

Forest Investment Program in Brazil

10 years supporting Cerrado conservation

Photo credit:
FIP Coordination
collection

Photo credit:
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collection

SUPPORTING CERRADO CONSERVATION

10 YEARS

FIP BRAZIL





Photo credit: FIP DGM
Brazil / Leo Lopes

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/ Geovano Sabino



Photo credit:
Funatura collection

The Cerrado

The Cerrado is **the second largest biome in Brazil** and South America. It covers approximately 2 million square kilometers¹, a land area equivalent to almost half of the entire European Union. Over 20 million people live in the Cerrado (twice the population of Portugal), distributed across more than a thousand municipalities.

The country that is home to the largest freshwater reserve on the planet has a great ally in the Cerrado. Considered Brazil's water tank, the Cerrado is responsible for supplying most of the country's rivers. In addition to guaranteeing the country's **water security** the biome is responsible for Brazil's **energy security**, as hydropower plants supply the greatest share of the country's energy mix. Because of its ability to stock carbon, the biome also contributes strongly to **global climate regulation**. Rich and diverse, the Cerrado is home to **indigenous peoples, quilombola and traditional communities** who are responsible for most of the biome's conserved vegetation.

¹ Brazilian Ministry of Environment and Climate Change. *Cerrado*, 2022. [Available here](#).

² Brazilian Ministry of Agriculture and Livestock Production. *TerraClass shows land cover and land use in the Cerrado biome*, 2022. [Available here](#).

The biome is considered a **biodiversity hotspot**: a geographic area with extensive and highly threatened biological diversity. Threatened by the expansion of the agricultural frontier, in the last decades the Cerrado saw its plant cover drop to less than 50% of its original territory².

In Brazil, the Forest Investment Program (FIP) aims to conserve the Cerrado. Working through eight projects, the FIP seeks to create enabling conditions to protect the **most biodiverse savannah in the world**, its plants and animals, its peoples, knowledge and culture.

Brazil's Investment Plan (BIP) for the Forest Investment Program (FIP)

Created in 2008, the **Climate Investment Funds (CIF)** is one of the world's largest multilateral investment funds, with operations in more than 70 countries. It promotes actions to combat climate change in low and middle income countries.

CIF's **Forest Investment Program** supports developing countries in their efforts to reduce deforestation and forest degradation. Its actions promote sustainable forest management, which leads to reduced emissions and increased forest carbon stocks. It's good for forests, for development, for the climate and for people.

Brazil participates in the FIP through the **Brazil Investment Plan (BIP)** a federal government initiative focused on conservation and sustainable development in the

Cerrado biome. The FIP/BIP is recognized as the biggest and most important ongoing socioenvironmental cooperation program in the Brazilian Cerrado.

FIP projects in Brazil are designed to operate at the source of problems, generating transformational changes that allow the country to develop based on sustainable foundations. It consists of eight broad, complex and complementary projects that contribute to the country's environment, climate and sustainability agenda.

In 2022 the FIP celebrated its 10th anniversary in Brazil. Many achievements and much progress marked the period, always looking to a Cerrado where the law is respected and sustainability prevails.



Photo credit:
Inocas
collection

Photo credit: FIP DGM
Brazil / Leo Lopes



FIP PROJECTS IN BRAZIL



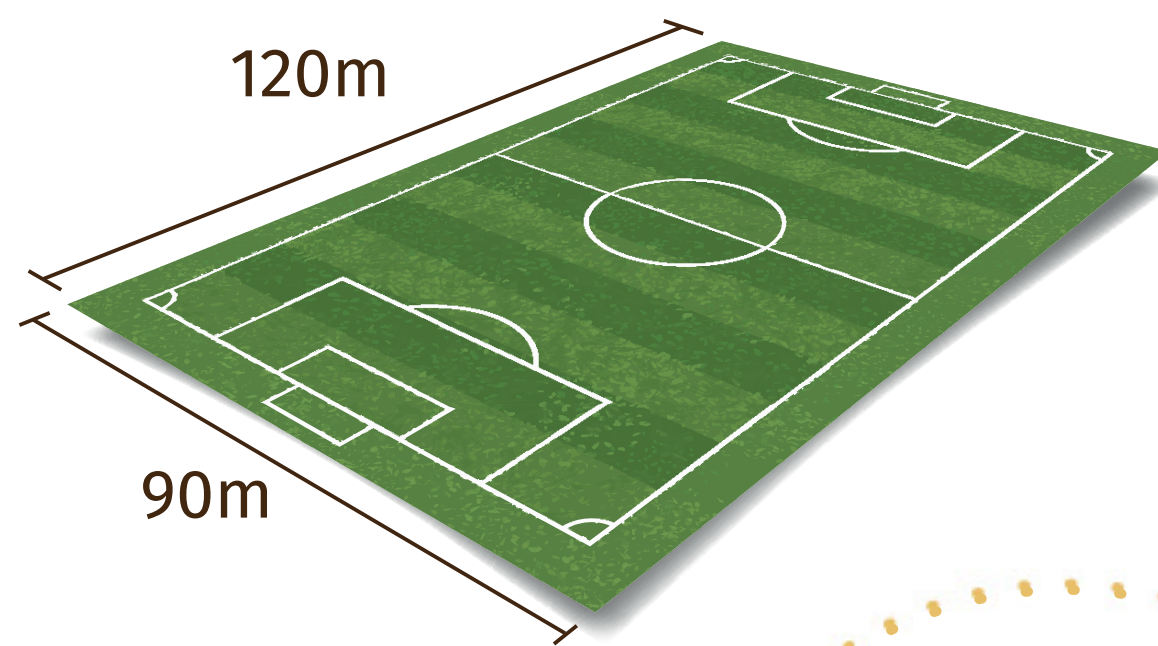
FIP ABC Cerrado

[Visit the website](#)

Sustainable production in areas previously converted to agriculture, based on the Low Carbon Agriculture Plan (ABC Plan)

In Brazil most greenhouse gas (GHG) emissions result from land use change and agriculture. As such, one of the ways for the country to mitigate climate change is to make Brazilian soils more productive, avoiding the clearance of new lands and reducing deforestation. That was the challenge taken on by **FIP ABC Cerrado** project. Building on sustainable technologies set forth in the ABC Plan, the Project offered free technical assistance and training to rural producers in the biome. Its biggest legacy consisted of proving that increasing productivity while conserving the environment in the Cerrado is possible.

1 hectare = 1 football field



Technical coordination: Ministry of Agriculture and Livestock Production (MAPA) and Brazilian Agricultural Research Corporation (Embrapa)

Executing entity: National Rural Learning Service (SENAR)

Investment executed: USD 10.31 million, donated by the Climate Investment Funds (CIF) through the World Bank

Beneficiaries: Male and female rural producers

Area of operation: 7 Cerrado states (Bahia, Goiás, Mato Grosso do Sul, Maranhão, Minas Gerais, Piauí, Tocantins) and the Federal District

Execution: 2014 to 2019

Objective: Foster the adoption of low carbon agriculture technologies by rural producers of the Cerrado biome



Photo credit: Senar collection

MAIN RESULTS

More than 11.3 thousand beneficiaries (20% women).

8.5 thousand people trained (22% women).

3 thousand producers applying low carbon technologies on their properties.

164 municipalities covered.

More than 93.8 thousand hectares with direct adoption of sustainable production systems, practices.

The lessons learned and the good results of the **FIP ABC Cerrado** were the basis for the **FIP Rural Landscapes** project proposal, which advances in supporting conservation and sustainable production in the Cerrado.

Livestock units per hectare increased from 0.7 to 2.5.

Bovine weight gain increased from 400 to 900 grams/day.

Rearing to market time reduced from 36 to 19 months.

BRL 7.00 invested by producers for every BRL 1.00 financed by the project, falling to BRL 5.00 in maintenance and management activities.





FIP National Forest Inventory (IFN)

[Visit the website](#)

Forest information for conservation-oriented management and appreciation of the Cerrado's forest resources by the public and private sectors

Due to the Cerrado's large territorial dimension and biological diversity information about its forests was scarce, sporadic and dispersed. The **FIP IFN** project produced quality and large scale information about Cerrado forests and its various uses by the communities. By using data collected directly in the field broadly and systematically the project produced and systematized biophysical and socioenvironmental information about the Cerrado. The project introduced a dedicated section on the Cerrado in the National Forest Information System (SNIF) that included IFN newsletters. In addition to receiving a set of specific methodologies to guide data analysis, the country also acquired information to underpin public and private sector policies and projects for sustainable biodiversity use and valuation of forest resources in the Cerrado.

Technical coordination:
Brazilian Forest Service (SFB)

Executing entity: SFB

Investment executed:
USD 6.75 million donated by the Climate Investment Funds (CIF) through the Inter-American Development Bank (IDB)

Beneficiaries: Forest information users of the public and private sector

Area de operation: 9 Cerrado states (Bahia, Goiás, Mato Grosso, Mato Grosso do Sul, Maranhão, Minas Gerais, Piauí, São Paulo and Tocantins)

Execution: 2016 to 2020

Objective: Conduct a National Forest Inventory in the 9 states that form the Cerrado biome and consolidate the National Forest Information System (SNIF)



Photo credit:
SFB collection /
Henrique Browne



Photo credit: SFB collection

MAIN RESULTS

174 million hectares of inventoried land corresponding to **83% of the Cerrado** (with information on plant cover, timber and non-timber forest resources, use of biodiversity species, carbon stocks and deforestation).

9 new plant species and new records of plant occurrences in the Cerrado.

32 thousand trees identified (2 thousand species, 500 genera, 120 botanical families).

The **FIP IFN's** continuity was guaranteed by CIF financing totaling USD 9.7 million. **FIP IFN - Phase 2** will conclude the inventories of the Cerrado, Atlantic Rainforest, Caatinga and Pantanal biomes, in addition to finishing the Pampa publications. With this the project will conclude its deliveries for the first cycle of the inventory for all biomes outside the Amazon.

53 thousand plant samples.

15 thousand soil samples (making it possible to estimate soil carbon density and volume).

More than 11 thousand socioenvironmental interviews.

More than 560 people trained.



Photo credit: SFB collection / Túllio Maxie



Photo credit: SFB collection / Andres Kruger



FIP Cerrado Monitoring

[Visit the website](#)

Development of systems to prevent forest fires and monitor vegetation cover in the Brazilian Cerrado

The **FIP Cerrado Monitoring** project arose in response to the need to monitor deforestation, forest fires and estimate GHG emissions in the biome with a view to encouraging assertive control measures.

Using satellite technology, the project generates important results for environmental governance in the Cerrado. Its systems—especially Prodes (deforestation mapping) and Deter (a near-real-time deforestation alerts)—are a national reference for understanding the region's occupation dynamics and for environmental enforcement actions in the Cerrado.

Technical coordination:

Ministry of Science, Technology and Innovation (MCTI)

Executing entities: National Institute for Space Research (INPE), the Federal University of Minas Gerais (UFMG) and Federal University of Goiás (UFG)

Administrative Entity: Research Development Foundation (FUNDEP)

Investment executed:

USD 9.25 million, donated by the Climate Investment Funds (CIF) through the World Bank

Beneficiaries: Government institutions and actors responsible for forest management in the Cerrado, academic and educational institutions, civil society organizations, producer associations and rural landowners

Area de operation: The full territory of the Cerrado

Execution: 2016 to 2021

Objective: Increase Brazil's institutional capacity to monitor deforestation, provide information on fire risks, and estimate GHG emissions in the Cerrado

Photo credit: FIP Cerrado Monitoring / Sérgio Nogueira

MAIN RESULTS

Annual deforestation mapping across the entire Cerrado from 2000 to 2018, using **Prodes**.

Construction of a two-year time series on the anthropic removal of native vegetation for the period of 2000 to 2012 and an annual series for the years 2013 to 2018.

Land use monitoring using the Terrabrasilis platform developed to visualize and analyze spatial data through interactive panels.

[Visit the website](#)

Real time deforestation detection using **Deter**, which functions as an alert system for enforcement and control activities.

[Visit the website](#)

Cerrado Deforestation Polygon Assessment Tool (Cerrado DPAT), platform, which gathers information about deforestation features in vulnerable natural areas of the Cerrado (geophysical data, photographs, land use activities and infrastructure).

[Visit the website](#)

Adaptation of the INPE GHG emissions estimation system for the Cerrado - CCST/INPE.

[Visit the website](#)

Online Fire Spread Model, which predicts fire behavior in near-real-time, based on an ignition point and a set of environmental variables, such as wind, slope, humidity and vegetation dryness.

[Visit the website](#)

Fire Risk Information System, from the **Queimadas Program**, which includes operational monitoring of controlled fire and wildfire hotspots, in addition to forecasting fire risks in the Cerrado vegetation.

[Visit the website](#)



Photo credit: FIP Cerrado Monitoring / João Costa

The project gave back **BRL 5.89** to society for every **BRL 1.00** invested, showing that monitoring activities represent an **investment for the country**³.

With the conclusion of the project, the Cerrado monitoring will continue supported by the **FIP Rural Landscapes** and other projects.

³ Evidence based evaluation report for the FIP Cerrado Monitoring Project: “Development of systems to prevent forest fires and monitor vegetation cover in the Brazilian Cerrado”, 2021.



FIP DGM Brazil

[Visit the website](#)

[▶ Video](#)

Dedicated Grant Mechanism for Indigenous Peoples and Local Communities

Indigenous peoples, Quilombola e traditional communities play a fundamental role in conserving the Cerrado. They are also socially vulnerable groups whose livelihoods and food security depend on natural resources and agricultural activities. In this scenario, **FIP DGM Brazil** supports small projects created for and geared to these communities who contribute to land forest and environmental management in their territories. The project also acts to strengthen the organizations that represent them.

The **FIP DGM Brazil** project is part of the **DGM Global Program**, a global mechanism of the FIP itself that supports initiatives of indigenous peoples and local communities.

Technical coordination: FIP DGM Brazil National Steering Committee

Executing entity: Center of Alternative Agriculture from the North of Minas (CAA/NM)

Investment executed: USD 6.5 million, donated by the Climate Investment Funds (CIF) through the World Bank

Beneficiaries: Indigenous peoples, Quilombola and traditional communities (PIQCTs) of the Cerrado biome and their representative organizations

Area de operation: PIQCT communities located in 9 Cerrado states (Bahia, Goiás, Mato Grosso, Mato Grosso do Sul, Maranhão, Minas Gerais, Piauí, São Paulo, Tocantins) and Federal District

Execution: 2015 to 2022

Objectives: To strengthen the participation of Cerrado PIQCTs in the FIP and in discussions about REDD+, in addition to contributing to improving quality of life in their communities and to sustainable management in their territories



Photo credit: FIP DGM Brazil/ Leo Lopes



MAIN RESULTS

64 subprojects executed:

- 36 indigenous peoples from 28 ethnicities.
- 12 Quilombola communities.
- 16 traditional communities.

13 designed for women and led by them.

35 thousand people benefited (51% women, 28% young people and 10% older adults).

450 hectares under sustainable landscape management practices.

PIQCT representatives supported in conservation and other processes related to REDD+ at the regional, national and global levels.

FIP DGM Brazil's good results led CIF to extend new additional finance totaling **USD 930 thousand**. In its second phase the project will support the communities in their sustainable and resilient post-pandemic reconstruction, aiming to reduce the impacts of climate change.



Photo credit: CAANM collection / Valdir Dias
FIP DGM Brazil / Leo Lopes



FIP Rural Environmental Cadaster (CAR)

Environmental Regularization of Rural Properties in the Cerrado

In Brazil, the Rural Environmental Cadaster (CAR) is a tool to generate integrated environmental information about rural properties in the country, forming a database that is used for environmental and economic monitoring and planning, and to curb deforestation in the national territory.

The **FIP Rural Environmental Cadaster** project increased Brazil's capacity to receive, analyze and approve CAR registrations. The project invested in consolidating a national database (SiCAR) and trained agents from the 11 federative units in the Cerrado to feed this database in an integrated manner. It also worked to register small landowners, indigenous peoples and communities directly, ensuring their access to legal structures to protect their forest property rights and favoring the access of vulnerable groups to rural credit funds. The Project additionally delivered thematic maps of hydrography, native vegetation and terrain that make it possible to analyze registrations automatically, thus accelerating the validation of registrations and removing the biggest bottleneck to regularization so far.

Technical coordination:

Brazilian Forest Service (SFB)

Executing entities: SFB and Inter-American Institute for Cooperation on Agriculture (IICA)

Investment executed: USD 6.20 million, loan from the Climate Investment Funds (CIF) through the World Bank

Beneficiaries: SFB, the 11 Federated Units (FU) of the Cerrado, rural landowners and families of traditional peoples and communities in selected municipalities of the Cerrado biome

Area de operation: 10 Cerrado states (Bahia, Goiás, Mato Grosso, Mato Grosso do Sul, Maranhão, Minas Gerais, Piauí, São Paulo and Tocantins) and the Federal District

Duration of execution: 2017 to 2022

Objective: Contribute to increasing environmental regularity in rural properties of the Cerrado, expanding compliance with Brazil's federal law

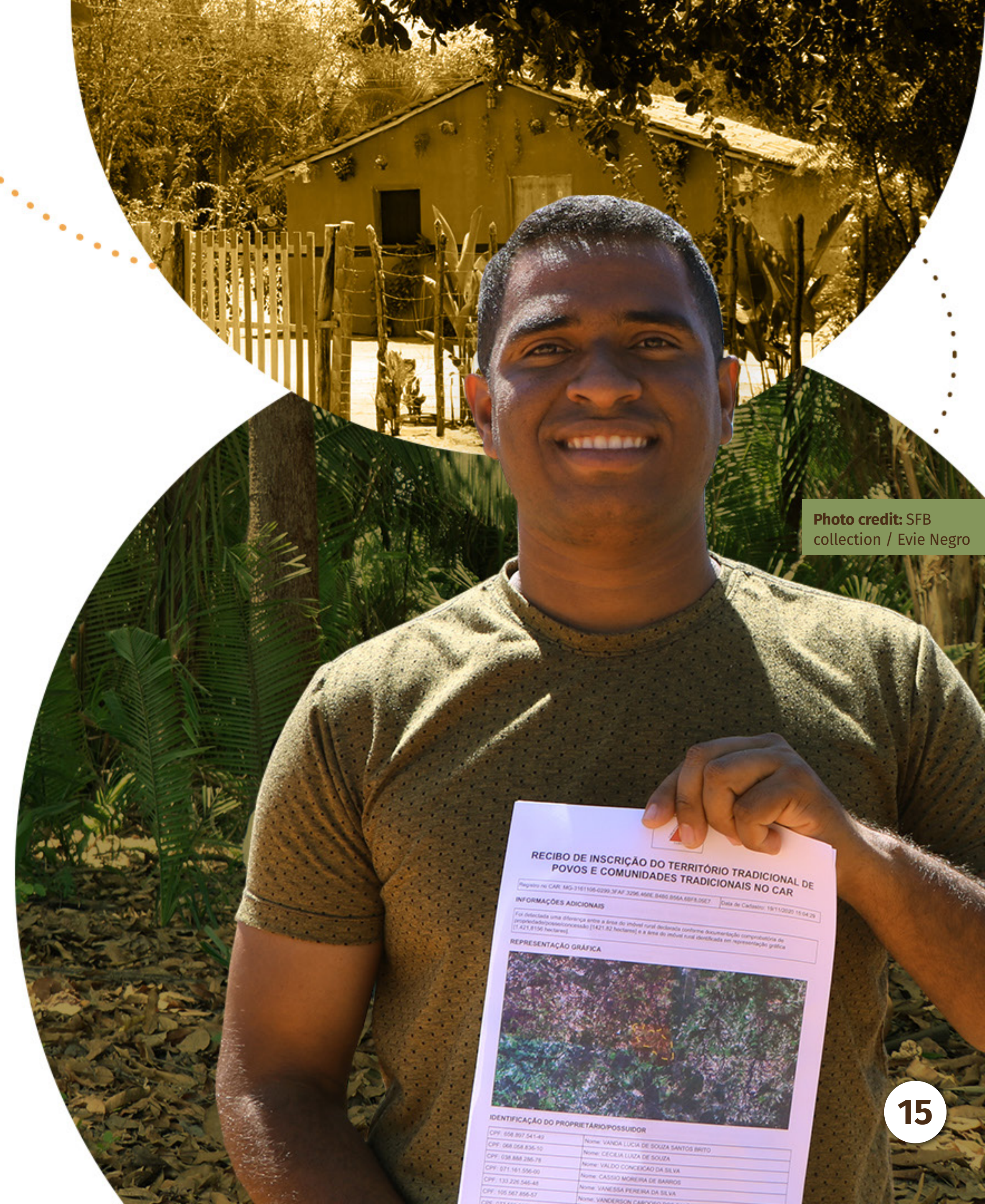


Photo credit: SFB collection / Evie Negro



Photo credit: FIP Coordination collection
SFB collection / Evie Negro



MAIN RESULTS⁴

More than 3.6 million small rural properties registered.

35 thousand families of small farmers registered.

More than 312 thousand medium and large properties registered.

25 thousand families of traditional peoples and communities registered.

364 million hectares of land registered.

More than 450 professionals from state agencies (46% women) trained.

3,647,973 km² of land area with hydrography, native vegetation and terrain mapped.

⁴ When the 11 units of the federation that form the Cerrado are included, the FIP CAR's numbers extrapolate the biome's as area of operation because it covers municipalities that have lands in other biomes.



Photo credit:
Inocas collection

Technical coordination:

Inter-American Development Bank (IDB)

Executing entity:

Inocas - Innovative Oil and Carbon Solutions

Investment executed:

USD 3 million investment from the Climate Investment Funds (CIF) through the Inter-American Development Bank (IDB)

Beneficiaries: Male and female rural smallholders

Area de operation: Minas Gerais

Time frame: 2018 to 2022

Objective: Promote the macauba value chain, with nuts grown under an agrosilvopastoral system and processed

FIP Macauba

[Visit the website](#)

Production of sustainable macauba plant oil by introducing an innovative agrosilvopastoral system in partnership with family farmers of the Cerrado

The **FIP Macauba** project arose from the need to develop an alternative to palm oil, whose high demand was leading to vast stretches of deforestation. Unlike palm monocropping, macauba—a native plant of the Cerrado—can be intercropped with crops or pastures allowing oil to be produced sustainably. Macauba nuts are moreover 100% used, generating inputs to produce cosmetics, chemical products and fuel. The FIP Macauba project developed research for seedling production, growing and management techniques under agrosilvopastoral systems and recovery of degraded pastures, in addition to investing in industrial machinery to process macauba nuts. As a pilot, the project’s sound performance contributed to consolidating a model that diversifies and upscales production, regenerates degraded grasslands and increases the income of rural producers without causing changes in land use and without damaging the environment.



Photo credit: Inocas collection



MAIN RESULTS *(until April 2023)*

2.3 thousand hectares of degraded pastures in the process of being regenerated.

More than 600 thousand macauba saplings planted in agrosilvopastoral systems.

110 vegetation corridors being formed (connecting APP and RL areas with macauba plantations).

FIP Macauba operates under a differentiated institutional arrangement within the private sector. Its actions have continued without interruptions and are expanding to new areas.

350 rural producers benefiting from the planting and extractive harvesting of macauba.

43 thousand tons of CO₂ e sequestered

110 prison inmates hired, totaling more than 1200 days of sentence redeemed.

2 expansion projects to plant 9,000 hectares of macauba in Pará and São Paulo.



Photo credit:
Inocas collection



FIP Rural Landscapes

Integrated Landscape Management in the Cerrado Biome

The **FIP Rural Landscapes** project resulted from the integration of three other FIP projects: FIP ABC Cerrado + FIP CAR + FIP Monitoring Cerrado. It works by applying restoration techniques to degraded pasture and reconstituting environmental liabilities in Legal Reserves (RL) and Permanent Preservation Areas (APP), in addition to providing satellite landscape monitoring. Its success builds on integrated landscape management, applying conservation practices to the Cerrado's water to soil and increasing resilience and productivity.



Technical coordination: Brazilian Forest Service (SFB), Brazilian Ministry of Environment and Climate Change (MMA) and Secretariat of Innovation, Sustainable Development, Irrigation and Cooperativism (SDI) of the Ministry of Agriculture and Livestock Production (MAPA)

Partners: National Institute for Space Research (INPE/MCTIC) and Brazilian Agricultural Research Corporation (Embrapa)

Executing entities: German Cooperation Agency (GIZ) and National Rural Learning Service (SENAR)

Investment: USD 21 million, donated by the Climate Investment Funds (CIF) through the World Bank

Beneficiaries: Male and female rural livestock producers

Area de operation: River basins in 7 Cerrado states (Bahia, Goiás, Maranhão, Minas Gerais, Mato Grosso do Sul, Mato Grosso and Tocantins)

Time frame: 2018 to 2023

Objective: Strengthen the implementation of conservation practices, environmental recovery/reconstitution and low carbon agricultural practices in selected basins of the Cerrado biome

Photo credit:
FIP Rural Landscapes collection



MAIN RESULTS *(up to April 2023)*

6.4 thousand rural producers served with technical and managerial assistance.

More than 560 thousand hectares under land use planning for landscape management.

75.3 thousand hectares under low-carbon agricultural practices.

Publication of *Prodes Cerrado 2022 maps* and *Deter Cerrado 2022*.

18 thousand hectares under conservation and restoration practices.

13.6 thousand rural producers received agricultural assets or services (30% women).

More than 340 people employed in agricultural services and/or restoration practices as a result of the project.

Update of the *TerraClass Portal* and completion of the 2020 **TerraClass Cerrado maps**.

Photos credit:
FIP Rural Landscapes
collection





FIP Coordination

Coordination of the Brazil Investment Plan for the Forest Investment Program (FIP/BIP)

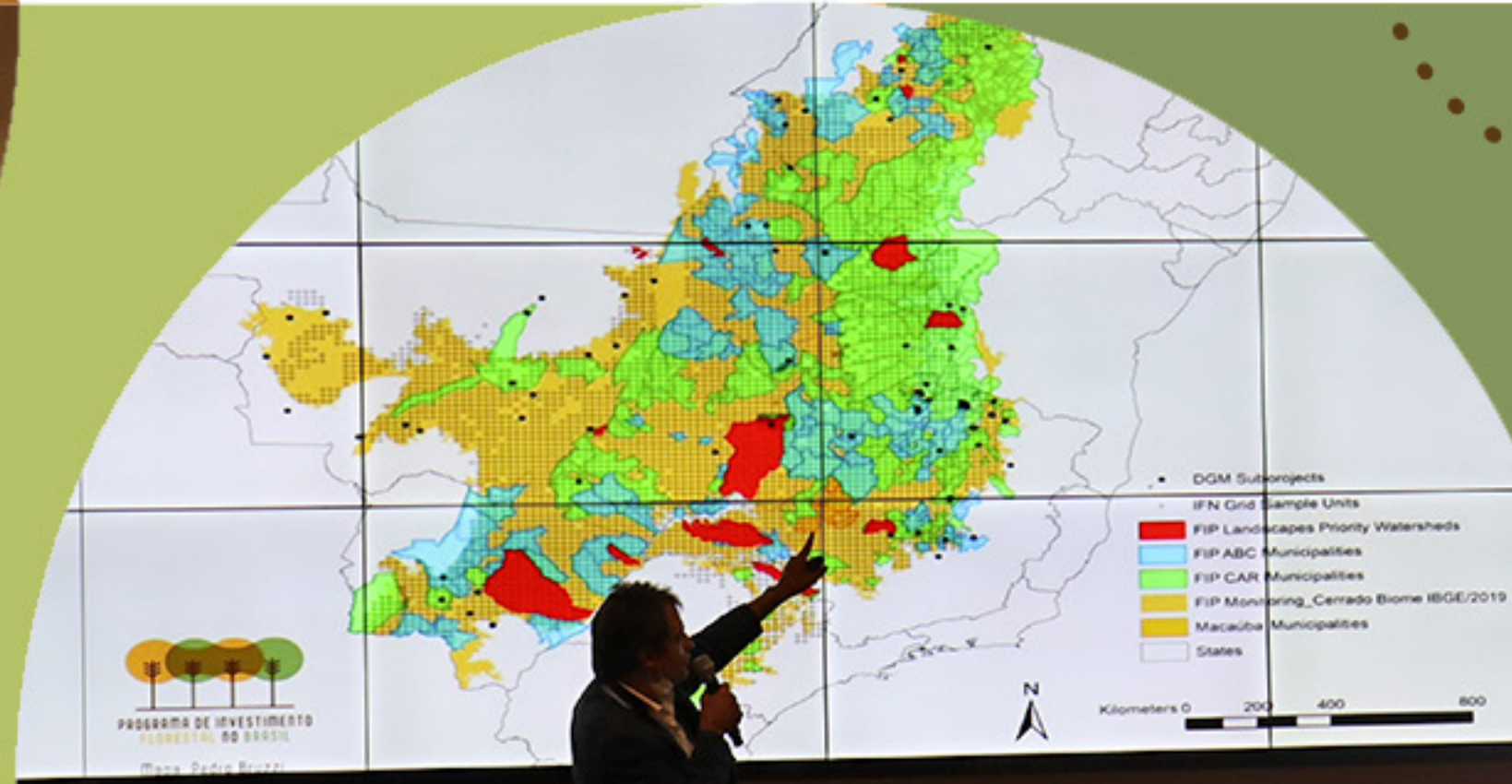
The **FIP Coordination** project plays a crucial role in orchestrating FIP implementation in Brazil. Through workshops, seminars, evaluation reports and communication activities, the FIP Coordination project strengthens the government institutions' ability to manage projects while at the same time encouraging synergies between them.

FIP Coordination is strategic to make sure that actions in other FIP projects continue and to incorporate them into public policies coordinated among different government entities. The FIP Coordination project also keeps the CIF informed about how project actions are evolving in the country through annual monitoring and evaluation reports.

Photo credit:
FIP Coordination collection
/ Fernanda Oliveira



Photo credit: FIP Coordination collection



MAIN RESULTS

Development and maintenance of the BIP/FIP website.

[Visit the website](#)

Mapping the synergies between FIP projects in Brazil.

Institutional videos produced for the eight FIP projects in Brazil and for the BIP.

Performance Evaluation of the eight FIP projects in Brazil.

Results Evaluation of the eight FIP projects in Brazil.

Brazil Investment Plan (BIP) Results Evaluation.

BIP Impact Assessment.

Annual BIP monitoring and evaluation reports for the CIF.

Coordination meetings with FIP project managers in Brazil.

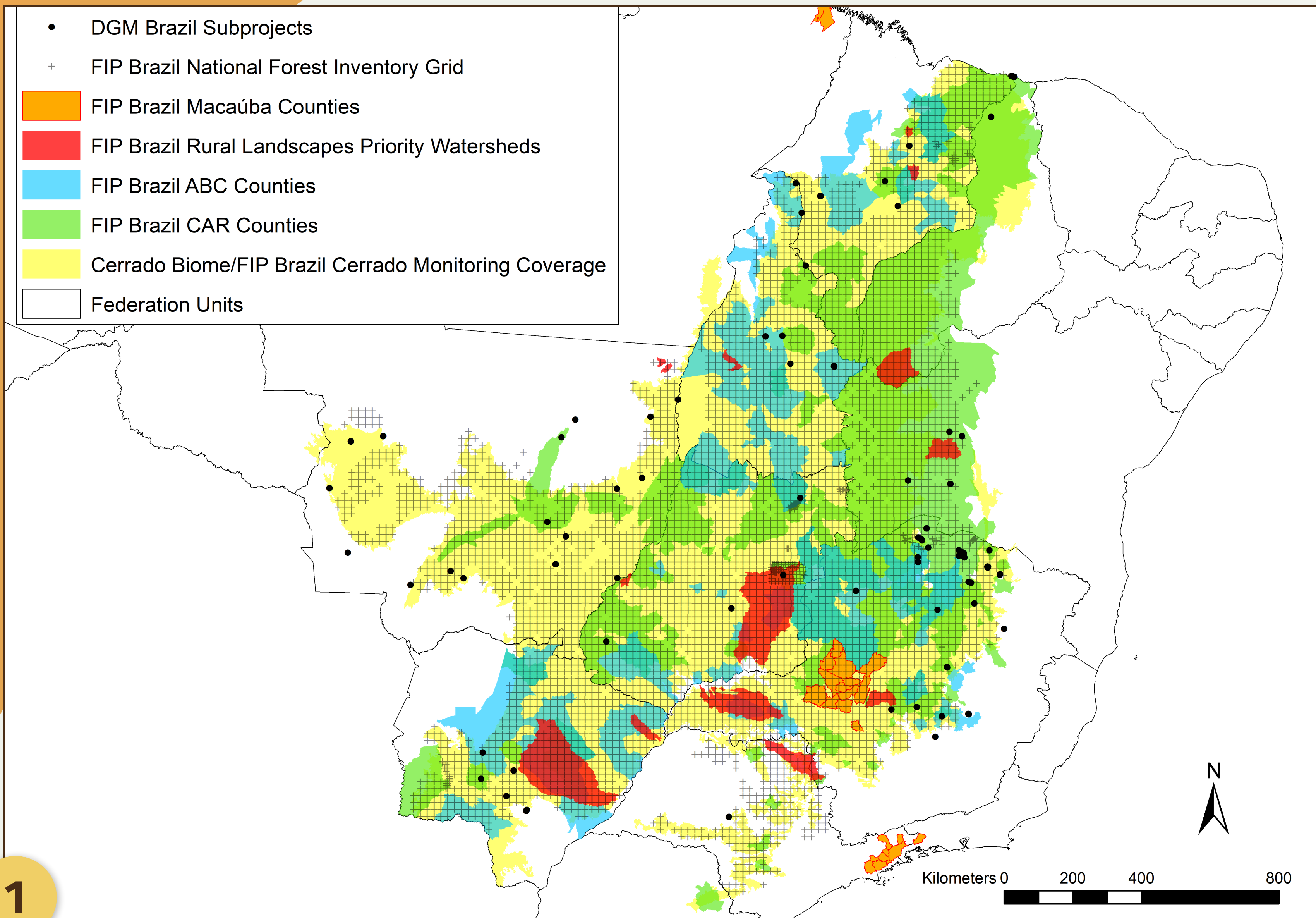
MAPS

Areas of operation of
FIP projects in Brazil

1

FIP Brazil

1

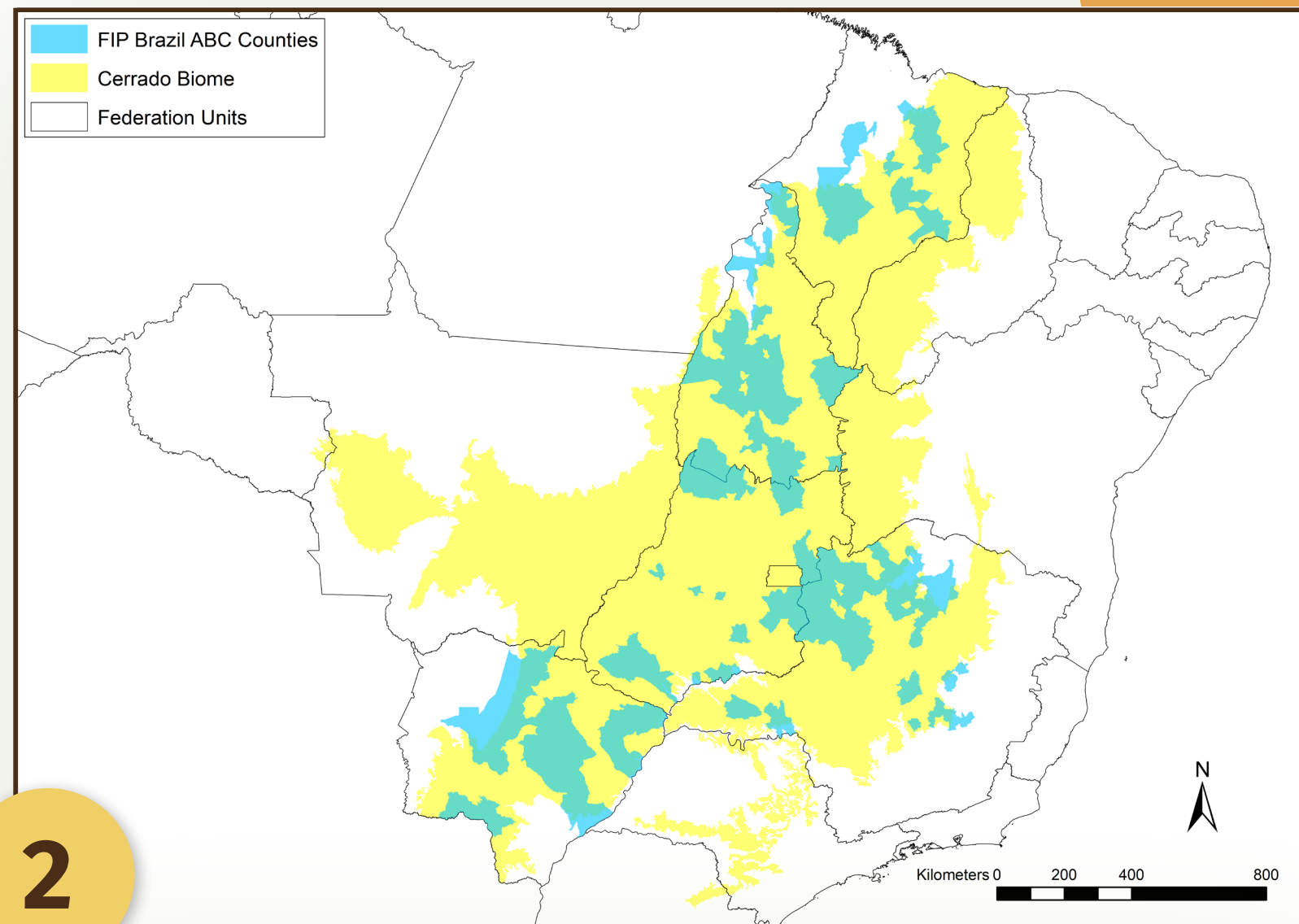


2 **FIP ABC Cerrado**
164 municipalities

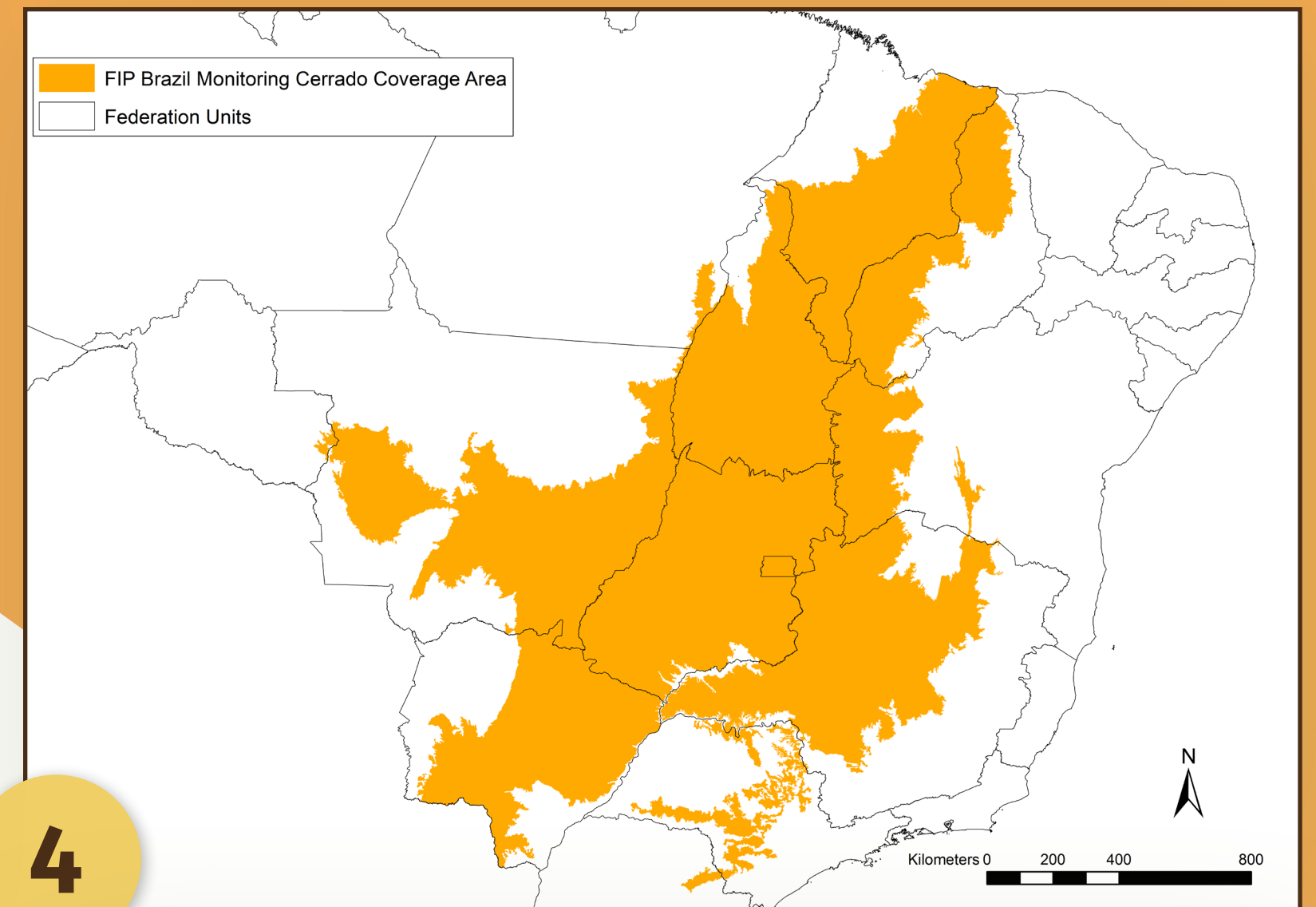
3 **FIP IFN**
4,110 sample units

4 **FIP Cerrado Monitoring**

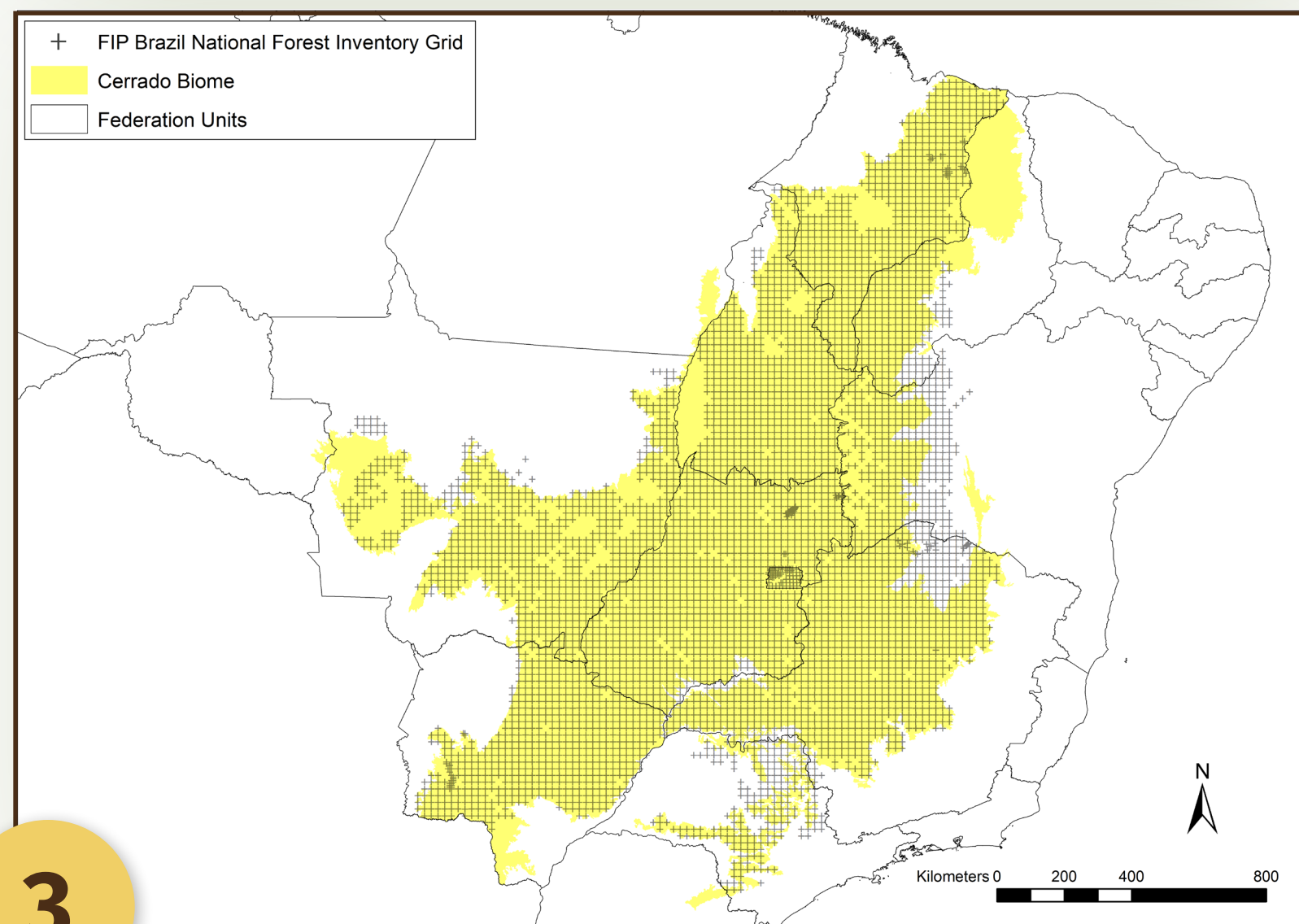
5 **FIP DGM Brazil**
Phase 1 sub-projects



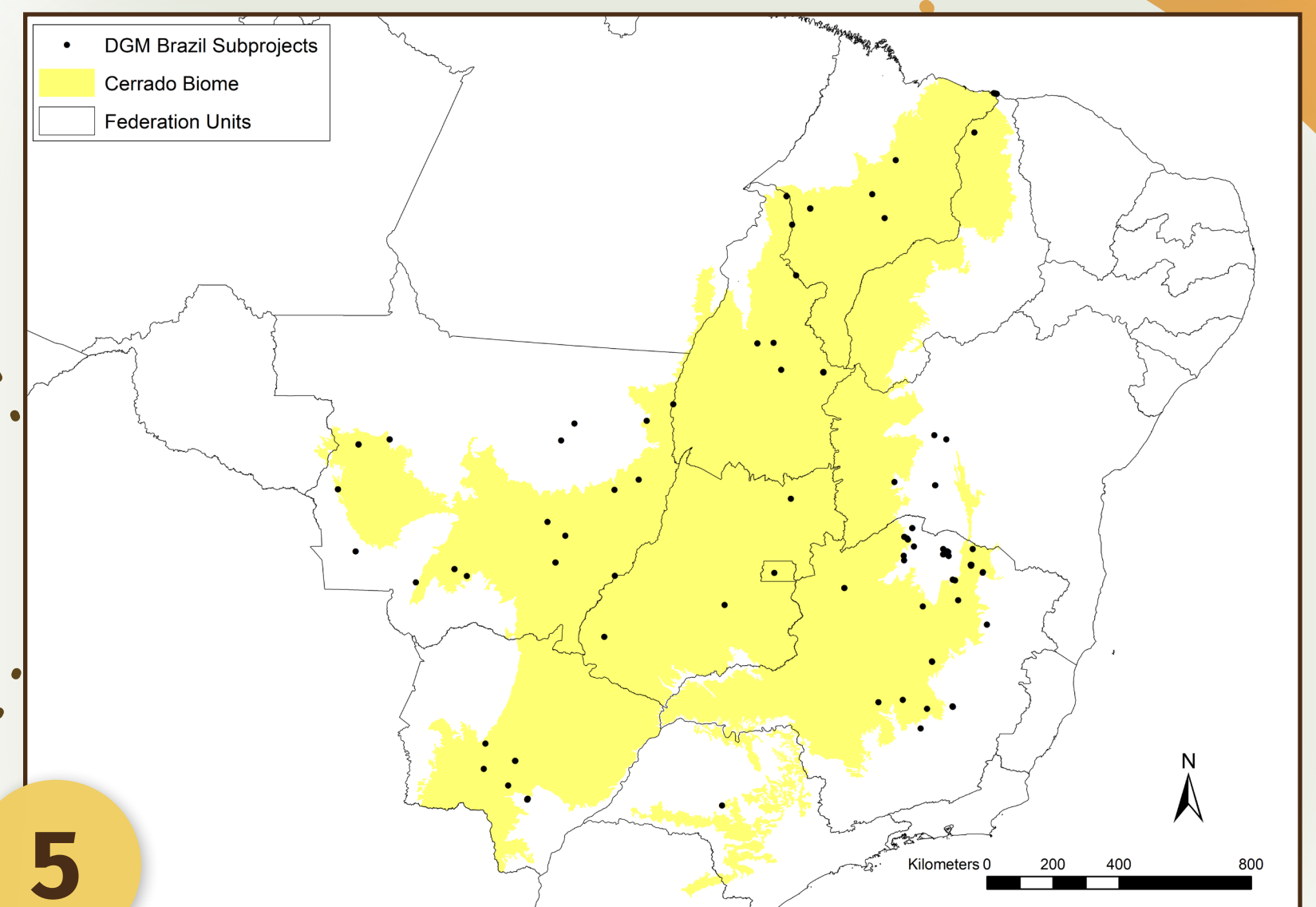
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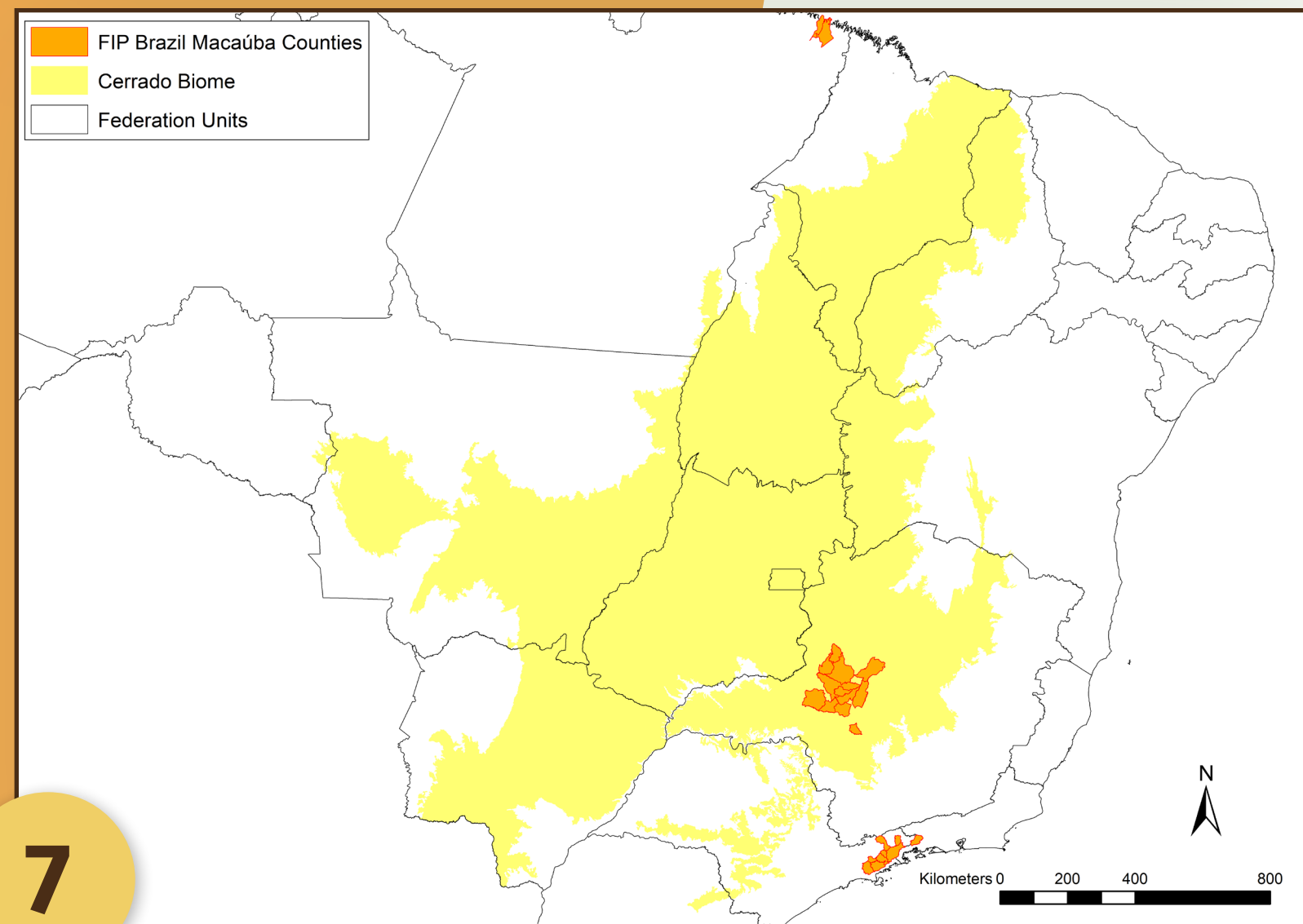
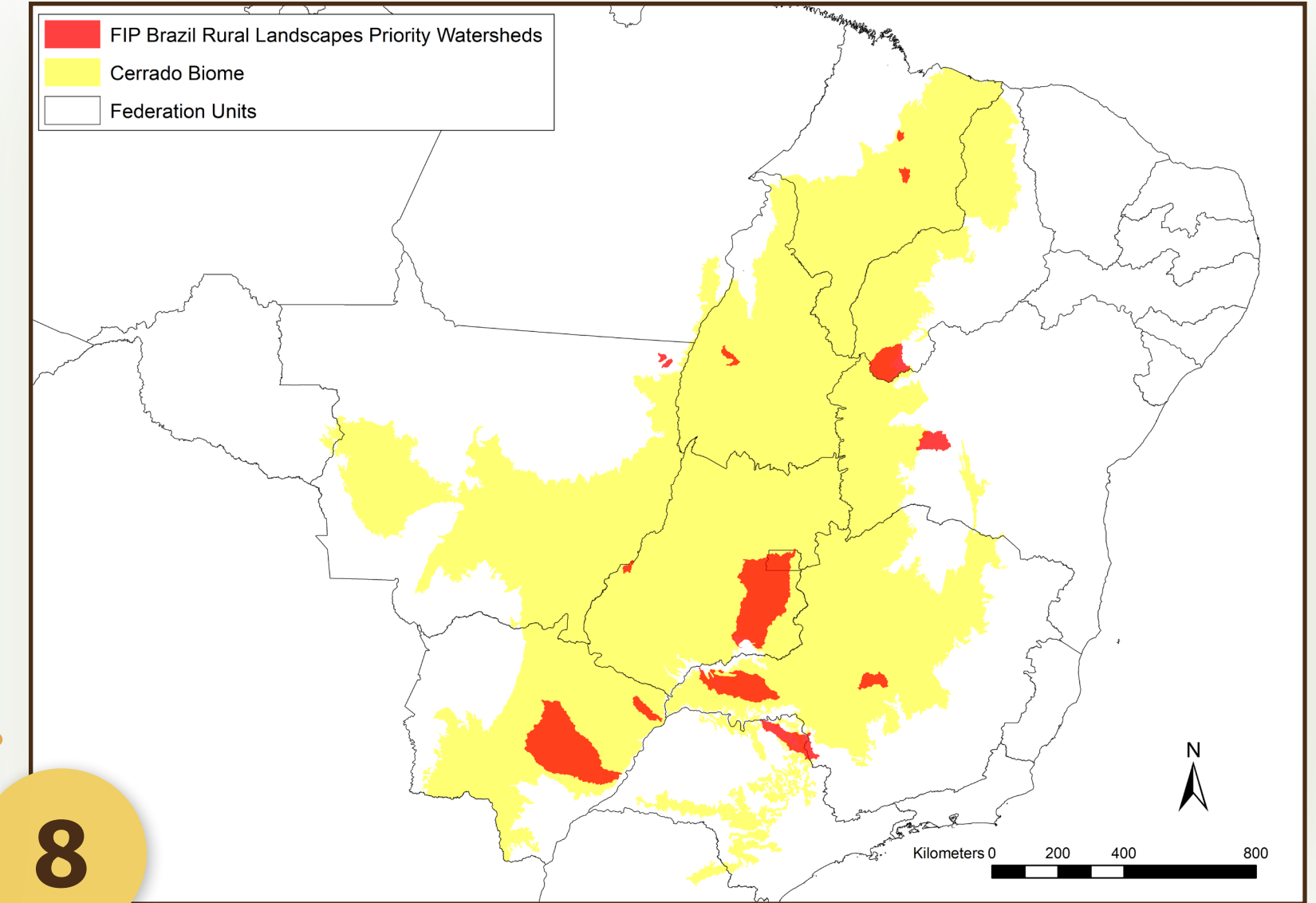
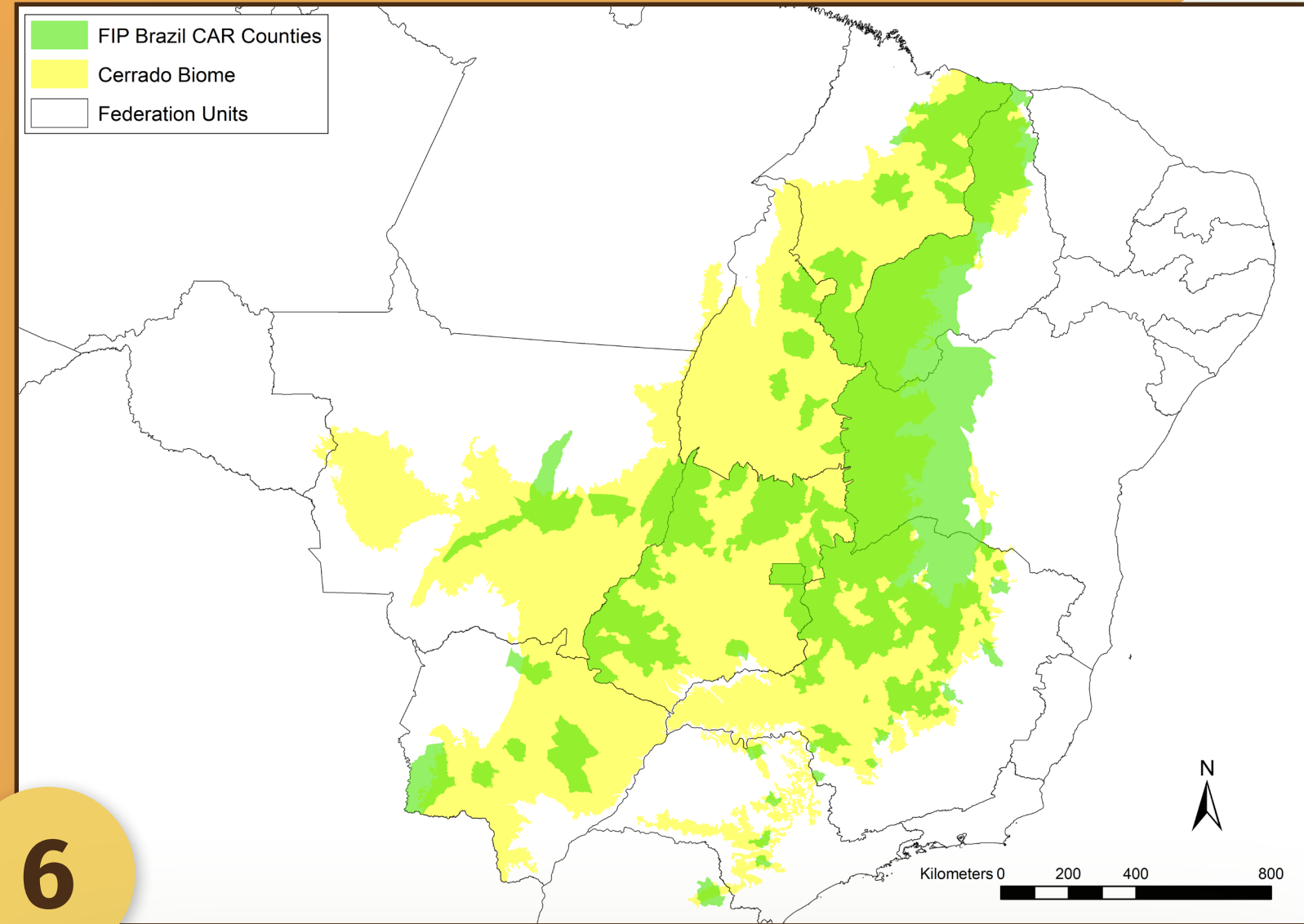


5

6 **FIP CAR**
Municipalities

7 **FIP Macaúba**
Municipalities served

8 **FIP Rural Landscapes**
Selected river basins



Projetos:



Financiador:



Implementadores:



Parceiros:



Executores:



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