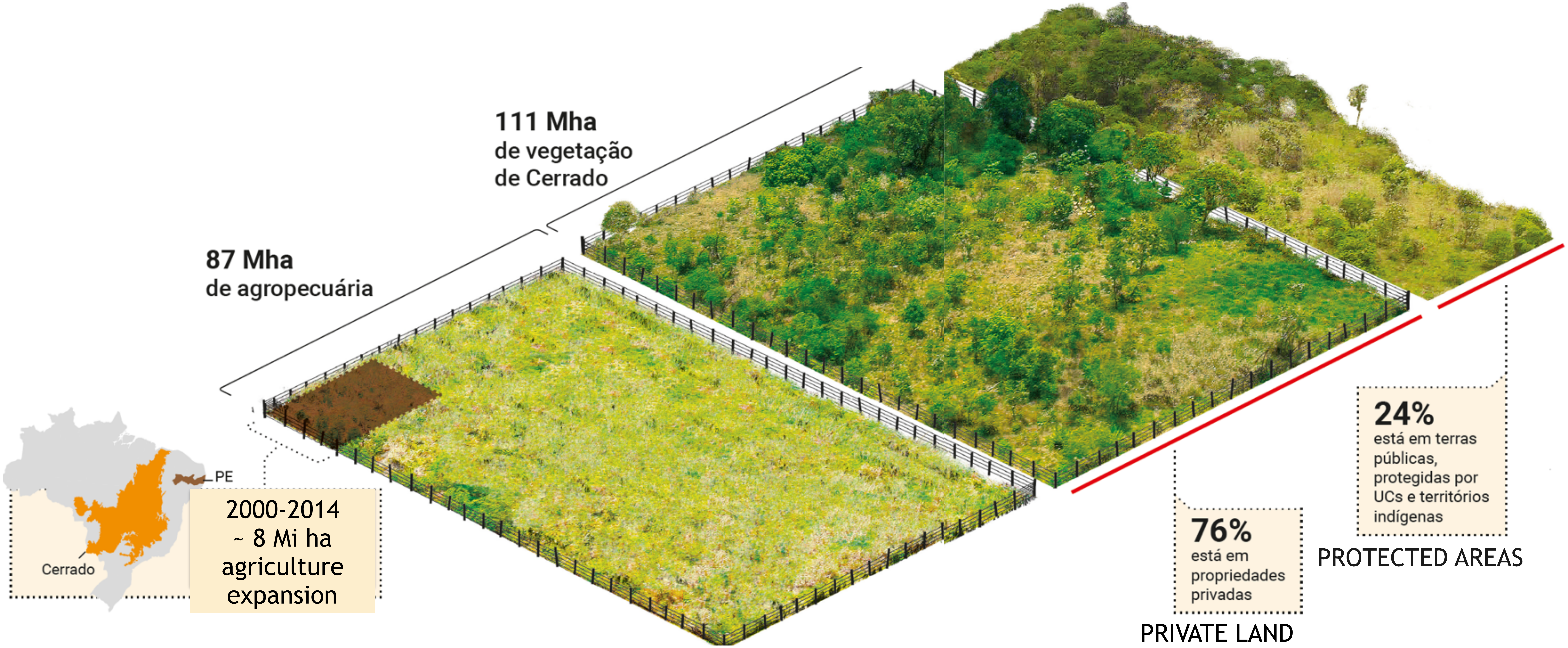

FITOFISIONOMIAS DO BIOMA CERRADO
Livraria Embrapa
Embrapa
Ministério da Agricultura, Pecuária e Abastecimento
BRASIL
FORMAÇÕES FLORESTAIS
FORMAÇÕES SAVÂNICAS
FORMAÇÕES CAMPESTRES
Mata Ciliar
Mata de Galeria
Mata Seca
Cerradão
Cerrado Denso
Cerrado Típico
Cerrado Ralo
Parque de Cerrado
Palmeiral
Vereda
Cerrado Rupestre
Campo Rupestre
Campo Sujo
Campo Limpo

LAND USE AND LAND COVER

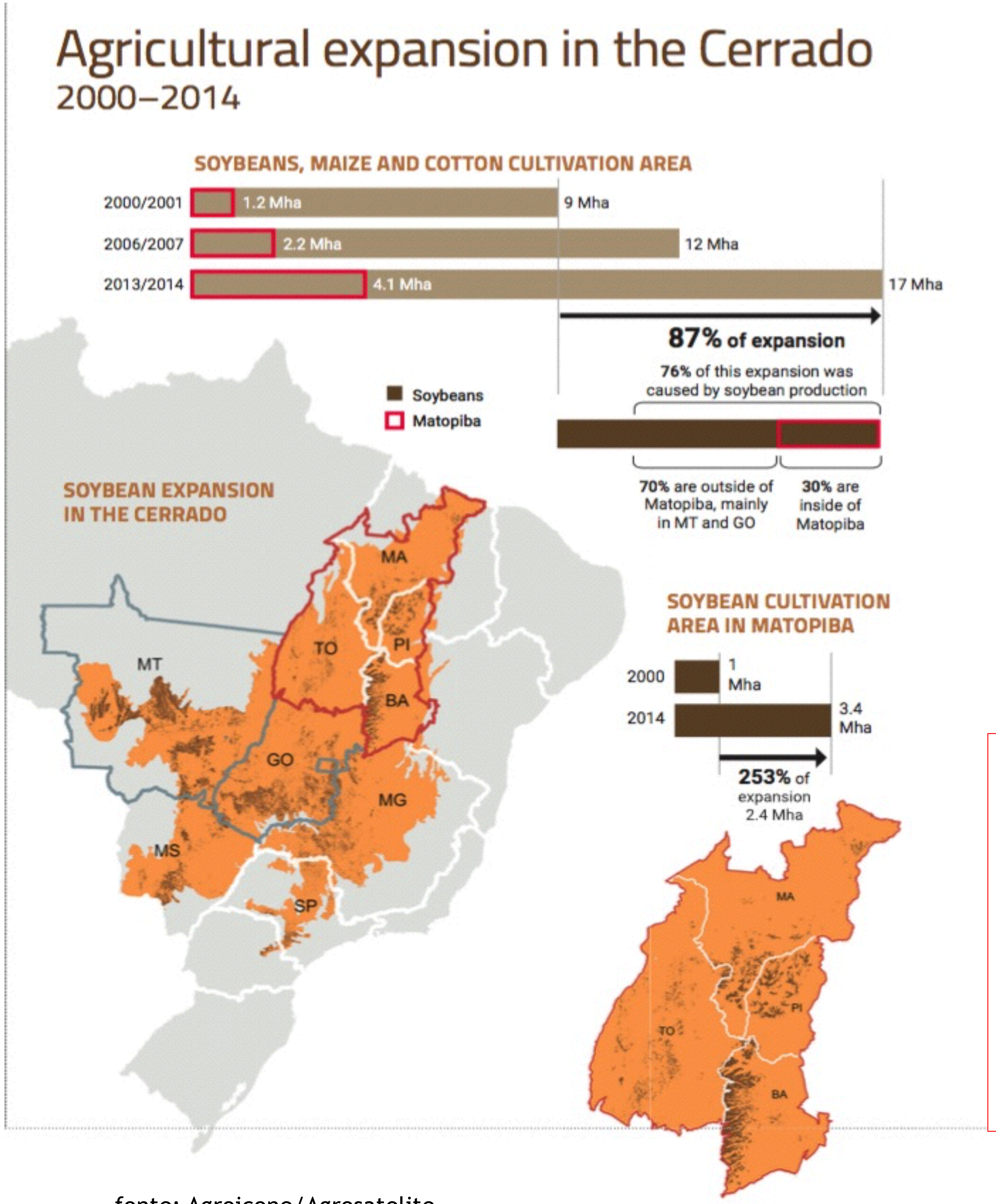


2000-2015
~ 24 Mi ha converted*

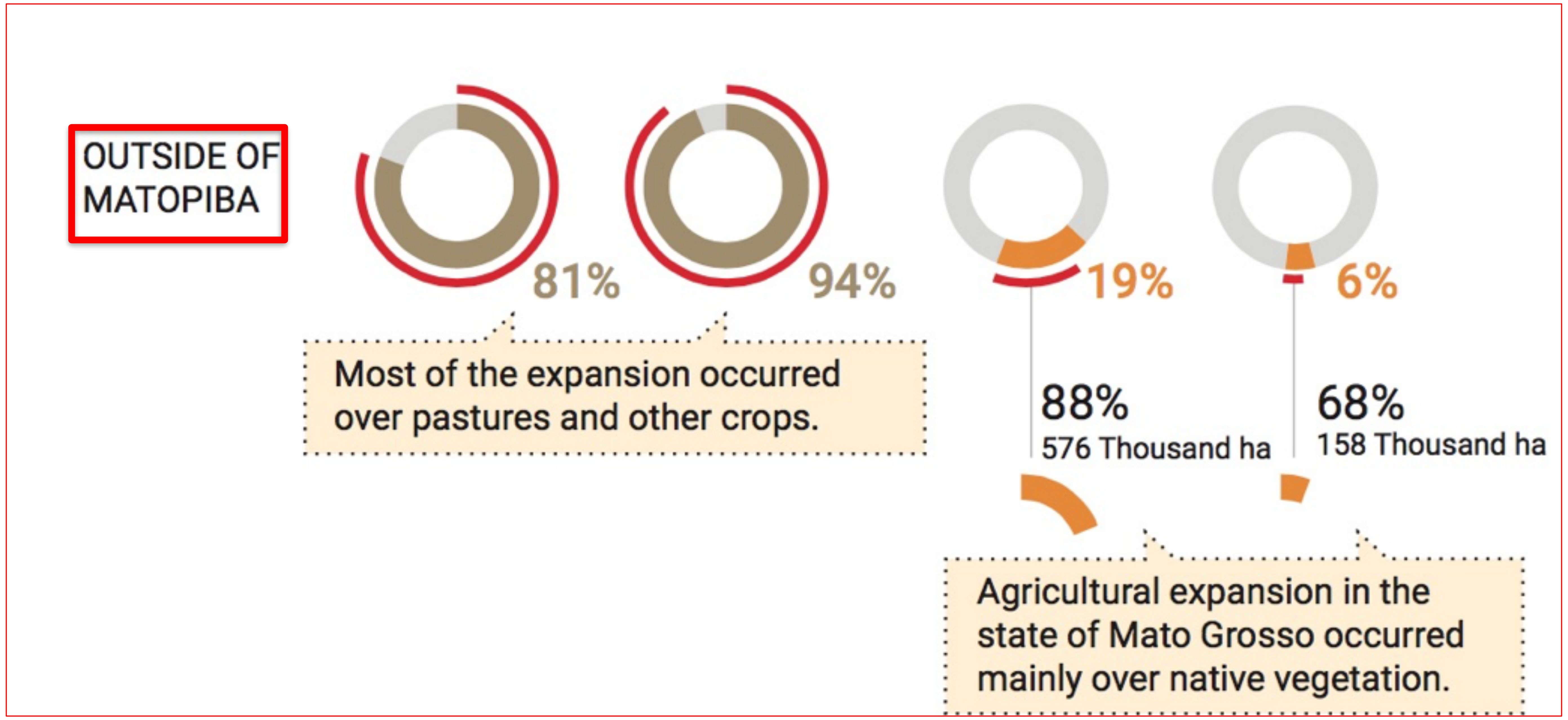
fonte: Agroicone/Agrosatelite

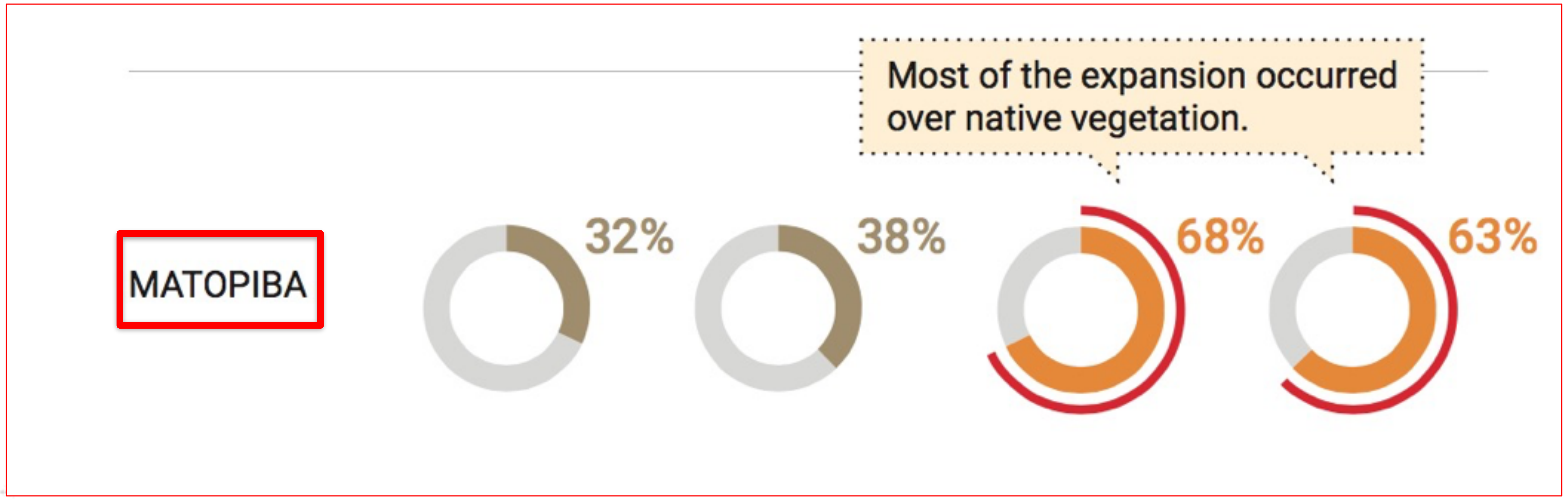
* INPE, 2017

AGRICULTURE IN THE CERRADO
10% cotton, maize and other crops
90% soybeans
THE CULTIVATION OF SOYBEANS IN THE BRAZILIAN TERRITORY
52% in the Cerrado
48% in other Brazilian regions



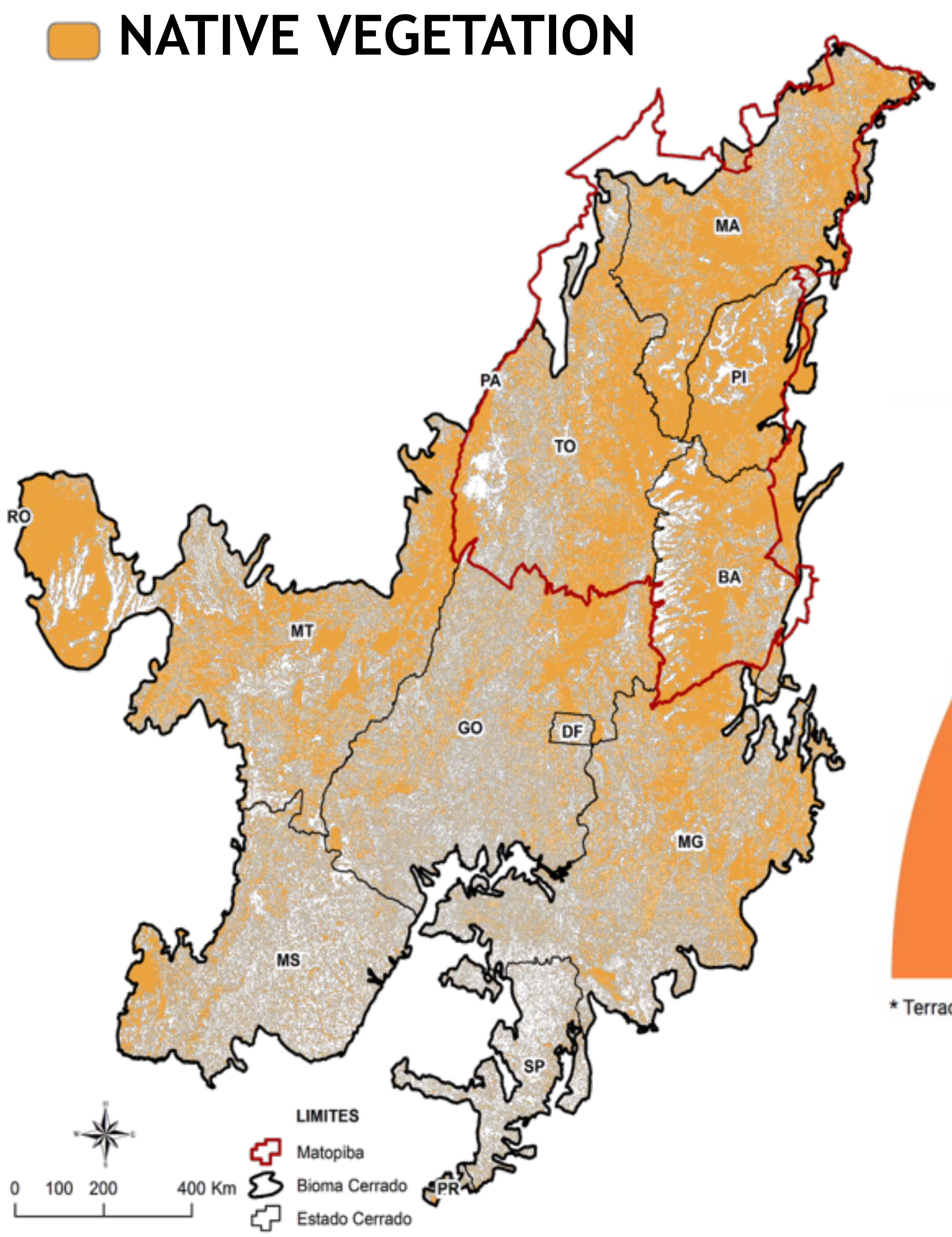
Período: 2000 - 2007 **Período: 2007 - 2014**

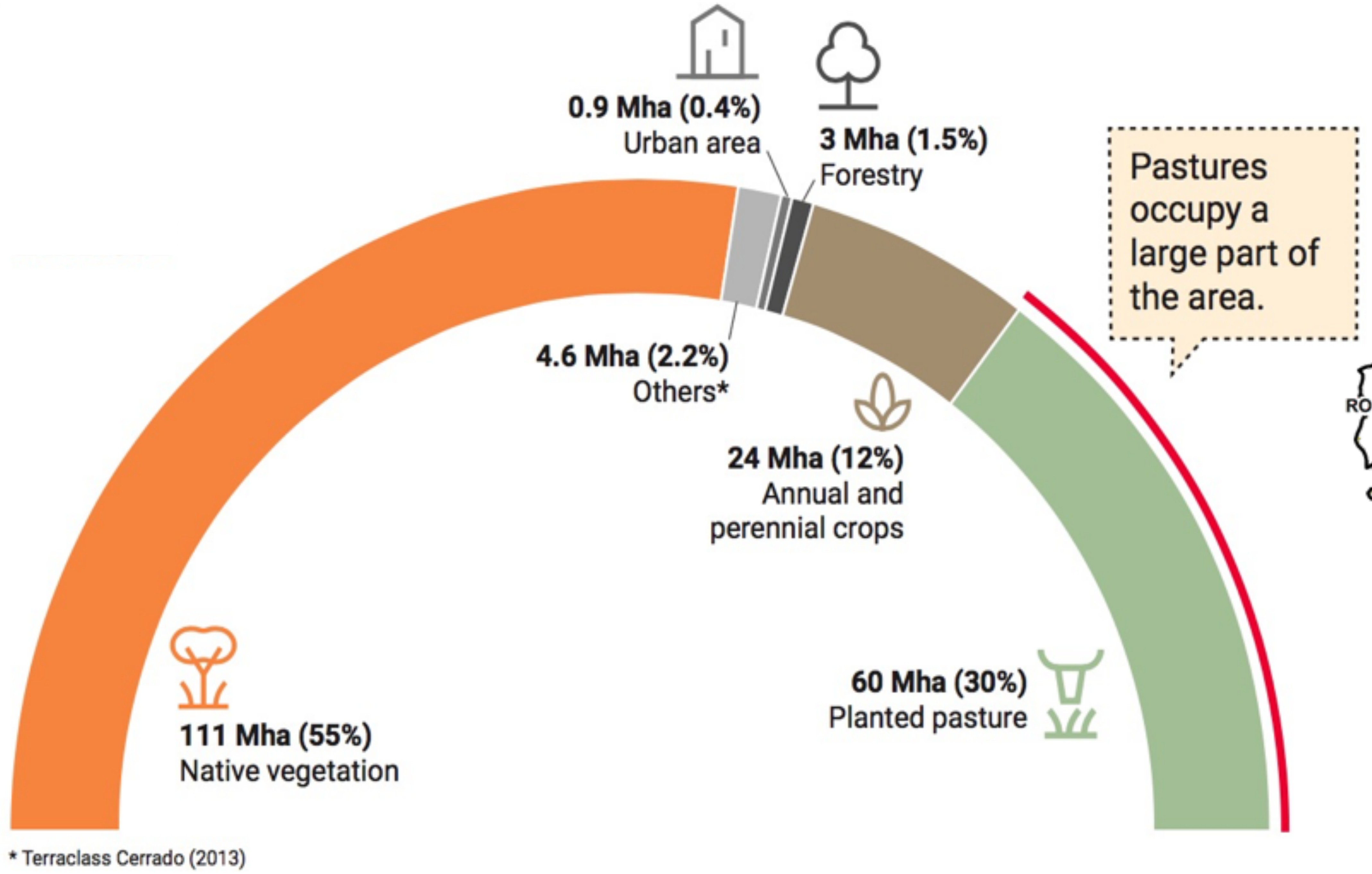


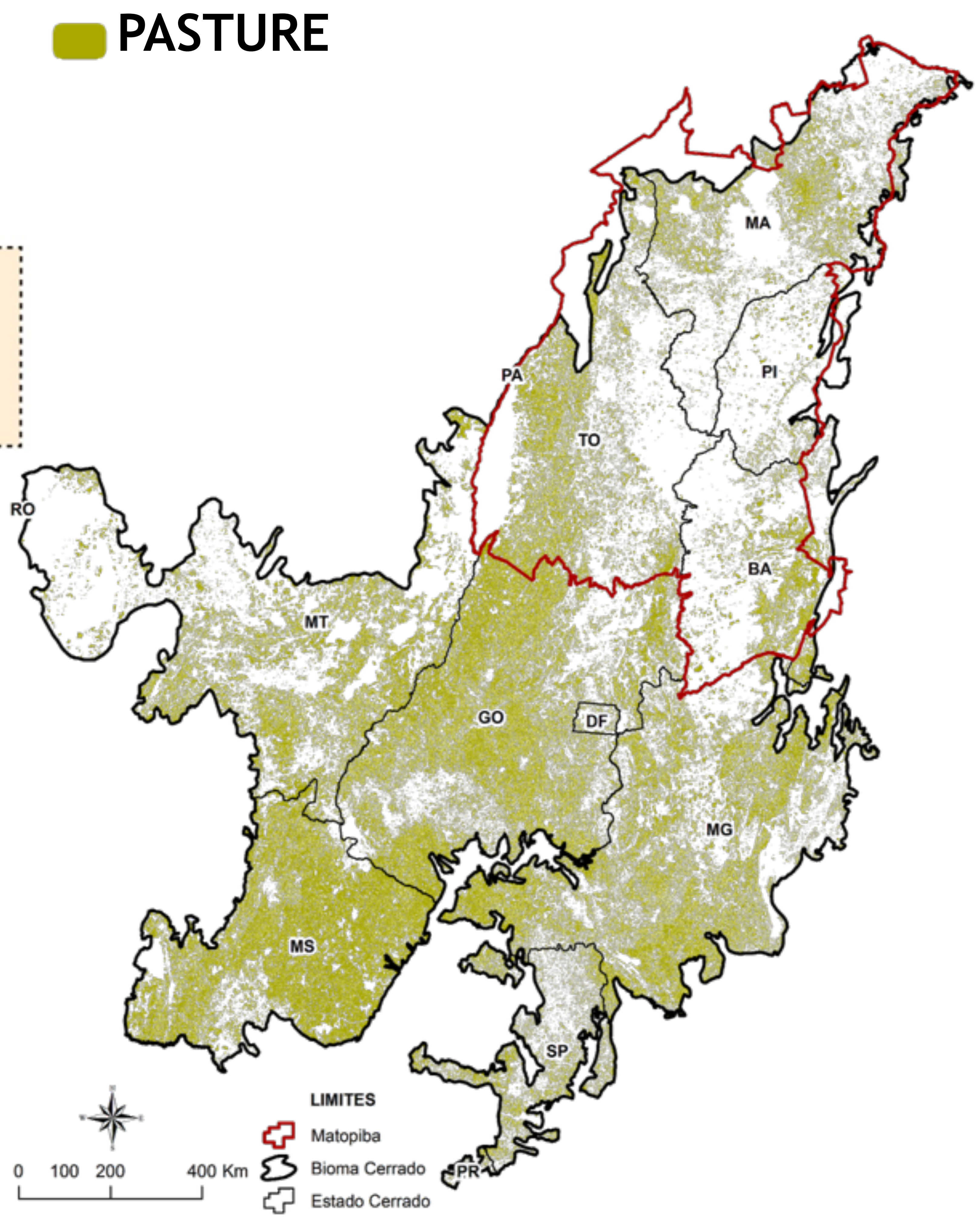


fonte: Agroicone/Agrosatelite

LAND USE AND LAND COVER



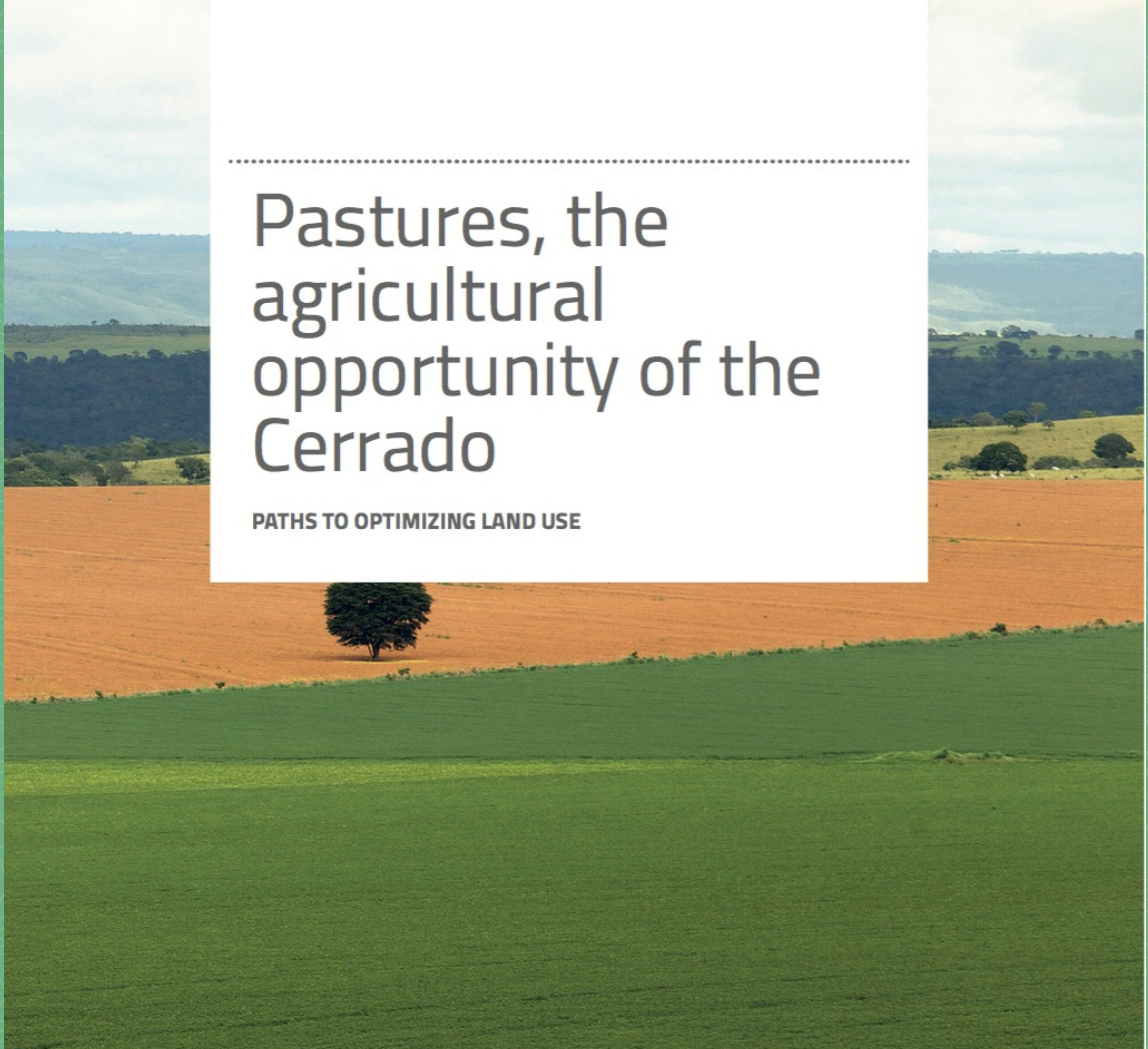




fonte: Agroicone/Agrosatelite

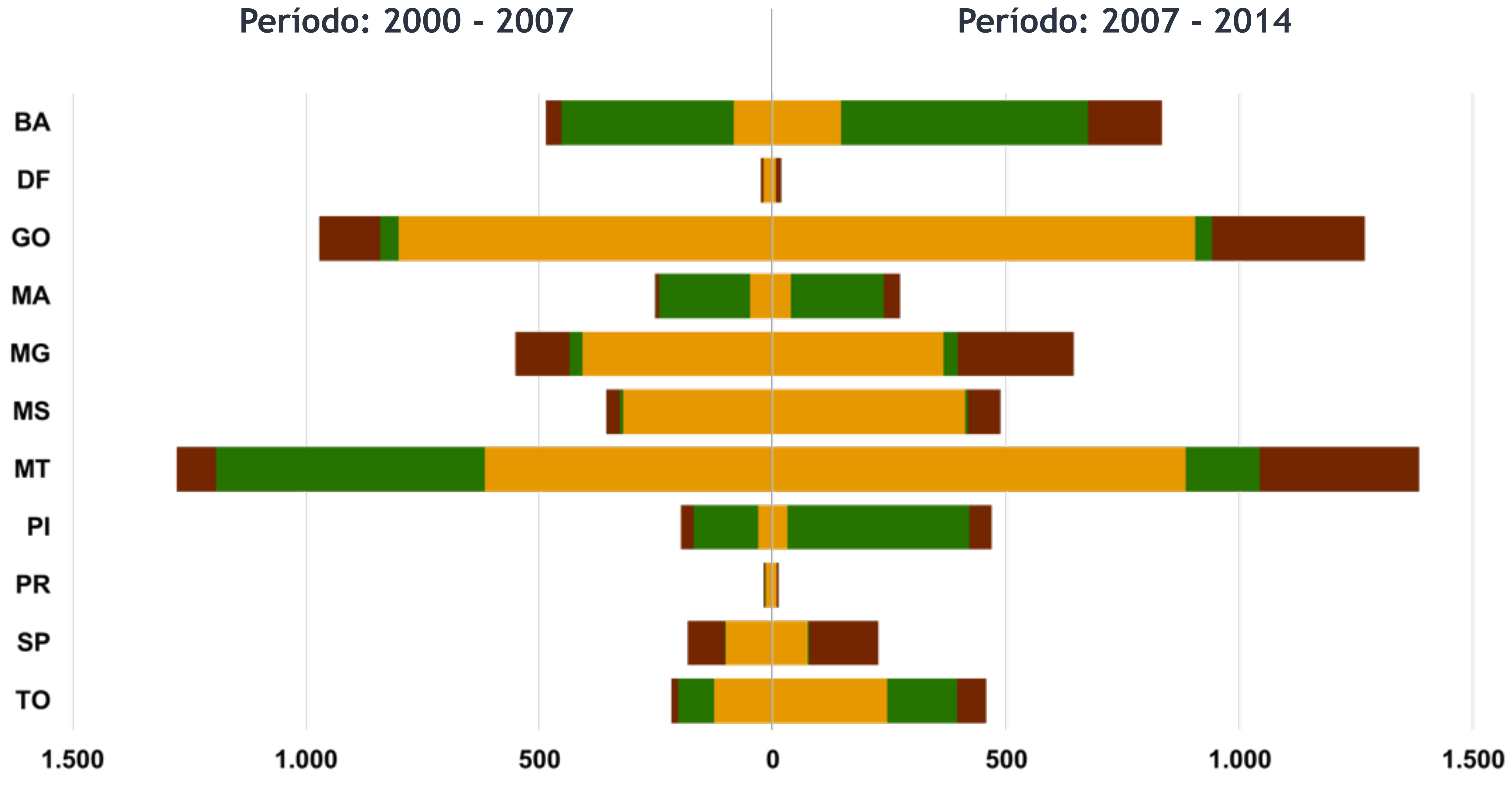
Pastures, the agricultural opportunity of the Cerrado

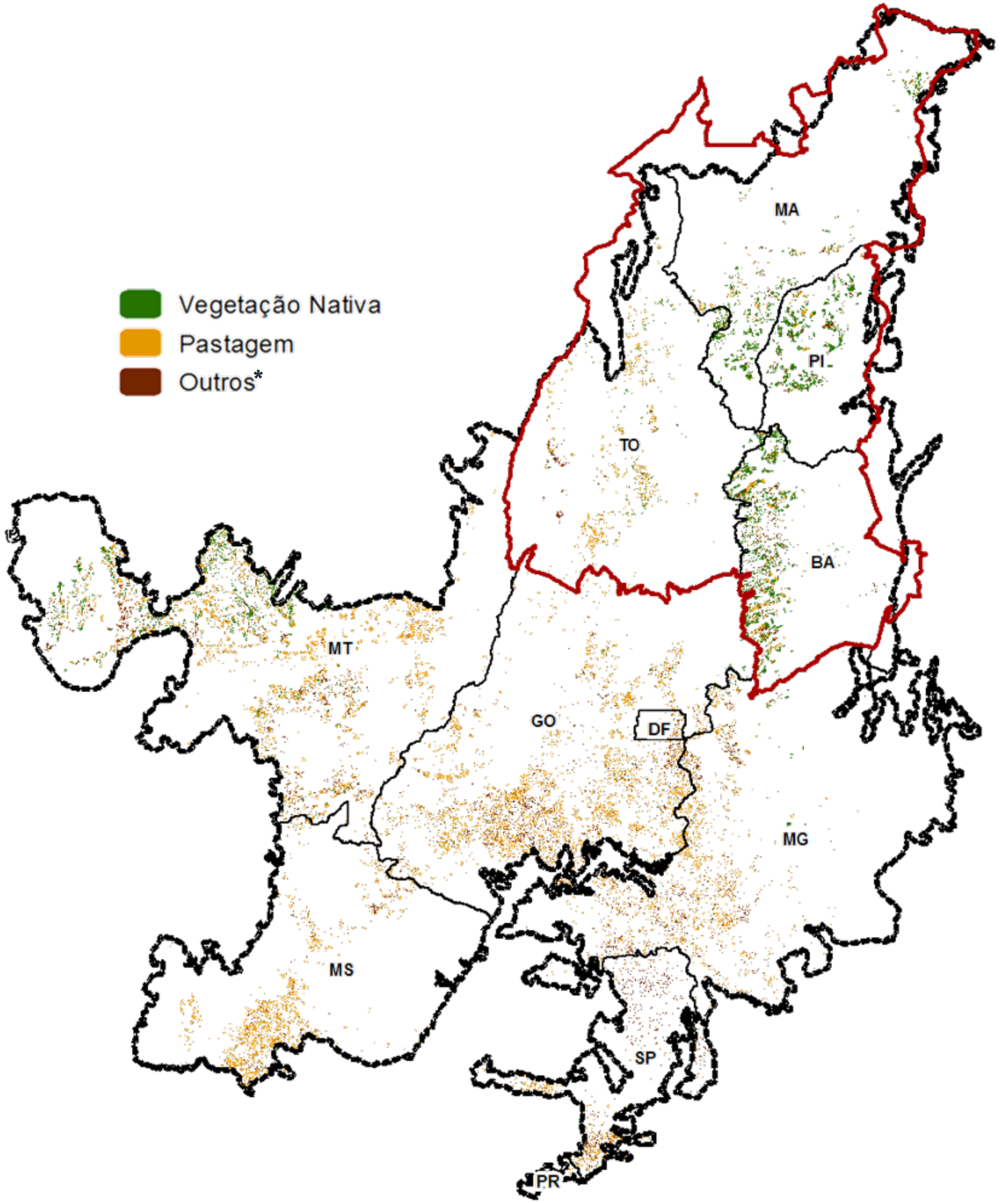
PATHS TO OPTIMIZING LAND USE



EXPANSION OVER PASTURE FIELDS

(68% entre 2000 e 2007) - (75% entre 2007 e 2014)





*A classe "outros" inclui outros usos, floresta plantada e cana-de-açu

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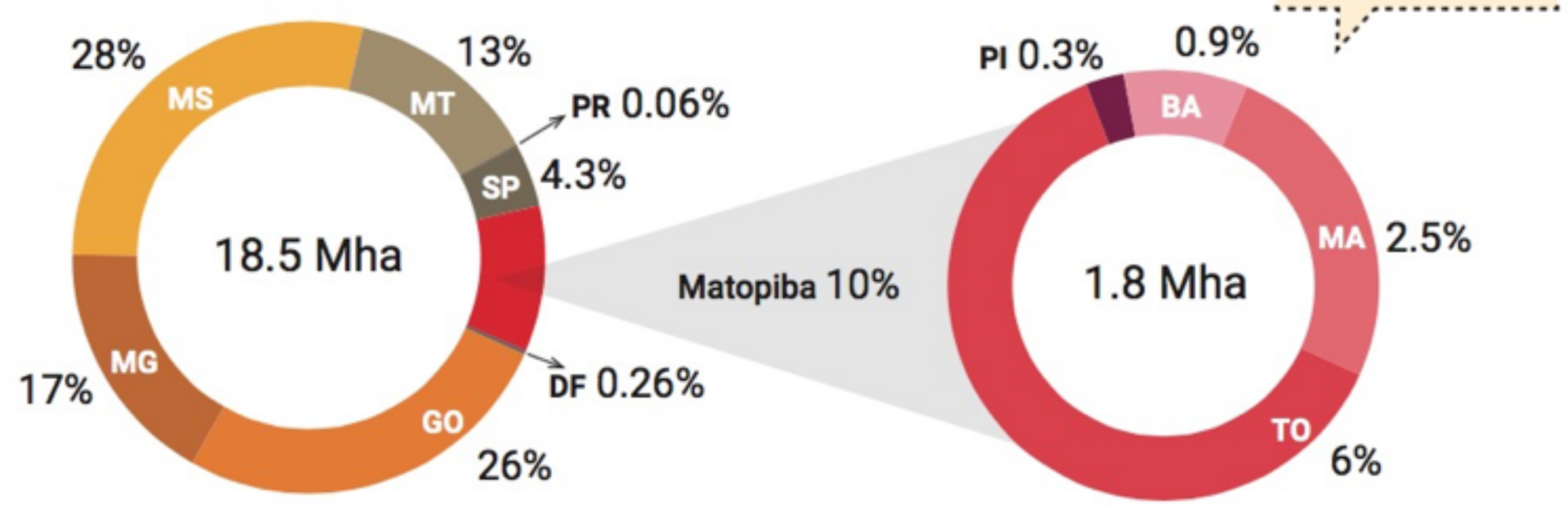
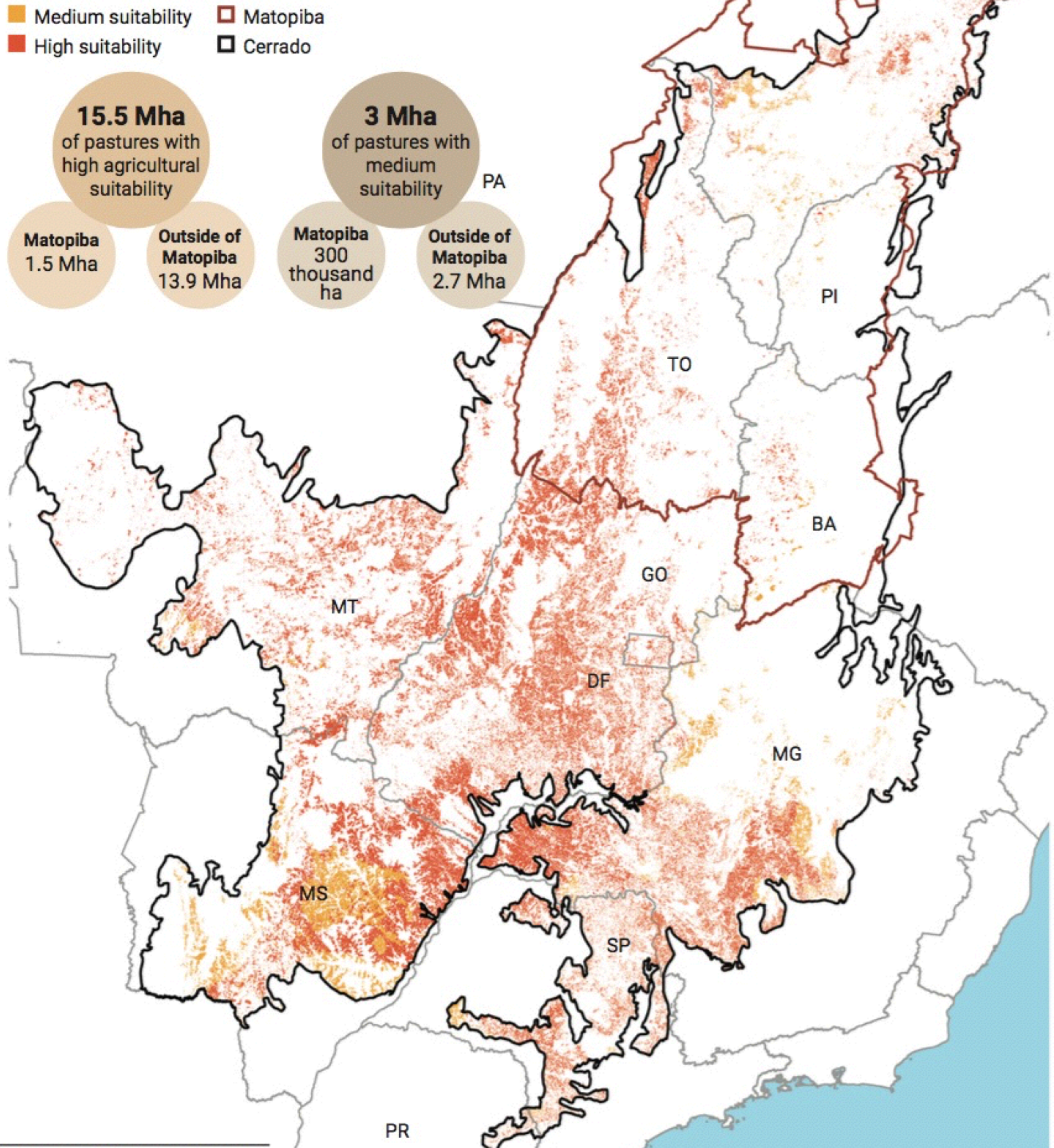
PASTURES WITH HIGH AND MEDIUM AGRICULTURAL SUITABILITY WITHOUT RESTRICTIONS[7] FOR AGRICULTURE

Matopiba concentrates 10% of these areas.



PASTURES WITH HIGH AND MEDIUM AGRICULTURAL SUITABILITY AND WITHOUT RESTRICTIONS[5] CAN SUPPORT THE DEMAND FOR AGRICULTURAL EXPANSION AREAS

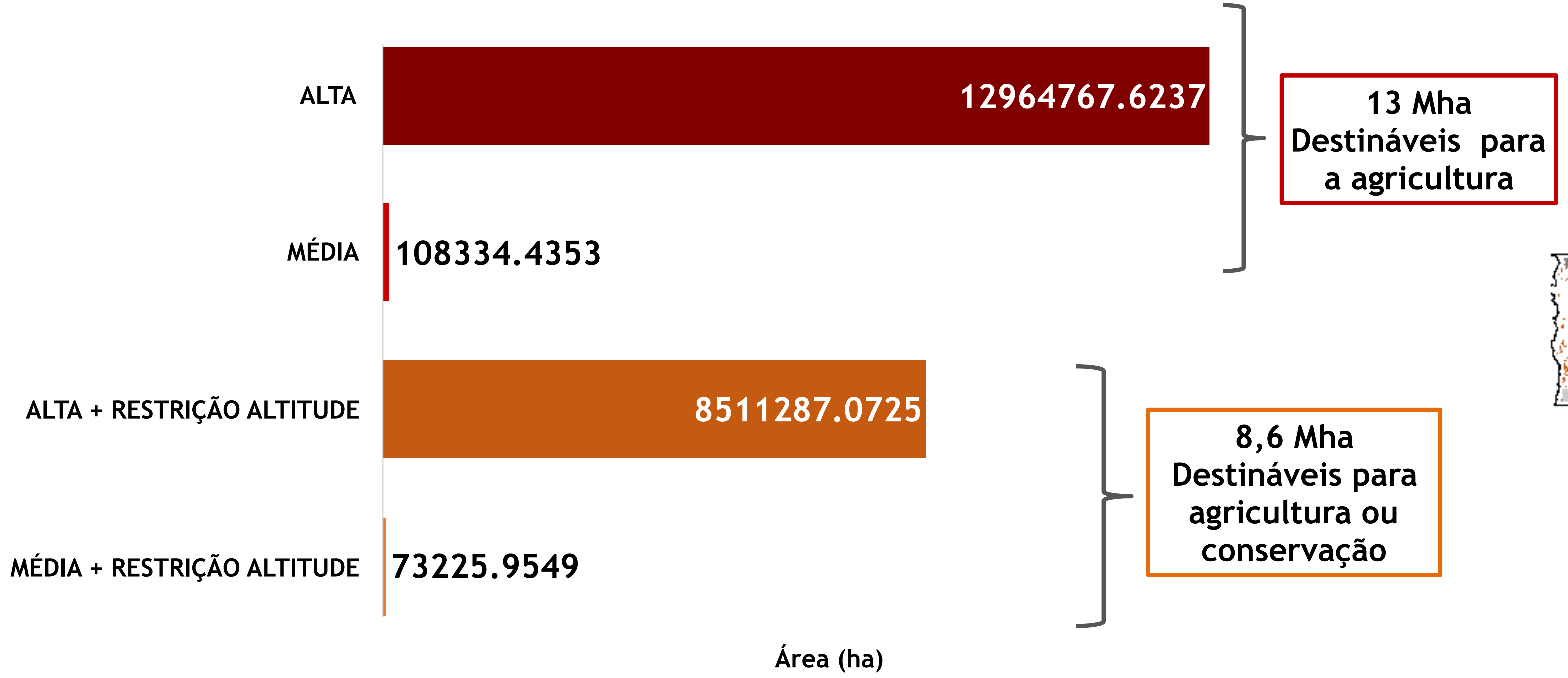


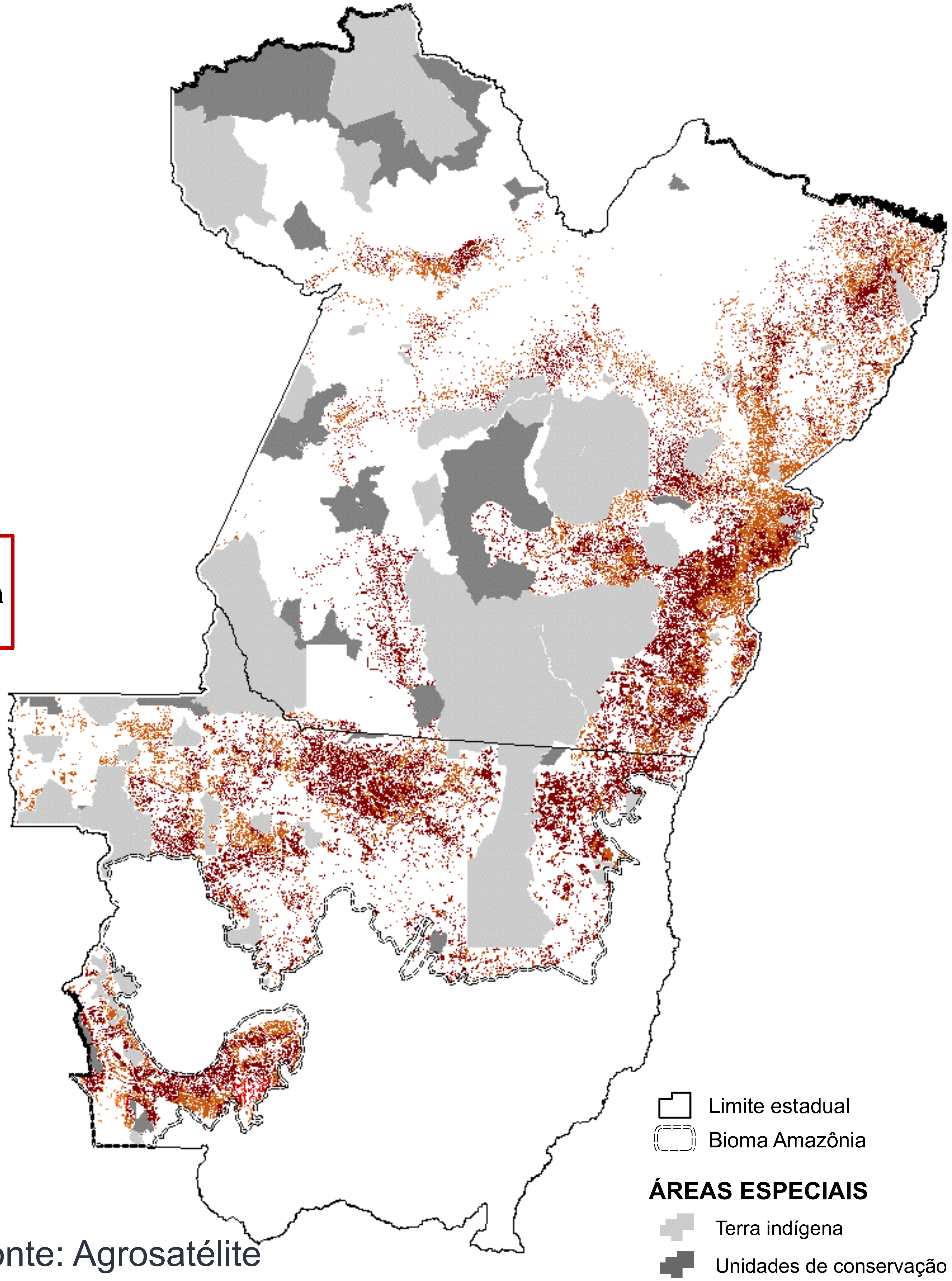
5. Restrictions apply to slopes > 12% and altitude.

INPUT AGROICONE

SOY SUITABILITY IN AMAZONIAN PASTURE

PARÁ E MATO GROSSO (21,6 Mha)





Fonte: Agrosatélite

* Descontados valores de vegetação em UC e TI

INPUT AGROICONE

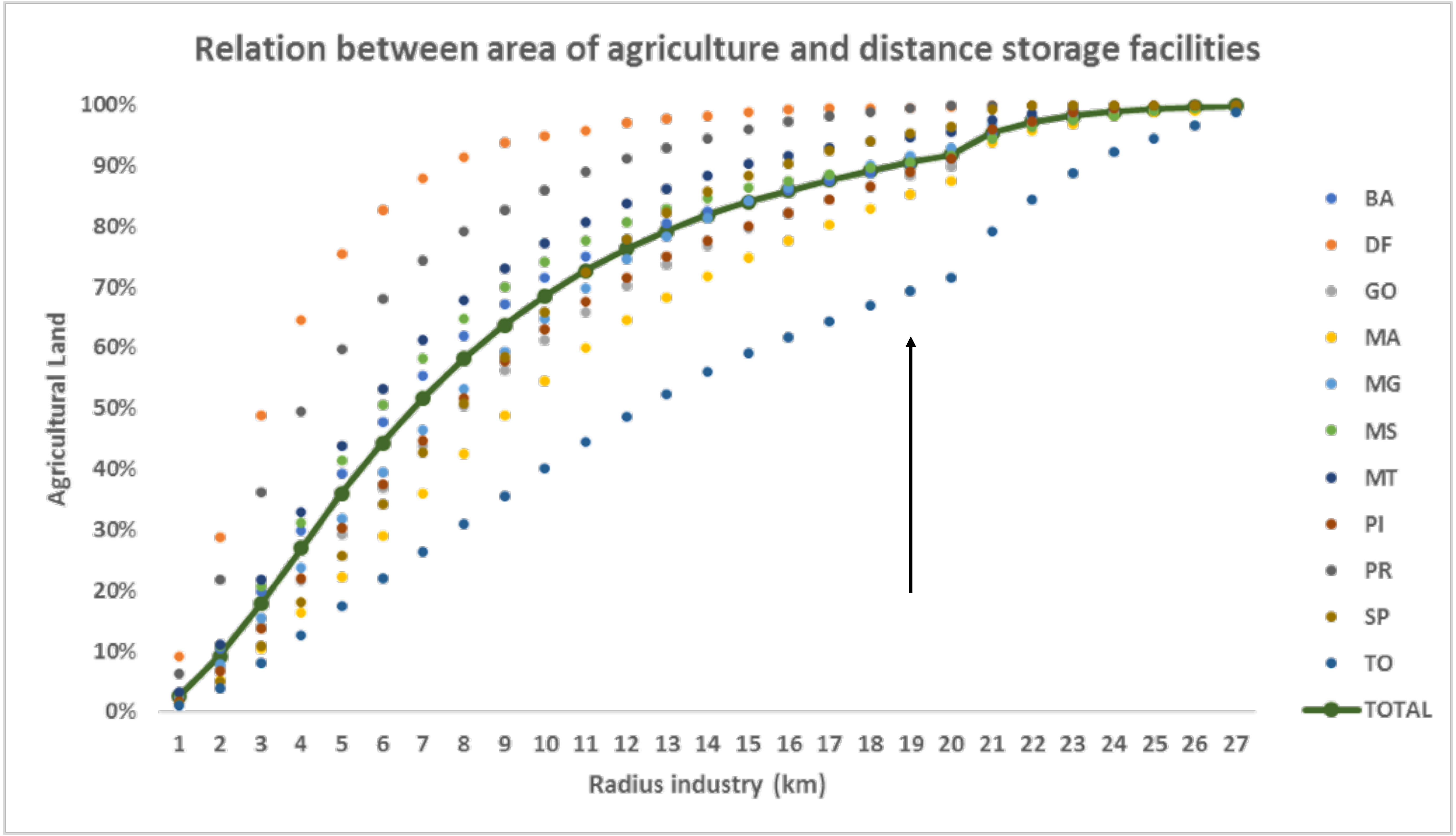
ROLE OF INFRASTRUCTURE DESIGNING TERRITORIES

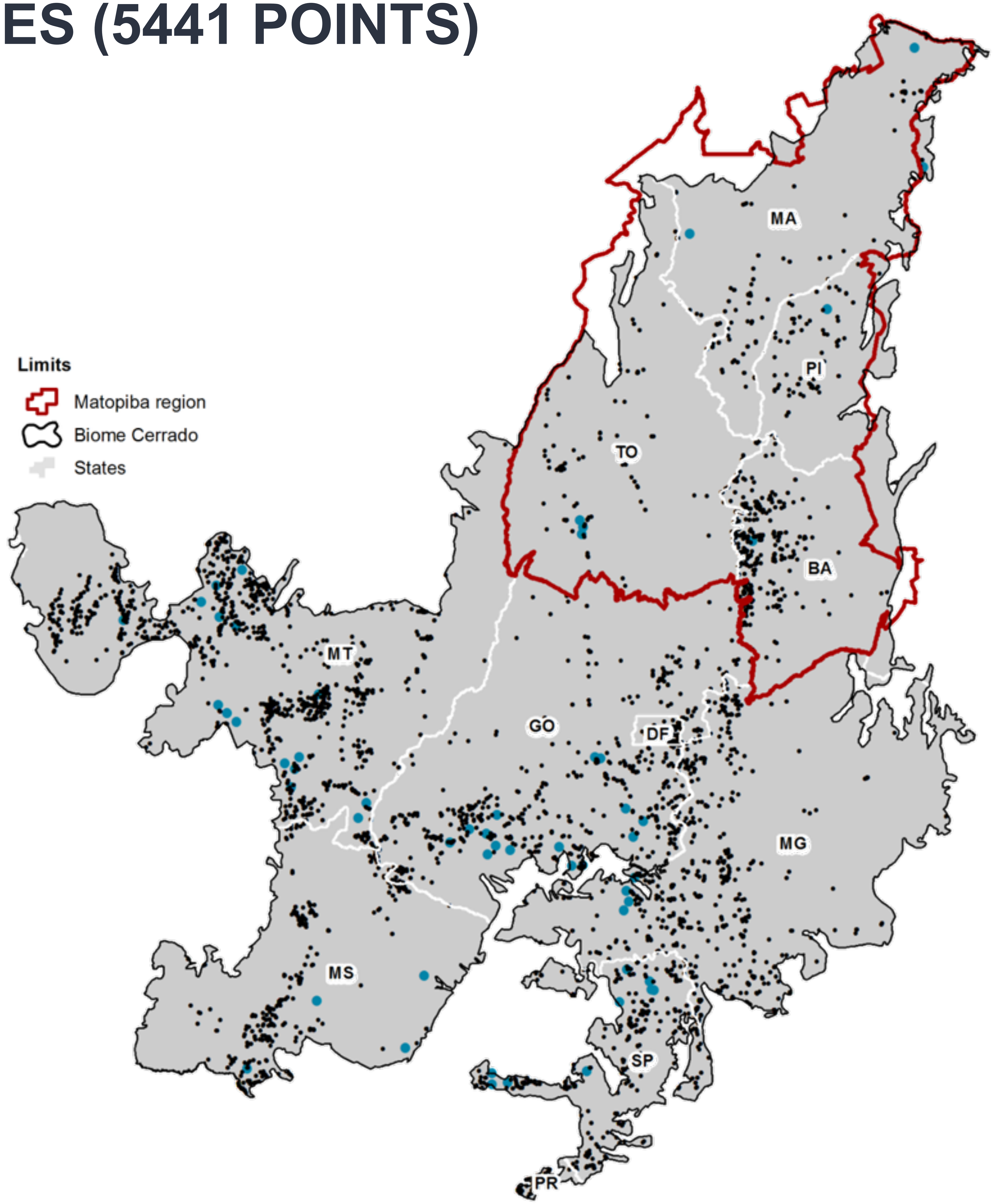
ABCD CASE

ADM, Bunge, Cargill and Dreyfuss

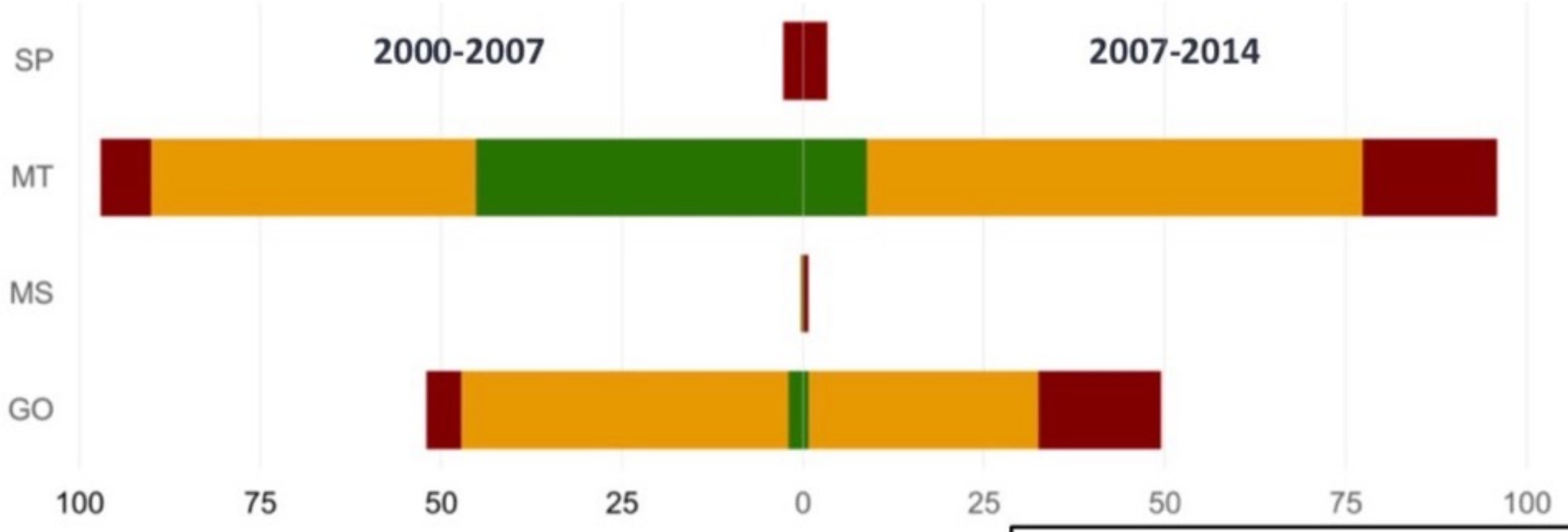
RADIUS OF INFLUENCE OF STORAGE FACILITIES (5441 POINTS)

Soybean area is concentrated (91%) at a **distance of 20 Km** from storage





EXPANSION PATTERNS AROUND BUNGE INFRASTRUCTURES 2000-2014



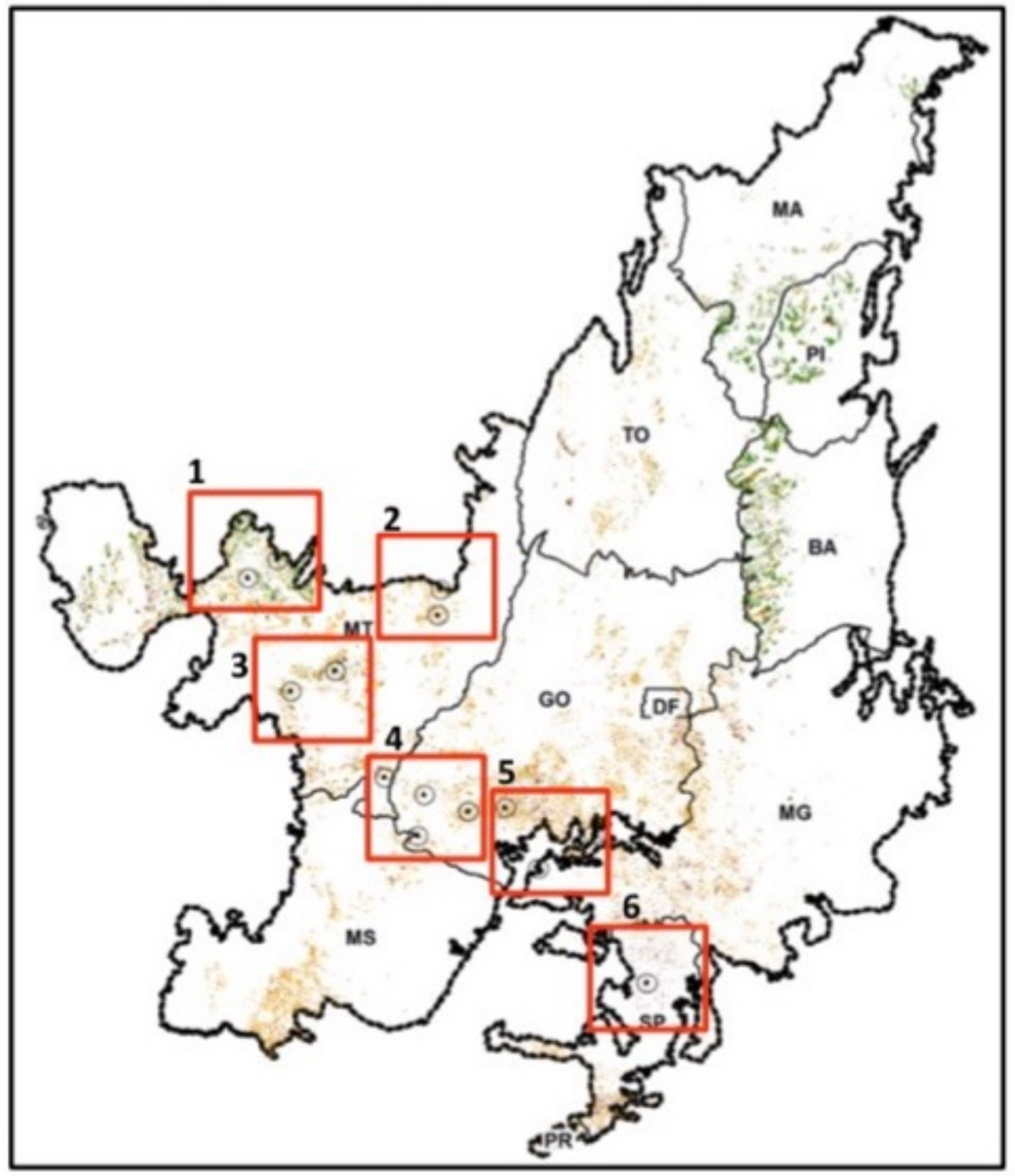
Expansão sobre:

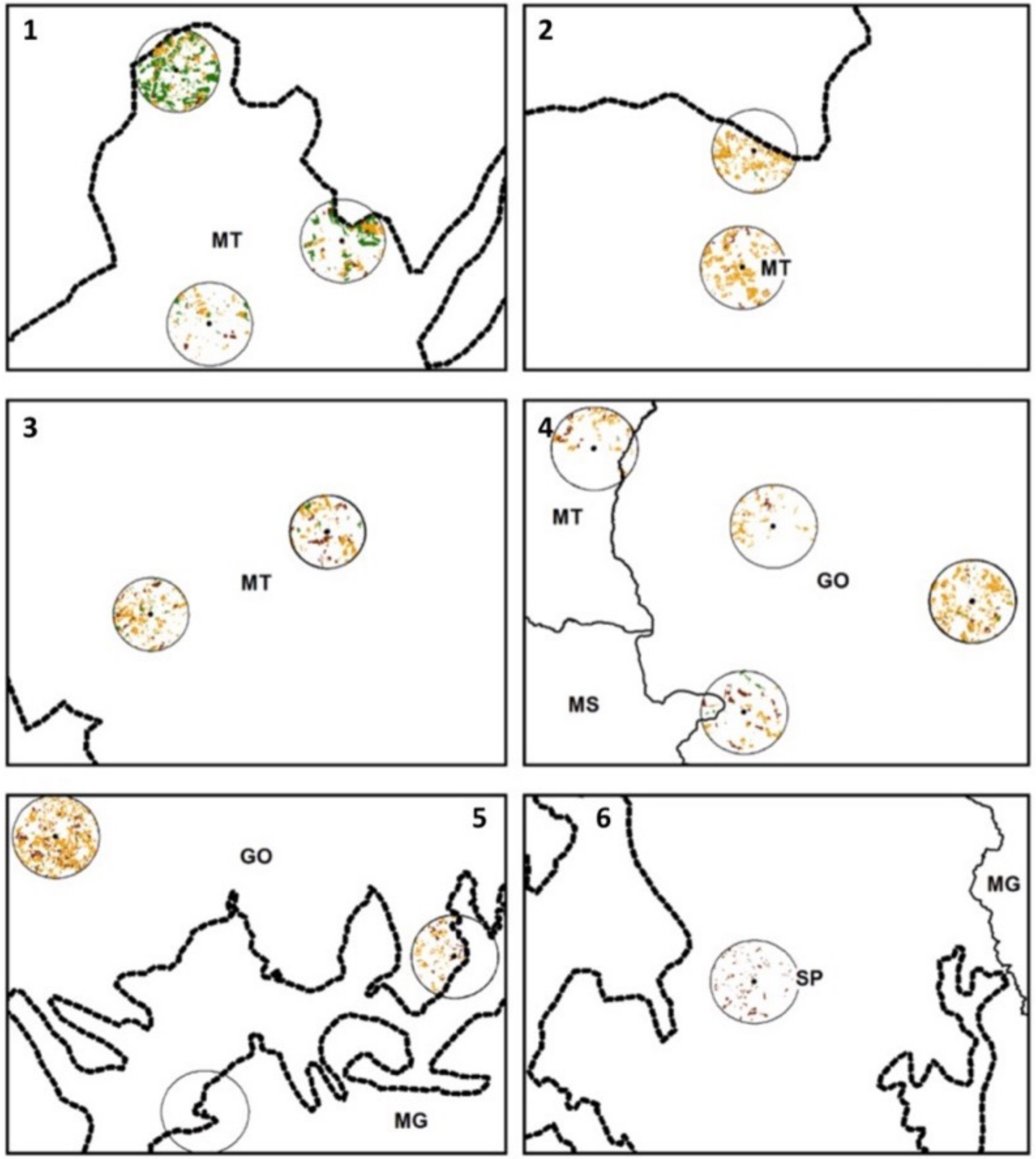
Cerrado = 57 mil ha
Pasto = 190 mil ha
Outros = 55 mil ha

Expansão agrícola 2000– 2007 sobre:

Vegetação Nativa
Pastagem
Outros
Armazéns e silos
Raio de 20 km

*A classe "outros" inclui agricultura, floresta plantada e cana-de-açúcar.



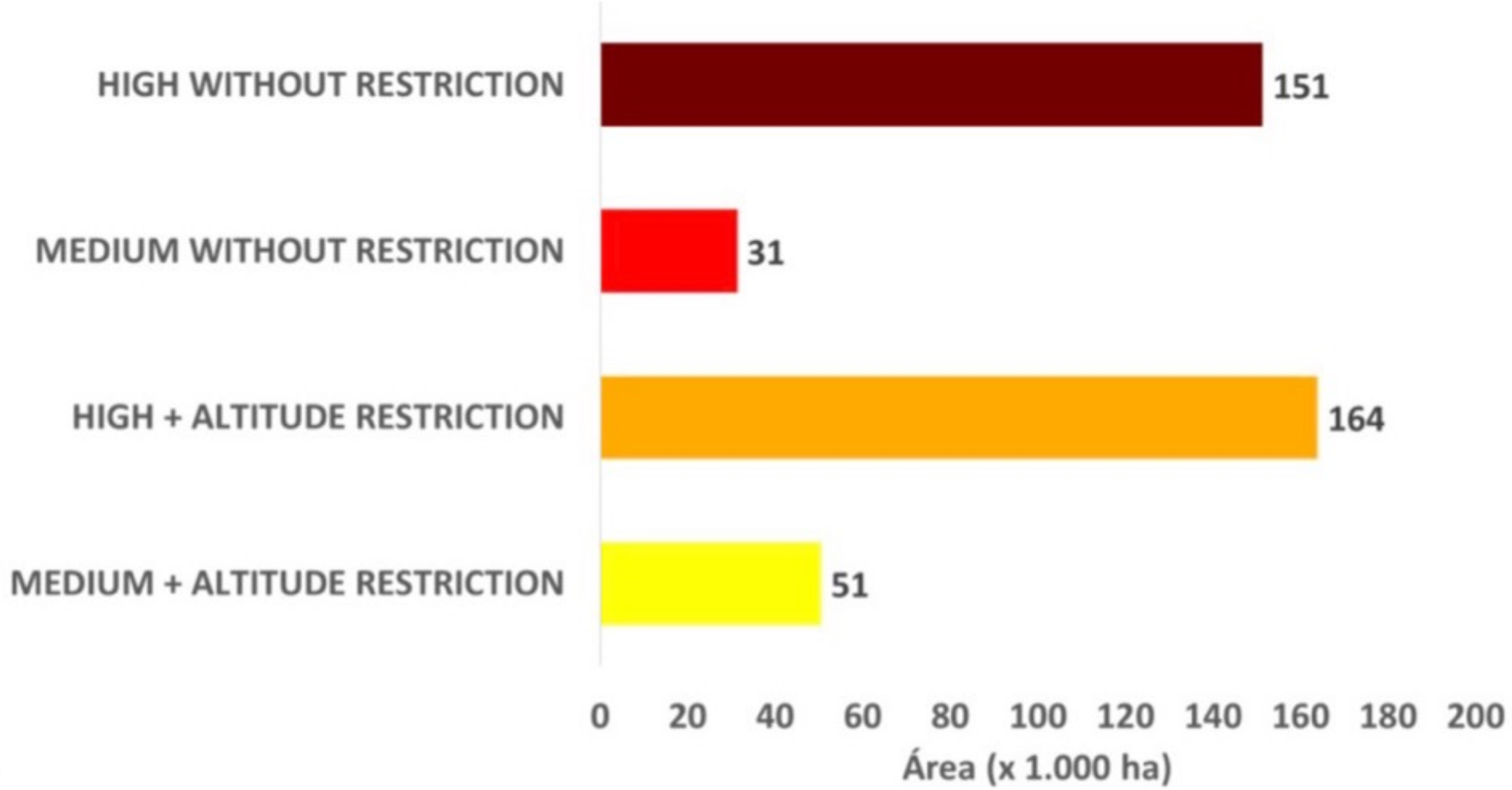


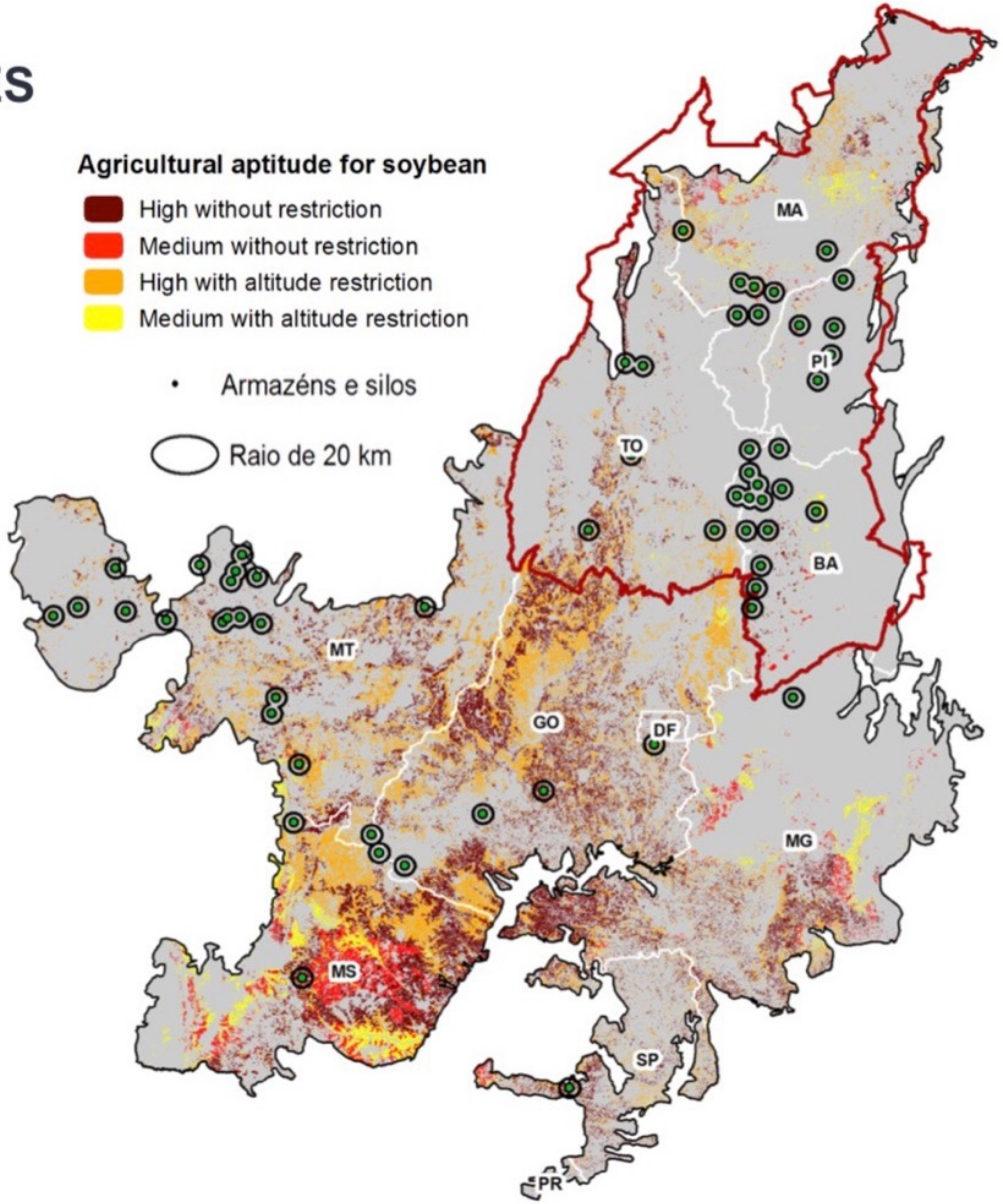
SOY SUITABILITY ON PASTURE – BUNGE FACILITIES

20 km RADIUS:

183 mil ha HIGH/MEDIUM SUITABILITY

214 mil ha HIGH SUITABILITY WITH RESTRICTIONS



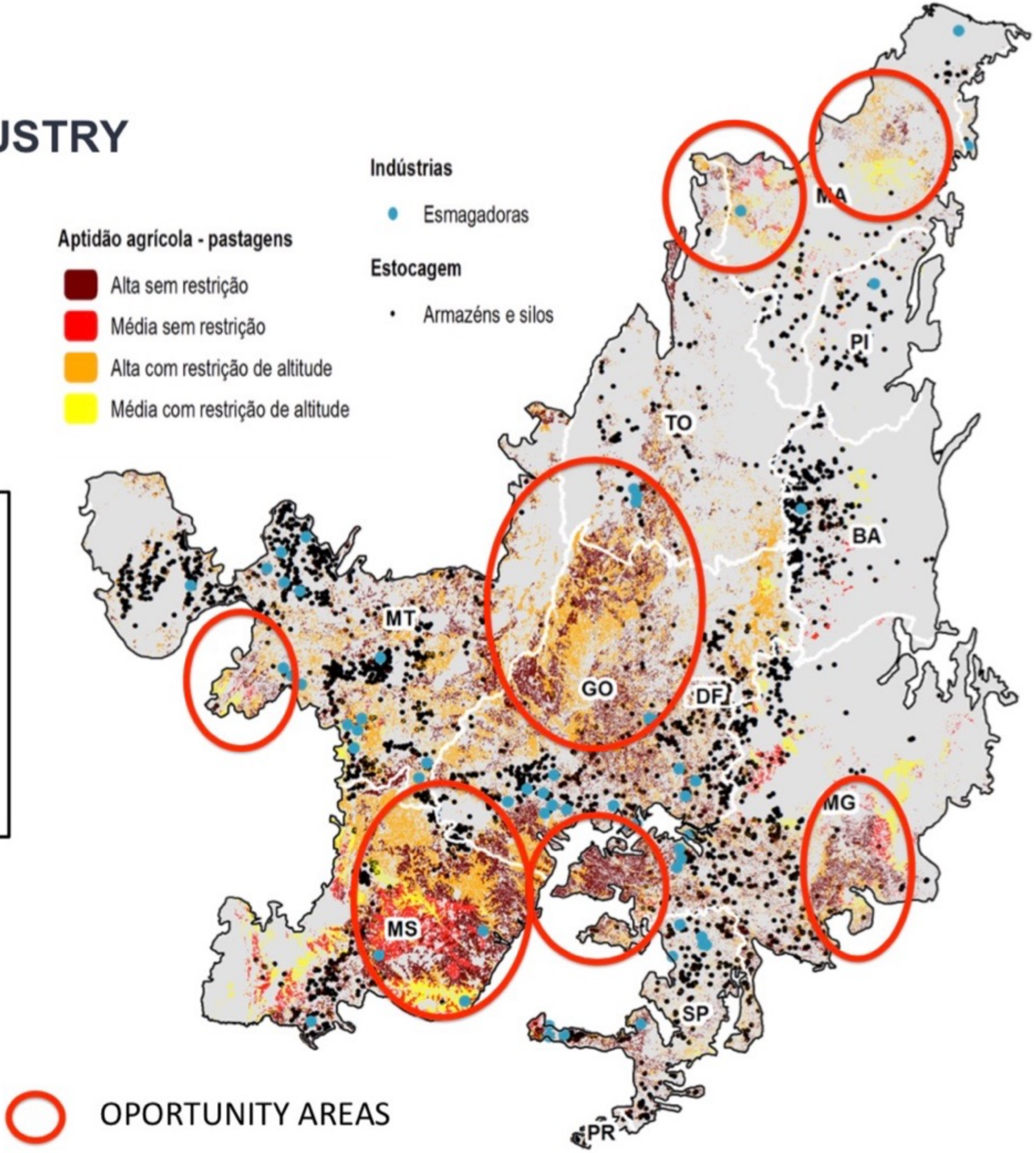


LDC – STORAGE FACILITIES + INDUSTRIES
Período: 2000 - 2007
Período: 2007 - 2014
BA
DF
GO
MA
MG
MS
MT
PR
SP
TO
1,000
750
500
250
0
250
500
750
1,000
AREA (x 1.000 ha)
ADM - STORAGE FACILITIES + INDUSTRIES
Período: 2000 - 2007
Período: 2007 - 2014
Area (x 1.000 ha)
Native vegetation
Pasture
Others
CARGILL - STORAGE FACILITIES + INDUSTRIES
Período: 2000 - 2007
Período: 2007 - 2014
AREA (x 1.000 ha)
BUNGE - STORAGE FACILITIES + INDUSTRIES
Período: 2000 - 2007
Período: 2007 - 2014
AREA (x 1.000 ha)

SUITABLE PASTURE AND LACK OF AGROINDUSTRY

- **FINANCIAL STRATEGY FOCUSING ON TRANSITION PASTURE/AGRICULTURE**

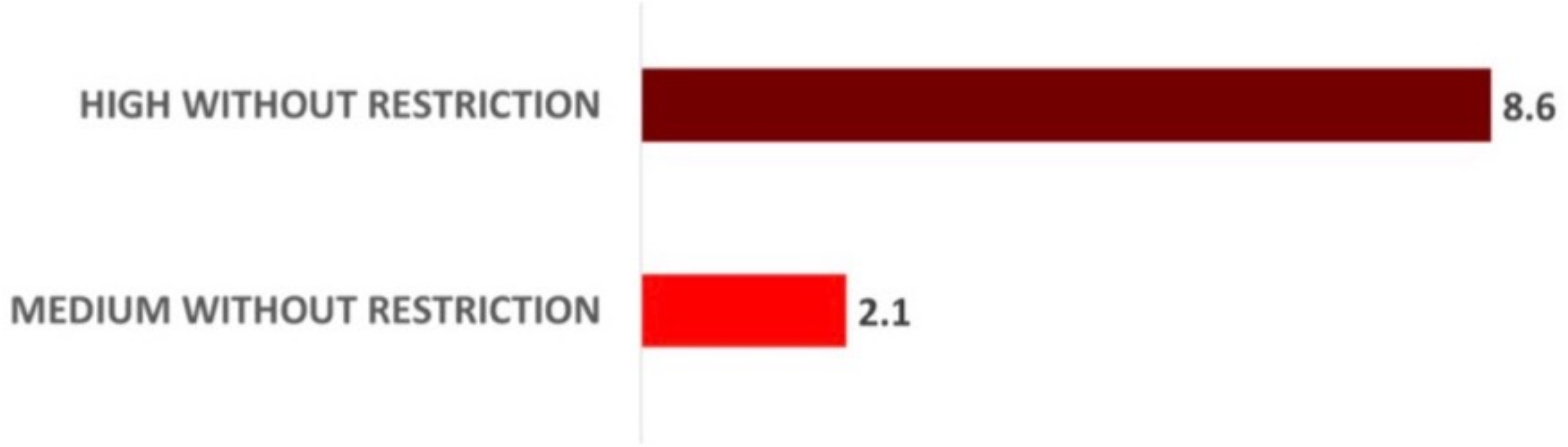
- **POLICY ORIENTED ON REGIONS (red spots)**

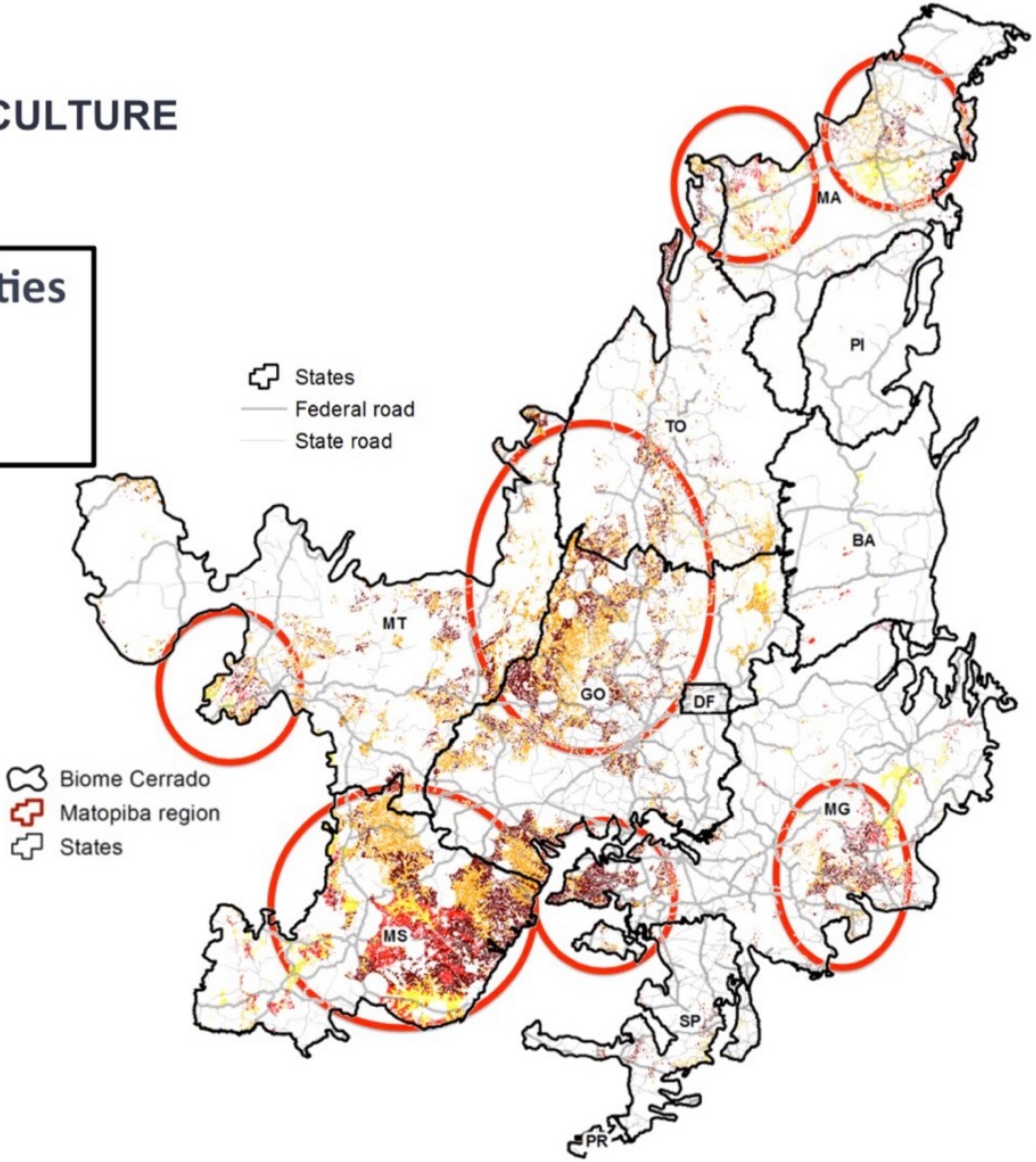


OPPORTUNITIES FOR TRANSITION PASTURE AGRICULTURE

Outside the radius of 20 km on present storage facilities

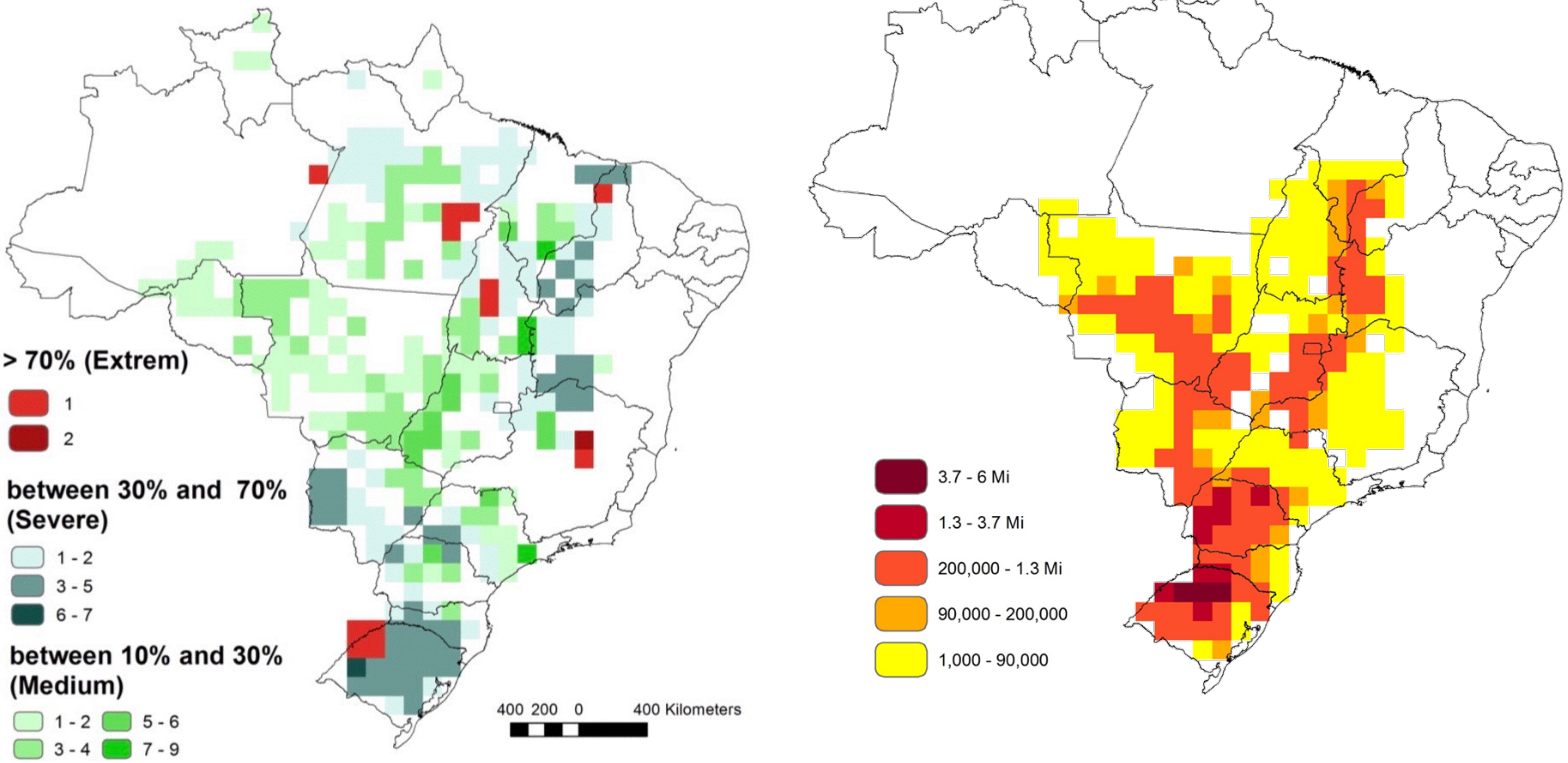
~10.7 mil ha of **high and medium** suitability



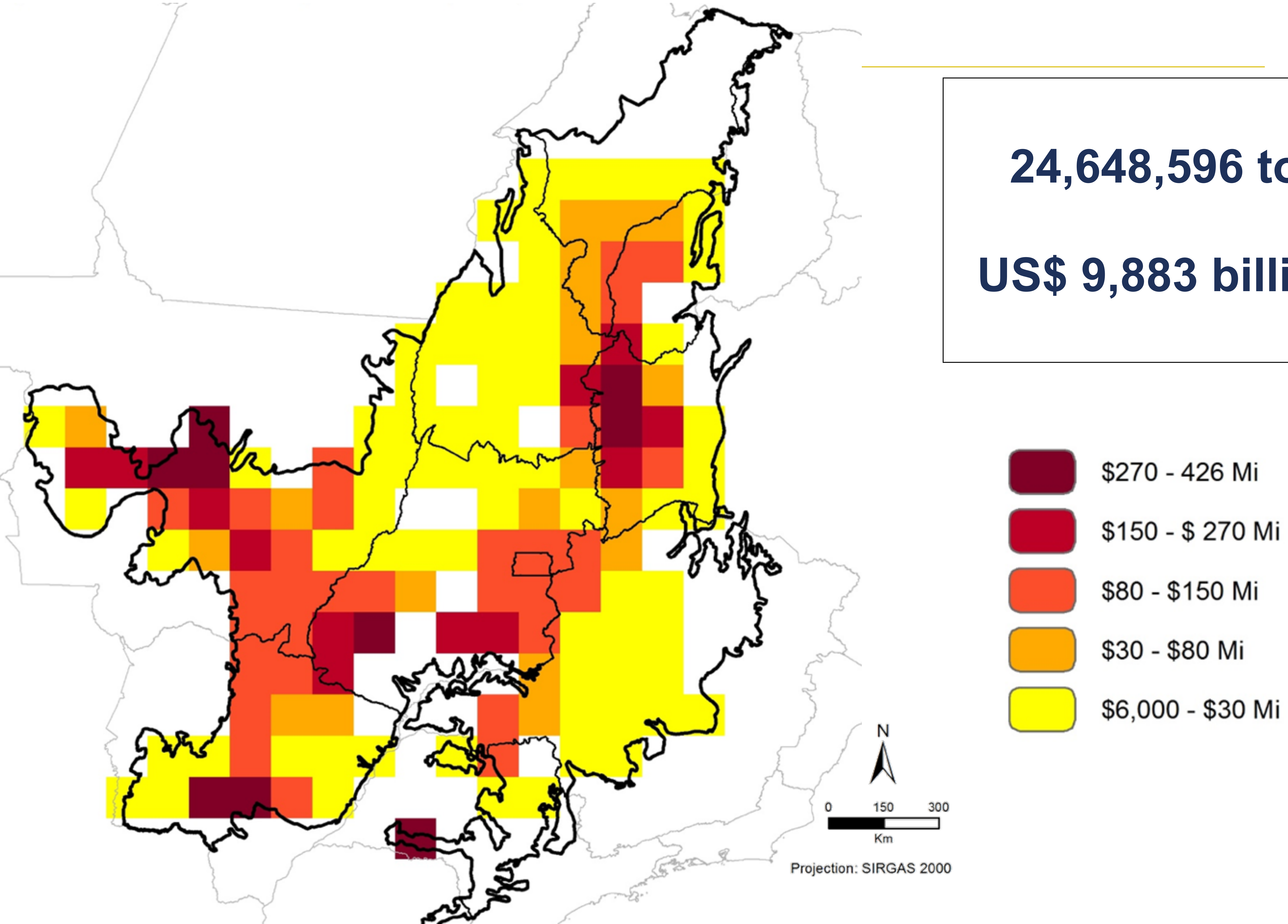


NEW FRONTIERS AND CLIMATE RISK

Soy - Number of Extrem, Severe and Medium Crop Failures between 1991 and 2014



Soy - Crop failures (US$) - 1991-2014 – Cerrado Biome



24,648,596 tons

US$ 9,883 billions

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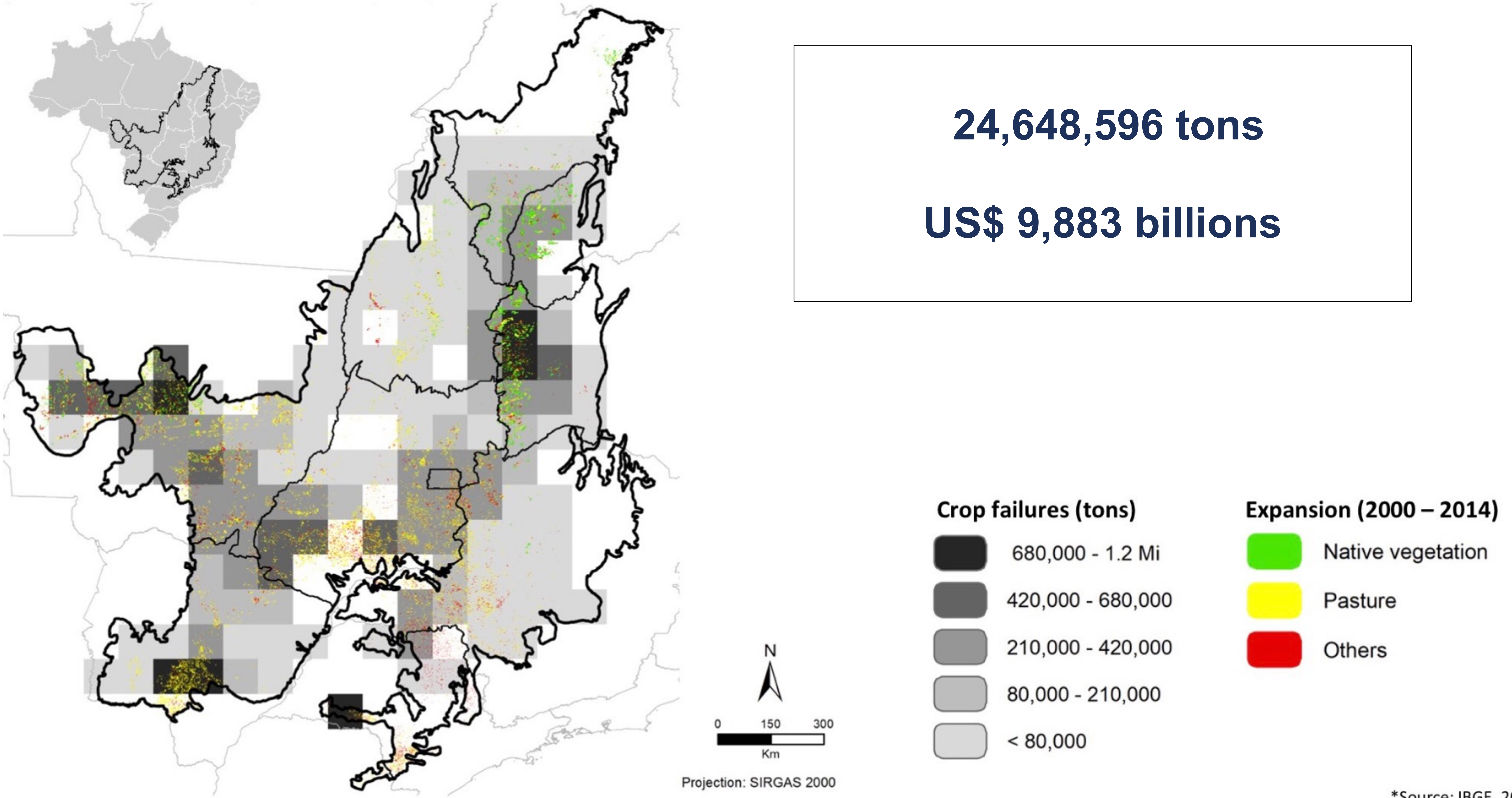
Soy - Crop failures (US$) - 1991-2014 – Cerrado Biome



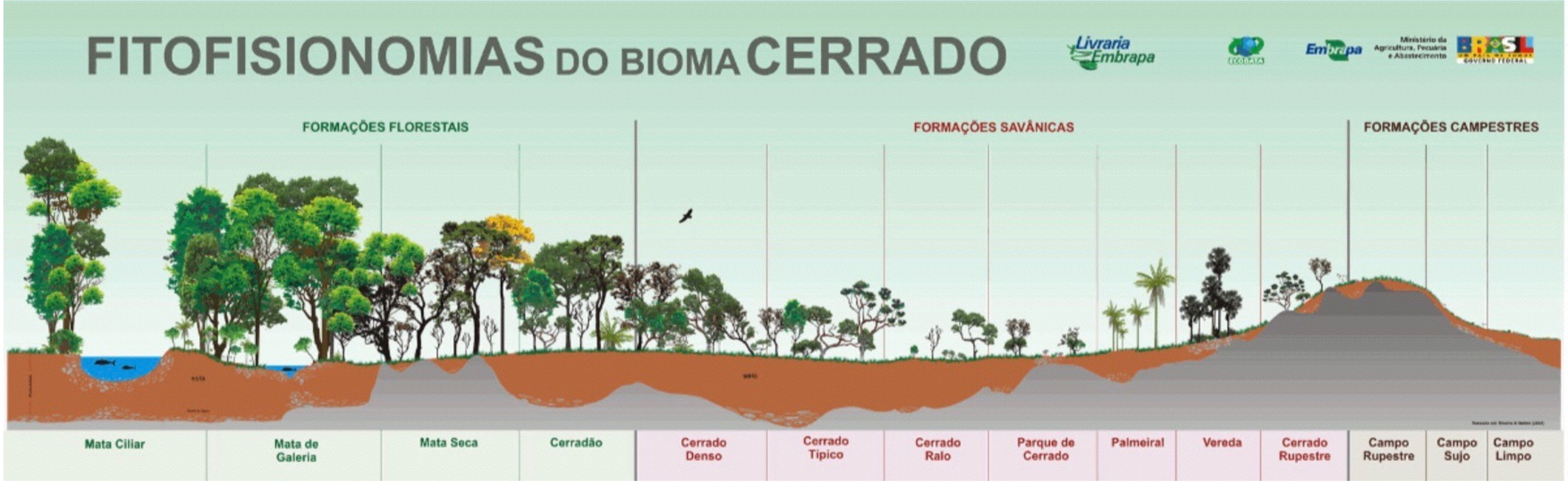
24,648,596 tons

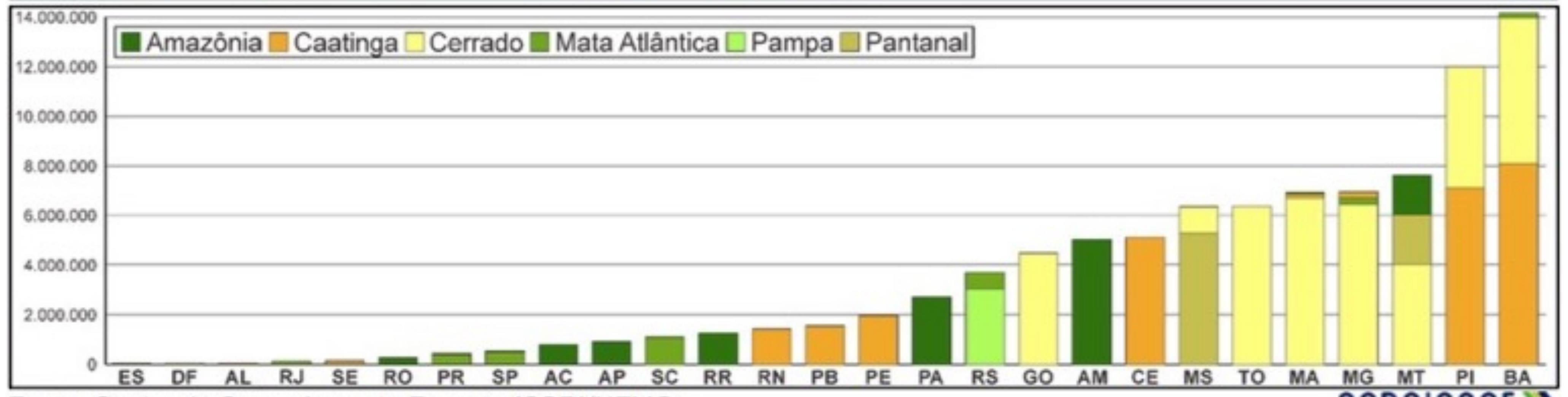
US$ 9,883 billions

*Source: IBGE, 2017.

LEGAL DEFORESTATION AND ASSETS FOR CONSERVATION

POTENCIAL LEGAL DEFORESTION
~ 40 Mi hectares



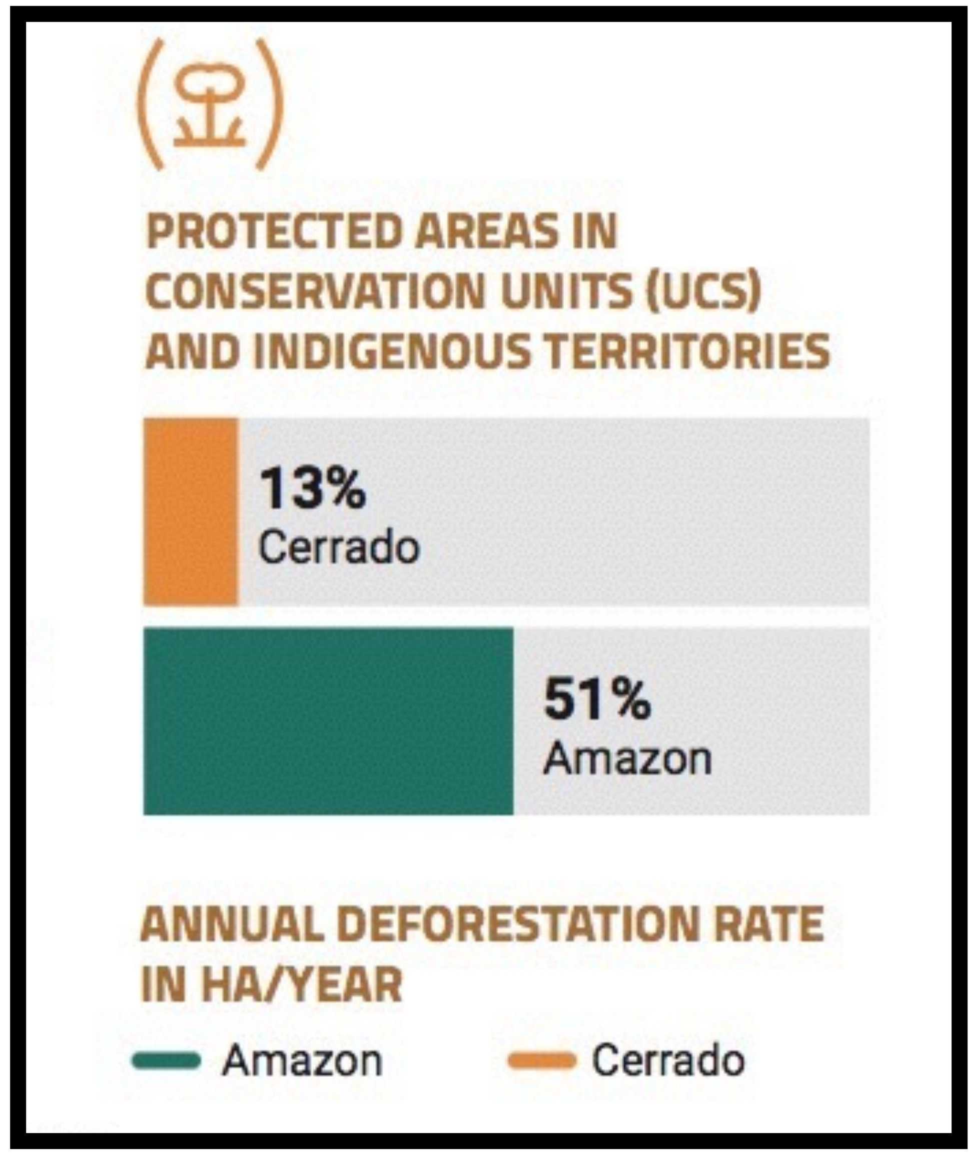


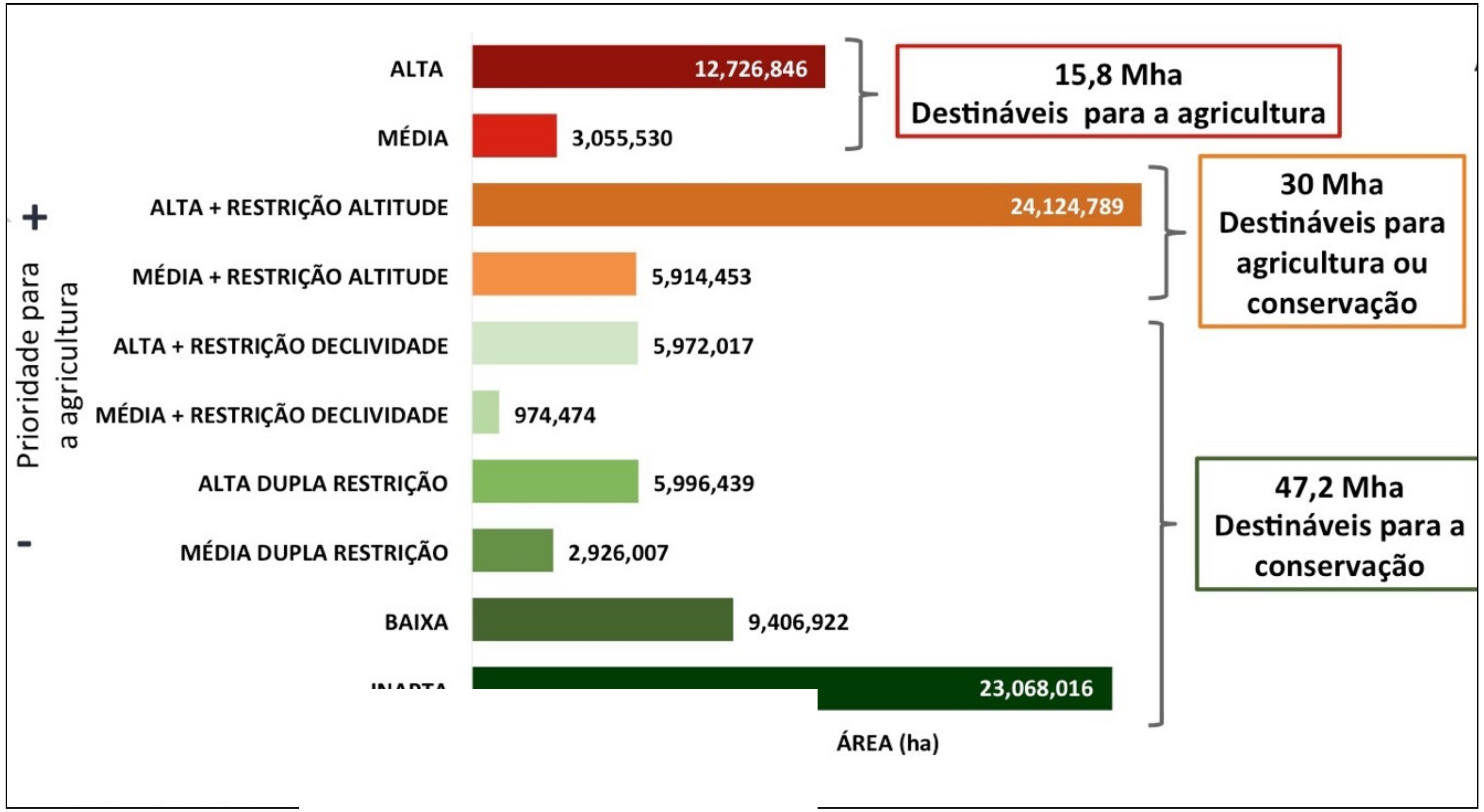
Fonte: Centro de Sensoriamento Remoto (CSR)/UFMG

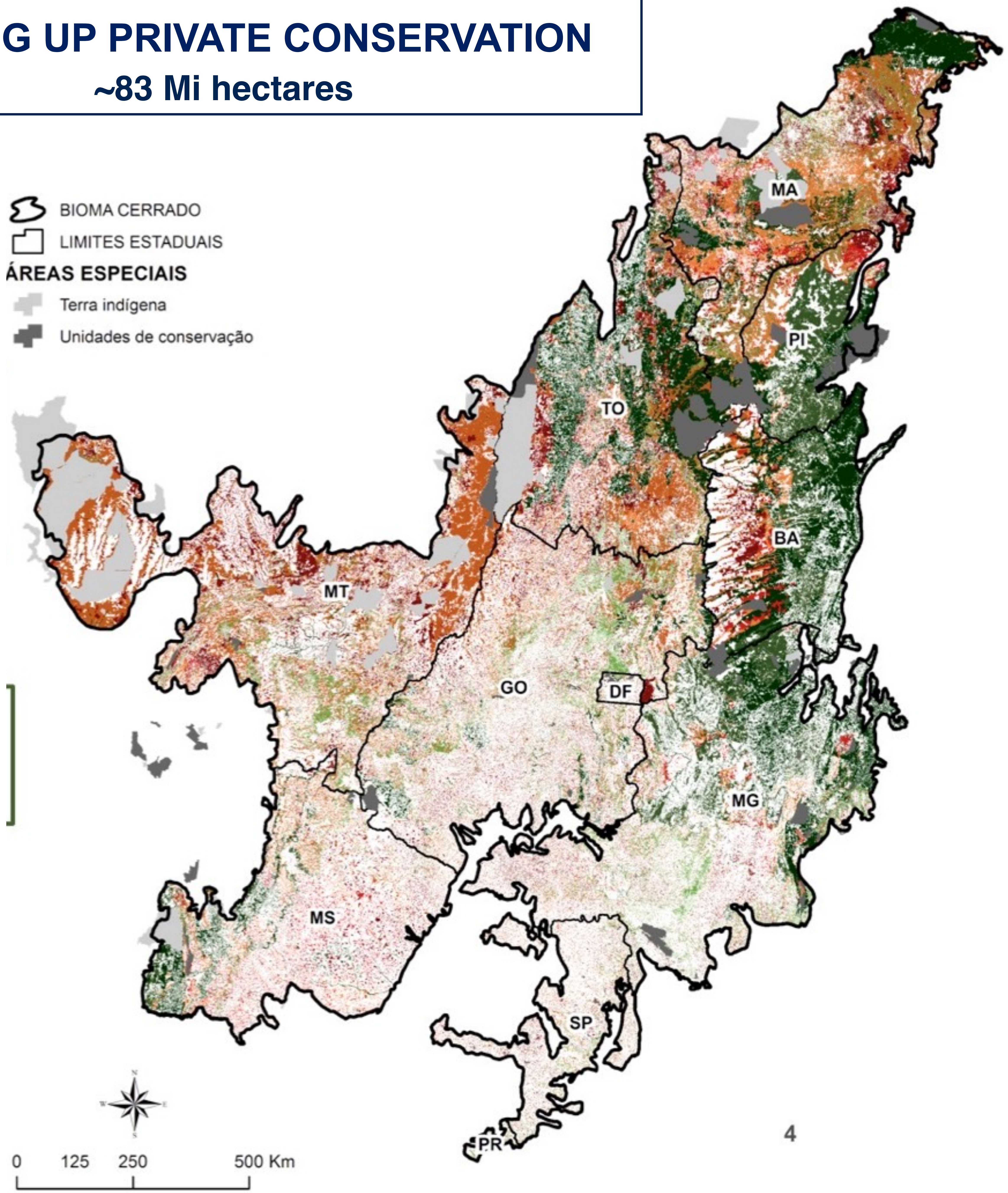
AGROICONE

SCALING UP PRIVATE CONSERVATION

~83 Mi hectares







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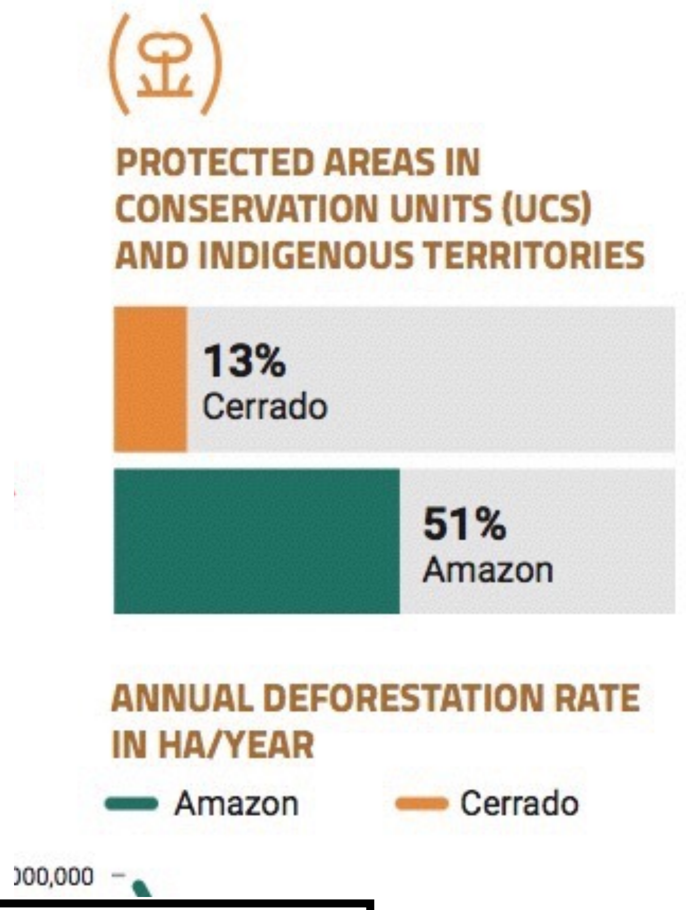
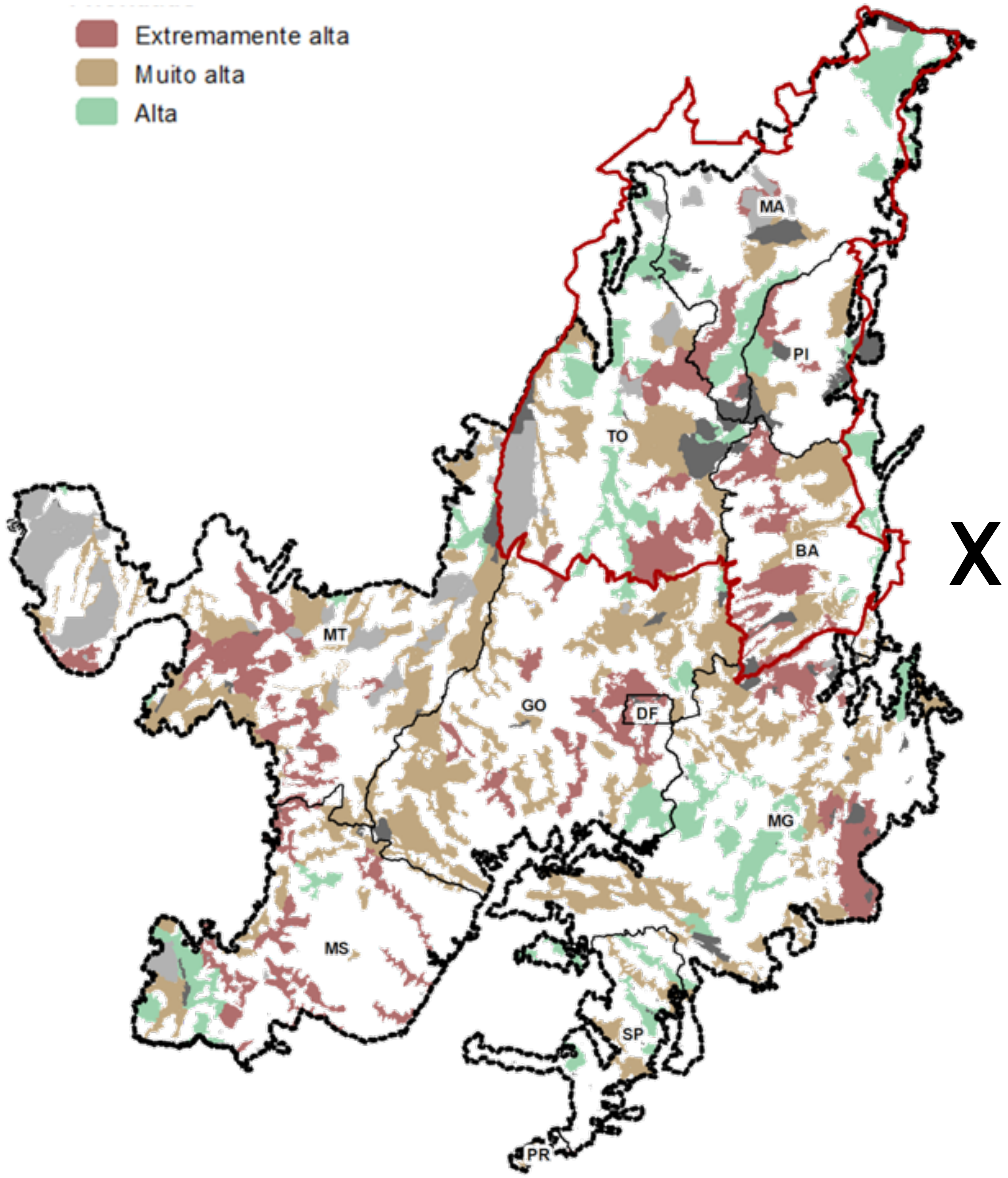
AGRICULTURE SUITABILITY X PRIORITY AREAS FOR CONSERVATION



Prioridade para conservação



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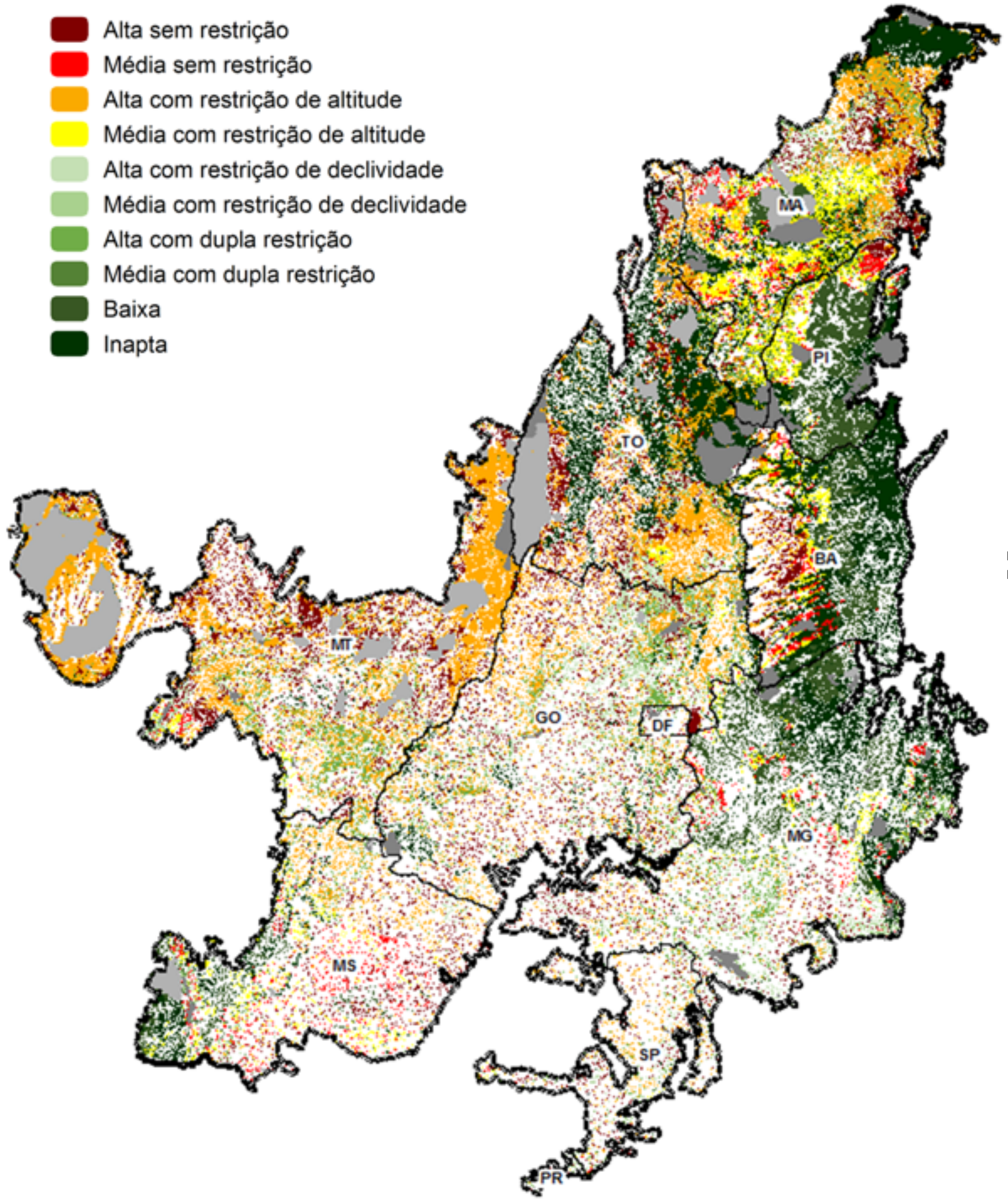
Aptidão agrícola na vegetação



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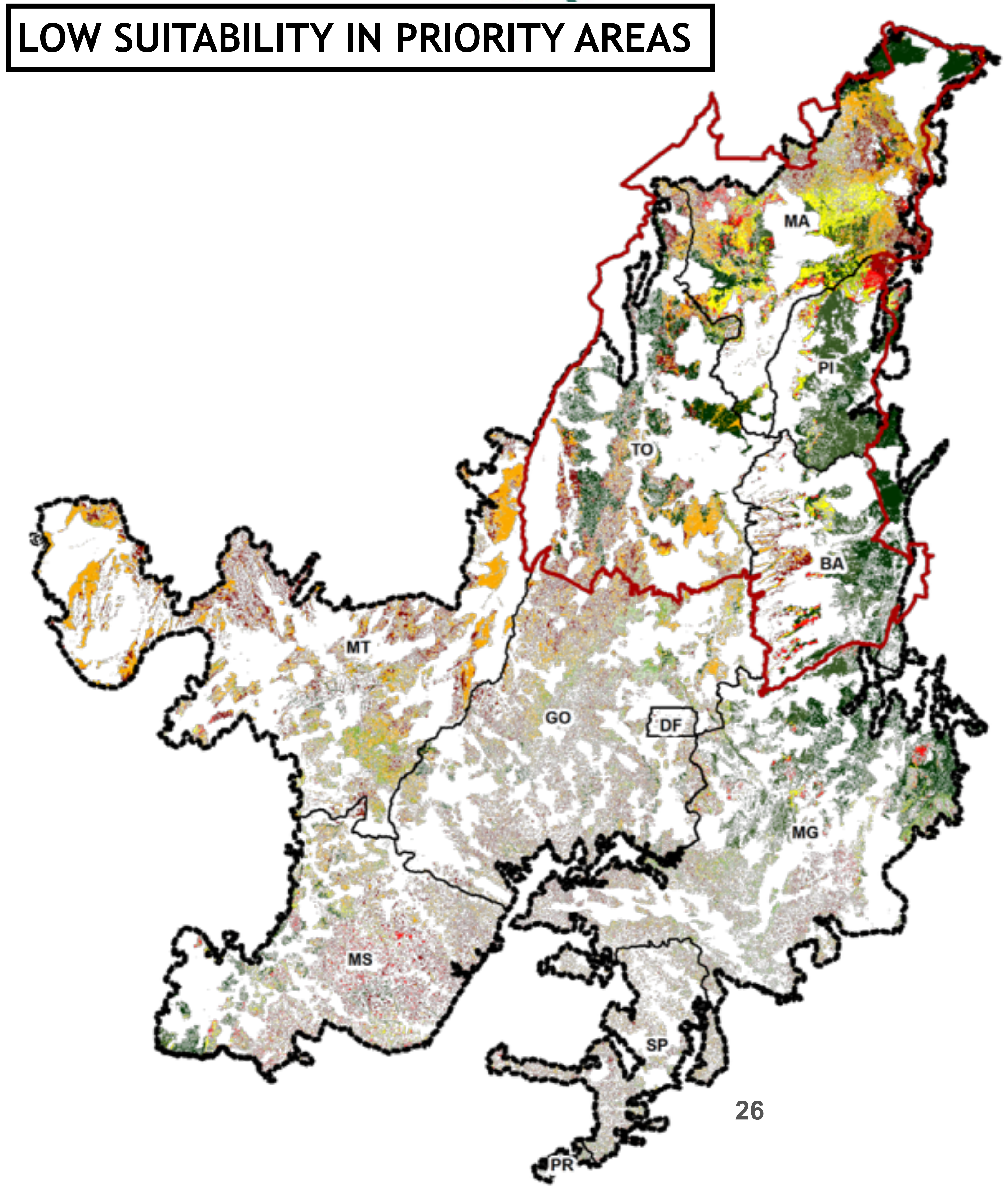
LOW SUITABILITY IN PRIORITY AREAS



FINAL COMMENTS

* CONDITIONALITY OF PRIVATE AND PUBLIC CREDIT FOCUS ON TRANSITION PASTURE-AGRICULTURE

* NEW GENERATION OF STORAGE FACILITIES DESIGNING NEW TERRITORIES FREE OF CONVERTION

* PRIVATE COMPLIANCE FINANCING THE EXPANSION OF PROTECTED AREAS TROUGH COMPENSATION SCHEMES

* PAYMENTS FOR ENVIRONMENTAL SERVICES ??!!!

OPTIMIZE LAND USE → DEFORESTATION ZERO

Thanks

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