SOY RISK 2022

Report

11 July 2022

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Objective

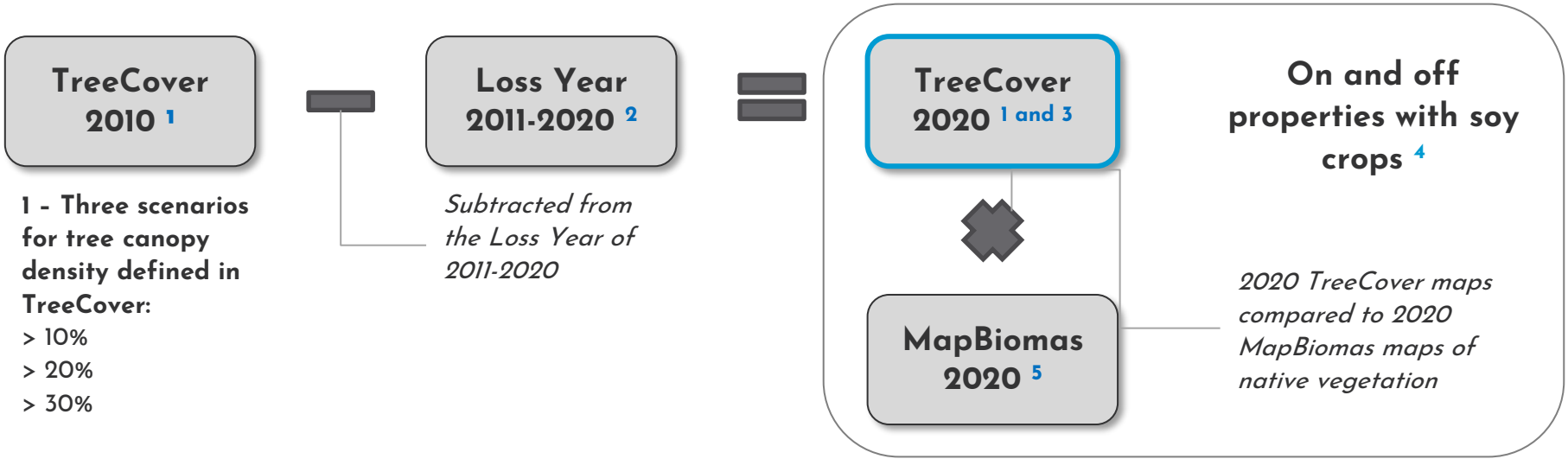
Assess the difference between the maps produced by MapBiomas (native vegetation) and those produced by TreeCover (10%, 20% and 30% forest cover) for the year 2020 for Brazil and for each biome.

This assessment considered TreeCover minimum area thresholds of five hectares, ten hectares and twenty-five hectares.

Justification

To determine the magnitude of the difference between the MapBiomas maps of native vegetation and the TreeCover maps of forest cover in order to understand the size of the native vegetation stocks that would not be included were TreeCover to be used as the reference.

Methodology



1 – Three scenarios for tree canopy density defined in TreeCover:
> 10%
> 20%
> 30%

2 – LossYear: This represents the loss of tree cover in the reference period (2011-2020). The gain in tree cover (TreeCover Gain) is also made available by Global Forest Watch, but only for the 2001-2012 period, and shows great similarity with the forest areas planted in Brazil.

3 - Four scenarios with minimum areas defined in this analysis: No minimum area, >5 ha, >10 ha and >25 ha.

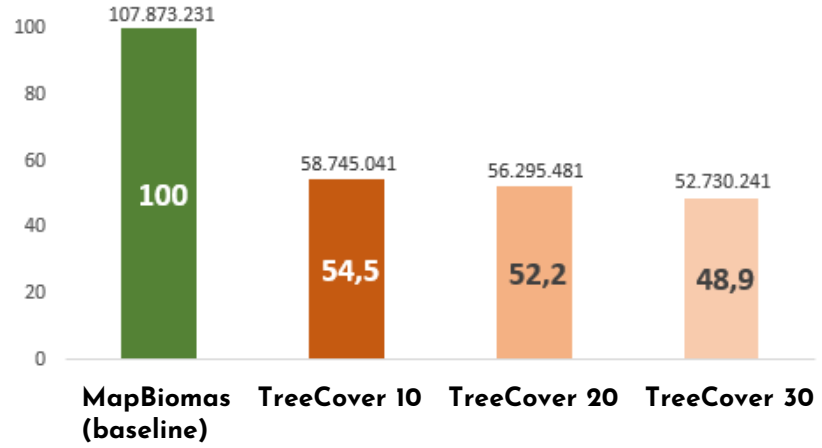
4 - CAR properties: other than settlements/traditional communities and/or cancelled situations, cross-referenced with the Brazil soy map for the 2020-21 crop (without a minimum area filter for soy in each property).

5 - Categories: Forest, savanna, mangrove, wooded restingas, flooded fields and swampy areas, terrain formations, apicum brackish areas, rocky outcrops, other non-forest formations.

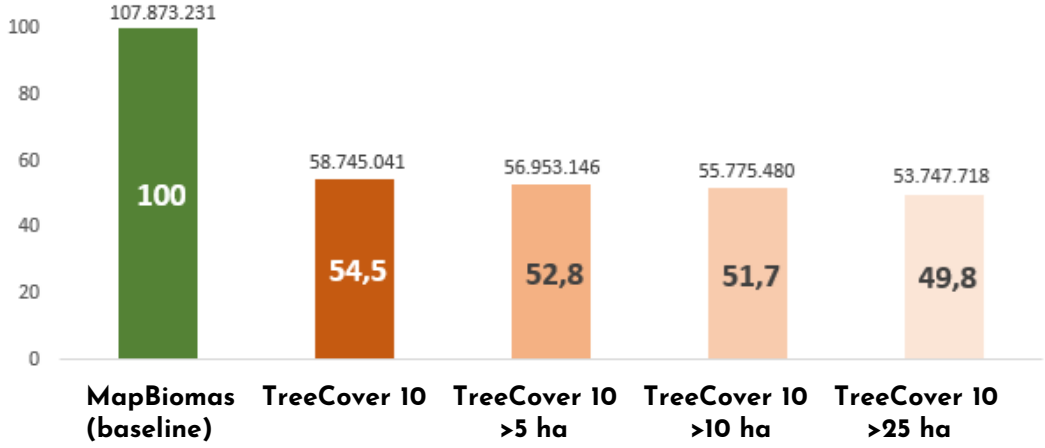
Results: Total Area in the Cerrado

Percentage (%) of the area (hectares) in the 2020 TreeCover scenarios that matches the 2020 MapBiomas native vegetation in the Cerrado Biome

Scenarios of Tree Canopy Density (over 10%, 20% or 30%)



Scenarios of Minimum Area (minimum area of 5, 10 or 25 hectares)

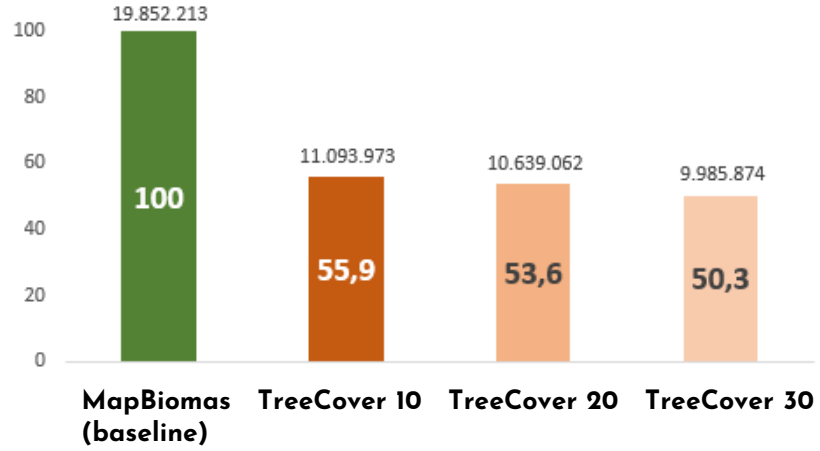


Minimum area scenarios refer to the removal from the analysis of small fragments and residual inclusion errors in the 2020 TreeCover forest cover map (<5, <10 or <25 hectares)

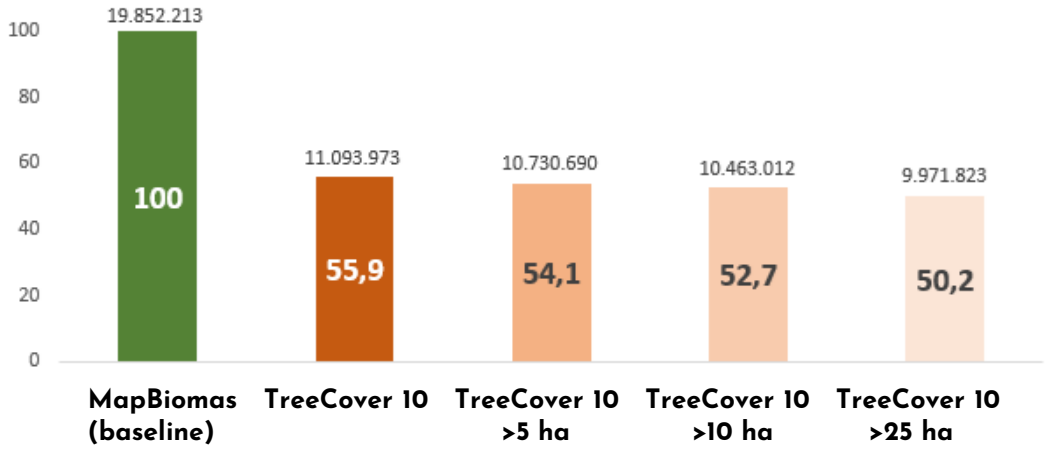
Results: Area of Soy Properties in the Cerrado

Percentage (%) of the area (hectares) in the 2020 TreeCover scenarios that matches the 2020 MapBiomas native vegetation on rural properties growing soy in the Cerrado Biome

Scenarios of Tree Canopy Density (over 10%, 20% or 30%)



Scenarios of Minimum Area (minimum area of 5, 10 or 25 hectares)

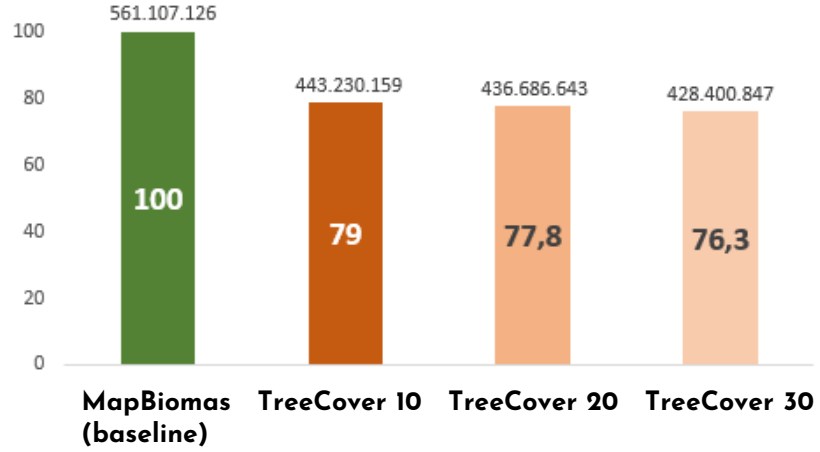


Minimum area scenarios refer to the removal from the analysis of small fragments and residual inclusion errors in the 2020 TreeCover forest cover map (<5, <10 or <25 hectares)

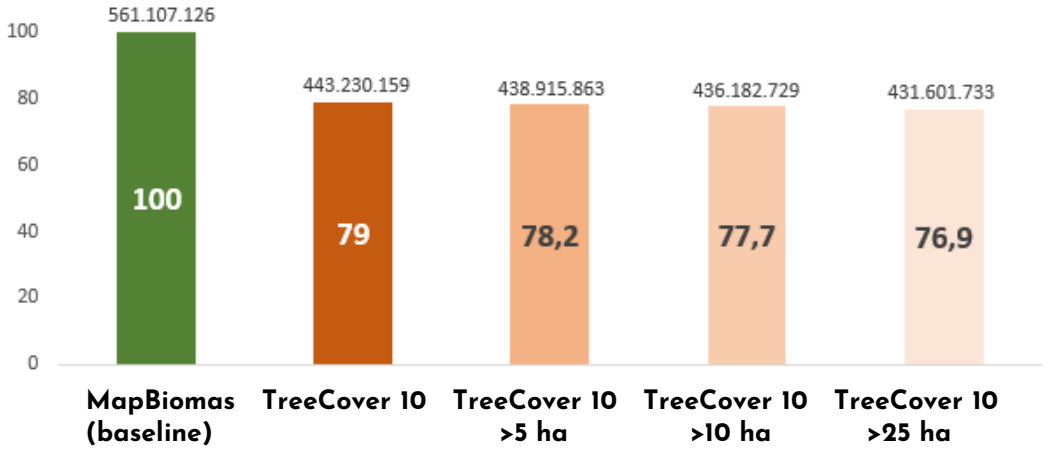
Results: Total Area in Brazil

Percentage (%) of the area (hectares) in the 2020 TreeCover scenarios that matches the 2020 MapBiomas native vegetation in Brazil

Scenarios of Tree Canopy Density (over 10%, 20% or 30%)



Scenarios of Minimum Area (minimum area of 5, 10 or 25 hectares)

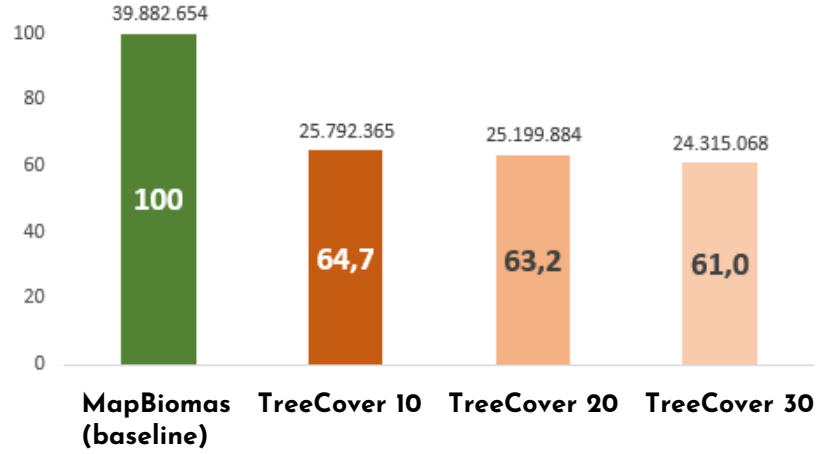


Minimum area scenarios refer to the removal from the analysis of small fragments and residual inclusion errors in the 2020 TreeCover forest cover map (<5, <10 or <25 hectares)

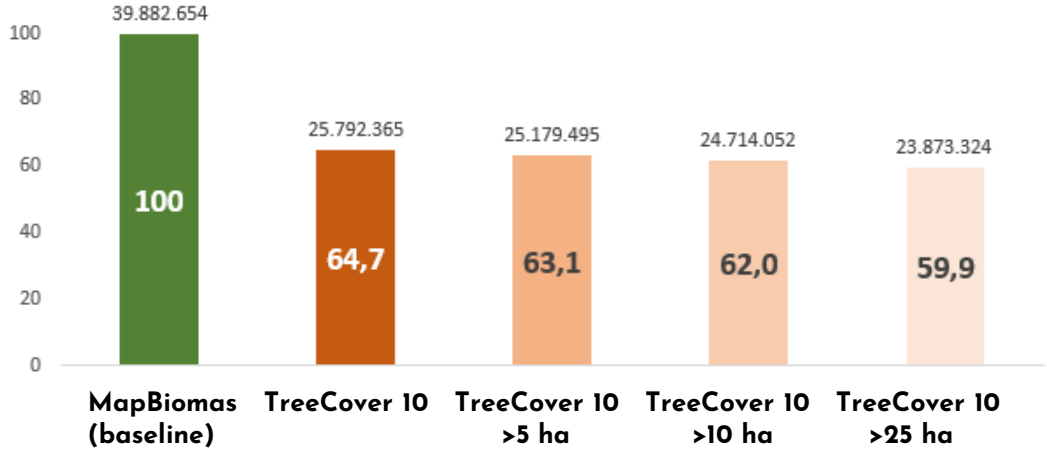
Results: Area of Soy Properties in Brazil

Percentage (%) of the area (hectares) in the 2020 TreeCover scenarios that matches the 2020 MapBiomas native vegetation on rural properties growing soy in Brazil

Scenarios of Tree Canopy Density (over 10%, 20% or 30%)

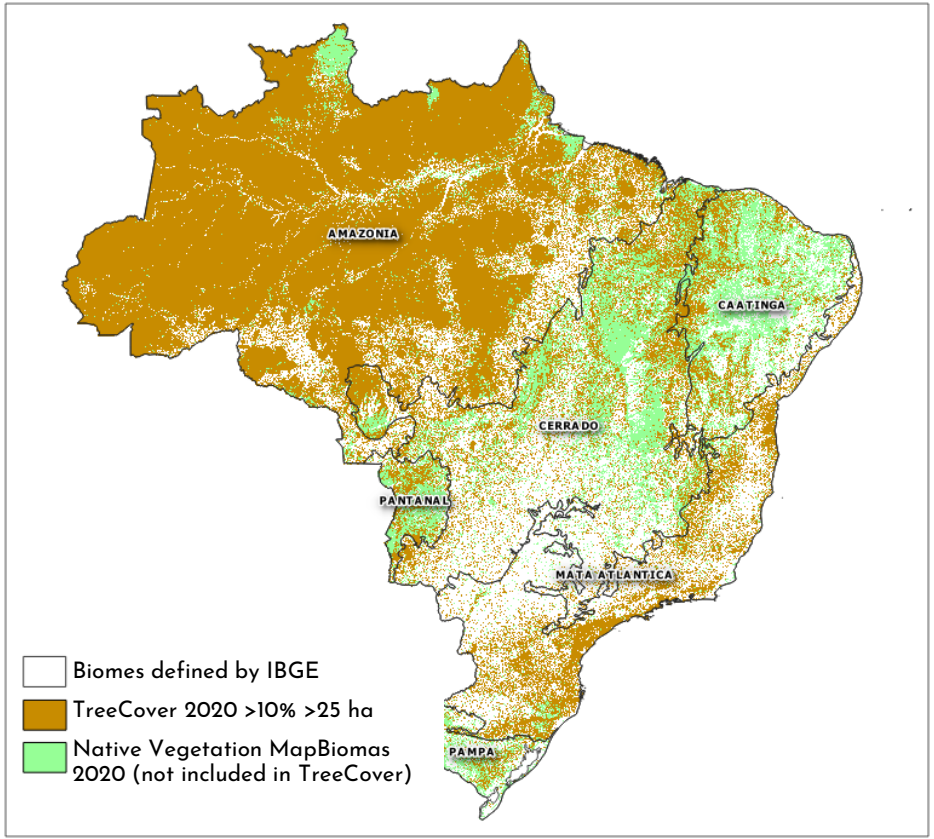


Scenarios of Minimum Area (minimum area of 5, 10 or 25 hectares)

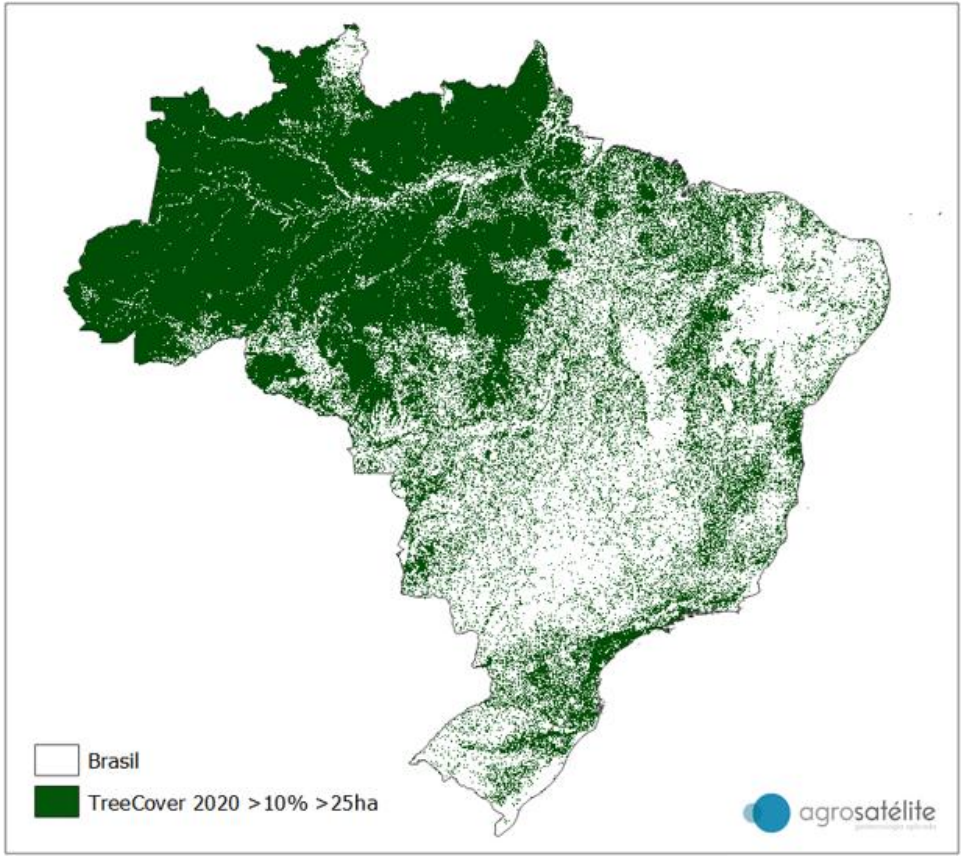


Minimum area scenarios refer to the removal from the analysis of small fragments and residual inclusion errors in the 2020 TreeCover forest cover map (<5, <10 or <25 hectares)

Results: Brazil



Results: Brazil



Results: Western Bahia State (Cerrado)

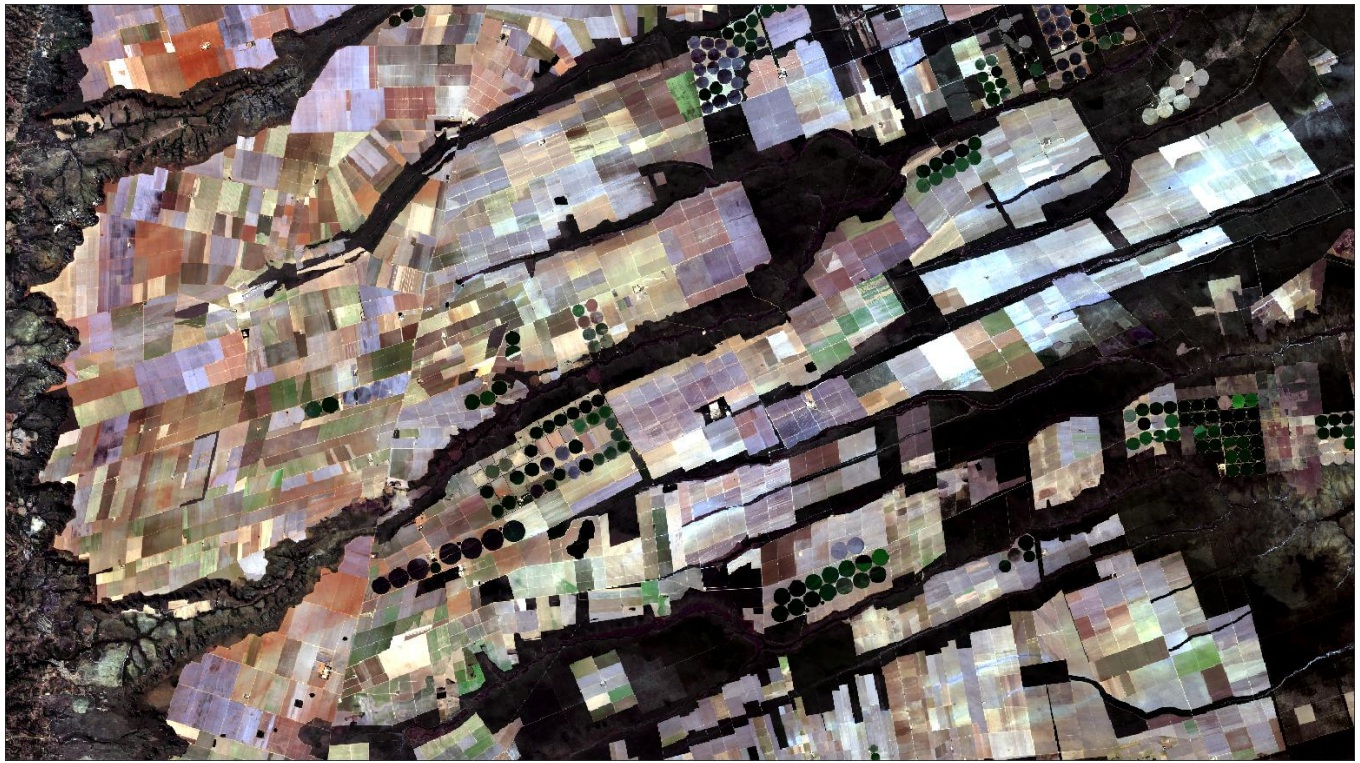
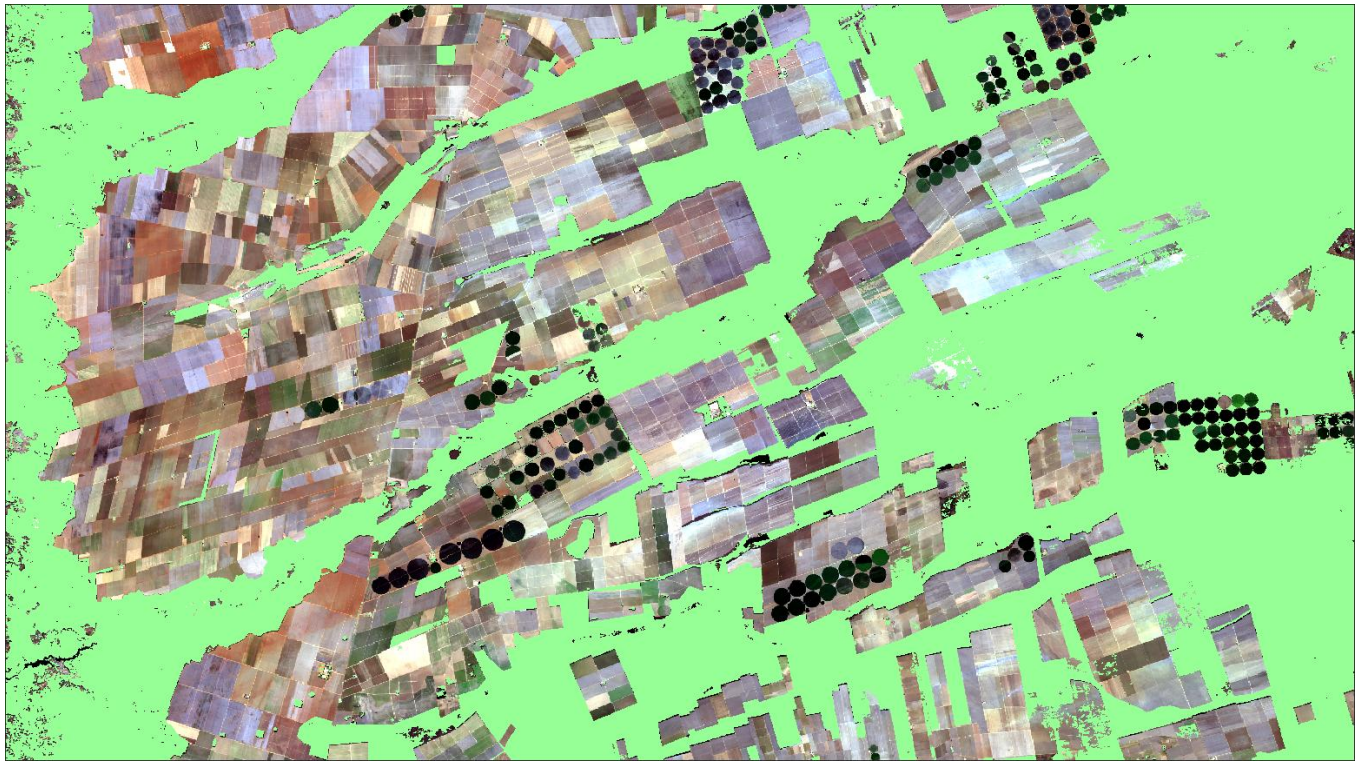


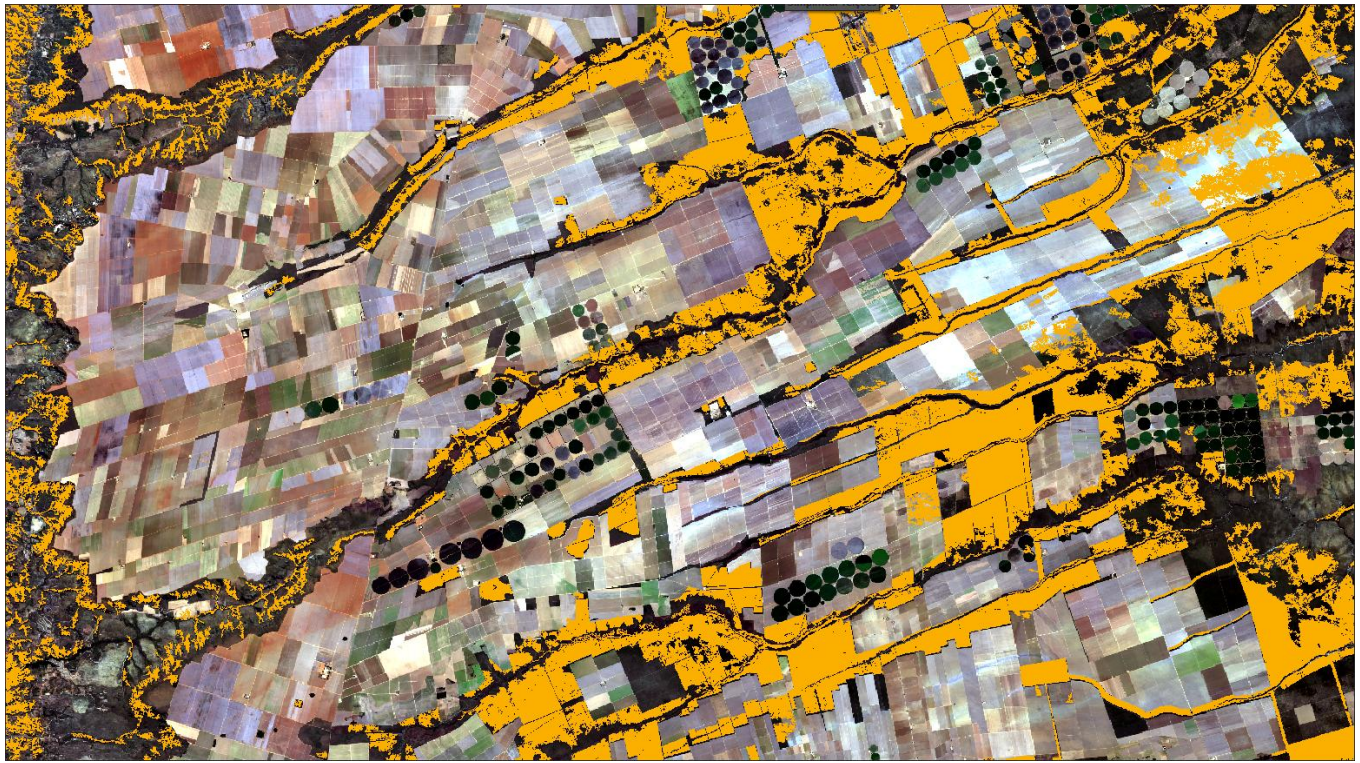
Image: OLI Landsat 220-069 / 29/06/2022 R(4)G(3)B(2)

Results: Western Bahia State (Cerrado) – MapBiomas 2020



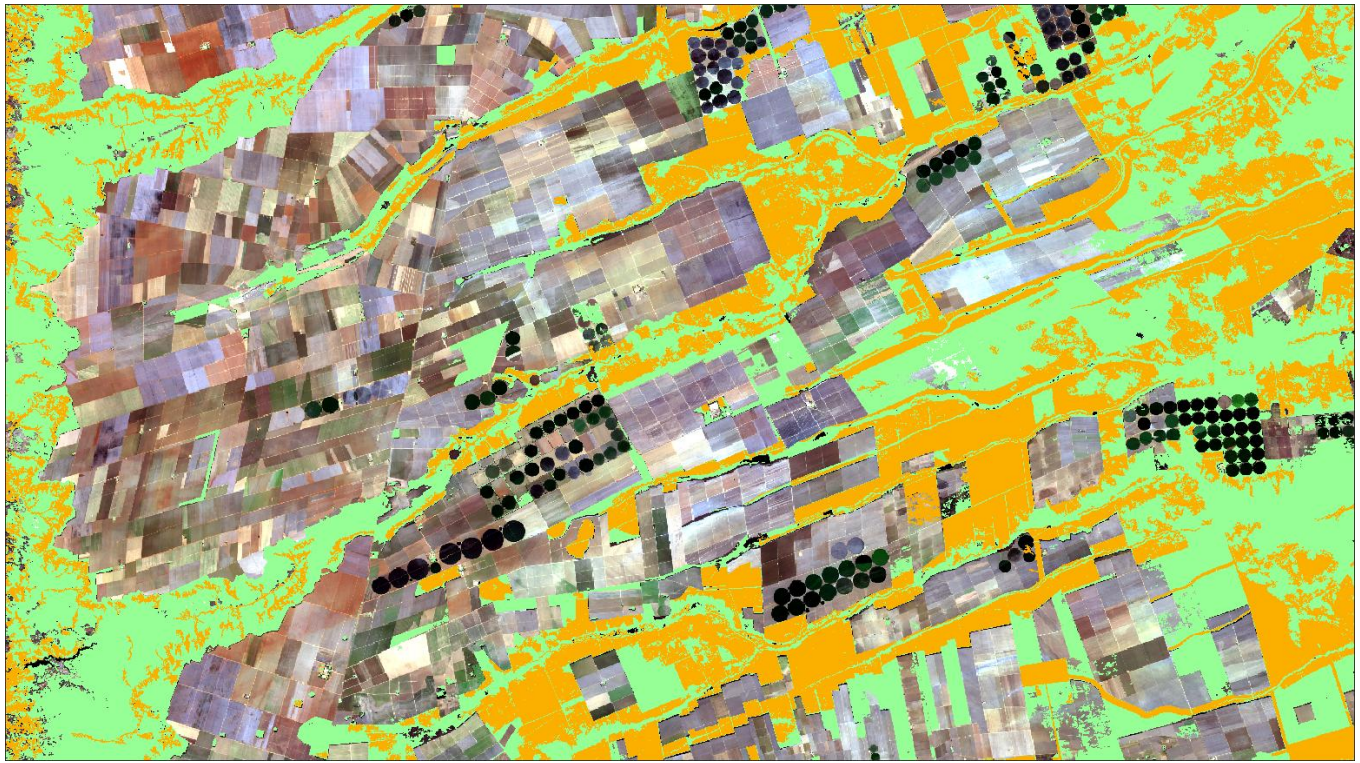
Native vegetation map from MapBiomas 2020

Results: Western Bahia State (Cerrado) – TreeCover >10% >25ha



Map from TreeCover 2020 >10% >25ha

Results: Western Bahia State (Cerrado) – Comparison



Map from TreeCover 2020 >10% >25ha

Native vegetation map from MapBiomas 2020

Final Considerations

According to MapBiomas, the Cerrado has 107,873,231 hectares
- Biggest match with the reference base: TreeCover >10% (54.5%; 65,332,660 ha)
- Biggest discrepancy with the reference base: TreeCover >30% (48.9%; 57,759,624 ha)

According to MapBiomas, properties growing soy in the Cerrado have 19,852,213 hectares
- Biggest match with the reference base: TreeCover >10% (55.9%; 12,475,925 ha)
- Biggest discrepancy with the reference base: TreeCover >10% >25ha (50.2%; 10,884,582 ha)

According to MapBiomas, Brazil has 561,107,126 hectares
- Biggest match with the reference base: TreeCover >10% (79.0%; 482,729,093 ha)
- Biggest discrepancy with the reference base: TreeCover >30% (76.3%; 461,091,858 ha)

Properties growing soy in Brazil have 39,882,654 hectares
- Biggest match with the reference base: TreeCover >10% (64.7%; 31,568,145 ha)
- Biggest discrepancy with the reference base: TreeCover >10% >25ha (59.9%; 28,271,375 ha)

The results for cut-off thresholds in area (>5 ha, >10 ha and >25 ha) reflected amounts similar to the results of tree canopy density (>20% and >30%), but only using polygons with more consolidated areas and removing fragments and small residual inclusion errors in the map.

** **Reference base:** Native vegetation from MapBiomas 2020*

References

Food and Agriculture Organization of the United Nations - FAO. Manual for integrated field data collection. FAO: Rome, Italy, 2012, 175p.

Instituto Brasileiro de Geografia e Estatística - IBGE. Manual técnico da vegetação brasileira. 2ed. Rio de Janeiro: IBGE, 2012, 275p.

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Global Forest Watch: https://www.globalforestwatch.org/

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