Integrating multiple data sources for the monitoring of SDG 15 - Life on Land

Leonardo Lima Bergamini
Biodiversity Analyst
SDG 15 Indicator production coordinator
October 2025

Introduction

- The 2030 agenda
- Indicators
- Data flows

SDG 15 Data sources

- Targets
- Indicators
- Data types and involved institutions

SDG Indicator 15.3.1

- Exemplify an indicator’s life cycle
- Non-traditional data use

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- The 2030 agenda
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- The 2030 agenda
- Indicators
- Data flows

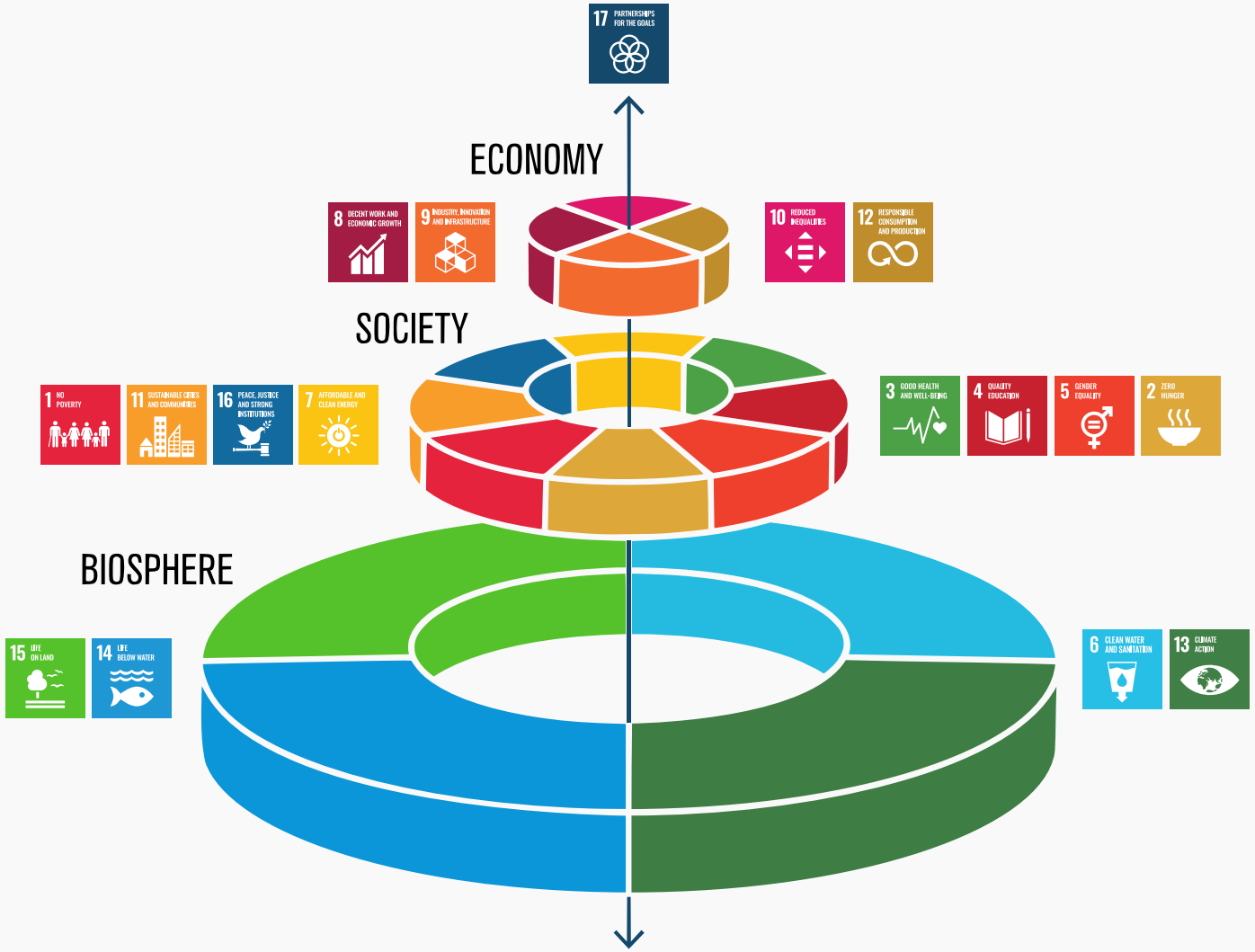
SDG 15 Data sources

- Targets
- Indicators
- Data types and involved institutions

SDG Indicator 15.3.1

- Exemplify an indicator’s life cycle
- Non-traditional data use


SUSTAINABLE DEVELOPMENT GOALS
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS



Credit: Azote for Stockholm Resilience Centre, Stockholm University CC BY-ND 3.0.

17 SDG

169 Targets

234 unique indicators

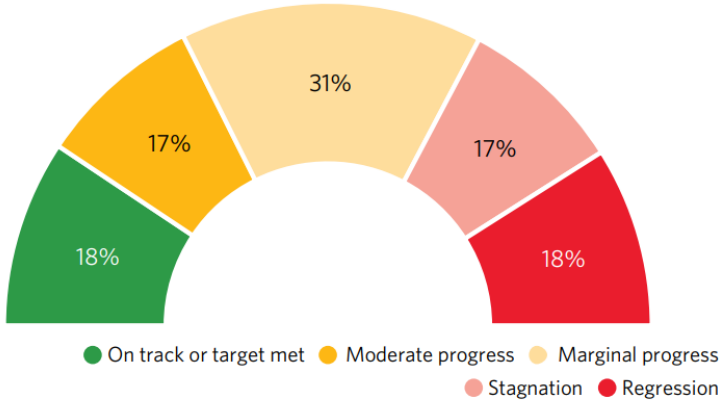
https://docs.un.org/A/RES/71/313

17 SDG

169 Targets

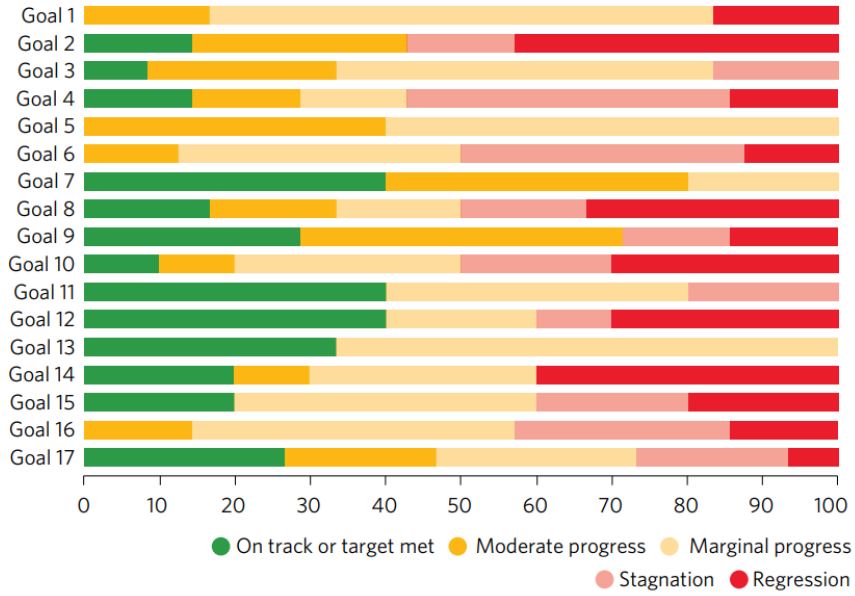
234 unique indicators

Overall progress across targets based on 2015–2025 global aggregate data

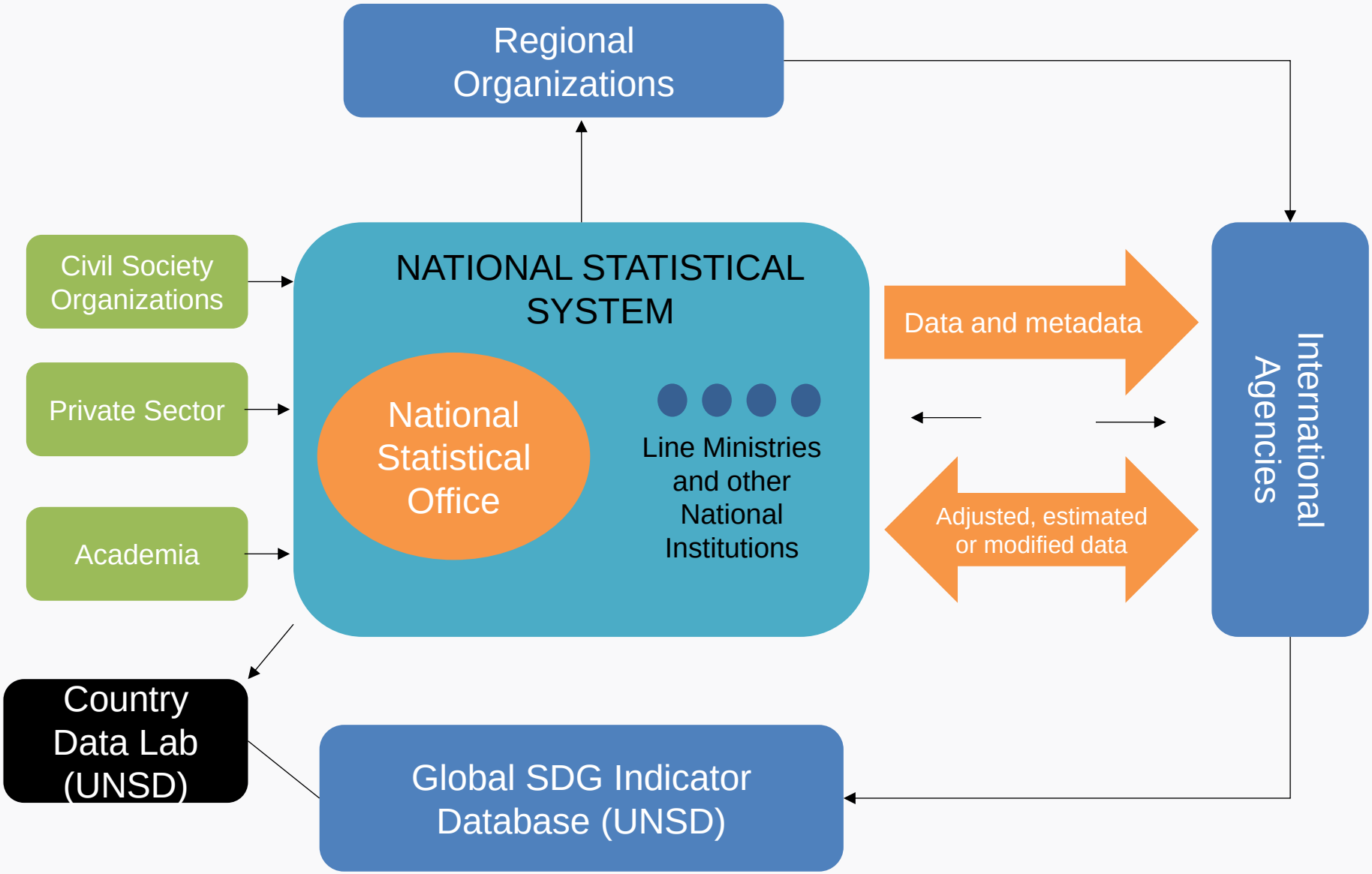


Note: Percentages do not add up to 100 per cent due to rounding.

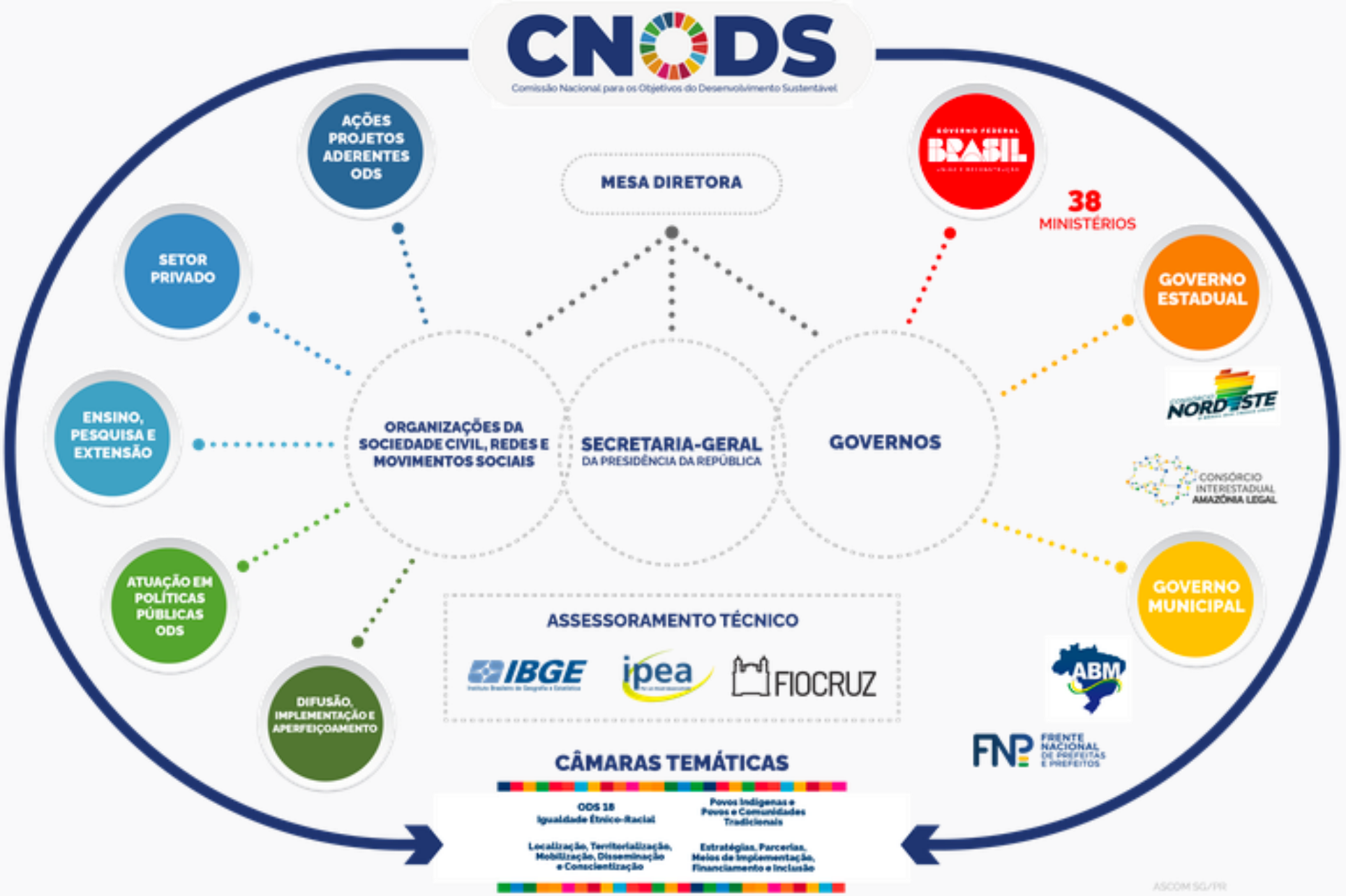
Progress assessment for the 17 Goals based on assessed targets, by Goal (percentage)



https://unstats.un.org/sdgs/report/2025/

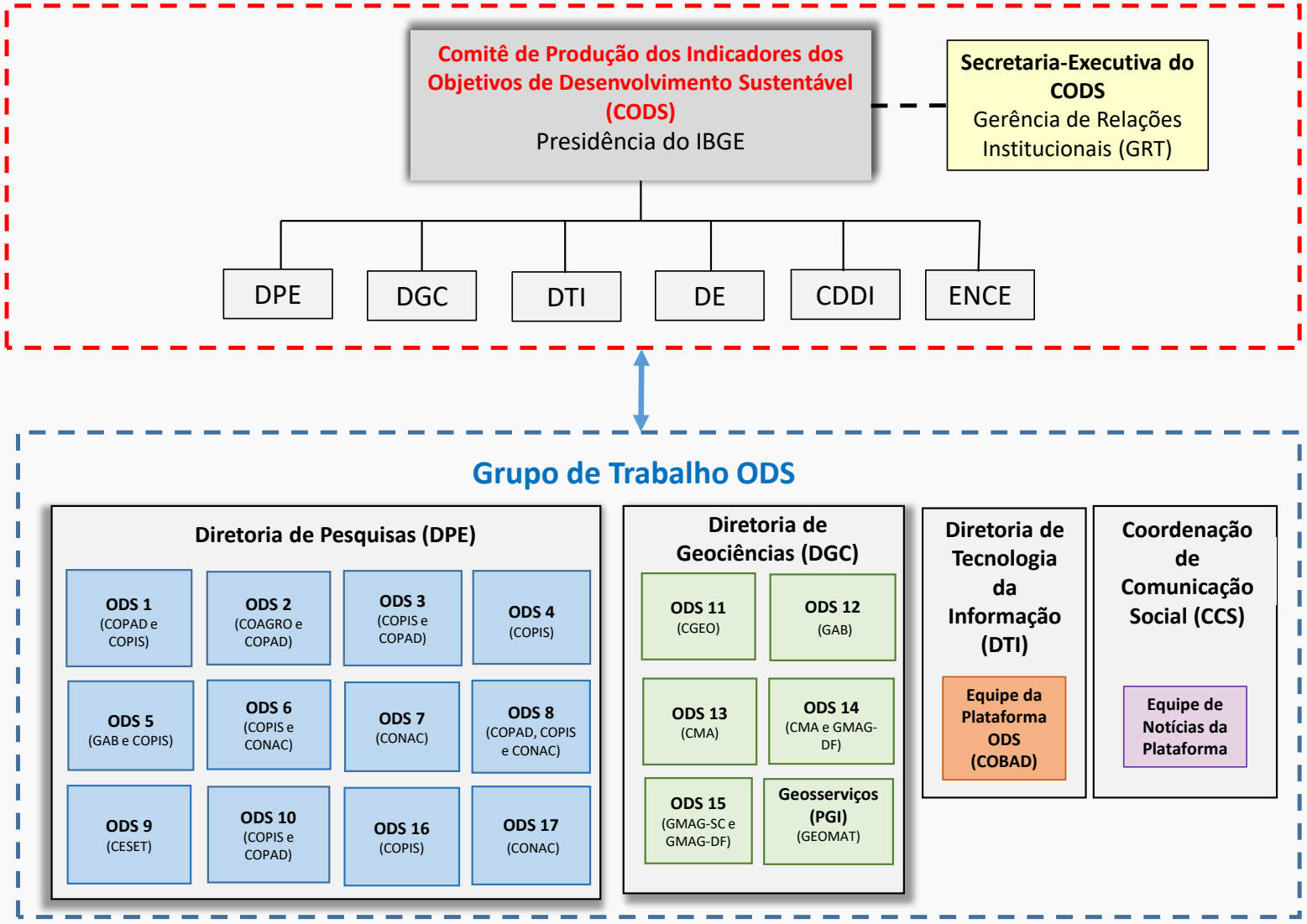


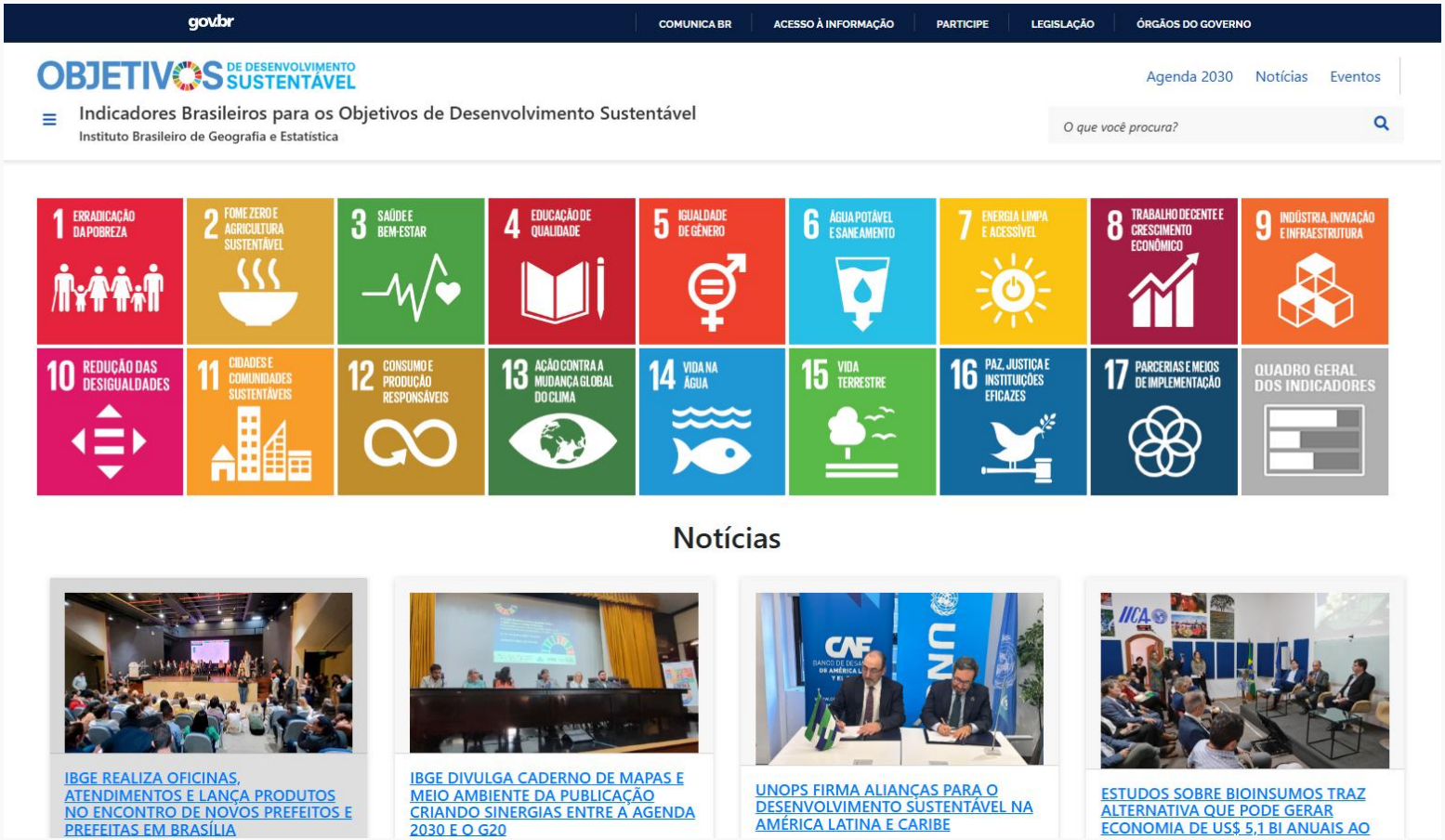
adapted from IAEG-SDG



https://www.gov.br/secretariageral/pt-br/cnods

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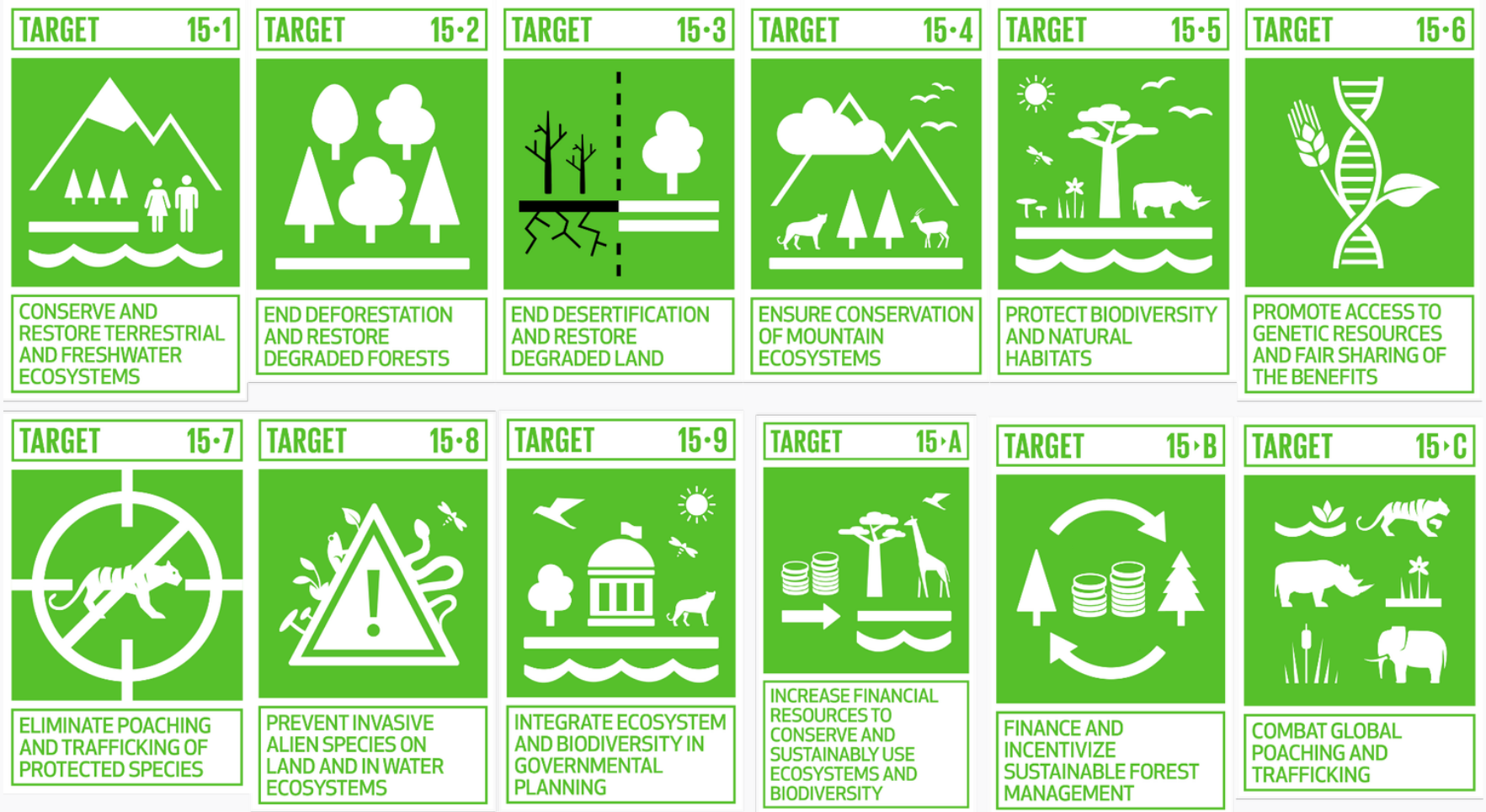
https://odsbrasil.gov.br/

OBJETIVOS DE DESENVOLVIMENTO SUSTENTÁVEL



Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

SDG 15 Data sources



SDG 15 Data sources

15.1.1 – Forest area

15.1.2 – Protection coverage of Key Biodiversity Areas

C15.1.c – Protection coverage total terrestrial area

15.2.1 – Sustainable forest management

15.3.1 – Land degradation

15.4.1 – Protect areas of mountain key biodiversity areas

15.4.2 – Mountain Green Cover Index and Mountain degradation

15.5.1 – Threatened species

15.6.1 – Benefit Sharing

15.7/c.1 – Wildlife poaching and trafficking

15.8.1 – Invasive alien species

15.9.1 – Integrate biodiversity values

15.a/b.1 – Official development assistance and economic instruments

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SDG 15 Data sources



Questionnaire

Ministry of Environment and Climate Change

IBGE

Convention on Biological Diversity

https://www.cbd.int/

System of Environmental Economic Accounting

https://seea.un.org/

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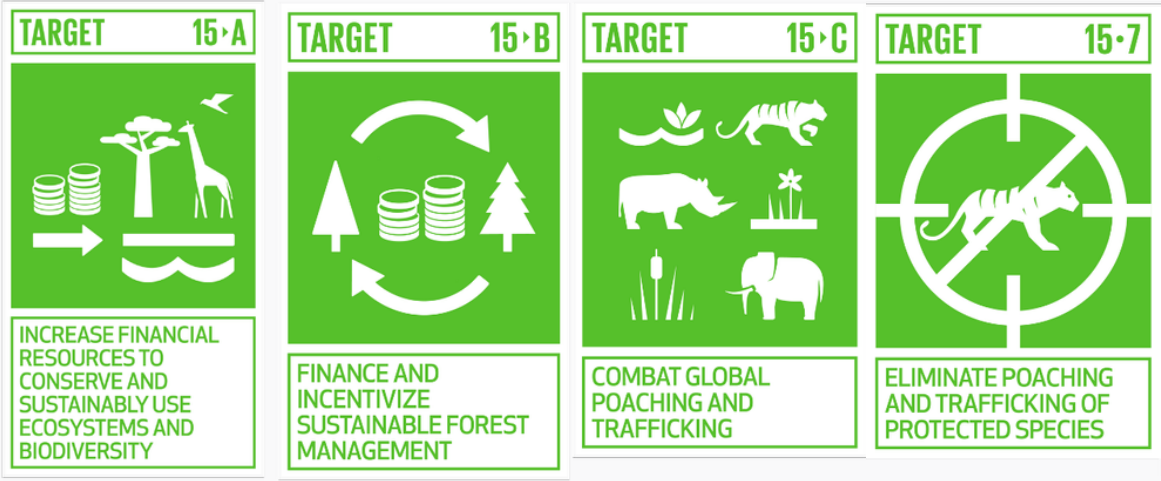
15.7/c.1 – Wildlife poaching and trafficking

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SDG 15 Data sources



PINE and DAC databases from OECD

CITES reports regarding international trade

IBAMA
MMA

OECD

CITES

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SDG 15 Data sources



Global ICUN RedList
of threatened species

National assessments
by MMA

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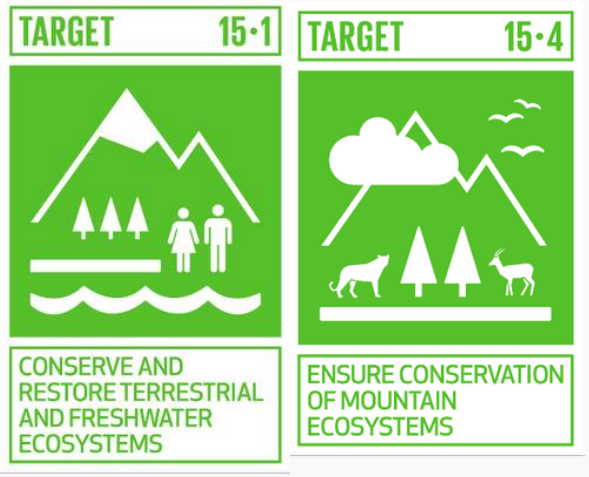
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SDG 15 Data sources



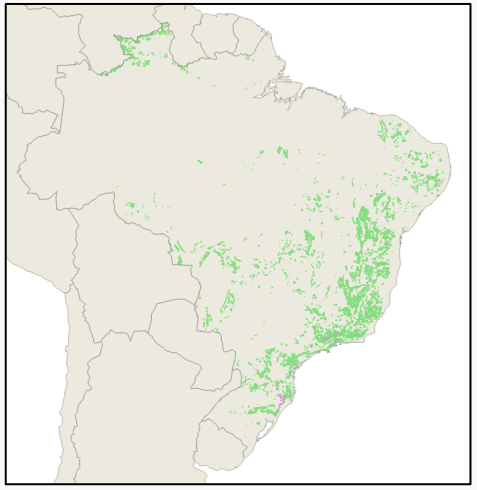


Key Biodiversity Areas

National Registry of Conservation Units

FAO map of mountain areas









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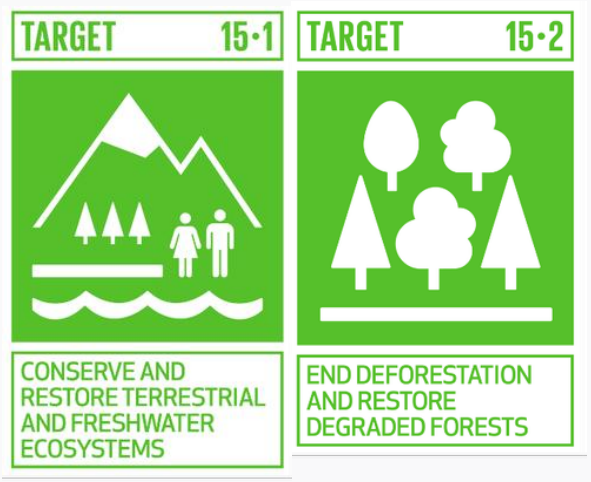
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SDG 15 Data sources



Data compiled by the Brazilian Forestry Service

SERVIÇO FLORESTAL BRASILEIRO

Global Forest Resources Assessment 2020

Multiple data sources including IBGE vegetation maps and deforestation monitoring by INPE

IBGE
Instituto Brasileiro de Geografia e Estatística





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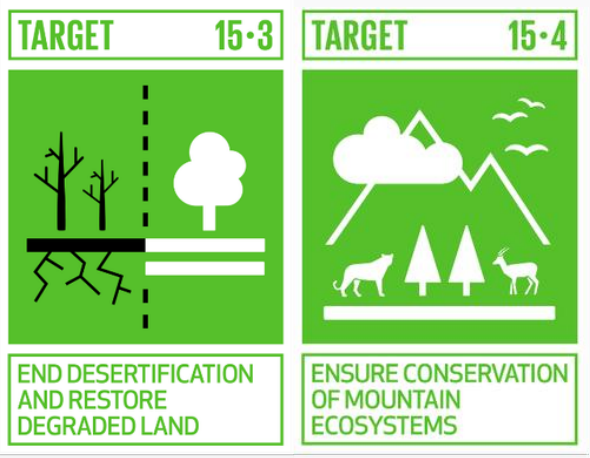
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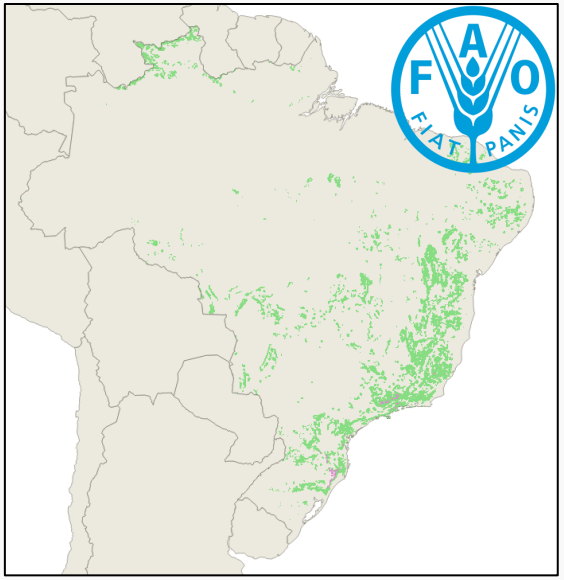
SDG 15 Data sources



Land Use and Cover from IBGE

FAO mountain layer

15.3.1 will be shown in detail on the next session

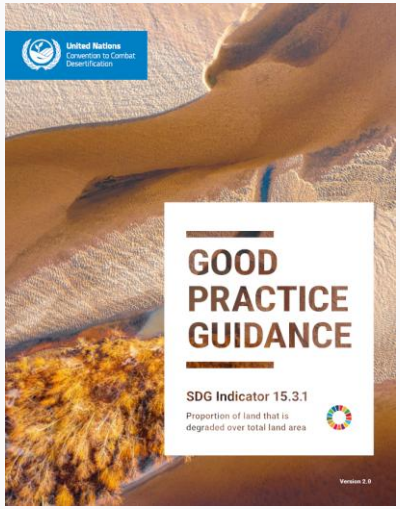


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Indicator 15.3.1: Proportion of land that is degraded over total land area



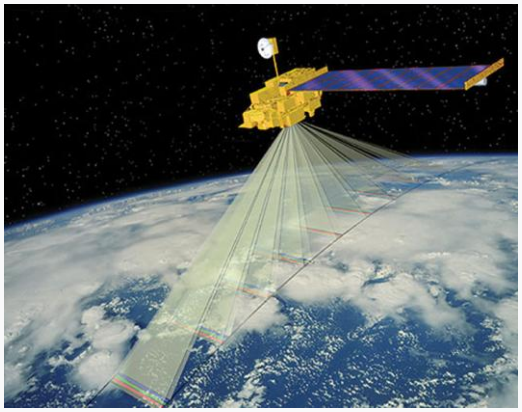
https://www.unccd.int/resources/manuals-and-guides/good-practice-guidance-sdg-indicator-1531-proportion-land-degraded

Timeline


2º PAB Brasil
Plano de Ação Brasileiro de Combate à Desertificação e Mitigação dos Efeitos da Seca
2018
2023
2024
2025
Embrapa
Solos
IBGE
Instituto Brasileiro de Geografia e Estatística
OCA
United Nations
Convention to Combat Desertification
MINISTÉRIO DO MEIO AMBIENTE E MUDANÇA DO CLIMA
GOVERNO FEDERAL
BRASIL
UNIÃO E RECONSTRUÇÃO

SDG Indicator 15.3.1
Proportion of land degraded over total land area

- Productivity
- Land Cover
- Soil Carbon



Launched 1999-12-18	2000-02-24 To Present

https://oceancolor.gsfc.nasa.gov/about/missions/terra/

SDG Indicator 15.3.1
Proportion of land degraded over total land area

Productivity

Land Cover

Soil Carbon

2000-2020



https://www.ibge.gov.br/en/geosciences/maps/brazil-environmental-information/18428-land-use-and-cover-in-brazil.html?lang=en-GB

SDG Indicator 15.3.1
Proportion of land degraded over total land area

Productivity

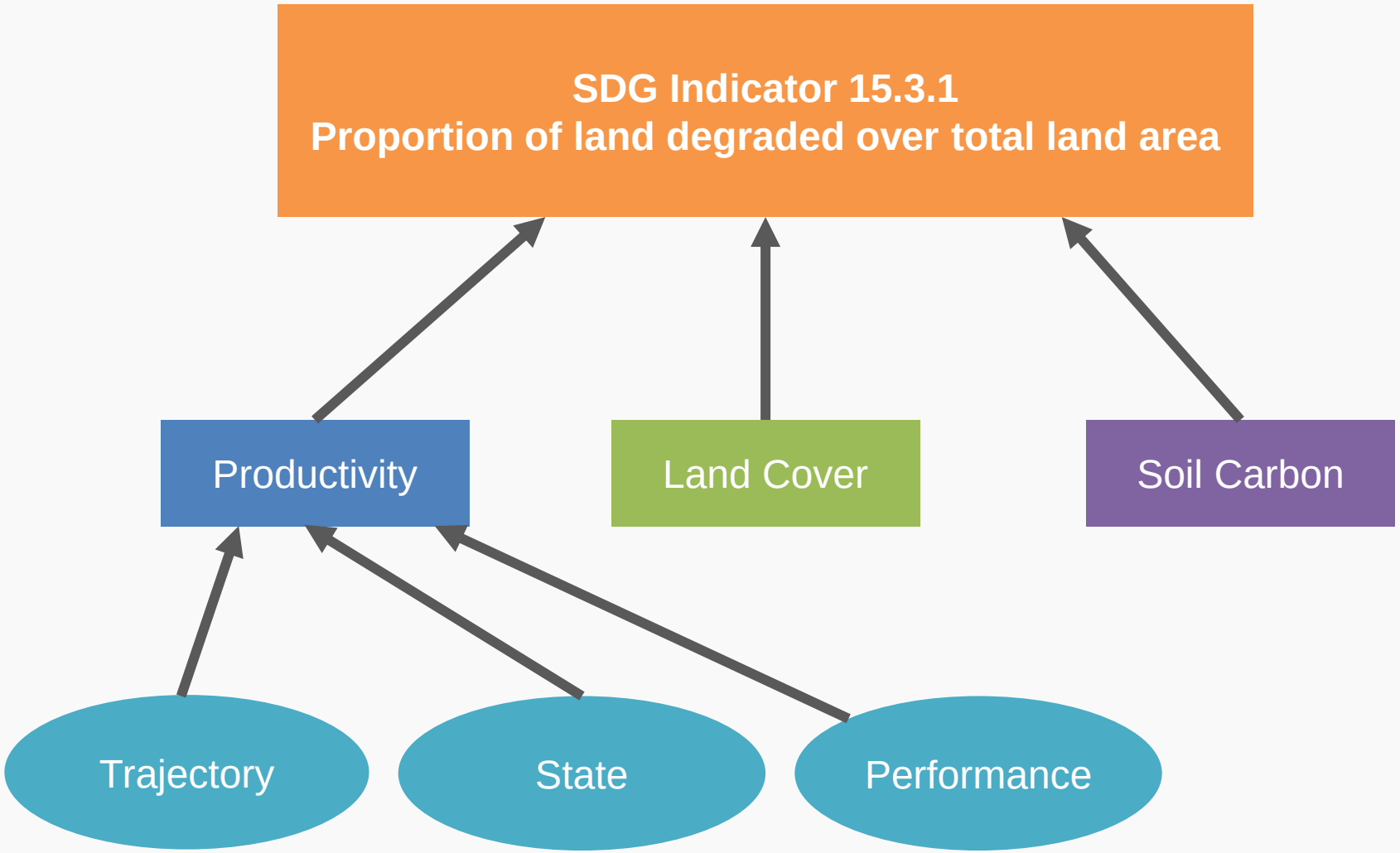
Land Cover

Soil Carbon

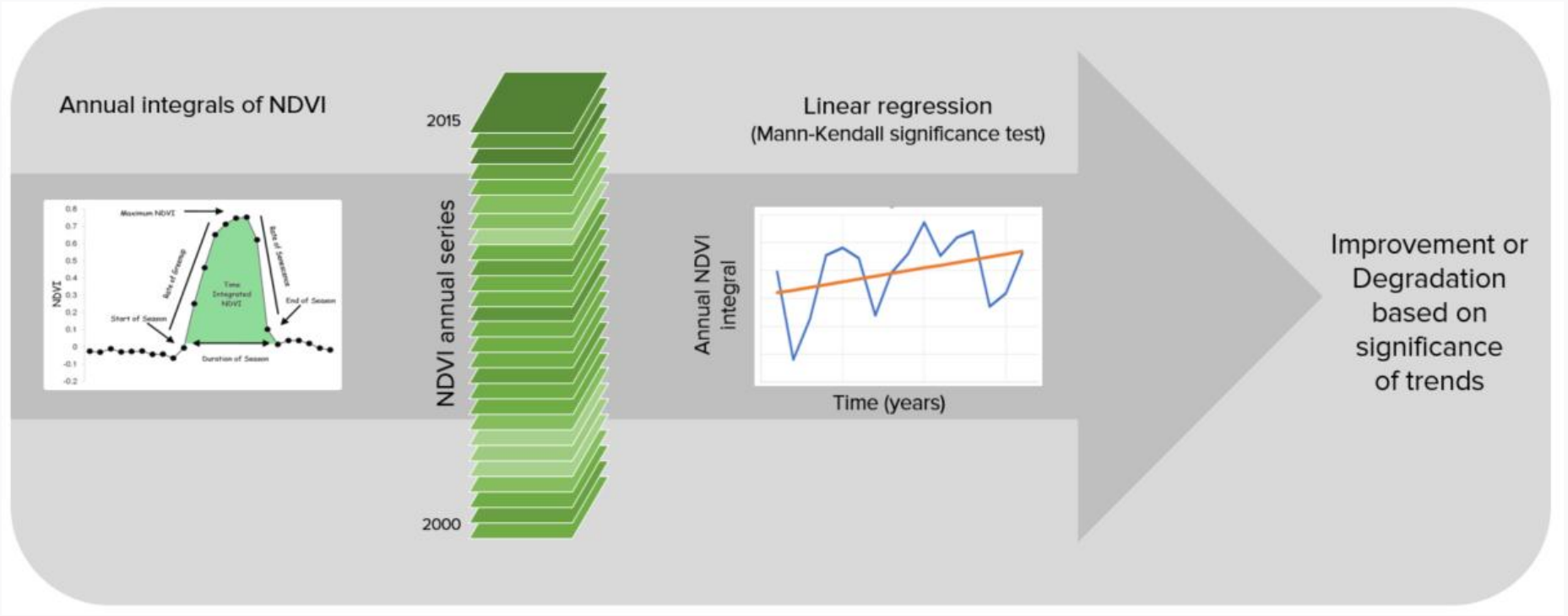
2017



https://geoinfo.dados.embrapa.br/datasets/br_gsocmap030:geonode:br_gsocmap030/metadata_detail


SDG Indicator 15.3.1
Proportion of land degraded over total land area
Productivity
Land Cover
Soil Carbon
Trajectory
State
Performance

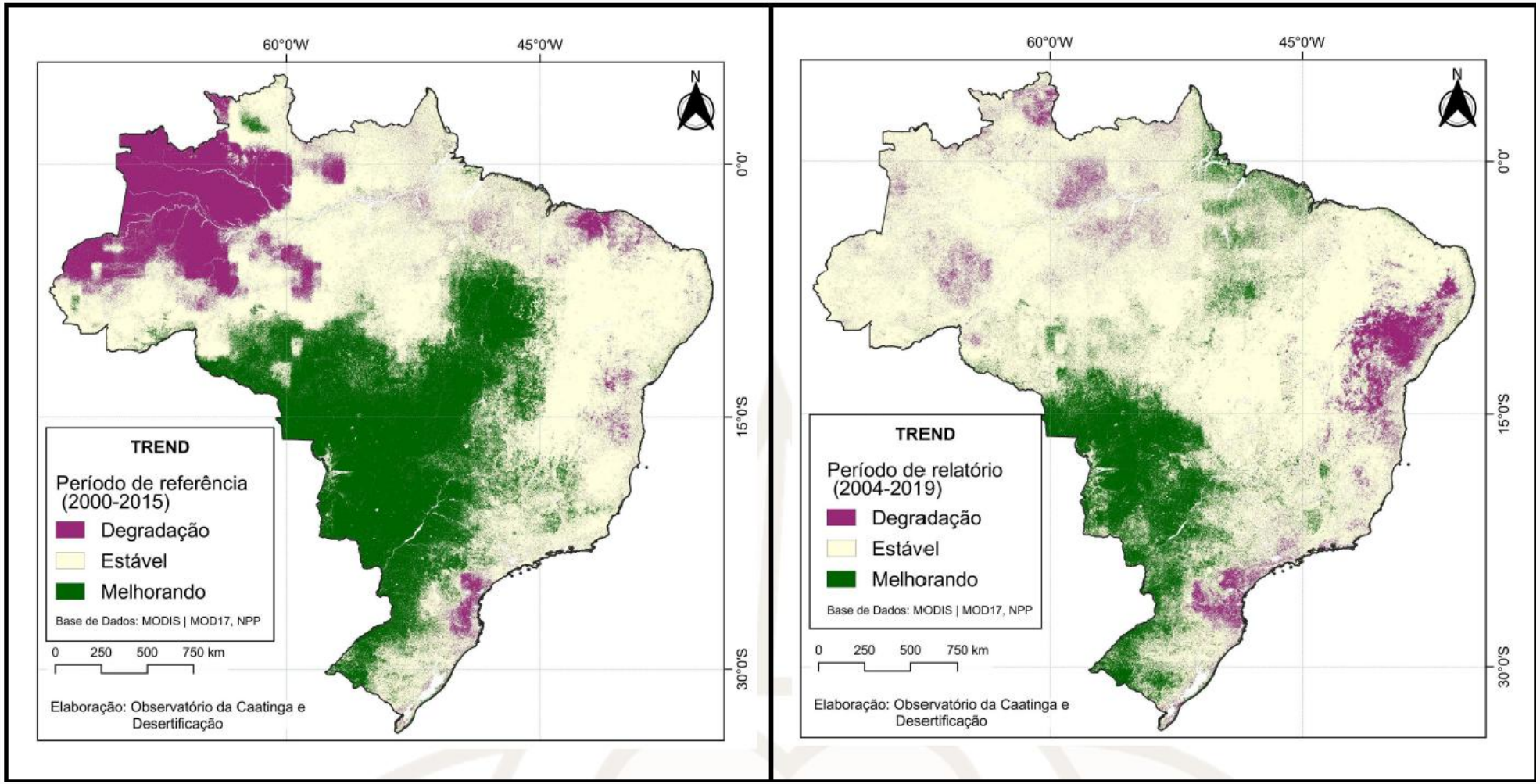
Productivity – Trajectory



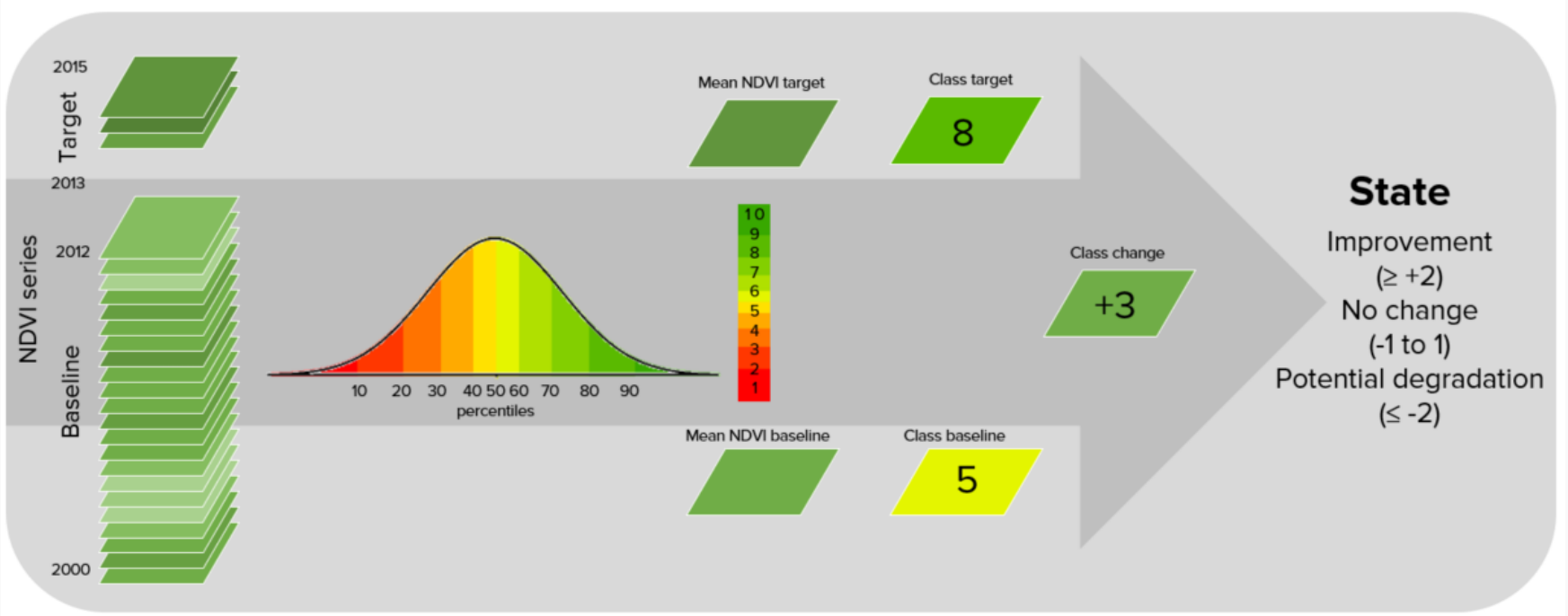
https://docs.trends.earth/en/latest/

Productivity – Trajectory

Results of the subindicator



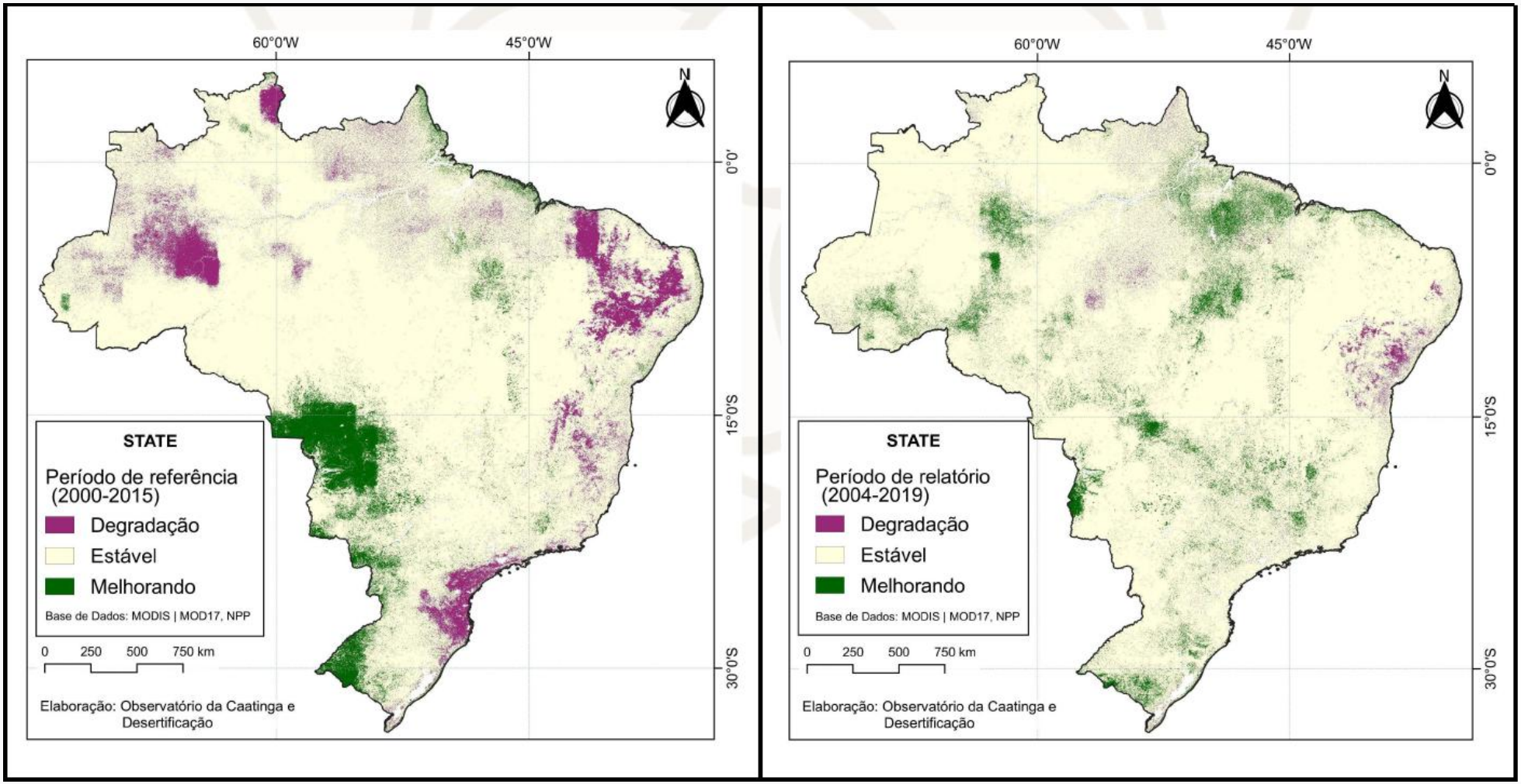
Productivity – State



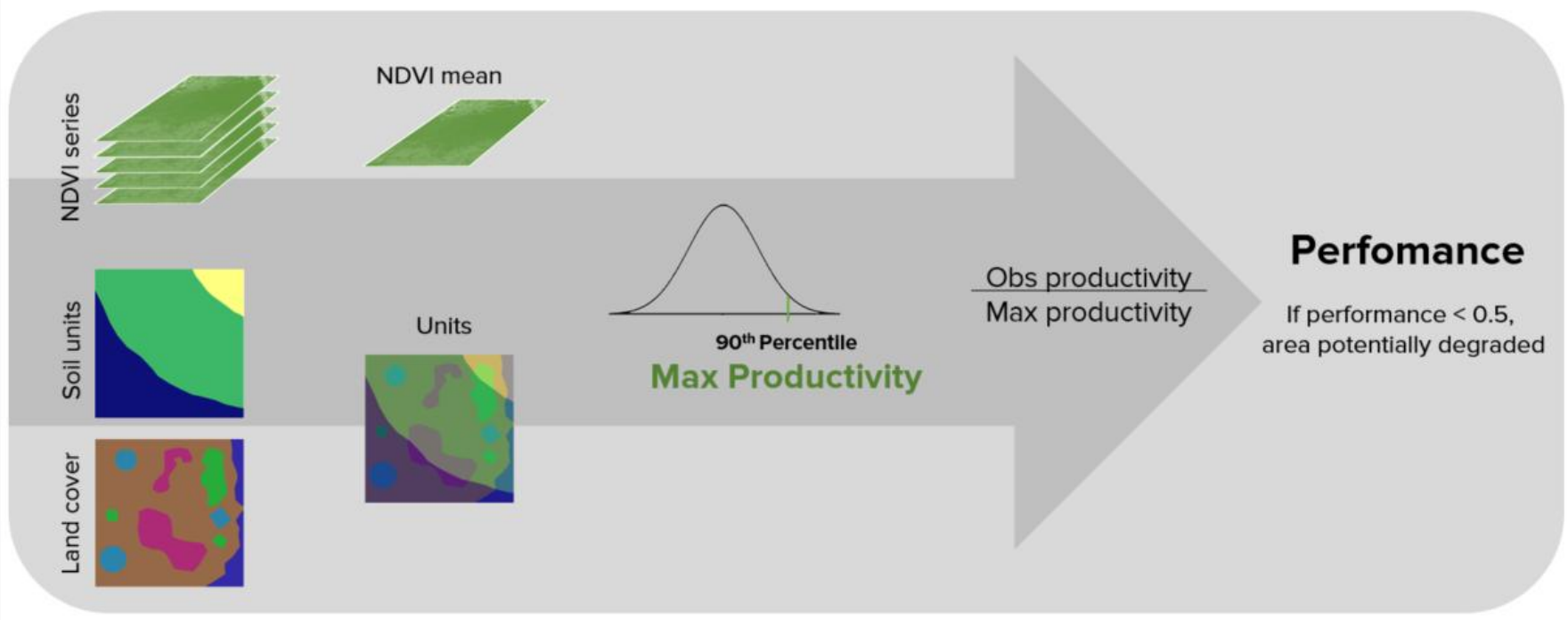
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Productivity – State

Results of the subindicator



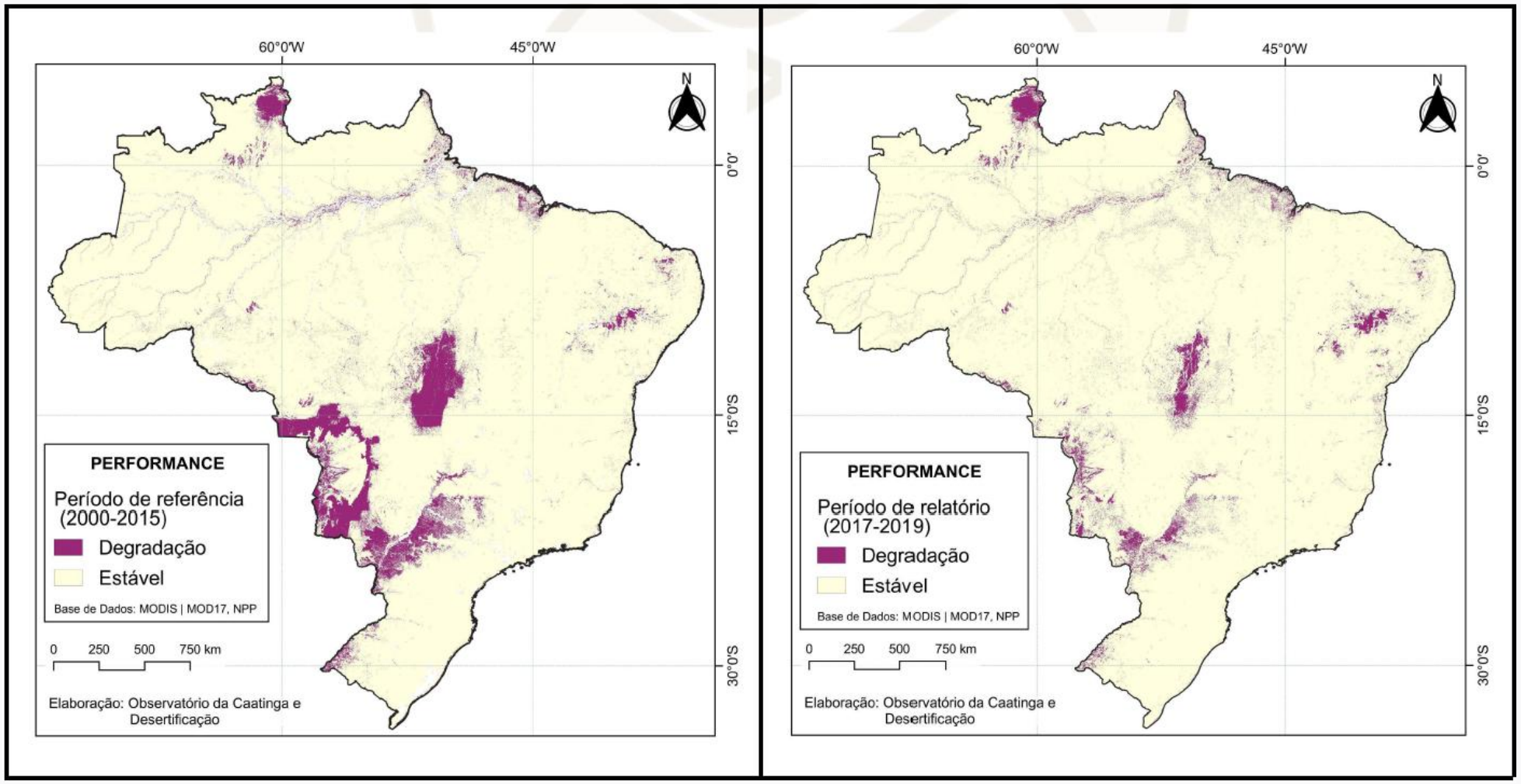
Productivity – Performance



https://docs.trends.earth/en/latest/

Productivity – Performance

Results of the subindicator



Land productivity - integration

	Mudanças observadas nos sub-indicadores de produtividade			Combinação das três métricas de produtividade
Combinação de classes	Tendência	Estado	Desempenho	Estado de degradação da produtividade do solo
1	1	1	0	1
2	1	1	-1	1
3	1	0	0	0
4	1	0	-1	0
5	1	-1	0	0
6	1	-1	-1	-1
7	0	1	0	0
8	0	1	-1	0
9	0	0	0	0
10	0	0	-1	0
11	0	-1	0	0
12	0	-1	-1	-1
13	-1	1	0	0
14	-1	1	-1	-1
15	-1	0	0	0
16	-1	0	-1	-1
17	-1	-1	0	-1
18	-1	-1	-1	-1

Figura 12. Matriz para Integração dos sub-indicadores de Tendência, Estado e Desempenho. Adaptada de https://prais4-reporting-manual.unccd.int/en/latest/SO1.html#id39

Land productivity - integration

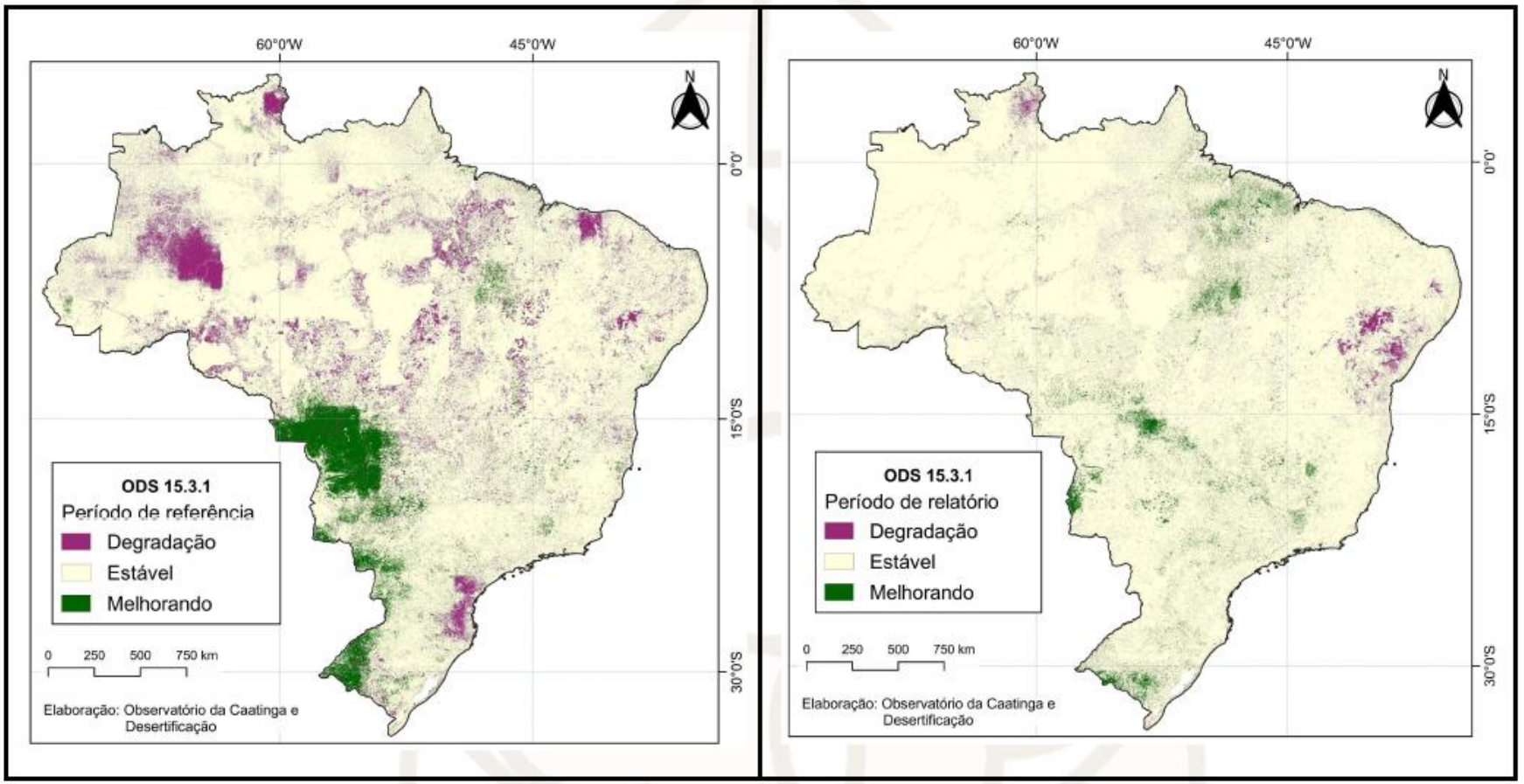


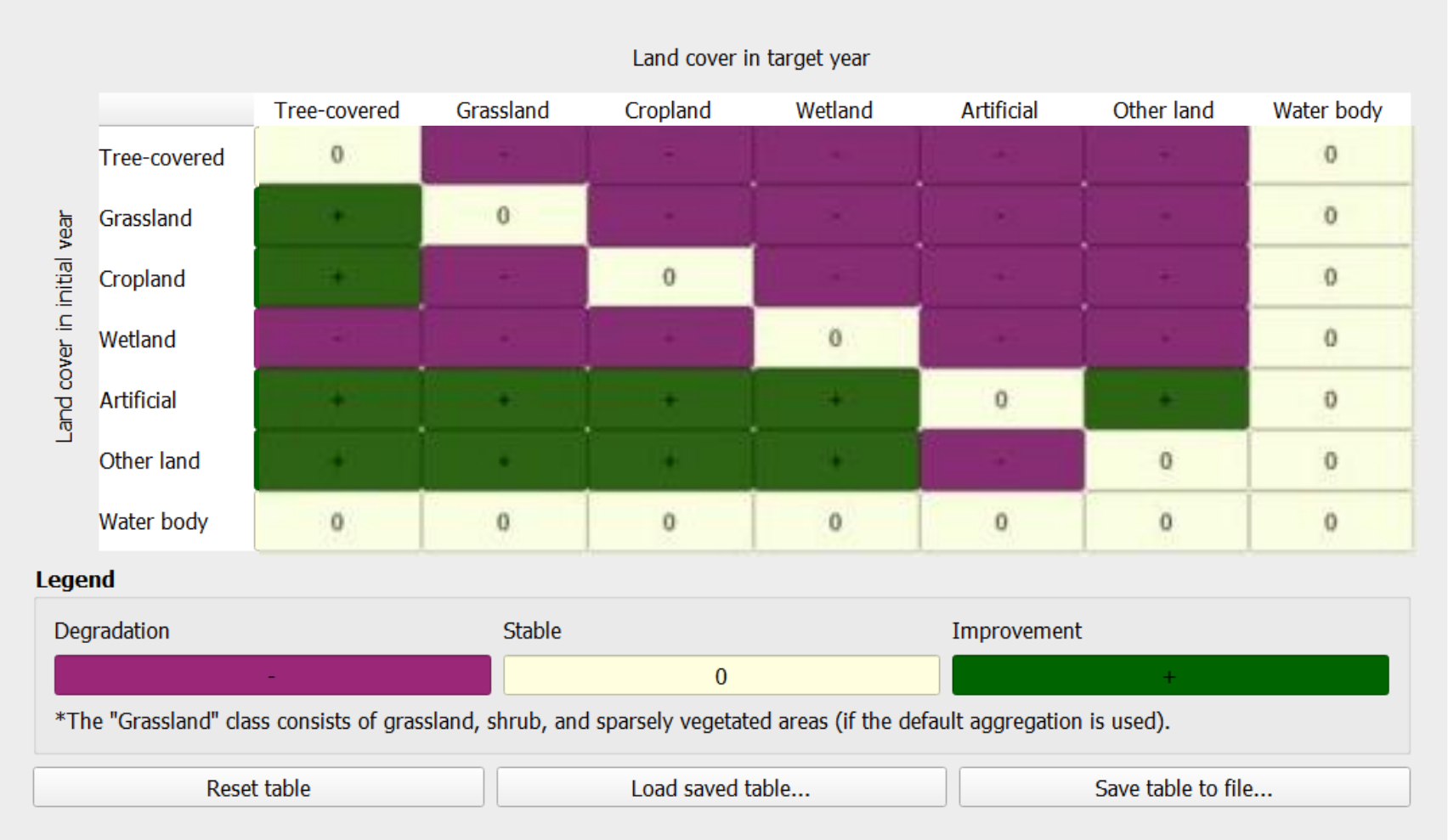
Figura 14. Mapa do indicador ODS 15.3.1. no período de referência (esquerda) e no período de relatório (direita). As cores seguem a mesma legenda da Figura 4.

Land cover

Class compatibilization



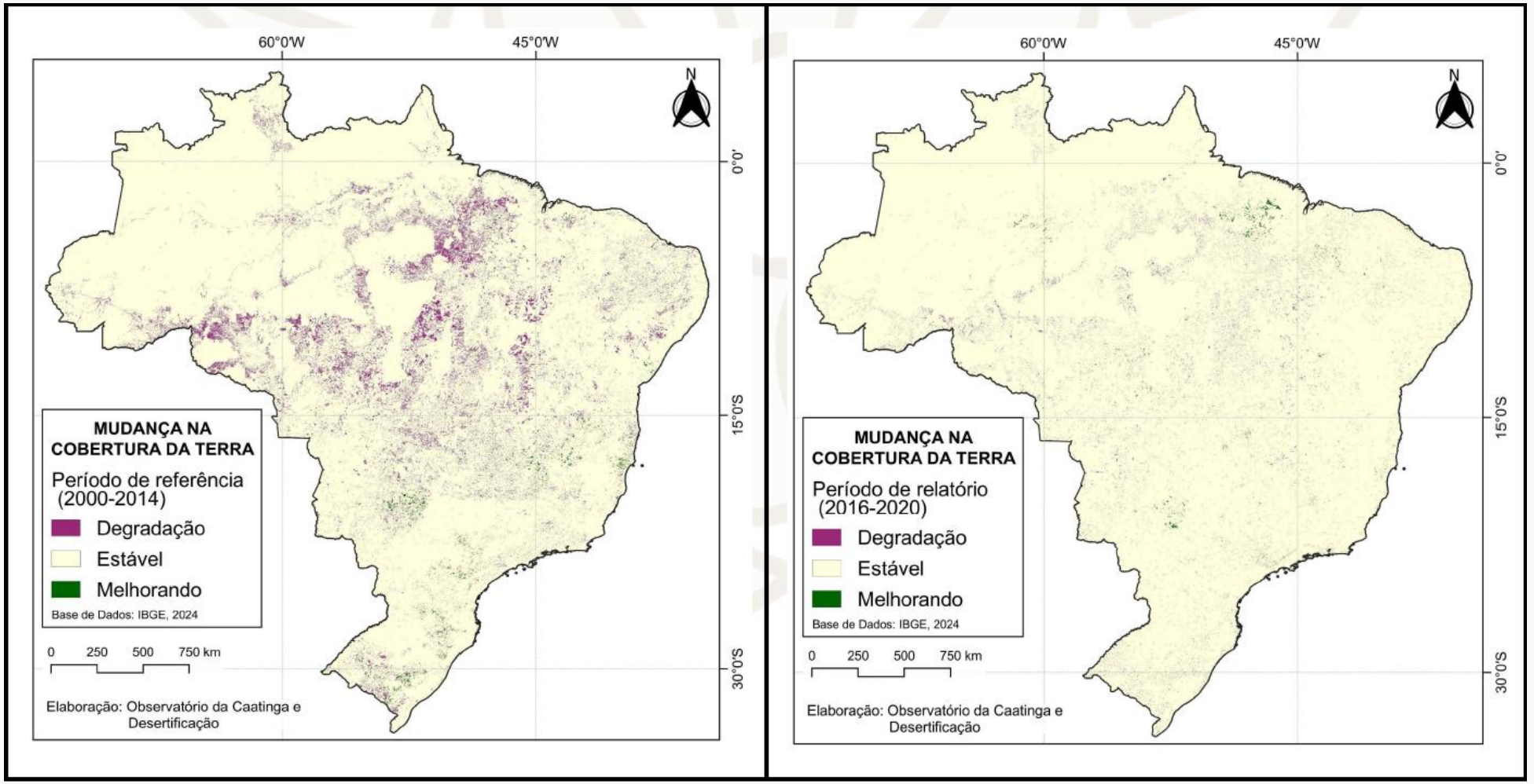
Land Cover



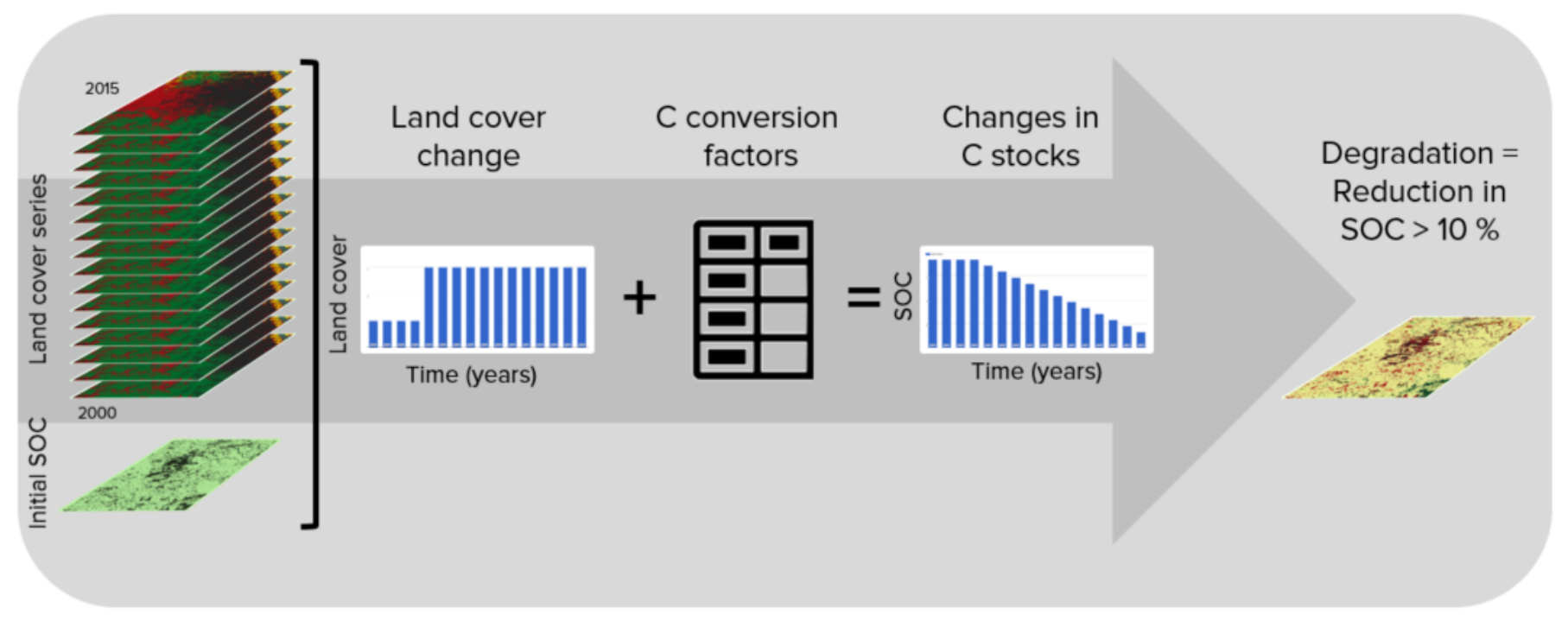
https://docs.trends.earth/en/latest/

Land cover

Results of the subindicator



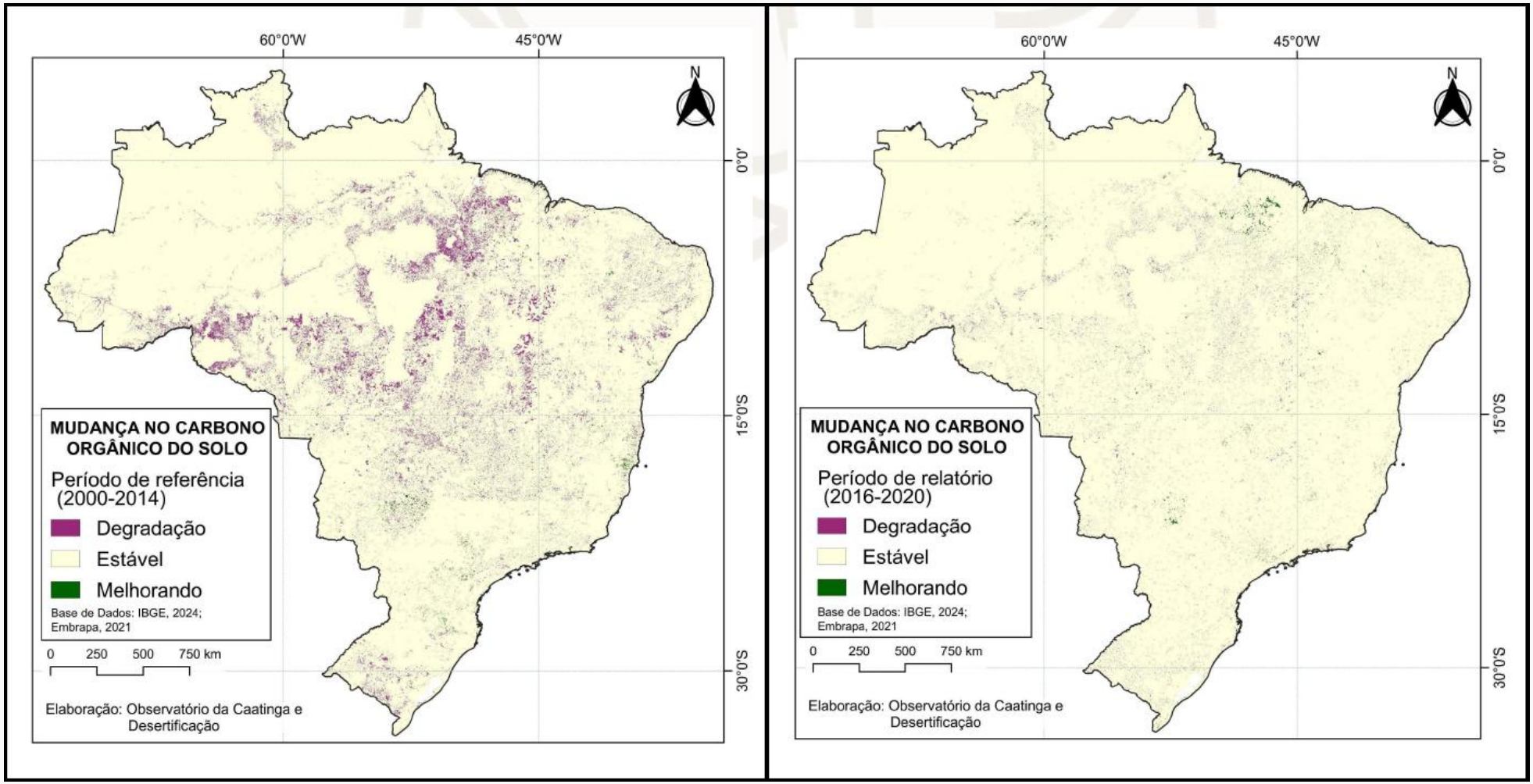
Soil Organic Carbon



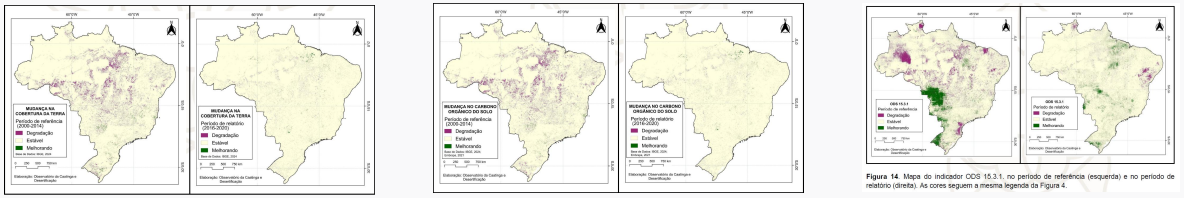
https://docs.trends.earth/en/latest/

Soil Organic Carbon

Results of the subindicator



Aggregating subindicators



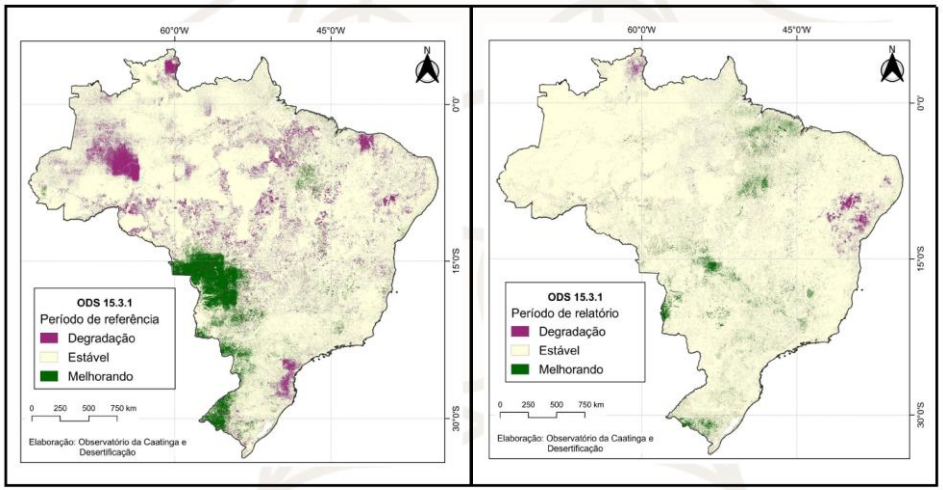


Figura 14. Mapa do indicador ODS 15.3.1. no período de referência (esquerda) e no período de relatório (direita). As cores seguem a mesma legenda da Figura 4.

Aggregating time periods

Período de referência	Período de relatório: Degradado	Período de relatório: Estável	Período de relatório: Aumentando
Degradado	Degradando	Degradando	Estável
Estável	Degradando	Estável	Melhorando
Aumentando	Degradando	Estável	Melhorando

Land degradation

(2016 – 2020)

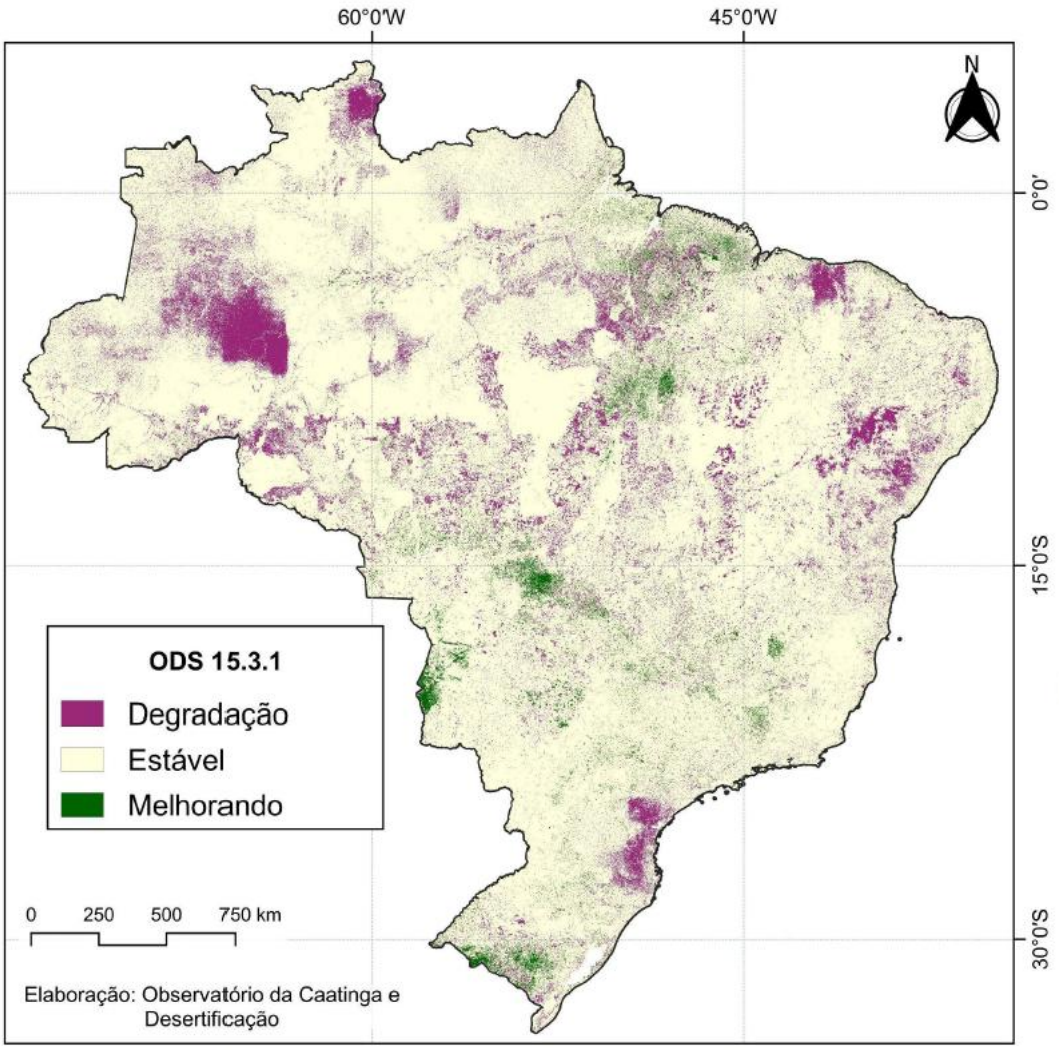


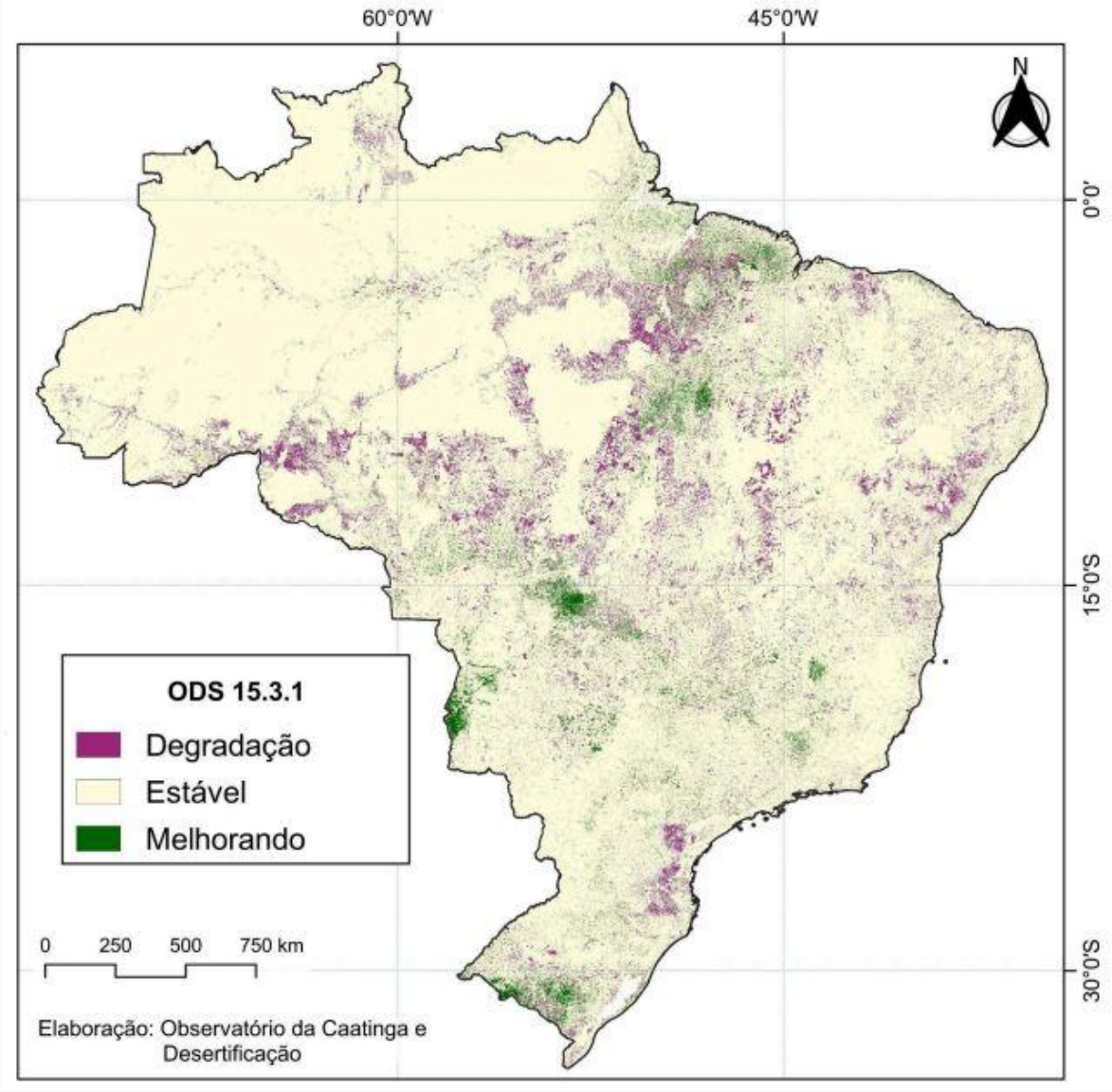
Figura 16. Mapa do *status* do ODS 15.3.1. As cores seguem a mesma legenda da Figura 4.

Natural area filter

Land degradation

(2016 – 2020)

Results



SDG Indicator 15.3.1

Final remarks

- *There is only five years left to reach the Sustainable Development Goals*
- *Although there is real progress to be seen, the current pace is not sufficient to fully achieve them*
- *Data and derived indicators should be a call for action for all society*
- *Beyond the information* per se, *the partnerships established during the process are a valuable progress*

Thank you!

Leonardo.Bergamini@ibge.gov.br

https://recor.ibge.gov.br/

https://www.ibge.gov.br/en/geosciences/environmental-information/biodiversity?lang=en-GB