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VICEPRESIDENCIA
TERCERA DEL GOBIERNO
MINISTERIO
PARA LA TRANSICIÓN ECOLÓGICA
Y EL RETO DEMOGRÁFICO



Fundación Biodiversidad



INICIATIVA ESPAÑOLA
EMPRESA Y
BIODIVERSIDAD

«Plataforma SeloVerde: una herramienta para la diligencia debida *EUDR* en Minas Gerais (Brasil)»

Presentación de la plataforma de trazabilidad SeloVerde

23 de octubre, de 10:00 h – 12:00 h

En colaboración con



FIIAPP
COOPERACIÓN ESPAÑOLA



iila

Organización internacional italo-latinoamericana

SeloVerde-MG: science and technology in support of agricultural transparency and traceability in Minas Gerais

23th Oct, 2024



Forest Code and legality of land use in Brazil



Science, 2014



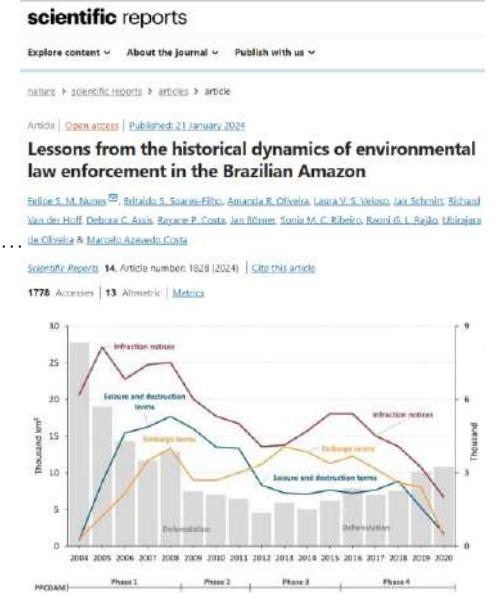
Plos One, 2016



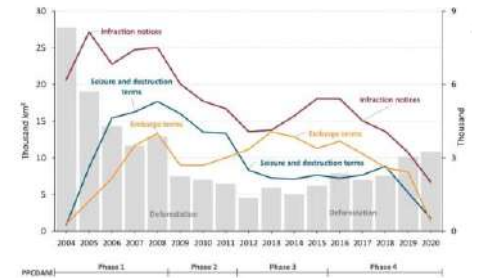
Science, 2020



Nature, 2023

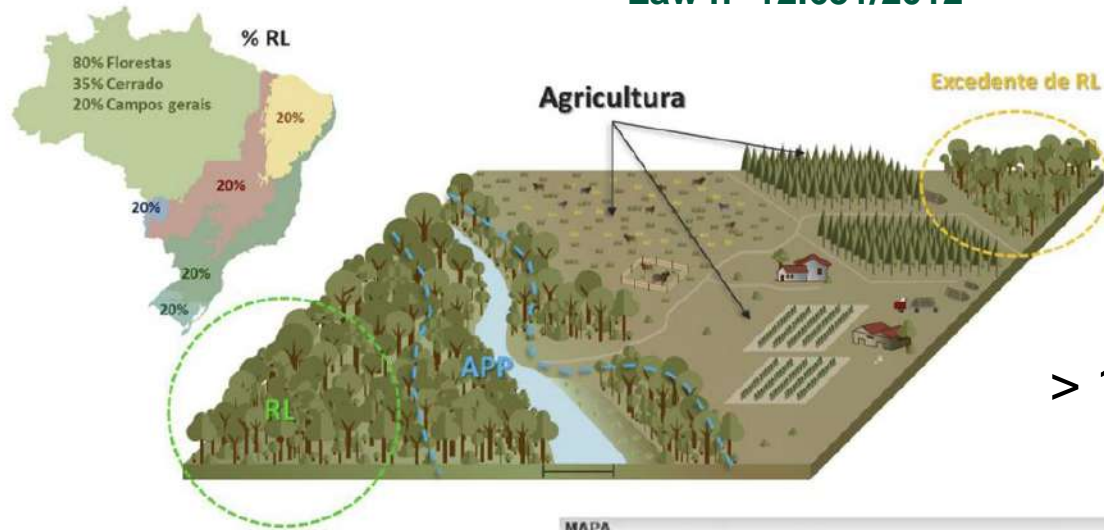


Scientific Reports, 2024



CAR: The online environmental registry

Forest Code
Law nº 12.651/2012



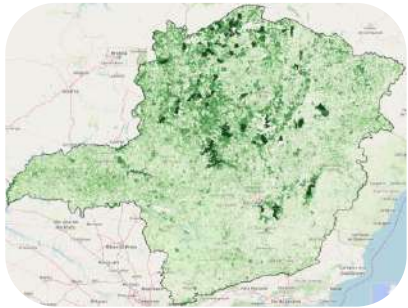
Roughly 53% of Brazil's native vegetation occurs on private properties*

> 1 million in Minas Gerais

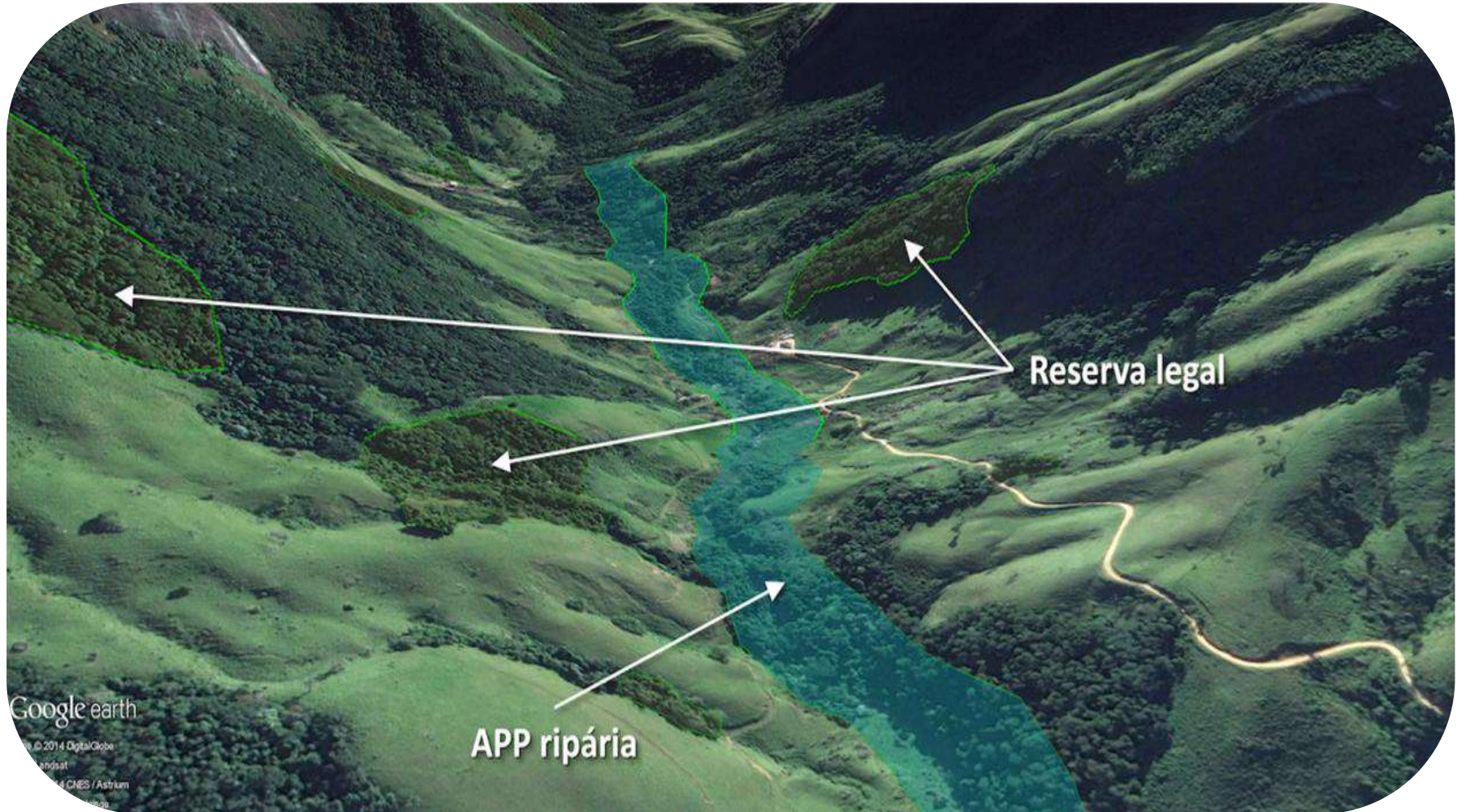


Automated Assessment of Forest Code Compliance

Environmental Rural Registry (CAR)



Computational Model



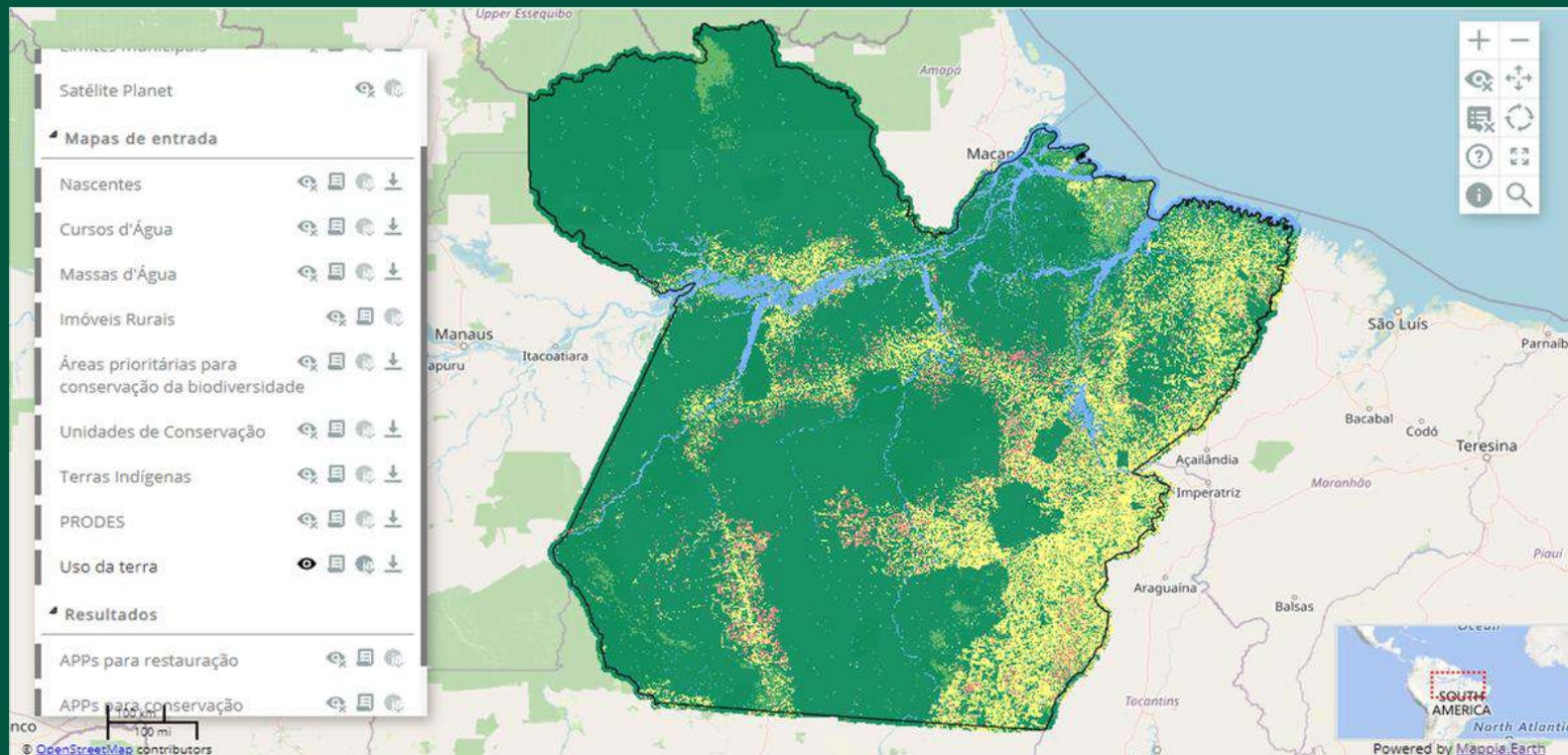
SeloVerde-PA: soy and cattle chains in Pará/Brazil



SeloVerde PA

Ciência e tecnologia em apoio à sustentabilidade ambiental da agropecuária

CONSULTAR CAR



≈ 300 thousand rural properties with daily updates

<https://www.semas.pa.gov.br/seloverde/>

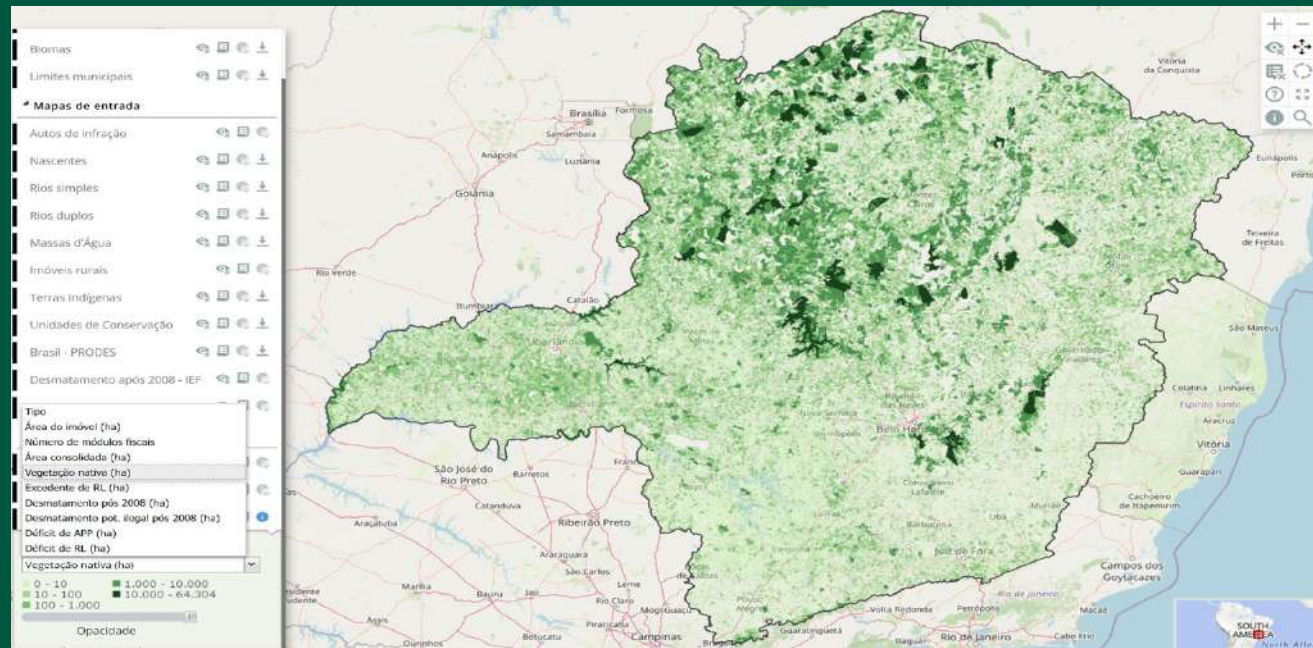
SeloVerde-MG: a public system covering all properties



SeloVerde MG

Ciência e tecnologia em apoio à sustentabilidade ambiental da agropecuária

CONSULTAR CAR



~ 1 million rural properties



No additional information is required from the rural producer

Environmental compliance of agricultural commodities



SeloVerde MG

Science and technology in support of environmental sustainability in agriculture

CONSULT CAR



Coffee



Forest plantations



Soy

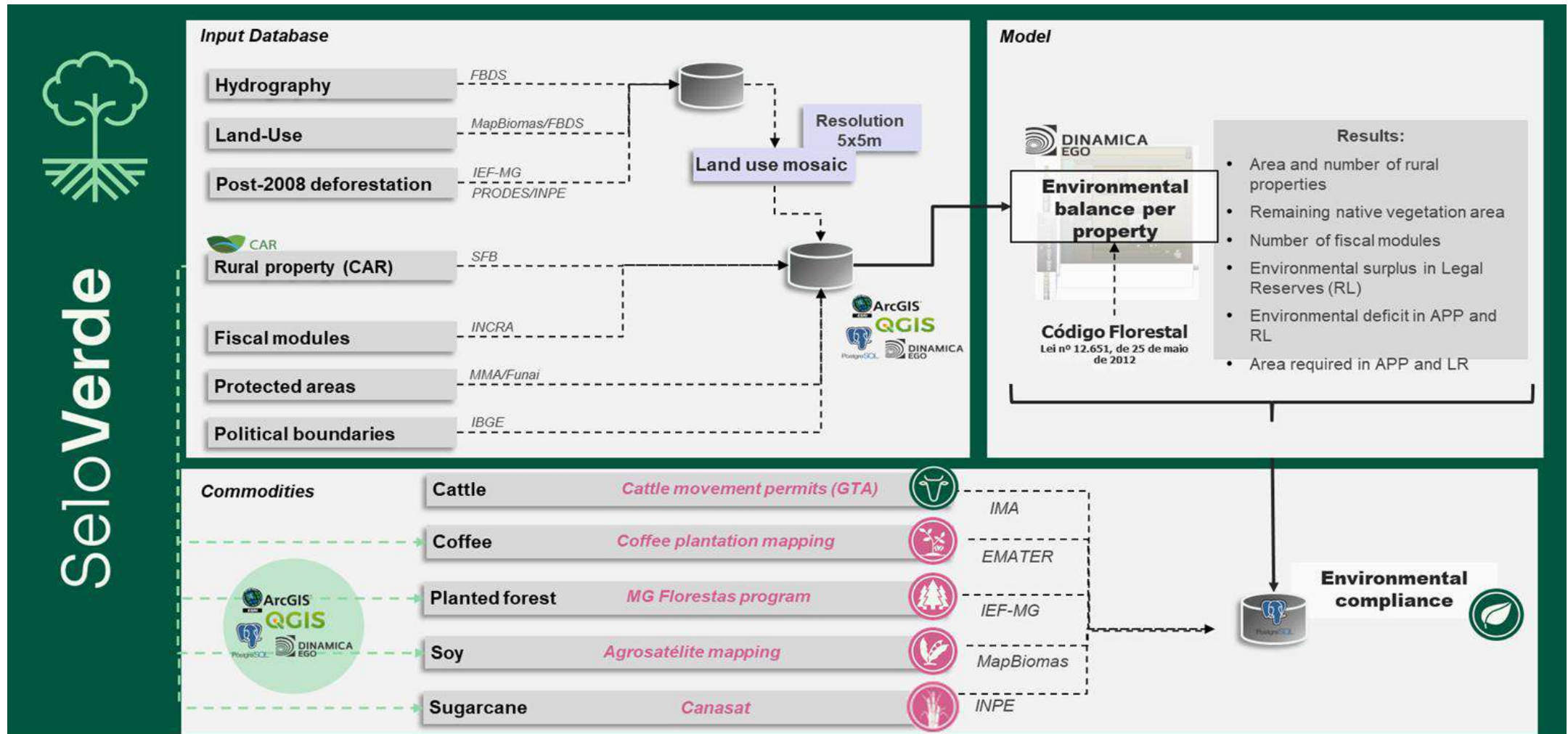


Sugarcane

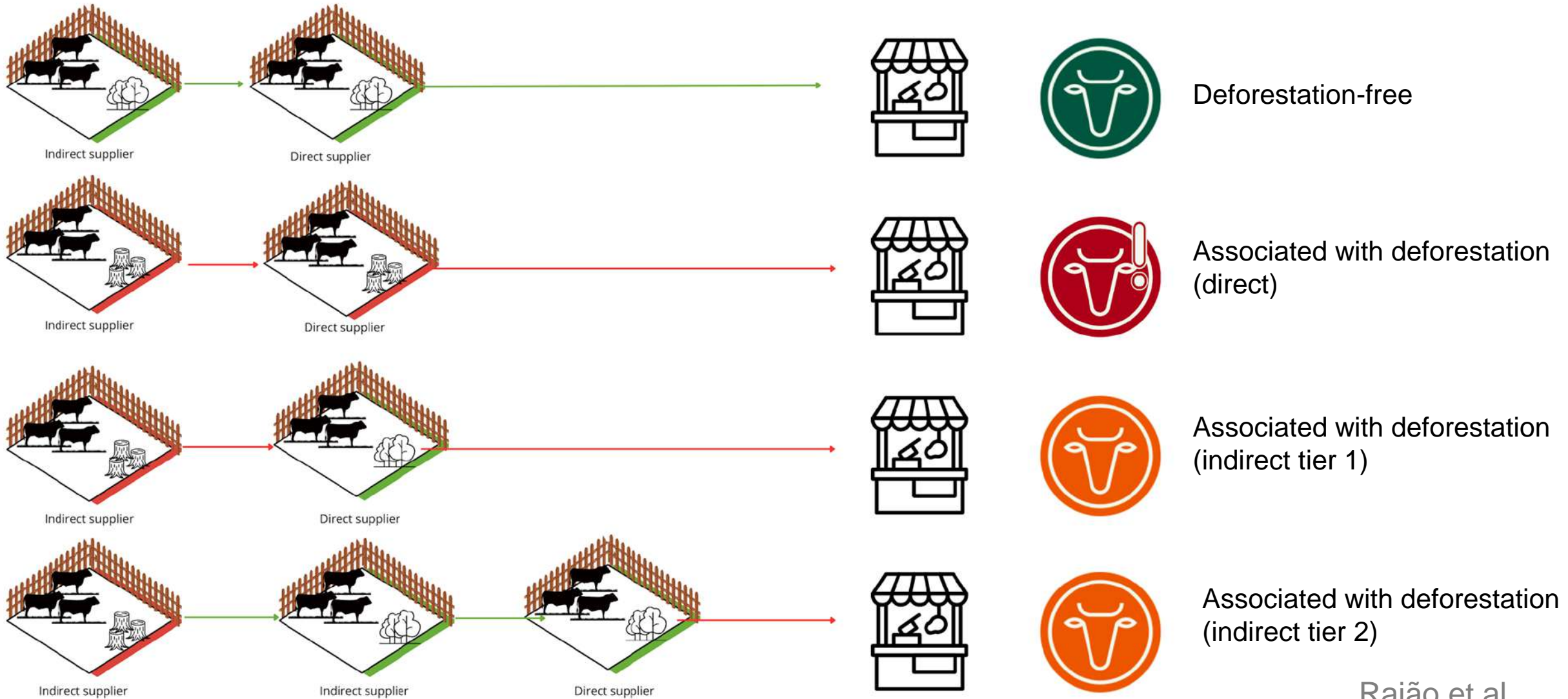


Cattle

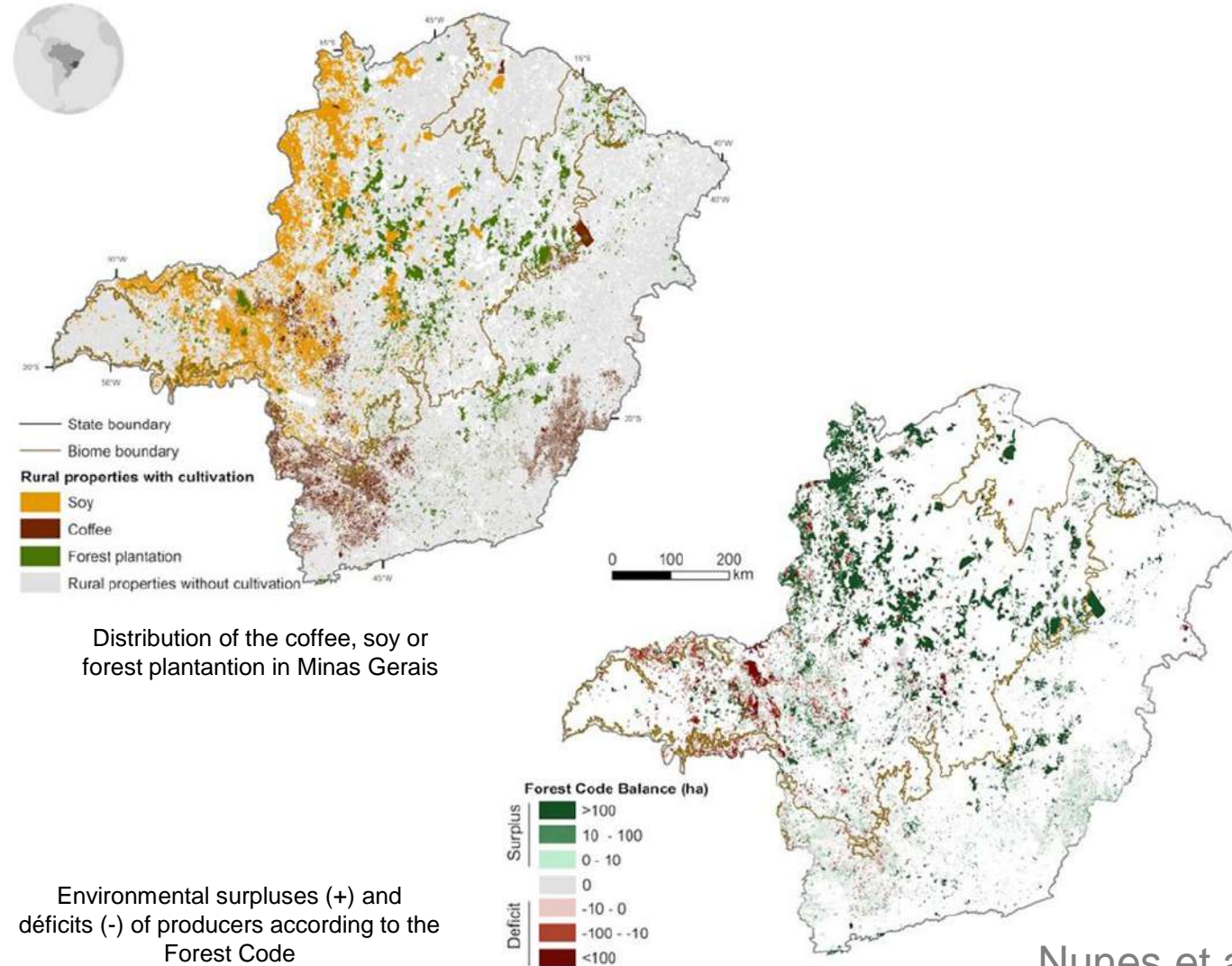
Data and Methods



Cattle traceability of direct and indirect suppliers



Compliance in Minas Gerais



	Without evidence of post-2020 deforestation	Remaining native vegetation	Surplus of Legal Reserve
Coffee	99%	25%	33%
Soy	95%	28%	26%
Forest plantation	93%	45%	61%
Sugarcane	99%	20%	17%
Cattle raising	94%	34%	41%

*Direct and Indirect

A science-based tool

Environmental compliance of coffee producers in the state of Minas Gerais, Brazil

Felipe Nunes
Britaldo Soares-Filho
Amanda Oliveira

Débora Assis
Filipe Lisboa

Traceability has consolidated as a market requirement to eliminate deforestation from agriculture supply chains, and as such has become pivotal for regulating the global trade¹. Growing pressure for deforestation-free agriculture products has led to agreements by large companies to exclude deforesters from their supply chains (e.g., Cattle Agreements), commitments from China and the United States to ban imports linked to deforestation, regulations with this end in France and the United Kingdom, and more importantly, the due diligence rules approved in May of 2023 by the European Union (EU)² to enforce the import of deforestation-free products.

The EU's due diligence mandates that seven agricultural commodities, namely cattle, cocoa, coffee, palm oil, rubber, soy, and wood be deforestation-free and that their production comply with the "relevant" legislation in the countries of origin. To this end, the regulation requires that companies trace the commodities back to their origin of production, at the same time proposing a benchmarking system to assign a level of deforestation risk to each sourcing country.

The EU's new regulation is expected to come into force in 2024. It may therefore impact the state of Minas Gerais, given that coffee is its major agricultural export. Were it a country, Minas Gerais would be the world's largest coffee producer and exporter. In 2022, the state contributed to 28.5 million out of 39.35 million sacks of coffee exported from Brazil. The National Supply Company (CONAB) estimates that Minas Gerais will produce

27.5 million sacks of coffee in 2023, which is approximately 50% of the entire national production, estimated at 55 million sacks.

Due to the relevance of the coffee production in Minas Gerais, it has become essential to evaluate the socioenvironmental compliance of coffee producers to the Brazilian Forest Code (FC) as well as with respect to deforestation. The FC is the country's primary legislation regulating environmental conservation on private lands³. In short, it establishes where native vegetation must be conserved or can be suppressed, also regulating the use of natural resources. The law defines two types of conservation areas: Areas of Permanent Preservation (APP) along rivers, water bodies and springs and on steep slopes and hilltops, and Legal Reserves (LR), a percentage of the rural property's area where native vegetation must be maintained. This percentage ranges from 80% in the Amazon to 20% in other biomes, such as those occurring in Minas Gerais, i.e., Cerrado, Atlantic Forest, and Caatinga. For non-compliant properties, the FC also determines the areas that must be restored, namely LR and APPs, as well as other illegally deforested areas.

There are around one million private properties in Minas Gerais registered on the Rural Environmental Registry (CAR) - the national web-based database of rural properties. Because the CAR is a self-reported system, there is still a need to validate its information. To do so, it is necessary to develop technological solutions capable of integrating the massive CAR dataset with detailed land-use mapping to automatically analyze the

¹Rajão R., et al. (2020) The rotten apples of Brazil's agribusiness. Science, 369 (6501): 246-248.
²https://environment.ec.europa.eu/topics/forests/deforestation/regulation-deforestation-free-products_en

³Brazil. Federal law nº 12.727 (October 17, 2012). Available at: <www.planalto.gov.br/ccivil_03/_Ato2011-2014/2012/Lei/L12727.htm>

Environmental compliance of coffee, soy, and forest plantations in the state of Minas Gerais, Brazil

Felipe Nunes
Britaldo Soares-Filho
Amanda Oliveira

Débora Assis
Filipe Lisboa
Rodrigo Bellezoni

Traceability has consolidated as a market requirement to eliminate deforestation from agriculture supply chains and, as such, has become pivotal for regulating global trade¹. Growing pressure for deforestation-free agriculture products has led to agreements by large companies to exclude deforesters from their supply chains (e.g., Soy Moratorium, Cattle Agreements), commitments from China and the United States to ban imports linked to deforestation, regulations with this end in France and the United Kingdom, and more importantly, the European Union Deforestation Regulation (EUDR) approved in May² to enforce the import of deforestation-free products.

The EUDR mandates that seven agricultural commodities, namely cattle, cocoa, coffee, palm oil, rubber, soy, and wood be deforestation-free and that their production comply with the "relevant" legislation in the countries of origin. To this end, the regulation requires that companies trace the commodities back to their origin of production, proposing at the same time a benchmarking system based on quantitative and internationally recognized criteria to assign a level of deforestation risk to each sourcing country and its producing regions.

The new regulation - scheduled to come into operation in December 2024 - strongly impacts the state of Minas Gerais, recognized for being the world's largest coffee producer (and exporter), not to mention its vast soy crops and forest plantations. In 2023, the state produced 29 million processed bags of coffee and 8.3 million tons

(Mton) of soybeans, accounting for 53% and 5% of the national output, respectively. Regarding forest plantations, the state yielded 6.3 Mton of charcoal and other products (84% of Brazilian production), and 24.6 million cubic meters of charcoal and other wood products (9% of the national output). In 2023, 12.3 million bags of coffee, 142.1 thousand tons of soybeans (including soy bran and other derivatives), and 404.5 thousand tons of forestry products (cellulose, paper, rubber, wood, and other derivatives) were exported to the EU, totaling business around US\$ 2.7 billion (coffee), US\$ 81.1 million (soy) and US\$ 218.1 million (forest products)³.

Given this regulatory context, it is essential to evaluate the socio-environmental compliance of agricultural producers in Minas Gerais, especially concerning deforestation and compliance with the Brazilian Forest Code (FC). The FC is the country's primary legislation regulating environmental conservation on private lands⁴. In short, it establishes where native vegetation must be conserved or can be suppressed upon authorization, also regulating the use of natural resources. The law defines two types of conservation areas: i) Areas of Permanent Preservation (APP) along rivers, water bodies and springs and on steep slopes and hilltops, and ii) Legal Reserves (LR), a percentage of the rural property's area where native vegetation must be maintained. This percentage ranges from 80% in the Amazon to 20% in other biomes, such as those occurring in MG, i.e., Cerrado, Atlantic Forest, and Caatinga. For non-compliant properties, the FC also determines the areas that must be restored by

¹Rajão R., et al. (2020) The rotten apples of Brazil's agribusiness. Science, 369 (6501): 246-248.

²https://environment.ec.europa.eu/topics/forests/deforestation/regulation-deforestation-free-products_en

³Data provided by SEAPA (Secretaria de Estado de Agricultura, Pecuária e Abastecimento de Minas Gerais).

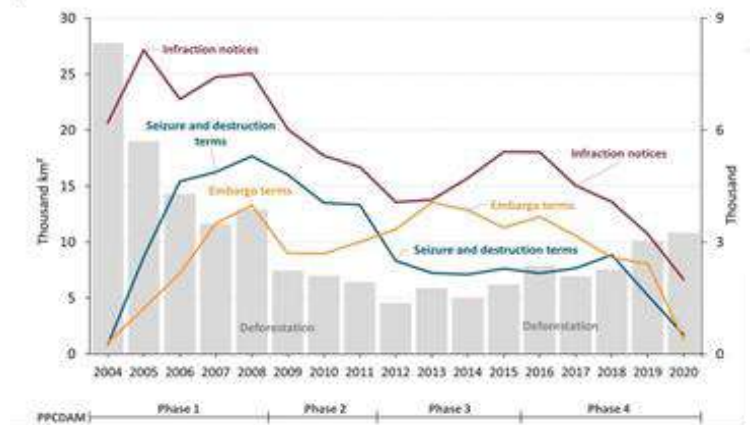
⁴Brazil. Federal law nº 12.727 (October 17, 2012). Available at: <www.planalto.gov.br/ccivil_03/_Ato2011-2014/2012/Lei/L12727.htm>

Lessons from the historical dynamics of environmental law enforcement in the Brazilian Amazon

Felipe S. M. Nunes, Britaldo S. Soares-Filho, Amanda B. Oliveira, Laura V. S. Weloso, Jair Schmitt, Richard Van der Hoff, Debora C. Assis, Rayane P. Costa, Jan Börner, Sonia M. C. Ribeiro, Raoni G. L. Rajão, Ubirajara de Oliveira & Marcelo Azevedo Costa

Scientific Reports 14, Article number: 1828 (2024) | Cite this article

1778 Accesses | 13 Altmetric | Metrics



SeloVerde-MG: a public system covering all properties

Free access to compliance information with personal and commercial data protection

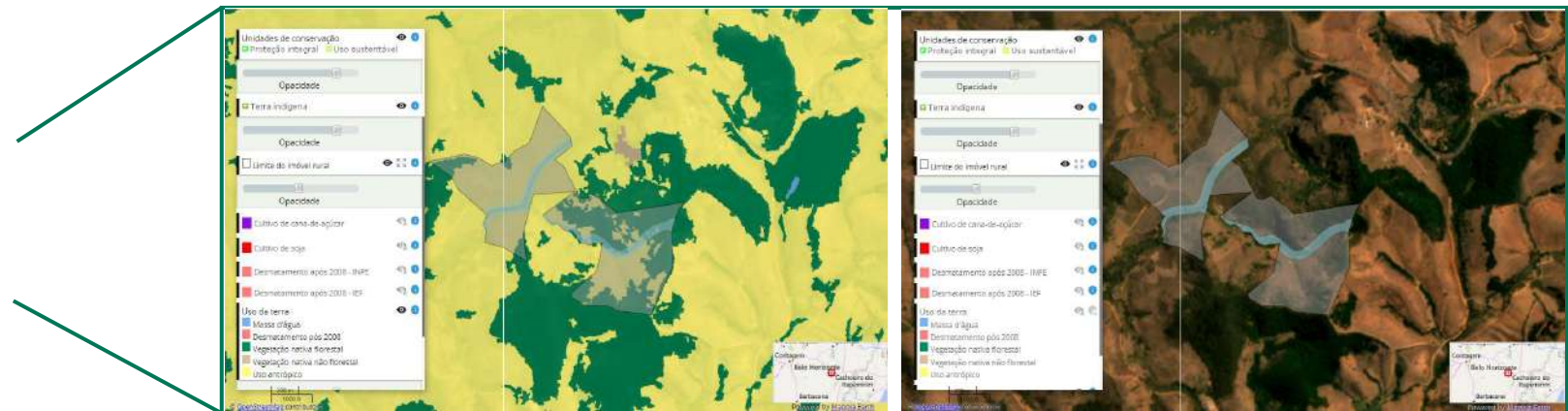
- Property query
- Geolocation and property perimeter
- Personal data protection
- Maps and satellite images
- Deforestation monitoring
- Transparency and traceability for all suppliers in Minas Gerais

Property details in CAR	
CAR Code	MG-3160108-28A629EED524161B14524E1358A6BF0
Property area	88.33 (ha)
Number of fiscal modules	3.40
CAR status	Active
CAR condition	Awaiting analysis, not amenable to data review
Property type	IRU (Rural Property)

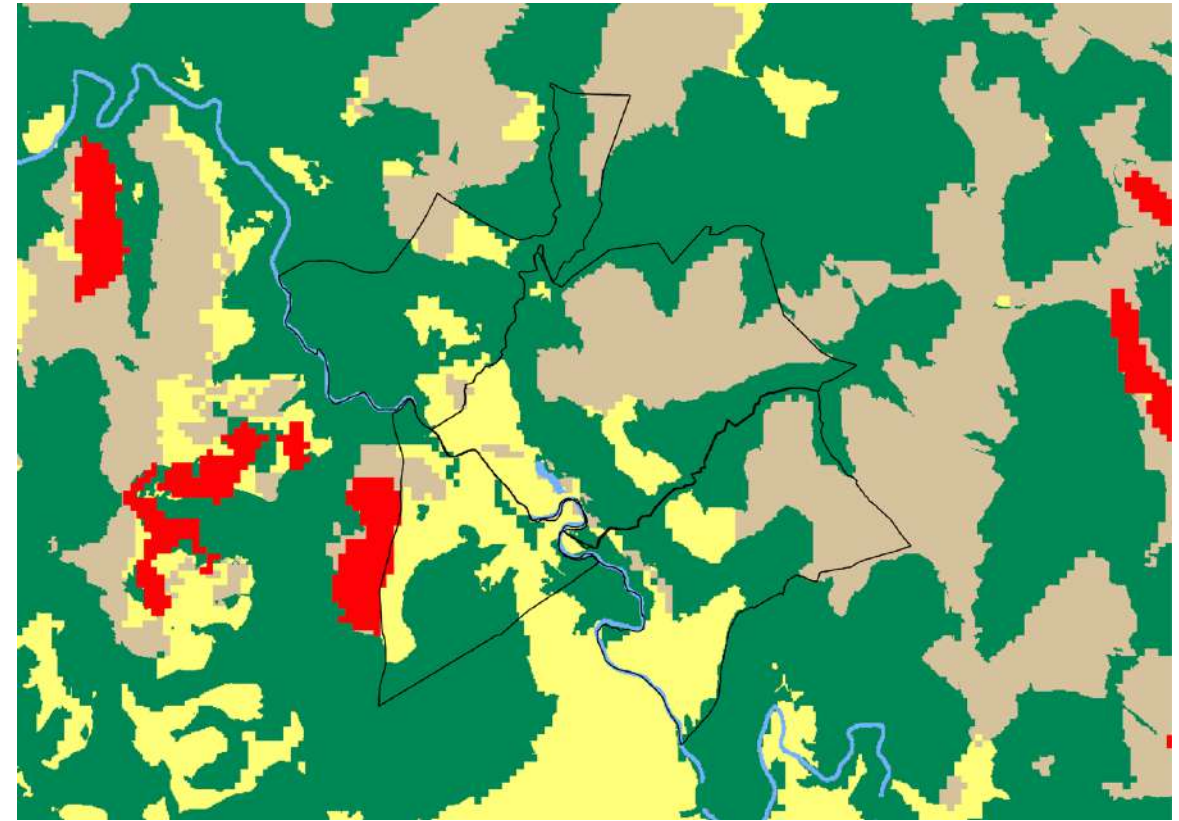
Land use cover	
Native vegetation	32.51 (ha)
Consolidated area	55.82 (ha)
Coffee cultivation	0 (ha)
Sugarcane cultivation	10.0 (ha)
Soybean cultivation	0 (ha)
Planted forest	0 (ha)

State programs and recognized best practices	
Certifica-MG	No
Programa MG Florestas	No

Deforestation	

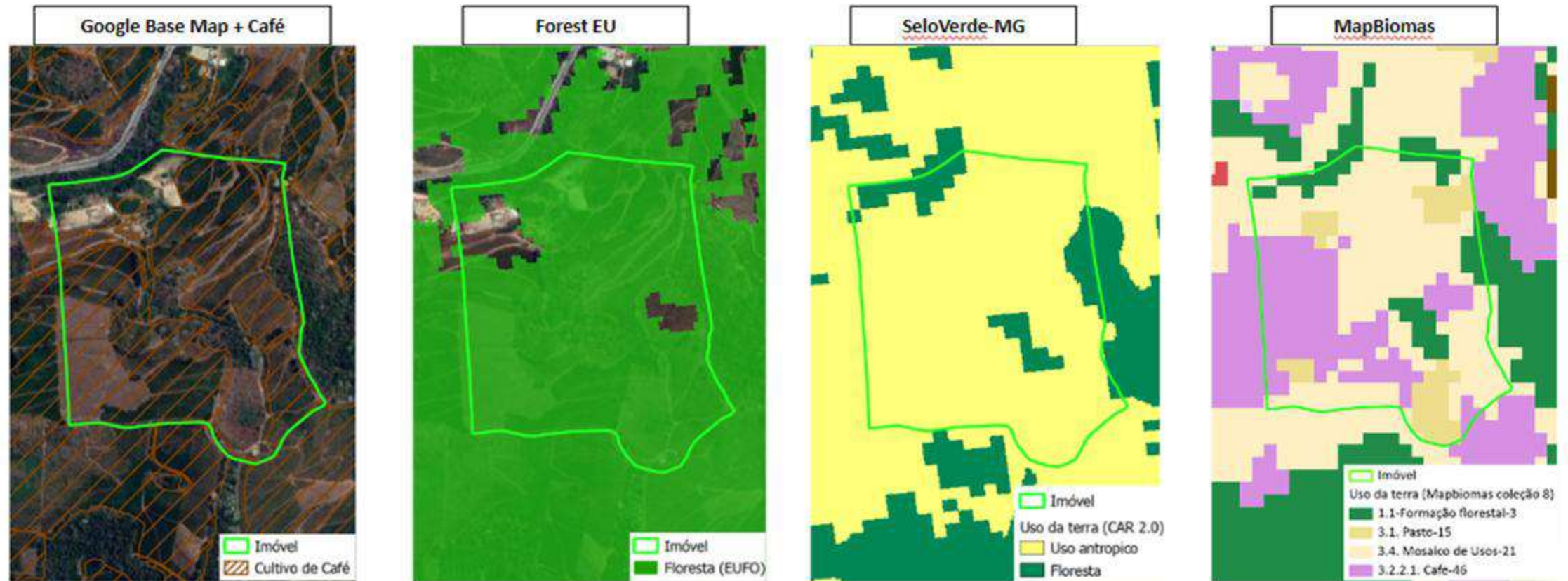


High-Resolution mapping for Minas Gerais

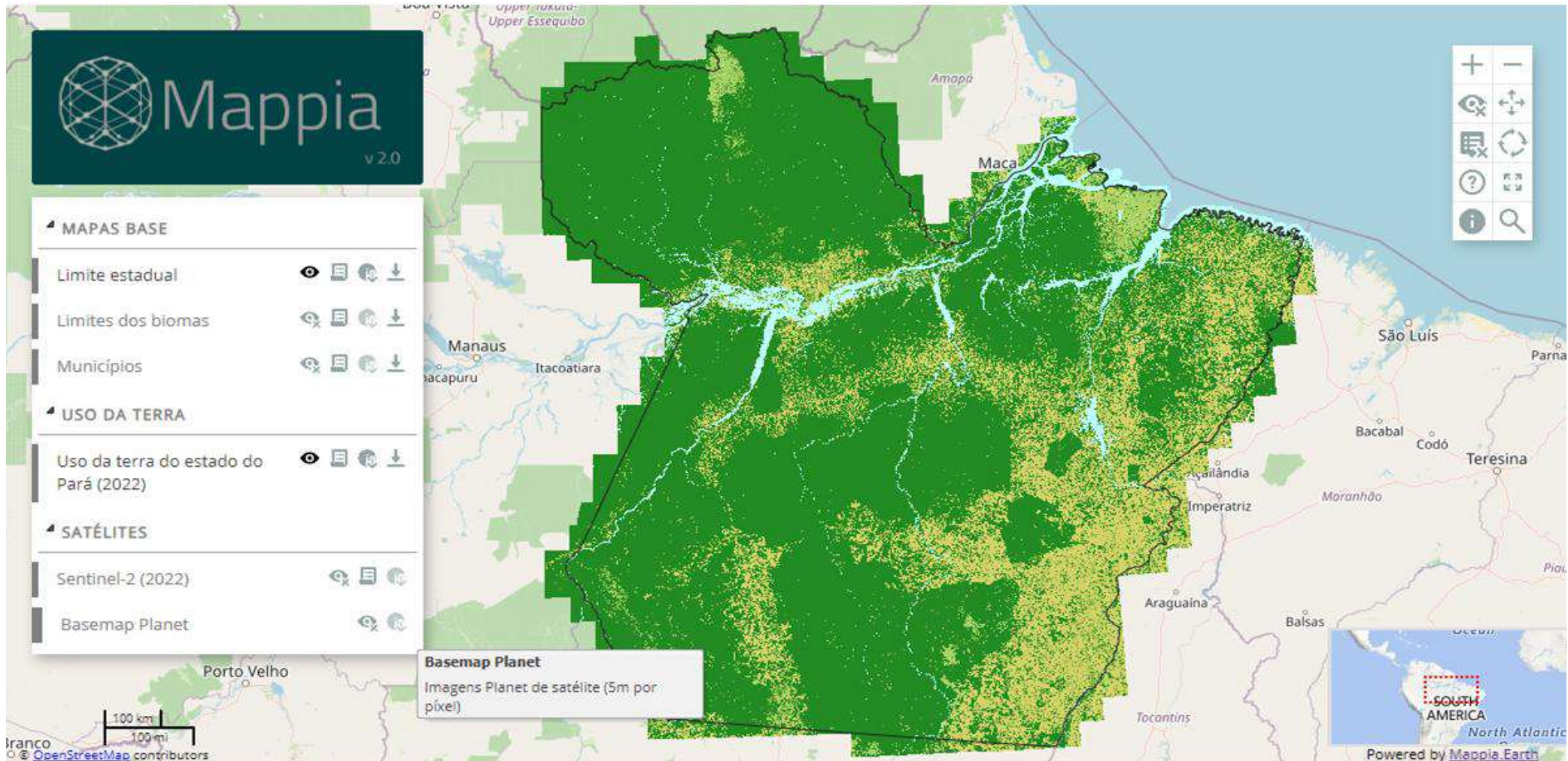


- water
- converted
- def_post_2008
- forest
- non_forest

Reference mappings and future challenges (coffee)

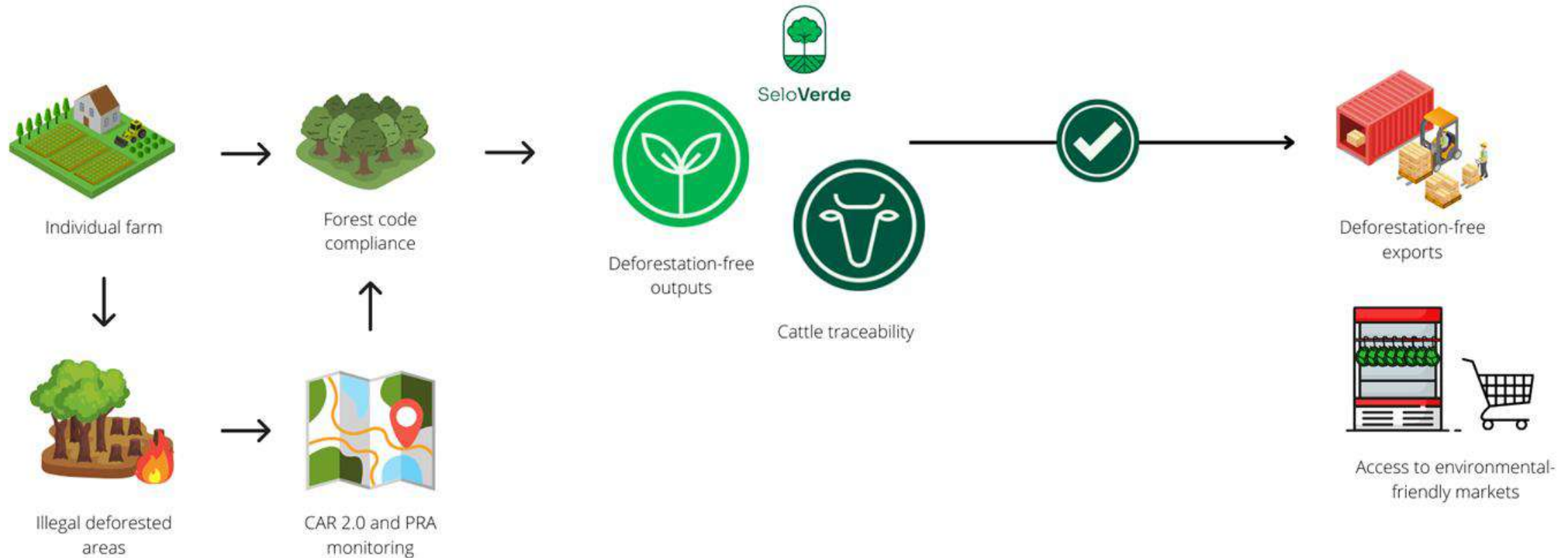


High-resolution mapping for Pará state (5m)



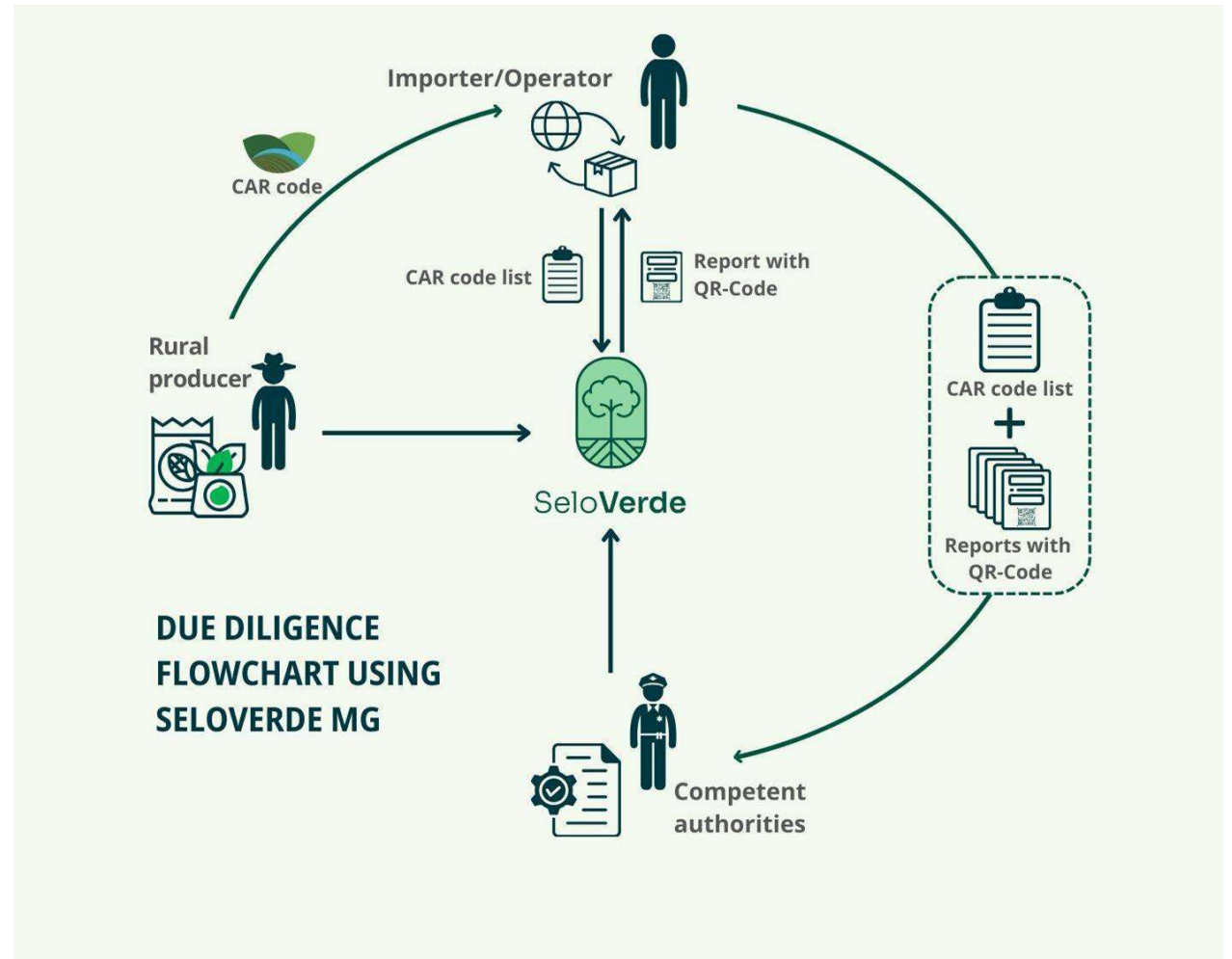
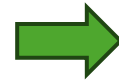
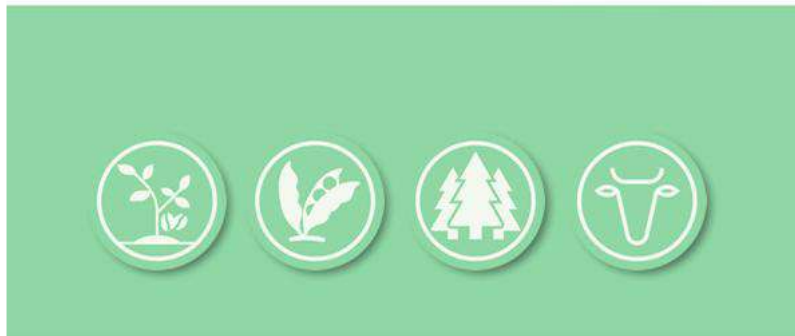
<https://csr.ufmg.br/mappia/para/>

SeloVerde helping to attest deforestation-free farms and legality



Verifiable compliance throughout the supply chain

DUE DILIGENCE IN AGRICULTURAL
SUPPLY CHAINS USING THE
SELOVERDE MG PLATFORM
A practical guide

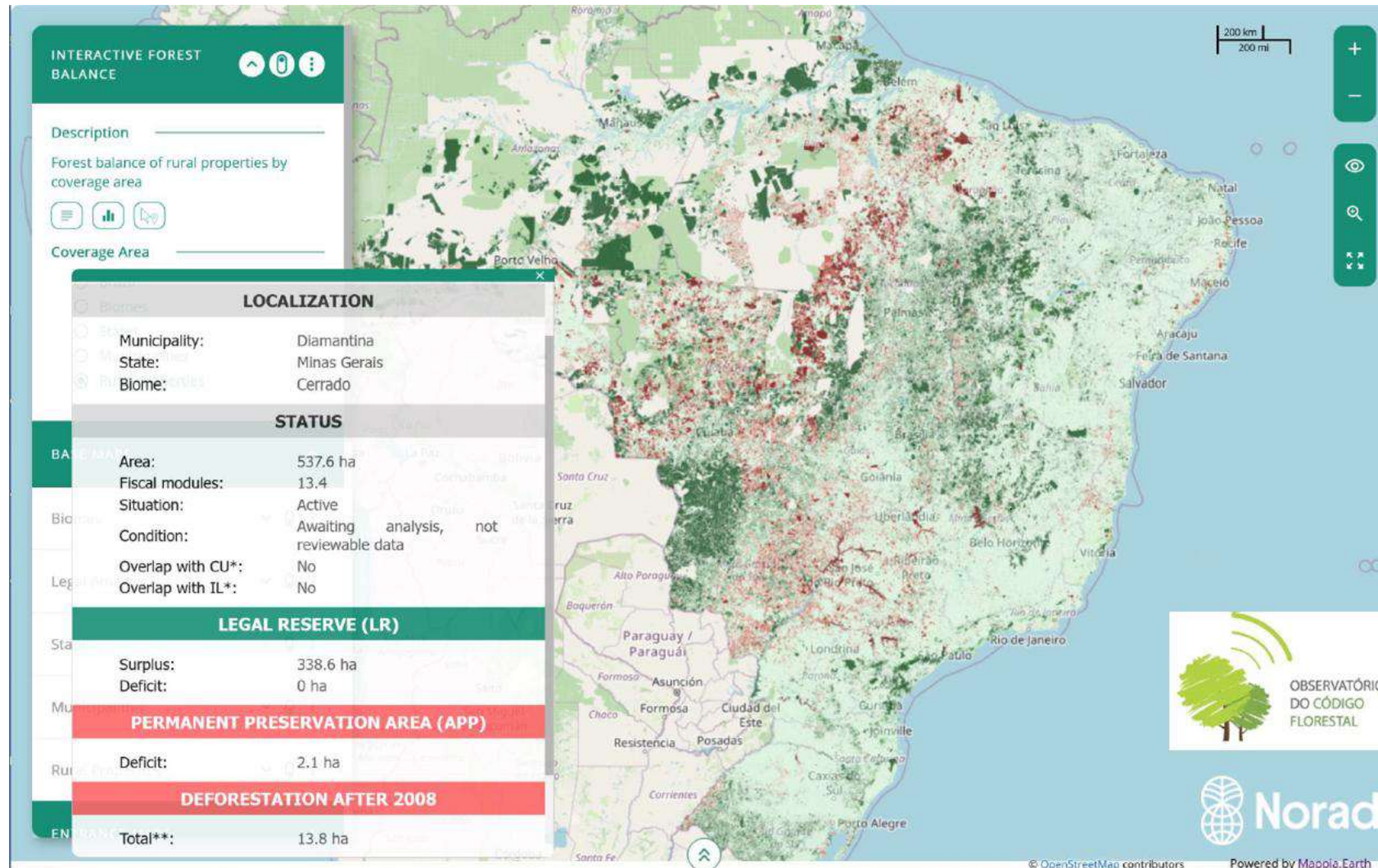


Online demonstration



Plataforma SeloVerde-MG:
<https://seloverde.meioambiente.mg.gov.br/>

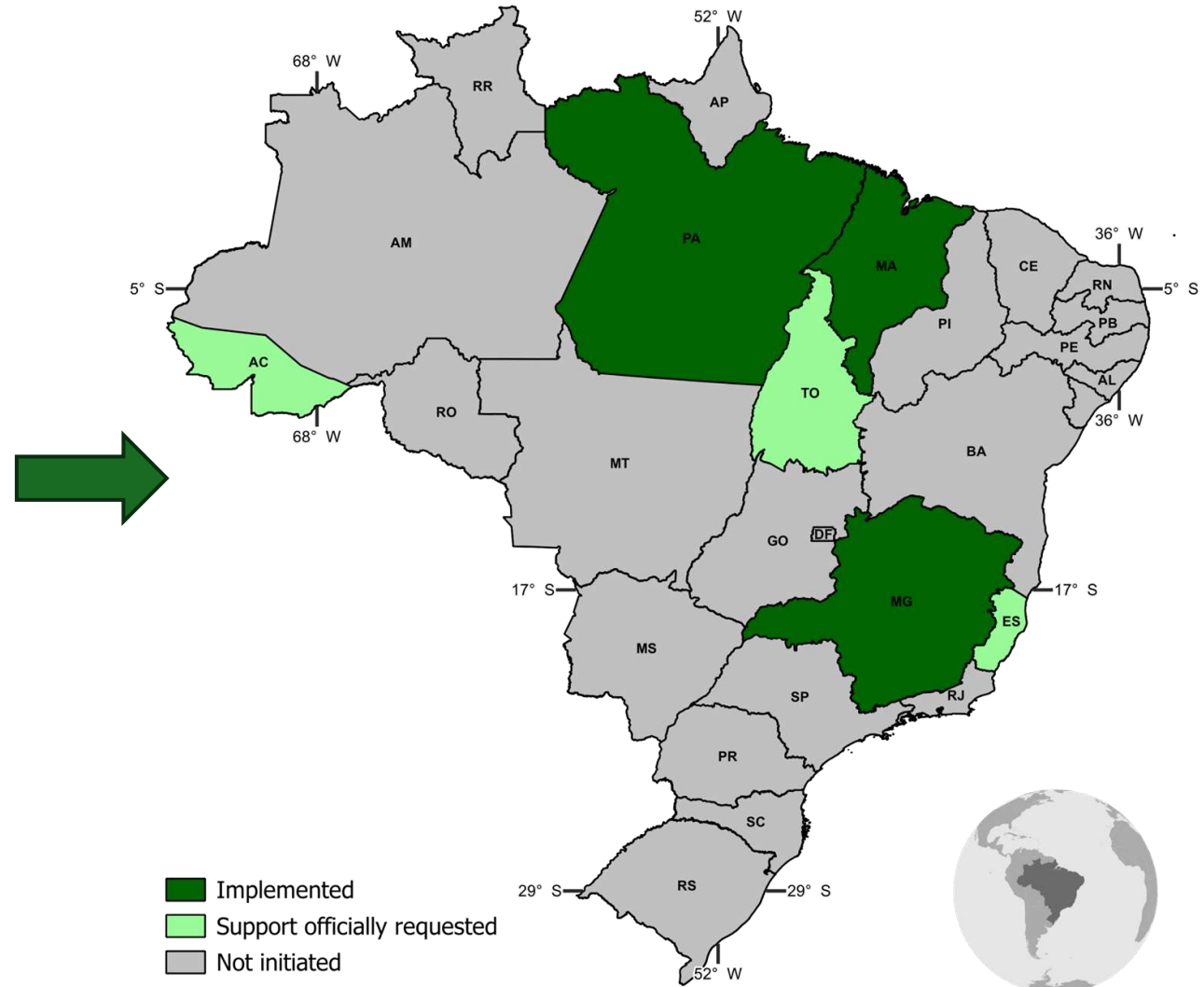
Farm-level analysis already available throughout Brazil



And we are expanding and tailoring to other States...



**Official
data**



Thank you for your attention

To know more:

Plataforma SeloVerde-MG: <https://seloverde.meioambiente.mg.gov.br/>

Policy brief: https://csr.ufmg.br/csr/wp-content/uploads/2023/06/policy_conformidade-do-parque-cafeeiro_english_2.pdf

Centro de Sensoriamento Remoto/UFMG: <http://csr.ufmg.br/csr/>

Secretaria de Agricultura, Pecuária e Abastecimento de Minas Gerais:
<http://www.agricultura.mg.gov.br/>

Instituto Estadual de Florestas: <http://www.ief.mg.gov.br/>