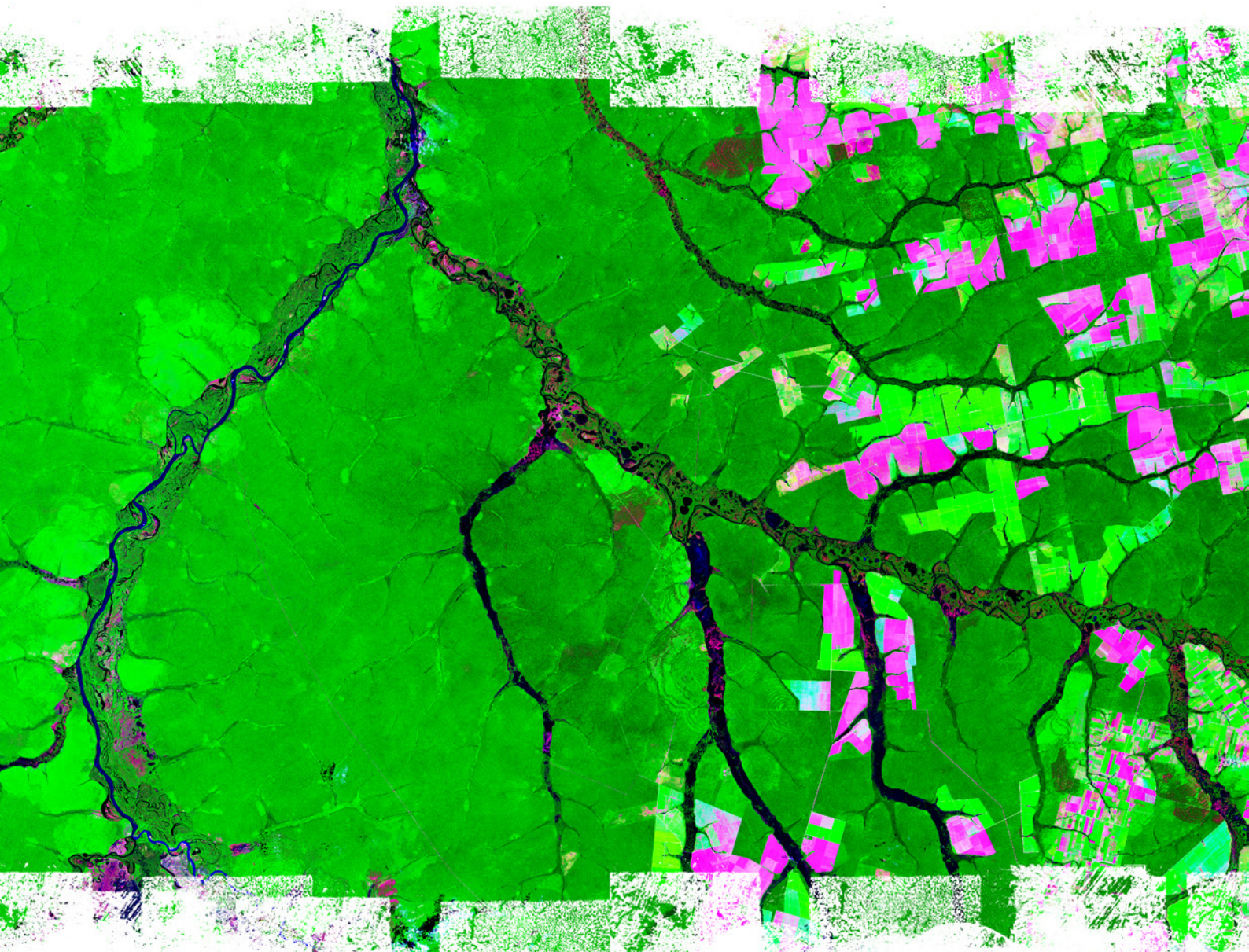


SOY

MORATORIUM

CROP YEAR 2019/20



MONITORING SOY THROUGH SATELLITE IMAGES IN THE AMAZON BIOME



CONTENTS

CONTENTS

- 1 INTRODUCTION** P. 8
- 2 SCOPE OF THE STUDY** P. 9
- 3 METHODOLOGY** P. 9
- 4 RESULTS** P. 19
- 5 CONCLUSIONS** P. 33
- 6 REFERENCES** P. 34
- 7 TECHNICAL TEAM IN CHARGE** P. 35
- 8 APPENDIX** P. 36



EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The Soy Moratorium is an initiative whose objective is to ensure that the soy produced in the Amazon Biome and traded by its signatories is free from deforestation occurring after 22nd July 2008^{1,2,3}. The Soy Working Group (GTS), made up of ABIOVE's and ANEC's member companies and civil society organisations, is responsible for the Moratorium's governance and operation¹. This Moratorium is the most successful example of the reconciliation of large-scale agricultural production and environmental sustainability, in terms of its most critical aspect: zero deforestation¹.

In a period of frank soy expansion in the Amazon Biome, the Soy Moratorium has shown its effectiveness for more than a decade since its inception. Between crop years 2007/08 and 2019/20, the area planted with soy went from 1.64 million hectares to 5.41 million hectares, respectively, with a residual fraction of 0.11 million hectares associated with deforestation occurring after 2008. This is a clear indication that the Moratorium did not suppress soy expansion in the Amazon Biome, but rather fostered its development without the conversion of primary forests, thus reconciling agricultural development and environmental conservation¹.

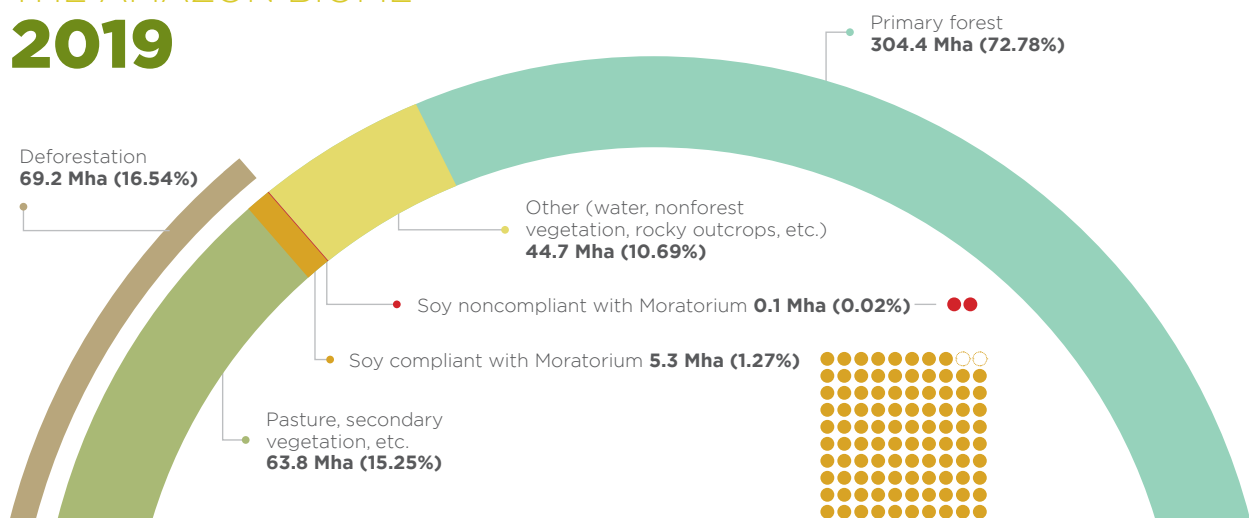
The Soy Moratorium initiative relies on meticulous monitoring using satellite images to identify rural properties with soy crops in any area deforested after 22nd July 2008^{4,5}. Rural properties that are not in compliance with the Moratorium are excluded from the soy trading and financing processes by the signatories of the Moratorium.

In the Amazon Biome, 98% (5.29 million hectares) of the soy area in the 2019/20 crop year lies in the 102 municipalities that make up the current study area⁶. Based on the annual analysis of the Project for Satellite Monitoring of the Brazilian Amazon Forest (PRODES), run by the National Space Research Institute (INPE)^{7,8}, deforestation in the Amazon Biome between 22nd July 2008 (the Moratorium's reference date) and the PRODES-2019 evaluation was 7.07 million hectares. Of this total, approximately 2.65 million hectares were deforested in those 102 municipalities, where 107,674 hectares were identified as having soy that is noncompliant with the Soy Moratorium.

This noncompliant area corresponds to 2.0% of the total soy grown in the Amazon Biome in the 2019/20 crop year, and to 4.1% of the total deforestation in the 102 soy-producing municipalities. In other words, 95.9% of the deforestation in these municipalities, during the period of the Soy Moratorium, is not associated with the conversion of forests into soy. It should be mentioned that only 23 municipalities concentrate 83% of the soy that is noncompliant with the Moratorium.

This report describes the methodology used and presents the results of the soy monitoring in the Amazon Biome in the 2019/20 crop year, in the context of the Soy Moratorium. The Appendix has detailed information on the deforested polygons with soy that is not in compliance with the Moratorium in the 2019/20 crop year.

LAND USE AND LAND COVER IN THE AMAZON BIOME 2019



LIST OF FIGURES

LIST OF FIGURES

Figure 1.

Location of soy areas in the Amazon Biome in the 2019/20 crop year

Figure 2.

Geographical distribution of the 102 selected municipalities

Figure 3.

PRODES deforestation rates for Legal Amazon, highlighting the years before and after the Soy Moratorium reference date

Figure 4.

PRODES deforestation rates for the 102 municipalities monitored in the Amazon Biome, highlighting the years before and after the Soy Moratorium reference date

Figure 5.

Example of aggregation of adjacent PRODES polygons mapped from 2009 to 2019, forming monitored polygons with 25 or more hectares (dark grey). Light grey polygons are not monitored as they have less than 25 hectares

Figure 6.

Remote sensing satellites and their respective sensors used to acquire images to identify soy crops that did not comply with the Soy Moratorium in the 2019/20 crop year

Figure 7.

Schematic of the monitoring process of soy crops in areas deforested during the Soy Moratorium

Figure 8.

Spatial distribution of the 102 municipalities analysed, classified according to the soy area not in compliance with the Soy Moratorium, for the 2019/20 crop year

Figure 9.

Evolution of the soy area not in compliance with the Soy Moratorium in the states of Mato Grosso (MT), Pará (PA), Rondônia (RO), Maranhão (MA), Amapá (AP), Tocantins (TO) and Roraima (RR), in crop years 2012/13 to 2019/20

Figure 10.

Evolution of the soy area in the Amazon Biome over two decades

Figure 11.

Evolution of the accumulated deforested area (Amazon Biome and the 102 municipalities) and of soy not in compliance with the Soy Moratorium in the monitored municipalities

LIST OF TABLES

LIST OF TABLES

Table 1.

Total annual deforestation area (in hectares) in the Amazon Biome during the Soy Moratorium (2009-2019) in the states of Mato Grosso (MT), Pará (PA), Rondônia (RO), Roraima (RR), Amapá (AP), Maranhão (MA) and Tocantins (TO)

Table 2.

Characteristics of images used in the Soy Moratorium monitoring process

Table 3.

Number (n) and area (ha) of nonaggregate and aggregated polygons, mapped between 2009 and 2019 in the 102 monitored municipalities

Table 4.

Deforested area (in hectares) during the Soy Moratorium in the 102 municipalities of the states of Mato Grosso (MT), Pará (PA), Rondônia (RO), Roraima (RR), Amapá (AP), Maranhão (MA) and Tocantins (TO)

Table 5.

Distribution of the deforested area (in hectares) during the Soy Moratorium on private properties: (a) outside Conservation Units (UC), indigenous lands (TI) and settlements (Ass); and (b) partially within these same categories, by state

Table 6.

Soy area (in hectares) in noncompliance with the Soy Moratorium, by size of deforested polygon, in the states of Mato Grosso (MT), Pará (PA), Rondônia (RO), Roraima (RR), Amapá (AP), Tocantins (TO) and Maranhão (MA)

Table 7.

List of the 81 municipalities with soy not in accordance with the Soy Moratorium in the 2019/20 crop year

Table 8.1.

Polygons with soy in Mato Grosso state

Table 8.2.

Polygons with soy in Pará state

Table 8.3.

Polygons with soy in Rondônia state

Table 8.4.

Polygons with soy in Maranhão state

Table 8.5.

Polygons with soy in Amapá state

Table 8.6.

Polygons with soy in Roraima state

ACRONYMS

ACRONYMS

ABIOVE – Brazilian Association of Vegetable Oil Industries

AGROSATÉLITE – Agrosatelite Applied Geotechnology Ltd.

ANEC – National Grain Exporters Association

FUNAI – National Native Indians Foundation

GTS – Soy Working Group

IBAMA – Brazilian Institute of Environment and Renewable Natural Resources

IBGE – Brazilian Geographic & Statistical Institute

INCRA – National Colonisation & Agrarian Reform Institute

INPE – National Space Research Institute

PPCDAm – Action Plan for Prevention & Control of Deforestation in Legal Amazon

PRODES – Project for Satellite Monitoring of the Brazilian Amazon Forest

INTRODUCTION

INTRODUCTION

The Soy Moratorium is a commitment that has been in effect since 2006, with the objective of eliminating the conversion of forests into soy crops in the Amazon Biome, and adding value in the domestic and international markets for having a soy chain that is environmentally sustainable.

Since the new Forest Code⁹ established 22nd July 2008 as the reference date for defining a consolidated rural area, the GTS adopted this same date for the Soy Moratorium. In other words, the acquisition and financing of soy from rural properties that plant soy on areas deforested after this date are suspended.

Soy crops on areas deforested after 2008 are identified through a meticulous monitoring procedure that uses remote sensing satellite images, with complementary spatial and temporal resolutions. These images are carefully analysed by an experienced team of interpreters. To complement these analyses, the database of deforestation in the Amazon Biome during the Moratorium, made available by PRODES, is also used, as are the databases from the following institutions: Agrosatélite⁶, FUNAI¹⁰, Ministry of the Environment¹¹, IBGE¹², and INCRA¹³.

2

SCOPE OF THE STUDY

SCOPE OF THE STUDY

The scope of this study is to identify and map, using remote sensing satellite images, the soy planted in the 2019/20 crop year in areas of the Amazon Biome deforested after 22nd July 2008 and mapped by PRODES between the years 2009 and 2019. The Soy Moratorium is restricted to private rural properties located in municipalities with soy areas of 5,000 or more hectares in the Amazon Biome. The agrarian reform settlement areas, conservation units and indigenous lands are not monitored.



3

METHODOLOGY

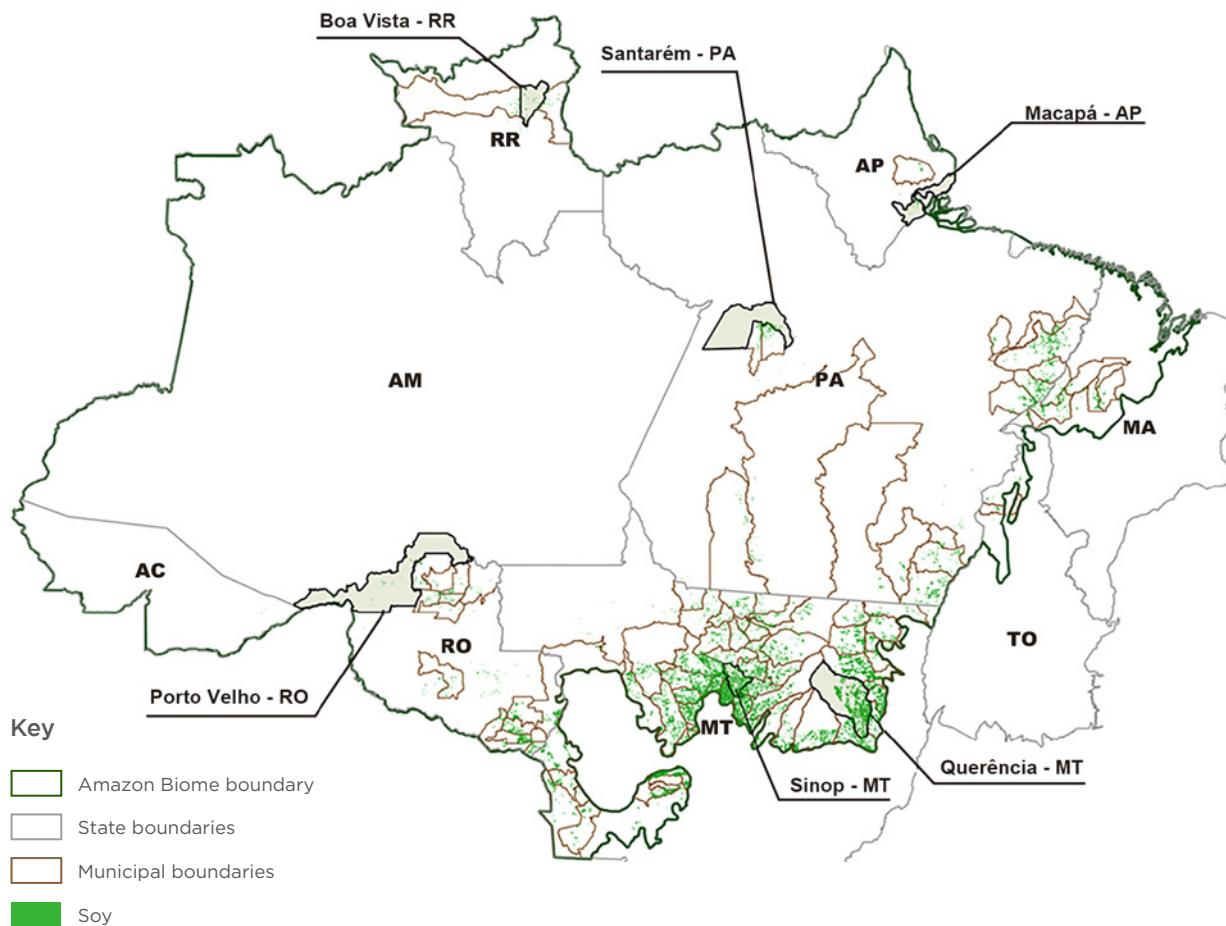
METHODOLOGY

In the first stage of this study, the municipalities that represent 98% (5.29 million hectares) of the soy area in the Amazon Biome were selected. The next step was selecting the deforested polygons mapped by PRODES during the period of the Soy Moratorium. Finally, the soy crops on these deforested areas were identified and mapped using remote sensing satellite images. The detailed methodology is presented below.

3.1 - Definition of the study area

In 2020, ABIOVE, in partnership with Agrosatélite, prepared a soy map of the Amazon Biome, which enabled the identification of a total 5.41 million hectares of soy grown in the 2019/20 crop year (Figure 1). Through this mapping, it was possible to identify the municipalities with a soy area of 5,000 or more hectares that would be monitored in this cycle, according to Soy Moratorium criteria. In all, 102 municipalities met this minimum-area criterion and were included in the study. Together, these municipalities account for 98% (5.29 million hectares) of the soy area in this Biome. The remaining 2% of soy areas are distributed in another 80 municipalities.

FIGURE 1.
LOCATION OF SOY AREAS IN THE AMAZON BIOME¹² IN THE 2019/20 CROP YEAR



Of the selected municipalities, 59 are in Mato Grosso state, 17 in Pará state, 14 in Rondônia state, 6 in Maranhão state, 3 in Roraima state, 2 in Amapá state and 1 in Tocantins state.

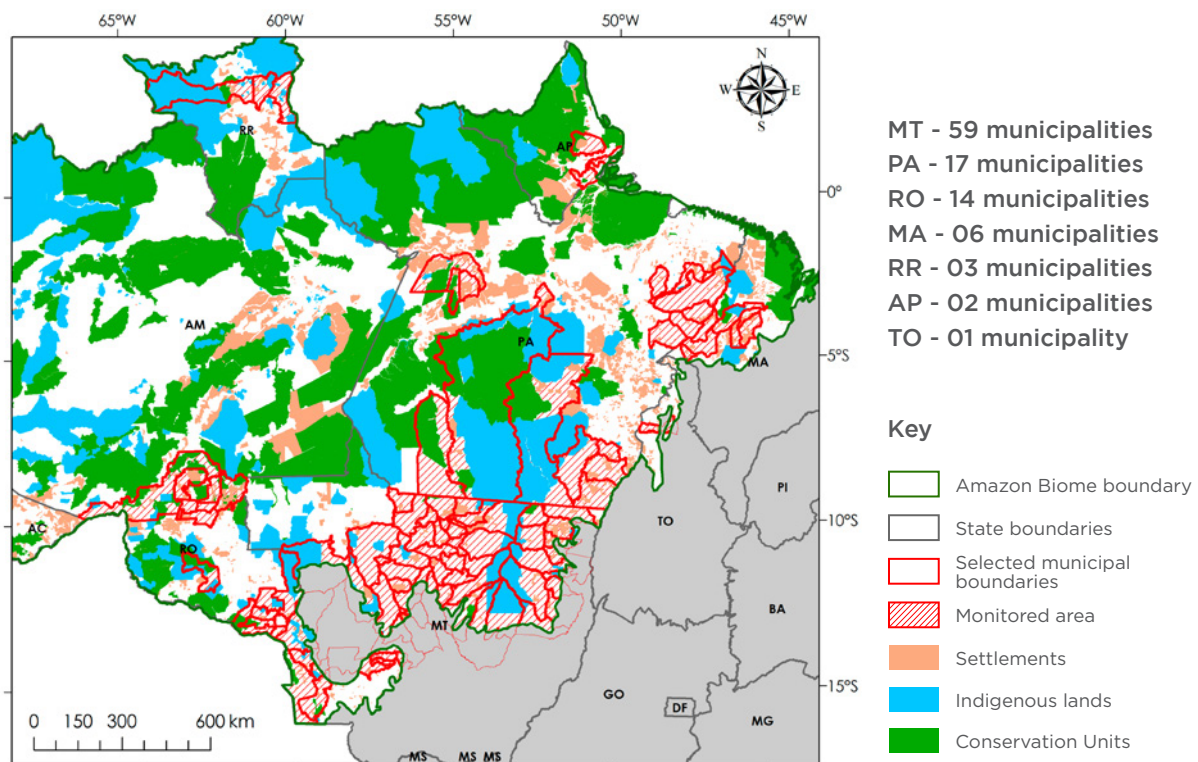
In the second stage of defining the study area, the polygons mapped by PRODES from 2009 to 2019 were selected, based on the following criteria:

1. They must be wholly or partially within the Amazon Biome, using the Biome boundaries established by the GTS in previous years of the Soy Moratorium (source IBGE)¹².
2. They must be wholly or partially in at least one of the 102 municipalities identified with over 5,000 hectares of soy.
3. They must be located on private rural properties and lie outside indigenous lands, Conservation Units and settlements^{10,11,13}, which are public areas that fall under the responsibility of the government’s environmental entities at the federal and state levels.
4. They must have areas larger than 25 hectares after aggregation of adjacent polygons (see Item 3.3).

Figure 2 shows the geographical distribution of the 102 selected soy-producing municipalities, as well as the Conservation Units, indigenous lands and settlements used to define the area covered by the study, in accordance with the criteria listed above.

It should be pointed out that, for municipalities only partially located within the Amazon Biome, the analysis was restricted to that part of the municipality that lies within the Biome.

FIGURE 2.
GEOGRAPHICAL DISTRIBUTION OF THE 102 SELECTED MUNICIPALITIES

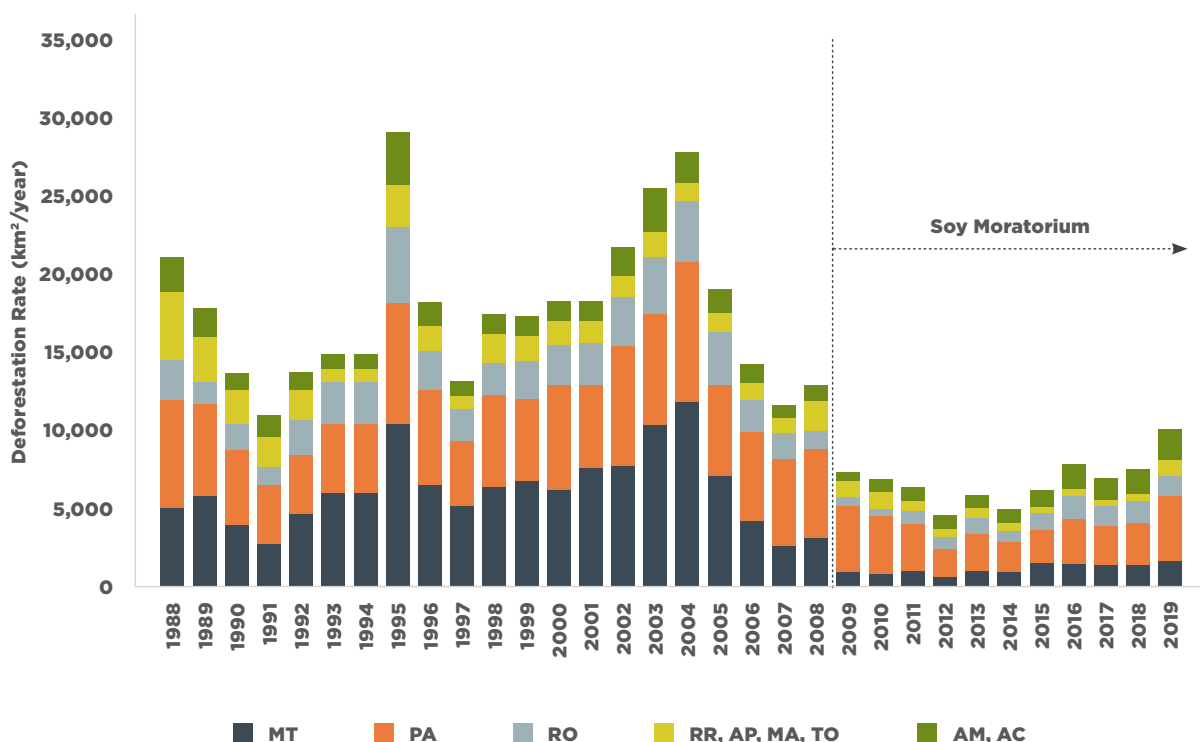


3.2 – Deforestation mapped by PRODES

Since 1988, PRODES, developed and implemented by INPE⁷, has mapped deforested areas and calculated the annual deforestation rate in Legal Amazon. The results of this deforestation mapping are available on the Internet through a georeferenced database that contains the boundaries of the deforested areas (polygons) and information on the year each polygon was deforested.

Figure 3 shows the Legal Amazon deforestation rates calculated by PRODES, highlighting the period before and after the Soy Moratorium’s reference date of 22nd July 2008. As can be seen, there has been a significant drop in the Legal Amazon deforestation rates since 2005, reaching their lowest level in 2012 (457,000 hectares), due to the government’s intervention to curb illegal deforestation in the region through the Plan for Prevention & Control of Deforestation in Legal Amazon (PPCDAm)¹⁴, created in 2004, and to integrated surveillance with the participation of IBAMA, the Federal Police and the National Guard. However, since 2013, there has been a gradual increase in deforestation rates, which resulted in 2019 having the highest rate recorded in the last eleven years (1.01 million hectares).

FIGURE 3.
PRODES DEFORESTATION RATES (KM2/YEAR) FOR LEGAL AMAZON, HIGHLIGHTING THE YEARS BEFORE AND AFTER THE SOY MORATORIUM REFERENCE DATE



Source: Adapted from INPE⁷.

Table 1 shows the figures for the deforested areas mapped by PRODES in the Amazon Biome during the period of the Soy Moratorium for the soy-producing states of Mato Grosso (MT), Pará (PA), Rondônia (RO), Roraima (RR), Amapá (AP), Maranhão (MA) and Tocantins (TO). These figures do not include those parts of the Cerrado and Pantanal Biomes that fall within the Legal Amazon region.

TABLE 1.
TOTAL ANNUAL DEFORESTATION AREA (IN HECTARES) IN THE AMAZON BIOME DURING THE SOY MORATORIUM (2009-2019) IN THE STATES OF MATO GROSSO (MT), PARÁ (PA), RONDÔNIA (RO), RORAIMA (RR), AMAPÁ (AP), MARANHÃO (MA) AND TOCANTINS (TO)

State	Year of PRODES Mapping during the Soy Moratorium ^{i, ii, iii, iv, v}											Total
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
MT	71,841	71,664	94,321	70,983	102,352	101,914	150,497	136,050	127,965	137,818	177,087	1,242,492
PA	355,732	341,788	255,202	172,610	213,457	182,990	288,568	284,444	260,218	263,098	445,012	3,063,119
RO	42,479	44,803	77,299	69,617	96,915	76,822	108,552	122,045	128,743	120,438	138,002	1,026,705
RR	11,124	24,268	13,174	10,801	15,364	19,056	23,617	24,913	12,575	8,475	54,286	217,653
AP	4,739	7,201	1,676	1,954	2,417	2,911	4,582	1,827	1,893	1,397	3,877	34,474
MA	45,563	25,317	18,087	13,483	16,054	13,944	17,146	13,896	15,494	8,150	16,541	203,676
TO	2,340	2,998	1,243	1,054	1,875	1,213	2,143	1,952	1,274	652	995	17,739
	533,818	518,039	461,002	340,502	448,434	398,850	595,105	585,127	548,162	540,028	836,790	5,805,857

Source: INPE⁷.

ⁱ PRODES identifies deforestation occurring between August of one year through July of the following year.

ⁱⁱ Area is calculated based on the available PRODES maps.

ⁱⁱⁱ The deforested areas in MT, TO and MA refer only to that portion of the state that lies within the Amazon Biome.

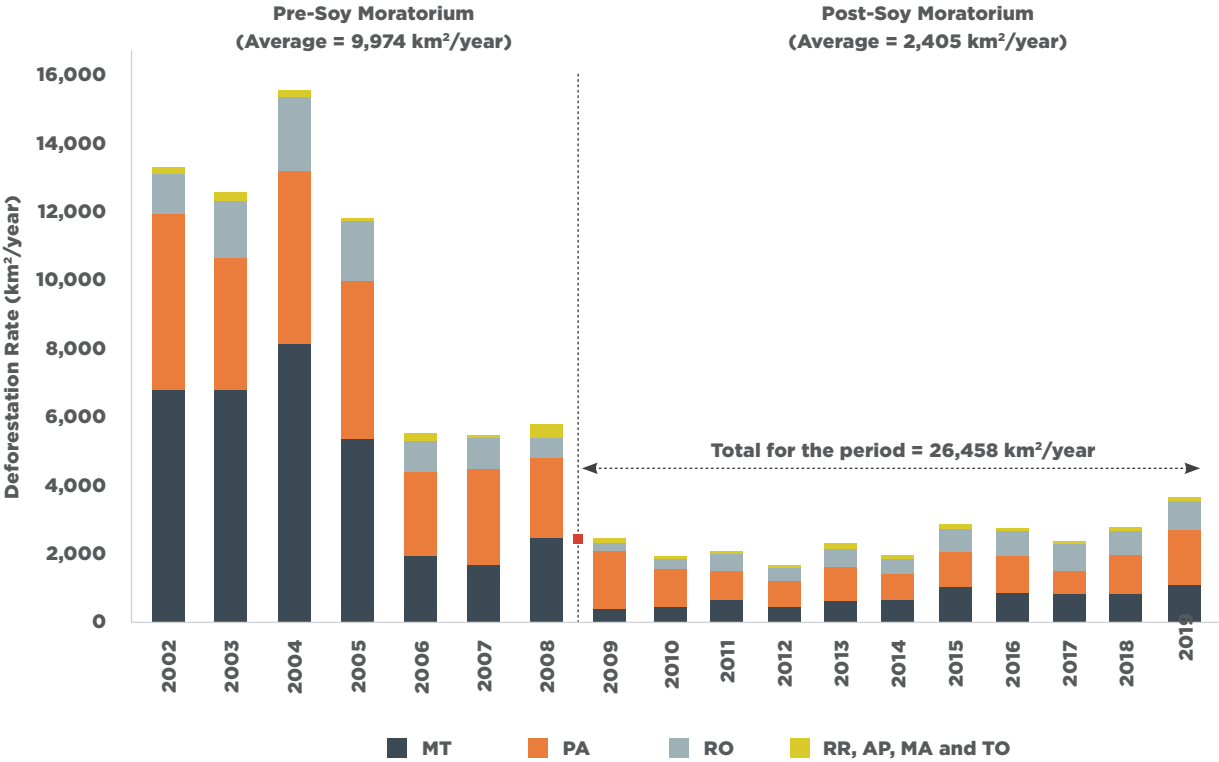
^{iv} The most recent data published by PRODES in their "yearly deforestation" tab include some polygons missing from PRODES-2018 because they were not available by the closing date of the Soy Moratorium 2018-19 report. Thus, the total 2018 deforestation shown above for each state could be slightly higher than that shown in the 2018/19 report.

^v There are some overlaps of 2019 PRODES polygons with 2018 deforestation, amounting to 3,133.5 hectares. This amount was discounted from the total 2019 deforestation to avoid duplication.



Figure 4 shows the PRODES deforestation for the period 2002-2019 in the 102 municipalities in the Amazon Biome monitored by the Soy Moratorium. With the creation of PPCDAm¹⁴, integrated surveillance, implementation of the Forest Code and introduction of the Soy Moratorium, the deforestation rates were drastically reduced in the soy-producing municipalities. The average deforestation rate observed before the Moratorium (2002-2008) fell from 9,974 km²/year to 2,405 km²/year during the Moratorium (2009-2019). However, the largest annual deforestation in these municipalities during the Moratorium period was observed in the year 2019, with an increase of 34% compared to 2018. Just 17 municipalities in Pará state (Figure 2) were responsible for 43% of the deforestation that occurred in 2019 in the 102 municipalities analysed (Figure 4).

FIGURE 4. PRODES DEFORESTATION RATES (KM²/YEAR) FOR THE 102 MUNICIPALITIES MONITORED IN THE AMAZON BIOME, HIGHLIGHTING THE YEARS BEFORE AND AFTER THE SOY MORATORIUM REFERENCE DATE.



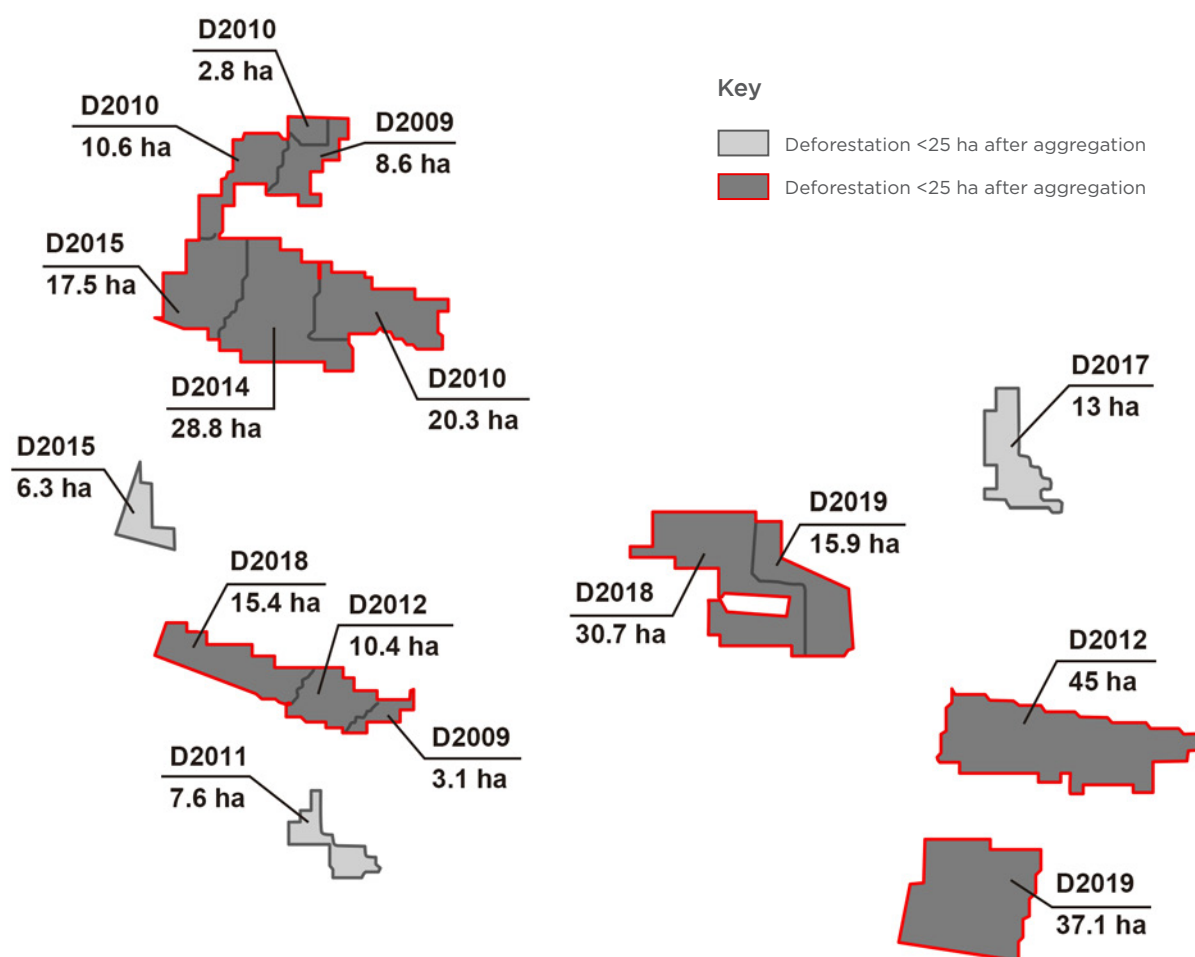
Source: Adapted from INPE⁷.



3.3 - Aggregation of adjacent deforestation

Considering that the nature of the Soy Moratorium is to deal with large-scale agriculture, the GTS established that the monitored deforested areas mapped by PRODES should be no less than 25 hectares. Although a significant part of the annual deforestation occurs in areas with less than 25 hectares, they will be monitored in subsequent years as the new deforestation is aggregated into adjacent areas, thus forming a polygon with 25 hectares or more. As an example, Figure 5 illustrates the procedure for aggregating adjacent polygons, deforested in different years, to form polygons of 25 hectares or more.

FIGURE 5. EXAMPLE OF AGGREGATION OF ADJACENT PRODES POLYGONS MAPPED FROM 2009 TO 2019, FORMING MONITORED POLYGONS WITH 25 OR MORE HECTARES (DARK GREY). LIGHT GREY POLYGONS ARE NOT MONITORED AS THEY HAVE LESS THAN 25 HECTARES.



3.4 - Identification of soy in deforested areas

Identification of soy crops in the deforested areas targeted by the Soy Moratorium was ensured through the continuous monitoring and analysis of remote sensing satellite images. Over the past few years, several satellites have been launched, and this has provided very favourable conditions in terms of getting cloud-free images during key periods to identify soy in the Amazon Biome (Figure 6, Table 2).

FIGURE 6.
REMOTE SENSING SATELLITES AND THEIR RESPECTIVE SENSORS USED TO ACQUIRE IMAGES TO IDENTIFY SOY CROPS THAT DID NOT COMPLY WITH THE SOY MORATORIUM IN THE 2019/20 CROP YEAR

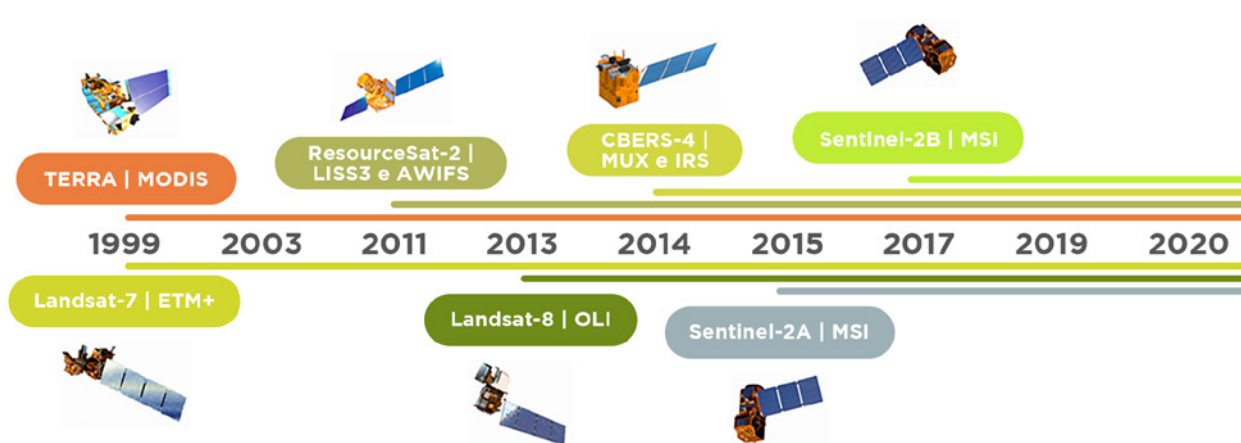


TABLE 2.
CHARACTERISTICS OF IMAGES USED IN THE SOY MORATORIUM MONITORING PROCESS

SATELLITE SENSOR	RESOLUTION		
	TEMPORAL (days)		SPATIAL (m)
Sentinel-2A MSI	10	-3	10 and 20
Sentinel-2B MSI	10		10 and 20
Landsat-8 OLI	16		15 and 30
Landsat-7 ETM+	16	8	30
CBERS-4 MUX e IRS	26		20 and 40
ResourceSat-2 LISS3 e AWIFS	24 and 5		23.5 and 56
TERRA MODIS	-1		250

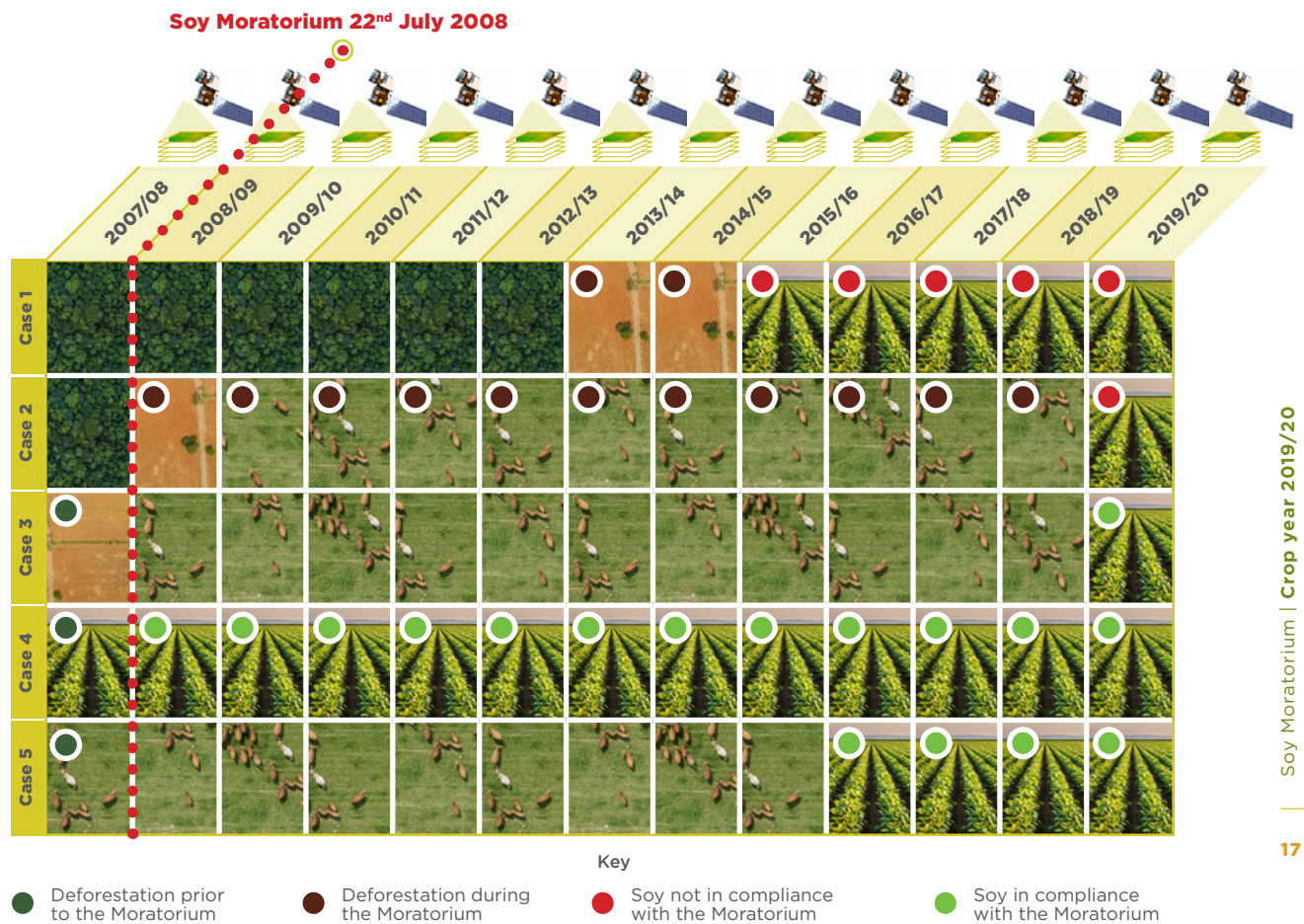
The images received from the Sentinel and Landsat satellites are given priority, complemented whenever necessary by images from the CBERS-4 and Resourcesat-2 satellites. The images from the MODIS sensor, in temporal series format, were accessed through EMBRAPA's SATVeg tool¹⁵ to assist in the visual analysis of soy identification.

With the significant increase in availability of medium spatial resolution images, MODIS images now have less relevance in the monitoring process. Thus, the Crop Enhancement Index (CEI¹⁶), which is based on MODIS images and was, for a long time, an important indicator in the soy identification process, has become a support element.

Each deforested polygon is now individually inspected through a visual analysis of up to 20 images acquired by the Sentinel and Landsat satellites. The acquisition dates of the images take into consideration the soy calendar followed in the different soy-producing regions of the Amazon Biome.

Figure 7 illustrates, in a schematic way, the use of satellite images for the monitoring procedure of the soybean crops: a) not in compliance as they were cultivated in areas deforested during the Moratorium (cases 1 and 2); and b) in compliance, as they were cultivated in areas deforested prior to the Moratorium (cases 3, 4 and 5).

FIGURA 7.
SCHEMATIC OF THE MONITORING PROCEDURE OF SOY CROPS IN AREAS DEFORESTED PRIOR TO THE MORATORIUM (CASES 1 AND 2) AND DURING THE MORATORIUM (CASES 3, 4 AND 5).





In the 102 municipalities with over 5,000 hectares of soy, the analysis combined deforested polygons mapped by PRODES (2009-2019) with soy crops mapped in the 2019/20 crop year (see Figure 1), providing the first indication of a soy presence. It should be noted that the map produced for the entire Amazon Biome is drawn up on a smaller scale with less detail (1:75,000 to 1:50,000) and does not consider the boundary characteristics of the deforested polygons or the rural properties. Therefore, each deforested polygon undergoes a thorough analysis on a larger scale, more detailed map (about 1:25,000) to ensure the correct identification of soy crops and their demarcation within the polygons, as well as possible shifts in the recording of PRODES polygons¹, in order to avoid false positives². In the same way, the remaining PRODES polygons, where no soy planting was identified, also underwent a detailed inspection to avoid false negatives³.

The deforested polygons, which are identified as soy plantations in the 2019/20 crop year that do not comply with the Soy Moratorium, go through a review process to determine whether they were, in fact, deforested during the Moratorium period. The review of the deforestation date indicated by PRODES is necessary because the dates of the images used by PRODES were not selected to meet the specific needs of the Moratorium, but rather to identify deforestation in each year. The dates are reviewed based on Landsat images obtained from the year 2000 up to the period closest to the Moratorium's reference date (22nd July 2008), backed up by images from the MODIS sensor for the same period.

Deforested areas identified as having soy crops in polygons partially within Conservation Units, indigenous land and settlements were also submitted to a review, and crops wholly within these public areas were eliminated.

After both these reviews, 5,427 hectares of soy were removed as these areas were deforested before the Soy Moratorium's reference date and a further 4,860 hectares were removed as they were located in Conservation Units (0 hectares), indigenous lands (15 hectares) and settlements (4,845 hectares). In other words, they were not in compliance with the Moratorium's criteria and, without this review, would have been wrongly included in the list of noncompliances.

At the end of the process identifying soy in noncompliance with the Soy Moratorium, INPE performs an independent audit of the results, attesting to the quality of the work developed by Agrosatélite.

^[1] The PRODES database for recording polygons does not always adjust for elements of the landscape visible in the images, requiring a technical analysis of each polygon based on the historical series of the satellite images, from the date of deforestation up to the present moment.

^[2] "False positives" are those areas mapped as soy crops in the mapping's landscape phase, but which need to be adjusted or have parts removed after the more detailed analysis during the inspection of individual polygons.

^[3] "False negatives" are possible errors of omission. In other words, small soy areas that were not identified in the mapping's landscape phase, and that should be added to the inspection of individual polygons. "False negatives" can also occur in the first year of some soy expansion areas that do not yet show up in typical format on the images, so they have to undergo a more detailed analysis or even a redefinition of the soy area boundaries.

4.1 - Deforestation mapped by PRODES from 2009 to 2019

In the 102 municipalities monitored under the Soy Moratorium, PRODES mapped, in the period 2009-2019, a deforested area of 2,642,617 hectares, as shown in Table 3. It should be noted that Table 3 shows that the deforestation category of less than 25 hectares had 997,900 hectares before aggregation of adjacent polygons, representing 38% of the total deforested area. After aggregation (see the methodology described in Item 3.3), this category was reduced to 388,655 hectares, indicating that a significant part of the polygons with less than 25 hectares (609,245 hectares) is now monitored. As a result of the aggregation process, the category of less than 25 hectares now represents just 15% of the total.

TABLE 3.
NUMBER (N) AND AREA (HA) OF NONAGGREGATE AND AGGREGATED POLYGONS, MAPPED BETWEEN 2009 AND 2019 IN THE 102 MONITORED MUNICIPALITIES

Category	Nonaggregate Polygons		Aggregated Polygons	
	n	ha	n	ha
< 25 ha	104,352	997,900	36,070	388,655
≥ 25 ha	20,251	1,647,874	15,307	2,253,962
Total	124,603	2,645,774	51,377	2,642,617

*The aggregation process of the 104,352 polygons with <25 ha caused a reduction of 3,157 ha in the total deforested area of the aggregated polygons due to the overlap of some 2019 deforestation that had already been mapped in previous years

Considering the PRODES aggregated polygons with an area equal to or more than 25 hectares (Table 3), the breakdown in Table 4 shows that the 59 soy-producing municipalities in the Amazon Biome located in Mato Grosso state had a deforested area of 683,925 hectares, or 30.3% of the deforested area in the 102 municipalities monitored by the Soy Moratorium. However, the largest area (970,381 hectares) is recorded in the 17 municipalities of Pará state, representing 43.1% of the total deforestation. In the 14 municipalities of Rondônia state, the deforested area was 538,607 hectares, or 23.9% of the total deforestation. The three municipalities in Roraima state and the two in Amapá state had a total deforested area of 12,017 hectares, or 0.5% of the total deforestation. The six municipalities of Maranhão state and the single municipality in Tocantins state had deforested areas of 47,248 hectares (2.1% of the deforestation) and 1,782 hectares (0.1% of the deforestation), respectively (Table 4).

TABLE 4.
DEFORESTED AREA (IN HECTARES) DURING THE SOY MORATORIUM IN THE 102 MUNICIPALITIES OF THE STATES OF MATO GROSSO (MT), PARÁ (PA), RONDÔNIA (RO), RORAIMA (RR), AMAPÁ (AP), MARANHÃO (MA) AND TOCANTINS (TO)

Category	MT ha	PA ha	RO ha	RR ha	AP ha	MA ha	TO ha	Total ha
25-50 ha	69,793	110,692	51,695	3,388	1,589	10,497	405	248,059
50-100 ha	81,606	121,353	58,902	2,526	651	10,898	278	276,214
>100 ha	532,526	738,336	428,010	3,687	176	25,853	1,099	1,729,687
Total	683,925	970,381	538,607	9,601	2,416	47,248	1,782	2,253,960

According to the criteria established by the GTS, the monitoring of soy crops is restricted to deforestation on private rural properties (see Item 3.1) and to the deforestation partially within Conservation Units, indigenous lands and settlements with a total of 1,596,733 hectares (Table 5), corresponding to 71% of the total deforested area in polygons of 25 or more hectares in the 102 monitored municipalities. In other words, 29% of the total deforested in these municipalities is located entirely within Conservation Units, indigenous lands and settlements.

TABLE 5.

DISTRIBUTION OF THE DEFORESTED AREA (IN HECTARES) DURING THE SOY MORATORIUM ON PRIVATE PROPERTIES: (A) OUTSIDE CONSERVATION UNITS (UC), INDIGENOUS LANDS (TI) AND SETTLEMENTS (ASS); AND (B) PARTIALLY WITHIN THESE SAME CATEGORIES, BY STATE

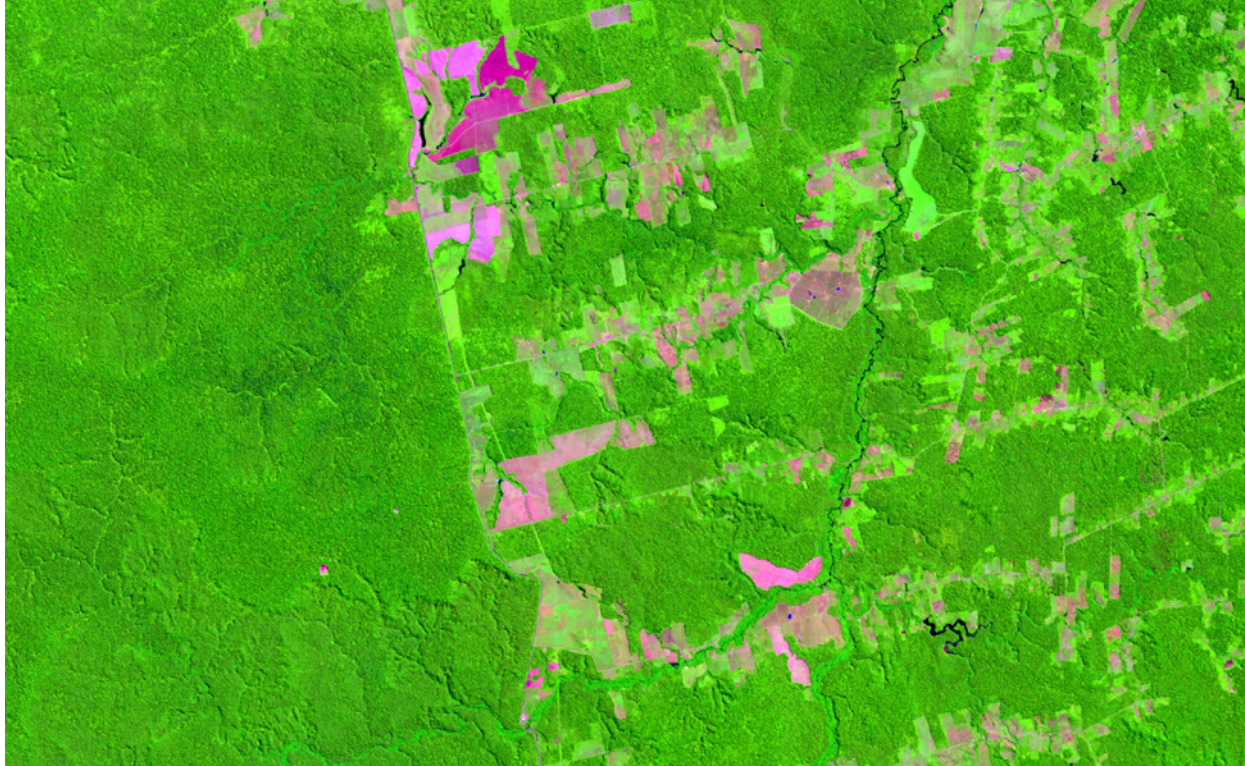
Deforestation*	MT	PA	RO	RR	AP	MA	TO	Total
	ha	ha	ha	ha	ha	ha	ha	ha
a. Outside UC, TI and Ass	522,573	397,032	286,837	3,500	1,270	19,768	1,615	1,232,595
b. Partially within UC, TI and Ass	62,185	155,188	134,427	1,873	165	10,300	0	364,138
Total	584,758	552,220	421,264	5,373	1,435	30,068	1,615	1,596,733

* Deforestation in polygons of 25 or more hectares

4.2 - Soy in areas deforested during the Soy Moratorium

The 1,596,733 hectares (Table 5), distributed in the 9,618 polygons that met the criteria established by the GTS (Item 3.1), were individually inspected through visual interpretation techniques to identify and map the soy crops in these polygons (Item 3.4).

In the 2019/20 crop year, 107,674 hectares of soy were identified as being in noncompliance with the Soy Moratorium. In Mato Grosso state alone, there were 84,623 hectares (Table 6) of soy that was not in compliance with Moratorium criteria, corresponding to 78.6% of the total noncompliant soy and to 6.8% of the state's total deforestation in the Amazon Biome during the period of the Moratorium (1,242,492 hectares; Table 1). Pará state had 14,144 hectares of noncompliant soy (Table 6), representing 13.1% of the soy detected in the monitoring process, but only 0.5% of the state's deforested area during the period of the Moratorium (3,063,119 hectares; Table 1). In Rondônia state, 4,172 hectares of noncompliant soy (Table 6) were identified, corresponding to 3.9% of the soy detected in this monitoring cycle and to 0.4% of the total area deforested in this state during the Moratorium (1,026,705 hectares; Table 1). Maranhão state had 4,672 hectares of noncompliant soy (Table 6), corresponding to 4.1% of the soy detected in this monitoring cycle and to 2.3% of the state's total deforestation during the Moratorium (203,676 hectares; Table 1). There was no noncompliant soy identified in Tocantins state. In Roraima and Amapá states, the noncompliant soy area was just 8 and 56 hectares, respectively. However, in these states, soy expansion occurs mostly through conversion of native, nonforest vegetation and, therefore, it is not mapped by PRODES, nor monitored in the context of the Soy Moratorium.



It should be noted that the soy area in deforested polygons with over 100 hectares was 92,784 hectares, or 86% of the total soy that is not in compliance with the Soy Moratorium (Table 6). This indicates that most of these noncompliant soy areas are found on private properties that carry out larger cumulative deforestation, as in the 25-50-hectare category only 6,800 hectares (6%) of soy was not in compliance with the Moratorium. Thus, the 388,655 hectares deforested in polygons with less than 25 hectares (Table 3) – and therefore not monitored – would contribute a relatively small amount to the soy that does not comply with the Moratorium criteria.

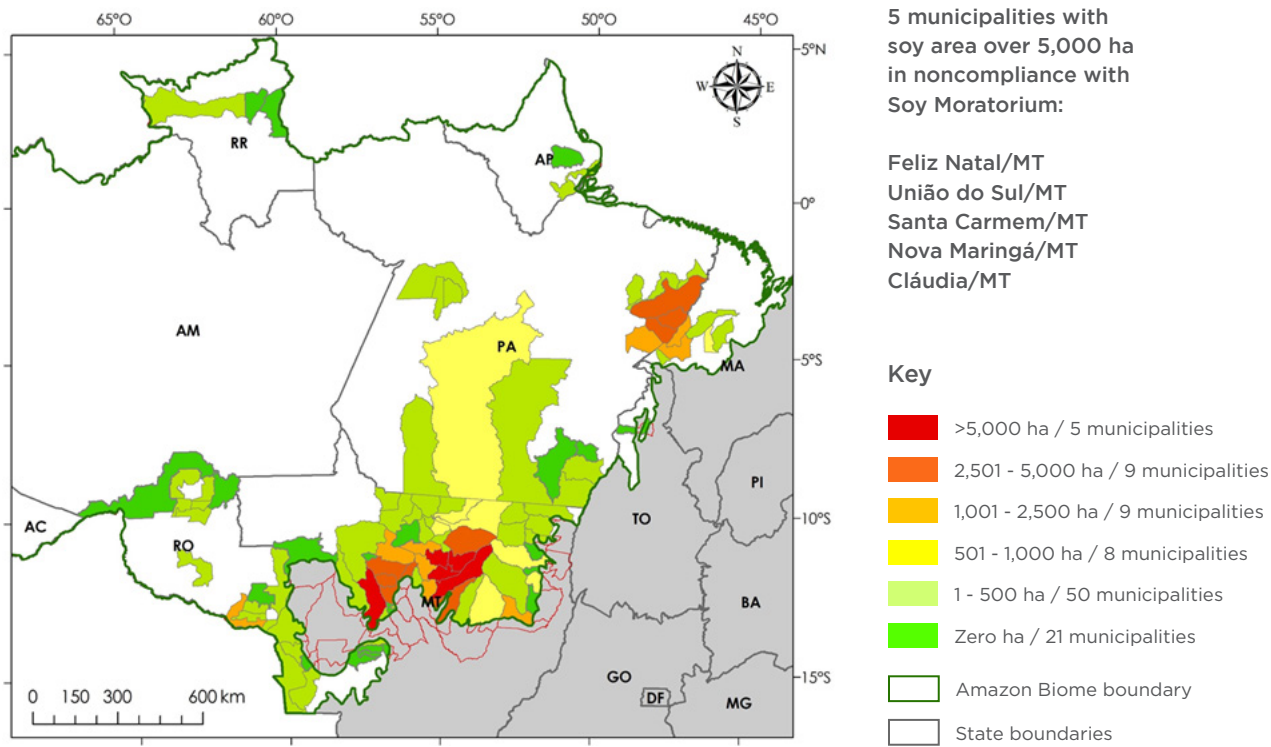
Item 8 – Appendix – has the complete list of the 820 deforested polygons with soy crops monitored in the 2019/20 crop year, by state (Tables 8.1 to 8.6).

TABLE 6.
SOY AREA (IN HECTARES) IN NONCOMPLIANCE WITH THE SOY MORATORIUM, BY SIZE OF DEFORESTED POLYGON, IN THE STATES OF MATO GROSSO (MT), PARÁ (PA), RONDÔNIA (RO), RORAIMA (RR), AMAPÁ (AP), TOCANTINS (TO) AND MARANHÃO (MA)

Classes	MT	PA	RO	RR	AP	TO	MA	Total
	ha	ha	ha	ha	ha	ha	ha	ha
25-50 ha	3,770	1,515	732	8	56	0	718	6,800
50-100 ha	4,352	1,682	1,074	0	0	0	983	8,090
>100 ha	76,500	10,947	2,366	0	0	0	2,971	92,784
	(90%)	(77%)	(57%)	(0%)	(0%)	(0%)	(64%)	(86%)
Total	84,623	14,144	4,172	8	56	0	4,672	107,674

Figure 8 shows the 102 monitored municipalities by size of their soy area that is not in compliance with the Soy Moratorium. There are 81 municipalities with noncompliant soy crops (Table 7), while 21 municipalities are fully compliant. Among the municipalities with soy crops that are not compliance with the Soy Moratorium, five have over 5,000 hectares (see the municipalities in red on Figure 8). They have a total of 48,117 hectares (44.7%) and are located in the state of Mato Grosso in the municipalities of Feliz Natal (18,973 hectares), União do Sul (8,355 hectares), Nova Maringá (7,541 hectares), Santa Carmem (7,455 hectares) and Cláudia (5,793 hectares) (Table 7). There are 18 municipalities with noncompliant soy with areas between 1,001 hectares and 5,000 hectares, totalling 43,981 hectares, or 40.8% of the total noncompliant soy area (Figure 8, Table 7).

FIGURA 8.
SPATIAL DISTRIBUTION OF THE 102 MUNICIPALITIES ANALYSED, CLASSIFIED ACCORDING TO THE SOY AREA NOT IN COMPLIANCE WITH THE SOY MORATORIUM, FOR THE 2019/20 CROP YEAR



23 municipalities concentrate -85% of soy not in compliance with Soy Moratorium





Another 58 municipalities have soy areas with less than 1,000 hectares of soy not in compliance with the Soy Moratorium, representing 14.5% (15,577 hectares) of the noncompliant total (Figure 8, Table 7), which is significantly less than the area found just in Feliz Natal, Mato Grosso state, as can be seen above. In addition, among the Mato Grosso soy producers, Feliz Natal has the largest area deforested during the Soy Moratorium (48,364 hectares). In comparison, in Pará state, the municipalities of Altamira, São Felix do Xingu and Novo Progresso have just 1,063 hectares of noncompliant soy, representing 1.0% of the total noncompliant area. However, these three municipalities together have a total of 831,731 hectares of deforestation during the Moratorium, corresponding to 31.5% of the deforested area (2009-2019) in the 102 municipalities (Table 3).

From 2009 to 2019, deforestation in the 102 monitored municipalities was 2,642,617 hectares (Table 3), of which 107,674 hectares were converted to soy. In other words, soy was directly responsible for 4.1% of the deforestation in these municipalities, in the area assessed by the Soy Moratorium. On the other hand, 95.9% of the deforestation in these 102 municipalities is not associated with soy production.

Among the 81 municipalities that were noncompliant with the Soy Moratorium for the 2019/20 crop year, the positive performance of the municipality Dom Eliseu, Pará state should be highlighted. In the 2013/14 crop year, Dom Eliseu had a noncompliant soy area of 4,865 hectares, which fell to 3,095 hectares in 2019/20, a reduction of more than 1,800 hectares in a six-year period, taking this municipality from first place to tenth place in the noncompliance ranking. At the other end, however, the municipality of União do Sul, Mato Grosso state, which had a noncompliant soy area of 808 hectares in the 2013/14 crop year (16th place), increased its noncompliant area tenfold over the last six years, going to second place in the 2019/20 crop year with 8,355 hectares of soy that was not in compliance with the Moratorium.

TABLE 7.**LIST OF THE 81 MUNICIPALITIES WITH SOY NOT IN ACCORDANCE WITH THE SOY MORATORIUM IN THE 2019/20 CROP YEAR**

Municipality	State	Poligons with soy (n)	Soy area in 2019/20 (ha)	Deforested area of 2009-2019 (ha)	% of soy on deforestation
FELIZ NATAL	MT	82	18,973	48,364	40.7%
UNIÃO DO SUL	MT	27	8,355	27,449	31.9%
NOVA MARINGÁ	MT	43	7,541	29,167	27.3%
SANTA CARMEM	MT	32	7,455	15,052	52.2%
CLÁUDIA	MT	48	5,793	30,423	21.3%
PORTO DOS GAÚCHOS	MT	25	4,063	20,430	22.6%
MARCELÂNDIA	MT	58	3,792	38,434	10.7%
ITANHANGÁ	MT	23	3,237	22,218	16.1%
IPIRANGA DO NORTE	MT	9	2,702	6,772	42.7%
TAPURAH	MT	26	2,629	8,285	37.2%
NOVA UBIRATÃ	MT	18	2,536	24,074	11.3%
TABAPORÃ	MT	11	2,449	17,761	16.2%
SINOP	MT	14	1,712	17,342	10.2%
VERA	MT	11	1,612	4,404	43.6%
ITAÚBA	MT	11	1,553	18,957	8.3%
CANARANA	MT	3	1,037	3,973	28.5%
GAÚCHA DO NORTE	MT	13	920	22,918	4.4%
PEIXOTO DE AZEVEDO	MT	4	795	41,311	2.3%
TERRA NOVA DO NORTE	MT	11	761	6,108	17.2%
BOM JESUS DO ARAGUAIA	MT	2	750	5,630	13.5%
SÃO FÉLIX DO ARAGUAIA	MT	9	686	15,589	4.8%
MATUPÁ	MT	15	647	17,410	5.3%
NOVA SANTA HELENA	MT	11	466	3,952	15.8%
SÃO JOSÉ DO RIO CLARO	MT	4	428	4,137	11.1%

TABLE 7.

LIST OF THE 81 MUNICIPALITIES WITH SOY NOT IN ACCORDANCE WITH THE SOY MORATORIUM IN THE 2019/20 CROP YEAR.

Municipality	State	Poligons with soy (n)	Soy area in 2019/20 (ha)	Deforested area of 2009-2019 (ha)	% of soy on deforestation
PORTO ALEGRE DO NORTE	MT	5	427	2,445	26.1%
CONFRESA	MT	2	400	23,733	2.1%
COMODORO	MT	7	375	20,750	2.2%
QUERÊNCIA	MT	7	367	26,111	1.5%
JUARA	MT	1	344	39,774	1.0%
LUCAS DO RIO VERDE	MT	3	265	1,260	22.4%
NOVO MUNDO	MT	7	258	17,941	1.9%
SANTA CRUZ DO XINGU	MT	4	218	8,929	2.7%
CARLINDA	MT	6	184	2,283	12.5%
SORRISO	MT	1	174	407	99.4%
VILA RICA	MT	5	112	8,316	2.1%
PARANAÍTA	MT	1	89	31,113	0.4%
DIAMANTINO	MT	1	79	252	56.3%
BRASNORTE	MT	3	67	19,130	0.4%
GUARANTÁ DO NORTE	MT	2	66	9,706	1.1%
VILA BELA DA SANTÍSSIMA TRINDADE	MT	2	66	16,575	0.5%
NOVA GUARITA	MT	2	52	2,030	3.9%
ALTA FLORESTA	MT	1	47	9,419	0.7%
PONTES E LACERDA	MT	1	47	4,708	1.7%
SÃO JOSÉ DO XINGU	MT	3	45	7,017	0.8%
PARANATINGA	MT	1	30	14,065	0.2%
COLÍDER	MT	1	11	4,681	0.3%
NOVA LACERDA	MT	2	9	12,846	0.1%
Total for Mato Grosso (MT)		578	84,623	733,703	11.5%

TABLE 7.

LIST OF THE 81 MUNICIPALITIES WITH SOY NOT IN ACCORDANCE WITH THE SOY MORATORIUM IN THE 2019/20 CROP YEAR.

Municipality	State	Poligons with soy (n)	Soy area in 2019/20 (ha)	Deforested area of 2009-2019 (ha)	% of soy on deforestation
PARAGOMINAS	PA	49	3,815	41,126	12.3%
DOM ELISEU	PA	67	3,095	19,636	21.7%
ULIANÓPOLIS	PA	34	2,793	21,557	15.6%
RONDON DO PARÁ	PA	37	2,258	30,878	9.0%
ALTAMIRA	PA	21	790	364,610	0.2%
BELTERRA	PA	8	282	4,604	12.1%
MOJUÍ DOS CAMPOS	PA	20	274	22,207	2.0%
NOVO PROGRESSO	PA	9	267	154,657	0.2%
NOVA ESPERANÇA DO PIRIÁ	PA	6	139	15,623	1.8%
IPIXUNA DO PARÁ	PA	3	138	19,124	1.0%
TAILÂNDIA	PA	5	119	21,283	0.8%
SANTARÉM	PA	3	85	16,728	1.2%
SANTANA DO ARAGUAIA	PA	5	68	28,841	0.4%
SANTA MARIA DAS BARREIRAS	PA	1	16	27,961	0.1%
SÃO FÉLIX DO XINGU	PA	1	6	312,464	0.0%
Total for Pará (PA)		269	14,144	1,101,299	1.9%
PIMENTEIRAS DO OESTE	RO	8	1,470	5,220	35.1%
CEREJEIRAS	RO	14	463	2,234	47.6%
CANDEIAS DO JAMARI	RO	10	414	61,087	0.8%
ALTO PARAÍSO	RO	15	398	33,204	1.4%
SÃO MIGUEL DO GUAPORÉ	RO	9	393	10,739	5.3%
CABIXI	RO	9	325	3,657	12.2%
VILHENA	RO	8	273	14,202	2.8%
RIO CRESPO	RO	7	191	6,910	2.1%

TABLE 7.

LIST OF THE 81 MUNICIPALITIES WITH SOY NOT IN ACCORDANCE WITH THE SOY MORATORIUM IN THE 2019/20 CROP YEAR.

Municipality	State	Poligons with soy (n)	Soy area in 2019/20 (ha)	Deforested area of 2009-2019 (ha)	% of soy on deforestation
CORUMBIARA	RO	4	168	3,229	9.9%
ARIQUEMES	RO	5	58	14,977	0.5%
CUJUBIM	RO	2	20	68,849	0.0%
Total for Rondônia (RO)		91	4,172	224,308	1.9%
AÇAILÂNDIA	MA	38	1,769	11,243	21.3%
ITINGA DO MARANHÃO	MA	19	1,460	14,347	13.1%
BURITICUPU	MA	28	796	12,081	8.9%
CIDELÂNDIA	MA	4	318	2,272	25.8%
BOM JARDIM	MA	4	288	20,921	1.8%
SANTA LUZIA	MA	4	40	4,620	1.9%
Total for Maranhão (MA)		97	4,672	65,483	7.1%
ALTO ALEGRE	RR	2	56	3,169	5.3%
Total for Roraima (RR)		2	56	3,169	1.8%
MACAPÁ	AP	2	8	12,335	0.1%
Total for Amapá (AP)		2	8	12,335	0.1%
Total		1039	107,674	2,140,298	5.0%

Note: In the 21 municipalities listed below, all soy crops are in compliance with the Soy Moratorium in the 2019/20 crop year. In Mato Grosso: Alto da Boa Vista, Canabrava do Norte, Conquista D'Oeste, Juina, Nortelândia, Nova Canaã do Norte, Nova Marilândia, Nova Mutum, Novo Horizonte do Norte, Ribeirãoascalheira, Santo Afonso and Tangará da Serra. In Pará: Cumaru do Norte and Redenção. In Rondônia: Chupinguaia, Machadinho D'Oeste and Porto Velho. In Roraima: Boa Vista and Bonfim. In Amapá: Tartarugalzinho. In Tocantins: Araguaína.

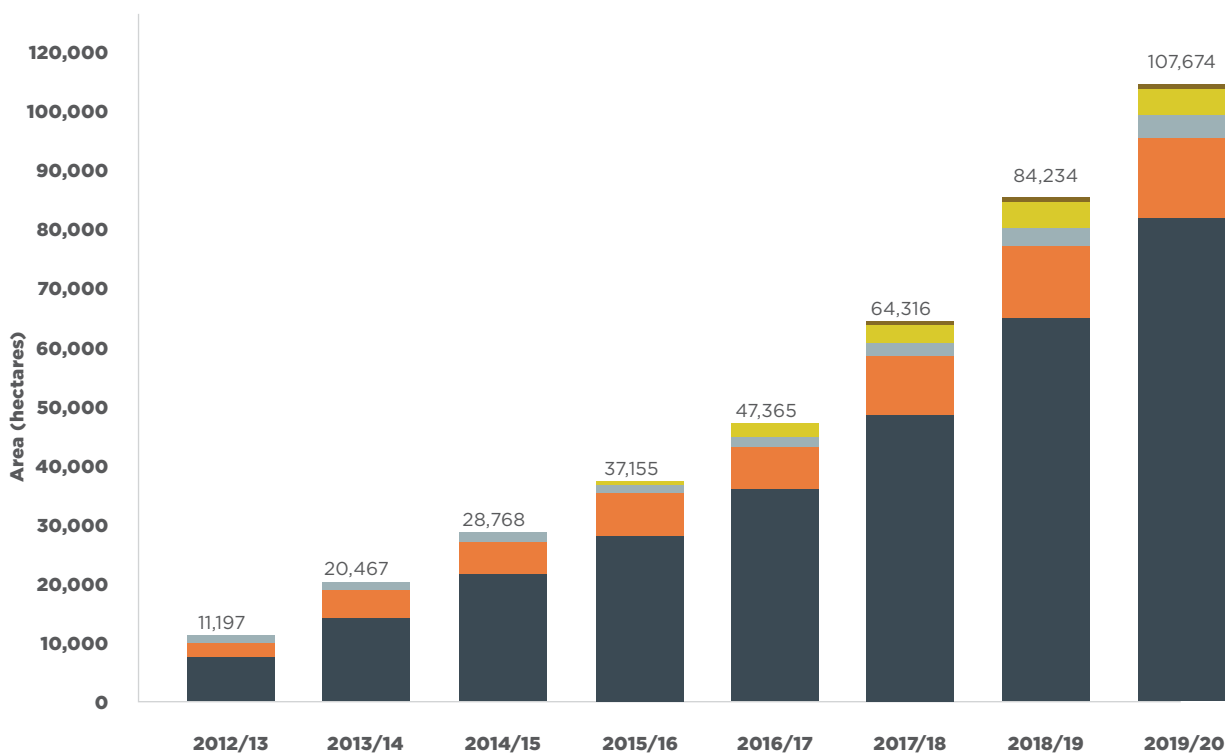
4.3 - Noncompliant soy expansion in the last eight crop years

Based on the reference date for the Soy Moratorium that considers soy planted on areas deforested after 22nd July 2008, it should be noted that, over the last eight crop years, the noncompliant soy area went from 11,200 hectares in 2012/13 to 107,700 hectares in 2019/20 (Figure 9). The noncompliant soy area has been increasing gradually, and currently represents 2% of the total soy grown in the Amazon Biome.



FIGURE 9.

EVOLUTION OF THE SOY AREA NOT IN COMPLIANCE WITH THE SOY MORATORIUM IN THE STATES OF MATO GROSSO (MT), PARÁ (PA), RONDÔNIA (RO), MARANHÃO (MA), AMAPÁ (AP), TOCANTINS (TO) AND RORAIMA (RR), IN CROP YEARS 2012/13 TO 2019/20



	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
RR	n.a.	n.a.	n.a.	0	0	23	9	8
TO	n.a.	n.a.	n.a.	n.a.	0	0	0	0
AP	n.a.	n.a.	n.a.	38	0	58	59	56
MA	n.a.	n.a.	n.a.	n.a.	2,212	3,160	4,505	4,672
RO	899	1,097	1,159	1,358	1,602	1,928	2,911	4,172
PA	2,065	4,676	5,722	7,479	7,418	10,133	12,811	14,144
MT	8,233	14,694	21,887	28,280	36,134	49,013	67,940	84,623

n.a. = not assessed

It is worth mentioning that the member companies of ABIOVE and ANEC, the signatories of the Soy Moratorium, account for approximately 87% of the soy market in the Amazon Biome. The gradual increase in noncompliant soy areas comes from the soy traded by companies that are not members of these two associations and are, therefore, not bound by the Moratorium. Also worthy of mention is that, if part of a soy producer's production is not in compliance with the Moratorium, an embargo is imposed by the Moratorium's signatories on the entire soy production of that farm. This embargo is estimated at about 10% of the Biome's soy production, corresponding to approximately 1.8 million tonnes. This volume could be traded by companies, grain producers and cooperatives that do not have a zero-deforestation policy for the Amazon Biome.



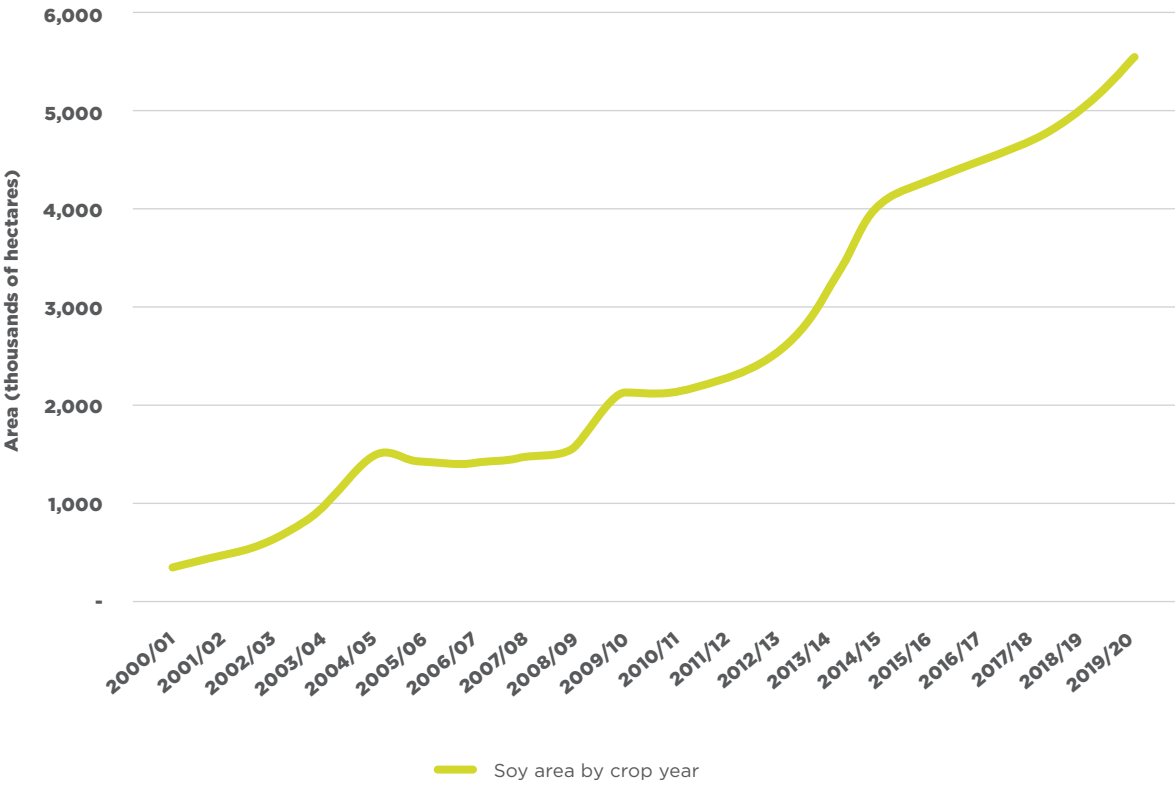
4.4 - Relevance of soy planting in recent deforestation in the Amazon Biome

The 2019/20 domestic soy crop was 124.8 million tonnes, grown on an area of 36.9 million hectares¹⁷. Compared to the previous crop, there was an increase of 3% in planted area and of 4.3% in production due to yield increase.

In the Amazon Biome, 5.41 million hectares were planted in the 2019/20 crop year, representing 14.6% of the domestic soy area. The states of Mato Grosso (78.4%), Pará (10.9%), Rondônia (6.3%) and Maranhão (2.7%) accounted for 98.3% of the soy area in the Biome. Therefore, the 107.674 hectares of soy planted in deforested areas during the Soy Moratorium represent just 2% of the Biome's current soy area.

In the twelve years since the Soy Moratorium’s reference date (22nd July 2008), the soy area in the Amazon Biome has more than tripled, going from 1.64 million hectares in the 2007/08 crop year to the current 5.41 million hectares, a significant increase considering that 98% (5.30 million hectares) of the expansion occurred without converting forest areas, essentially by encouraging soy expansion into pastures, areas that were deforested before the Soy Moratorium¹⁸. This confirms the efficacy of this initiative, in the sense of mitigating soy expansion into new areas of deforestation, without impeding the advancement of soy’s economic activity in the Biome, as shown in Figure 10.

FIGURE 10.
EVOLUTION OF THE SOY AREA IN THE AMAZON BIOME OVER TWO DECADES

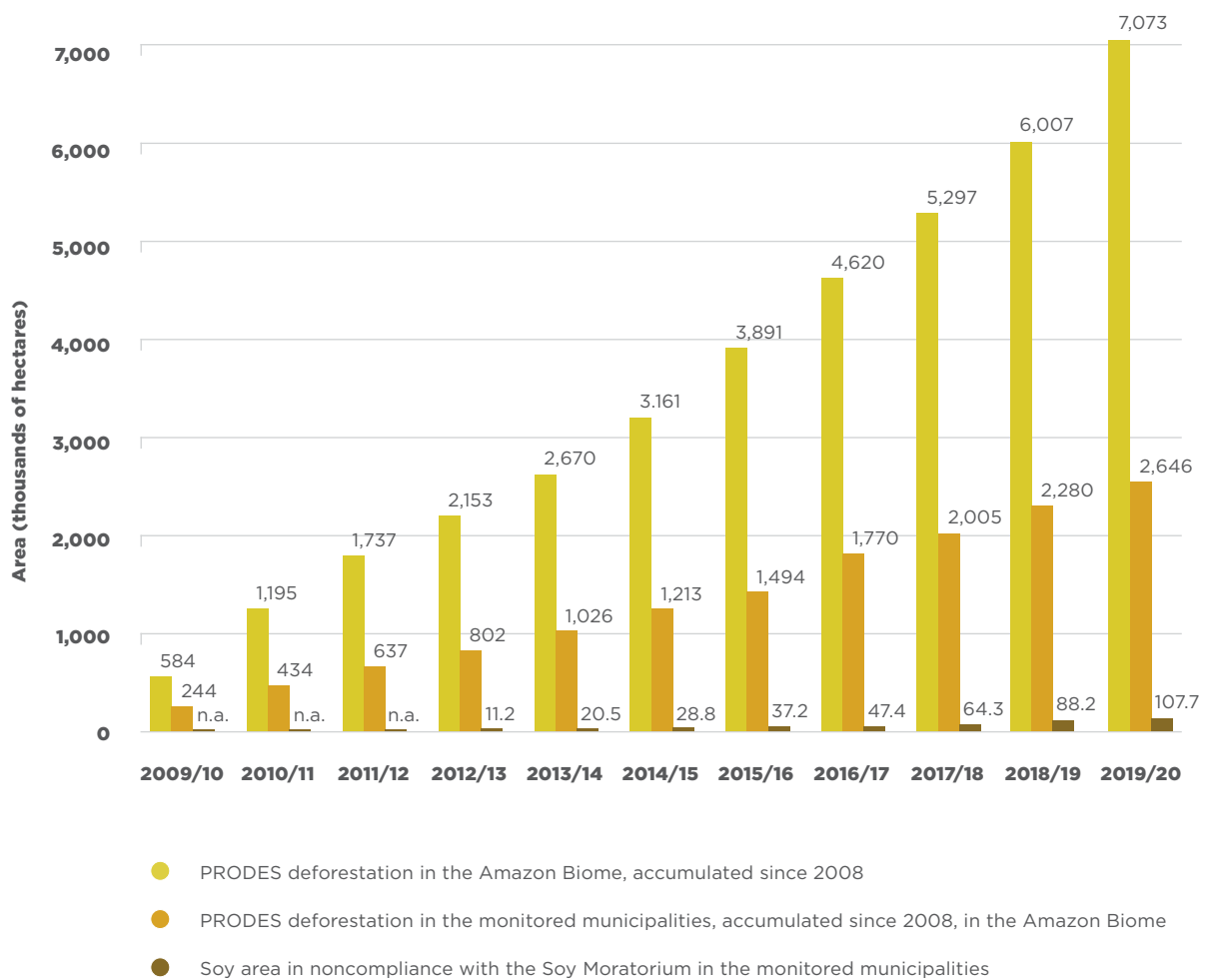


Source: Adapted from Agrosatélite⁶



Figure 11 shows deforestation both in the Amazon Biome and in the 102 monitored municipalities (Table 3), in addition to the area of soy on deforested land during the Soy Moratorium (Table 6). The monitored municipalities were responsible for 37.4% of the deforestation in the Amazon Biome, of which 4.1% was used to grow soy in the 2019/20 crop year.

FIGURE 11.
EVOLUTION OF THE ACCUMULATED DEFORESTED AREA (AMAZON BIOME AND THE 102 MUNICIPALITIES) AND OF SOY NOT IN COMPLIANCE WITH THE SOY MORATORIUM IN THE MONITORED MUNICIPALITIES



I Area calculated based on the maps made available by INPE⁷.

II There are small differences when compared to previous years due to the update in the PRODES database in 2017, which generated some incompatibility between the databases.

CONCLUSIONS

CONCLUSIONS

The Soy Moratorium has been in effect since 2006 and has been playing a highly relevant role in promoting a sustainable soy production with the objective of eliminating deforestation from its production chain in the Amazon Biome.

A sophisticated monitoring mechanism through satellite images has made it possible to identify approximately 108,000 hectares of soy crops that were not in compliance with the Moratorium's criteria. This represents 2% of all the soy grown in the Amazon Biome in the 2019/20 crop year.

Rural properties identified with noncompliant soy crops face trade sanctions and are prevented from trading their production with the Soy Moratorium's signatories.

The Soy Moratorium does not prevent new deforestation, but it does block soy production on the cleared land. This discourages new conversions of forest areas for soy, while encouraging intensification of land use by limiting soy expansion to areas cleared before the Moratorium was signed. Currently, 98% of the Amazon Biome's soy-producing area is on land cleared before 2008, showing the efficacy of this initiative in reconciling the development of food production with environmental sustainability by eliminating soy grown on land deforested after 2008 from the production chain of the Soy Moratorium's signatories.

São Paulo, 30 April 2021

André Nassar
President
ABIOVE

Bernardo Rudorff
Director
Agrosatélite

Marcos Adami
Researcher
INPE

REFERENCES

REFERENCES

1. Heilmayr, R., Rausch, L.L., Munger, J. et al. Brazil's Amazon Soy Moratorium reduced deforestation. *Nat Food* 1, 801-810 (2020). <https://doi.org/10.1038/s43016-020-00194-5>.
2. Meijer, K. Can supply chain initiatives reduce deforestation? A comparative analysis of cases from Brazil and Indonesia. Discussion Paper: Deutsches Institut für Entwicklungspolitik. v.36. 38p. 2014.
3. Gibbs, H.K., L. Rausch, J. Munger, I. Schelly, D. C. Morton, P. Noojipady, B. Soares-Filho, P. Barreto, L. Micol, and N.F. Walker. "Brazil's Soy Moratorium: Supply chain governance is needed to avoid deforestation." *Science*. v.347, n.6220, p.377-378. 2015.
4. Rudorff, B.F.T.; Adami, M.; Risso, J.; de Aguiar, D.A.; Pires, B.; Amaral, D.; Fabiani, L.; Cecarelli, I. Remote Sensing Images to Detect Soy Plantations in the Amazon Biome—The Soy Moratorium Initiative. *Sustainability*, 4, p.1074-1088. 2012.
5. Rudorff, B.F.T., Adami, M., Aguiar, D.A., Moreira, M.A., Mello, M.P., Fabiani, L., Amaral, D.F., Pires, B.M. The Soy Moratorium in the Amazon Biome Monitored by Remote Sensing Images. *Remote Sensing*, v.3, p.185-202. 2011.
6. Agrosatélite - Agrosatélite Geotecnologia Aplicada Ltda. Projeto de mapeamento de culturas anuais. Mapeamento de soja no bioma Amazônia. Arquivo interno. 2020.
7. INPE - Instituto Nacional de Pesquisas Espaciais. Plataforma TerraBrasilis. Monitoramento da floresta amazônica brasileira por satélite - Estimativas anuais de desflorestamento desde 1988 até 2018. Available on: <<http://terra-brasilis.dpi.inpe.br/downloads/>>. Accessed on: 11th November 2020.
8. ALMEIDA, C. A.; MAURANO, L. E. P.; VALERIANO, D. D. M.; CAMARA, G.; VINHAS, L.; GOMES, A. R.; MONTEIRO, A. M. V.; SOUZA, A. A. A.; RENNO, C. D.; SILVA, D. E.; ADAMI, M.; ESCADA, M. I. S.; MOTA, M.; KAMPEL, S. A. Metodologia para Monitoramento da Floresta usada nos projetos PRODES e DETER. São José dos Campos: INPE, versão: 2021-01-26. IBI: <8JMKD3MGP3W34R/443GTAS>. Available on: <<http://urlib.net/rep/8JMKD3MGP3W34R/443GTAS>>. Accessed on: 24th March 2021.
9. BRASIL. Lei nº 12.727, de 17 de outubro de 2012. Altera a Lei no 12.651, de 25 de maio de 2012, que dispõe sobre a proteção da vegetação nativa; altera as Leis nos 6.938, de 31 de agosto de 1981, 9.393, de 19 de dezembro de 1996, e 11.428, de 22 de dezembro de 2006; revoga as Leis nos 4.771, de 15 de setembro de 1965, e 7.754, de 14 de abril de 1989, e a Medida Provisória no 2.166-67, de 24 de agosto de 2001; e dá outras providências. República Federativa do Brasil, Brasília, DF, 18 out. 2012b. Available on: <http://www.planalto.gov.br/ccivil_03/_ato2011-2014/2012/lei/L12727.htm>. Accessed on 16th October 2019.
10. FUNAI - Fundação Nacional do Índio. Geoprocessamento. Terras Indígenas do Brasil. Available on: <<http://www.funai.gov.br/index.php/servicos/geoprocessamento>>. Accessed on 11th November 2020.
11. MMA - Ministério do Meio Ambiente. Sistema Nacional de Unidades de Conservação - SNUC. Download de dados geográficos. Available on: <<http://mapas.mma.gov.br/i3geo/datadownload.htm>>. Accessed on: 11th November 2020.
12. IBGE - Instituto Brasileiro de Geografia e Estatística. Organização territorial. Dados vetoriais oficiais do território brasileiro. Available on: <<ftp://geoftp.ibge.gov.br>>. Accessed on: 11th November 2020.
13. INCRA - Instituto Nacional de Colonização e Reforma Agrária. Acervo Fundiário. Available on: <<http://acervofundiario.incra.gov.br/i3geo/interface/incra.htm>>. Accessed on: 11th November 2020.
14. BRASIL. Plano de Prevenção e Controle do Desmatamento na Amazônia Legal - PPCDAm. Available on: <<http://www.mma.gov.br/component/k2/item/616?Itemid=1155>>. Accessed on: 11th November 2020.
15. SatVeg Sistema de Análise Temporal da Vegetação. Embrapa Informática Agropecuária <https://www.satveg.cnptia.embrapa.br/satveg/login.html>. Accessed on: 11th November 2020.
16. Rizzi, R., Risso, J., Epiphanyo, R.D.V., Rudorff, B.F.T., Formaggio, A.R., Shimabukuro, Y.E., Fernandes, S.L. Estimativa da área de soja no MT por meio de imagens MODIS. XIV Simpósio Brasileiro de Sensoriamento Remoto. Anais... INPE, Natal, pp. 387-394. 2009.
17. CONAB - Companhia Nacional de Abastecimento. Acompanhamento da safra brasileira - Grãos. V. 7. Safra 2019/20, n. 12, setembro 2020. Brasília, 68 p. 2020.
18. Risso, J. Diagnóstico espacialmente explícito da expansão da soja no MT de 2000 a 2012. Dissertação de Mestrado em Sensoriamento Remoto. São José dos Campos. INPE, 110 p. 2013. Available on: <<http://urlib.net/8JMKD3MGP7W/3DKND9B>>. Accessed on: 16th October 2019.

TECHNICAL TEAM IN CHARGE

TECHNICAL TEAM IN CHARGE

7.1 - AGROSATÉLITE GEOTECNOLOGIA APLICADA LTDA.

General Coordinator: Bernardo Rudorff

Technical Coordinator: Joel Risso

Technical Team: Cristian Back, Daniel Alves de Aguiar
and Moisés Pereira Galvão Salgado.

7.2 - ABIOVE

General Coordinator: André Meloni Nassar

Technical Coordinator: Bernardo Machado Pires

Contributors: Cindy Moreira and Pedro Moré Garcia

7.3 - INPE

Auditor: Marcos Adami

EXECUTION



SOY WORKING GROUP - GTS



TABLE 8.1.
POLYGONS WITH SOY IN MATO GROSSO STATE

ID	Area of Polygon (ha)	State	Municipality	Soy Area (ha)
3513	319	MT	ALTA FLORESTA	47
1700	721	MT	BOM JESUS DO ARAGUAIA	709
1664	349	MT	BOM JESUS DO ARAGUAIA	42
1804	37	MT	BRASNORTE	37
1877	41	MT	BRASNORTE	15
1821	49	MT	BRASNORTE	15
584	709	MT	CANARANA	683
569	713	MT	CANARANA	354
4141	83	MT	CARLINDA	71
4339	56	MT	CARLINDA	54
4166	38	MT	CARLINDA	33
4134	36	MT	CARLINDA	25
2309	1156	MT	CLÁUDIA	996
2652	2687	MT	CLÁUDIA	924
2399	650	MT	CLÁUDIA	616
2187	571	MT	CLÁUDIA	532
2161	497	MT	CLÁUDIA	378
2350	335	MT	CLÁUDIA	298
2482	287	MT	CLÁUDIA	218
2283	218	MT	CLÁUDIA	194
2444	178	MT	CLÁUDIA	177
2582	152	MT	CLÁUDIA	132
2693	737	MT	CLÁUDIA	132
2313	108	MT	CLÁUDIA	100
2263	93	MT	CLÁUDIA	92
2554	96	MT	CLÁUDIA	90
2729	1932	MT	CLÁUDIA	82
2630	215	MT	CLÁUDIA	81
2613	290	MT	CLÁUDIA	69
2619	77	MT	CLÁUDIA	64

TABLE 8.1.
POLYGONS WITH SOY IN MATO GROSSO STATE

2617	110	MT	CLÁUDIA	56
2486	55	MT	CLÁUDIA	55
2365	51	MT	CLÁUDIA	46
2377	46	MT	CLÁUDIA	46
2307	64	MT	CLÁUDIA	44
2403	43	MT	CLÁUDIA	43
2424	41	MT	CLÁUDIA	41
2269	39	MT	CLÁUDIA	39
2616	38	MT	CLÁUDIA	36
2286	37	MT	CLÁUDIA	35
2585	200	MT	CLÁUDIA	28
2700	29	MT	CLÁUDIA	28
2490	174	MT	CLÁUDIA	22
2556	177	MT	CLÁUDIA	21
2572	45	MT	CLÁUDIA	21
2489	28	MT	CLÁUDIA	19
2668	220	MT	CLÁUDIA	18
2596	145	MT	CLÁUDIA	9
2562	39	MT	CLÁUDIA	8
2595	458	MT	CLÁUDIA	2
3457	46	MT	COLÍDER	11
738	618	MT	COMODORO	202
718	91	MT	COMODORO	90
873	204	MT	COMODORO	51
322	35	MT	COMODORO	15
311	28	MT	COMODORO	9
326	32	MT	COMODORO	8
4233	243	MT	CONFRESA	221
4210	183	MT	CONFRESA	179
268	85	MT	DIAMANTINO	79
1185	8719	MT	FELIZ NATAL	5,999
1517	1628	MT	FELIZ NATAL	1,314
1926	1823	MT	FELIZ NATAL	816
1469	1153	MT	FELIZ NATAL	758
1497	1422	MT	FELIZ NATAL	752
928	933	MT	FELIZ NATAL	747
1021	2602	MT	FELIZ NATAL	712
1204	862	MT	FELIZ NATAL	704

TABLE 8.1.
POLYGONS WITH SOY IN MATO GROSSO STATE

1312	1108	MT	FELIZ NATAL	590
1859	554	MT	FELIZ NATAL	497
1175	611	MT	FELIZ NATAL	492
989	773	MT	FELIZ NATAL	480
1550	483	MT	FELIZ NATAL	453
1043	1215	MT	FELIZ NATAL	374
1507	398	MT	FELIZ NATAL	327
1786	410	MT	FELIZ NATAL	281
1572	250	MT	FELIZ NATAL	238
1528	253	MT	FELIZ NATAL	232
1258	1071	MT	FELIZ NATAL	212
1745	368	MT	FELIZ NATAL	188
1133	368	MT	FELIZ NATAL	187
1191	233	MT	FELIZ NATAL	174
1181	189	MT	FELIZ NATAL	171
896	174	MT	FELIZ NATAL	171
1375	174	MT	FELIZ NATAL	149
1397	233	MT	FELIZ NATAL	131
1053	178	MT	FELIZ NATAL	130
1408	277	MT	FELIZ NATAL	126
1515	149	MT	FELIZ NATAL	124
1298	130	MT	FELIZ NATAL	123
929	177	MT	FELIZ NATAL	116
1459	157	MT	FELIZ NATAL	115
1219	607	MT	FELIZ NATAL	114
890	108	MT	FELIZ NATAL	105
1479	369	MT	FELIZ NATAL	101
996	140	MT	FELIZ NATAL	74
981	126	MT	FELIZ NATAL	70
1294	495	MT	FELIZ NATAL	70
1148	70	MT	FELIZ NATAL	69
1439	50	MT	FELIZ NATAL	40
1279	39	MT	FELIZ NATAL	39
1016	224	MT	FELIZ NATAL	38
1487	37	MT	FELIZ NATAL	37
1001	70	MT	FELIZ NATAL	35
1371	37	MT	FELIZ NATAL	34
1431	36	MT	FELIZ NATAL	33

TABLE 8.1.
POLYGONS WITH SOY IN MATO GROSSO STATE

1161	35	MT	FELIZ NATAL	31
1032	26	MT	FELIZ NATAL	26
1265	37	MT	FELIZ NATAL	25
933	29	MT	FELIZ NATAL	24
1256	25	MT	FELIZ NATAL	24
1510	76	MT	FELIZ NATAL	23
1070	27	MT	FELIZ NATAL	20
1282	142	MT	FELIZ NATAL	17
1063	198	MT	FELIZ NATAL	17
1183	42	MT	FELIZ NATAL	14
1003	35	MT	FELIZ NATAL	5
1201	123	MT	FELIZ NATAL	1
1127	32	MT	FELIZ NATAL	1
564	445	MT	GAÚCHA DO NORTE	413
357	238	MT	GAÚCHA DO NORTE	166
344	217	MT	GAÚCHA DO NORTE	126
482	234	MT	GAÚCHA DO NORTE	98
635	46	MT	GAÚCHA DO NORTE	36
722	32	MT	GAÚCHA DO NORTE	29
624	34	MT	GAÚCHA DO NORTE	18
504	35	MT	GAÚCHA DO NORTE	13
660	53	MT	GAÚCHA DO NORTE	9
598	29	MT	GAÚCHA DO NORTE	9
651	49	MT	GAÚCHA DO NORTE	4
5994	55	MT	GUARANTÃ DO NORTE	42
5992	29	MT	GUARANTÃ DO NORTE	25
1958	1706	MT	IPIRANGA DO NORTE	1,181
2162	452	MT	IPIRANGA DO NORTE	426
1720	491	MT	IPIRANGA DO NORTE	390
2150	302	MT	IPIRANGA DO NORTE	266
1949	168	MT	IPIRANGA DO NORTE	142
2129	143	MT	IPIRANGA DO NORTE	129
2151	122	MT	IPIRANGA DO NORTE	119
2138	43	MT	IPIRANGA DO NORTE	30
2206	53	MT	IPIRANGA DO NORTE	18
1898	1673	MT	ITANHANGÁ	1,206
1944	1669	MT	ITANHANGÁ	583
1911	324	MT	ITANHANGÁ	262

TABLE 8.1.
POLYGONS WITH SOY IN MATO GROSSO STATE

1513	241	MT	ITANHANGÁ	226
1411	186	MT	ITANHANGÁ	173
1860	215	MT	ITANHANGÁ	143
1476	136	MT	ITANHANGÁ	125
1491	203	MT	ITANHANGÁ	104
1475	72	MT	ITANHANGÁ	72
1710	107	MT	ITANHANGÁ	71
1925	97	MT	ITANHANGÁ	68
1410	64	MT	ITANHANGÁ	60
1501	45	MT	ITANHANGÁ	41
1452	38	MT	ITANHANGÁ	37
1803	57	MT	ITANHANGÁ	22
1527	68	MT	ITANHANGÁ	20
1743	38	MT	ITANHANGÁ	15
1516	158	MT	ITANHANGÁ	8
2864	1211	MT	ITAÚBA	566
2920	424	MT	ITAÚBA	401
2964	270	MT	ITAÚBA	257
2889	788	MT	ITAÚBA	151
2877	181	MT	ITAÚBA	95
2766	224	MT	ITAÚBA	32
2737	39	MT	ITAÚBA	24
2726	34	MT	ITAÚBA	16
2740	50	MT	ITAÚBA	11
1869	1592	MT	JUARA	344
751	149	MT	LUCAS DO RIO VERDE	134
741	514	MT	LUCAS DO RIO VERDE	131
3147	706	MT	MARCELÂNDIA	695
3231	3591	MT	MARCELÂNDIA	453
3129	1277	MT	MARCELÂNDIA	374
3008	314	MT	MARCELÂNDIA	309
3104	342	MT	MARCELÂNDIA	240
2982	174	MT	MARCELÂNDIA	168
3272	183	MT	MARCELÂNDIA	162
2981	230	MT	MARCELÂNDIA	129
3140	208	MT	MARCELÂNDIA	121
3392	734	MT	MARCELÂNDIA	103
3305	86	MT	MARCELÂNDIA	78

TABLE 8.1.
POLYGONS WITH SOY IN MATO GROSSO STATE

3011	94	MT	MARCELÂNDIA	76
3473	70	MT	MARCELÂNDIA	61
3074	94	MT	MARCELÂNDIA	55
3498	66	MT	MARCELÂNDIA	55
2980	90	MT	MARCELÂNDIA	54
3488	54	MT	MARCELÂNDIA	48
2963	473	MT	MARCELÂNDIA	46
3009	82	MT	MARCELÂNDIA	45
2973	93	MT	MARCELÂNDIA	44
2763	369	MT	MARCELÂNDIA	41
2998	60	MT	MARCELÂNDIA	40
3014	47	MT	MARCELÂNDIA	36
3495	85	MT	MARCELÂNDIA	34
2926	48	MT	MARCELÂNDIA	34
3485	40	MT	MARCELÂNDIA	29
3257	38	MT	MARCELÂNDIA	26
3030	29	MT	MARCELÂNDIA	25
2820	36	MT	MARCELÂNDIA	23
2974	224	MT	MARCELÂNDIA	22
2803	34	MT	MARCELÂNDIA	20
3461	26	MT	MARCELÂNDIA	20
2883	25	MT	MARCELÂNDIA	18
3183	25	MT	MARCELÂNDIA	17
2906	28	MT	MARCELÂNDIA	16
2812	84	MT	MARCELÂNDIA	14
3007	82	MT	MARCELÂNDIA	14
3048	168	MT	MARCELÂNDIA	11
3133	27	MT	MARCELÂNDIA	10
2848	131	MT	MARCELÂNDIA	10
3080	3903	MT	MARCELÂNDIA	9
2934	62	MT	MARCELÂNDIA	4
2969	130	MT	MARCELÂNDIA	3
4602	289	MT	MATUPÁ	264
4542	113	MT	MATUPÁ	104
4628	92	MT	MATUPÁ	80
4350	46	MT	MATUPÁ	34
4335	39	MT	MATUPÁ	31
4292	44	MT	MATUPÁ	30

TABLE 8.1.
POLYGONS WITH SOY IN MATO GROSSO STATE

4331	67	MT	MATUPÁ	26
4330	34	MT	MATUPÁ	25
4332	29	MT	MATUPÁ	21
4116	57	MT	MATUPÁ	18
4097	26	MT	MATUPÁ	14
3877	51	MT	NOVA GUARITA	46
4026	31	MT	NOVA GUARITA	6
262	295	MT	NOVA LACERDA	5
228	2672	MT	NOVA LACERDA	3
823	2418	MT	NOVA MARINGÁ	1,861
743	590	MT	NOVA MARINGÁ	577
1435	417	MT	NOVA MARINGÁ	415
830	1332	MT	NOVA MARINGÁ	377
1858	413	MT	NOVA MARINGÁ	370
1827	680	MT	NOVA MARINGÁ	369
1661	406	MT	NOVA MARINGÁ	368
1829	344	MT	NOVA MARINGÁ	321
2037	312	MT	NOVA MARINGÁ	298
786	289	MT	NOVA MARINGÁ	268
1036	264	MT	NOVA MARINGÁ	259
625	258	MT	NOVA MARINGÁ	249
882	220	MT	NOVA MARINGÁ	180
1503	414	MT	NOVA MARINGÁ	170
1017	153	MT	NOVA MARINGÁ	136
818	306	MT	NOVA MARINGÁ	132
1453	124	MT	NOVA MARINGÁ	117
1460	122	MT	NOVA MARINGÁ	116
1449	133	MT	NOVA MARINGÁ	85
599	115	MT	NOVA MARINGÁ	77
876	71	MT	NOVA MARINGÁ	67
772	254	MT	NOVA MARINGÁ	67
887	65	MT	NOVA MARINGÁ	63
970	60	MT	NOVA MARINGÁ	60
2051	476	MT	NOVA MARINGÁ	60
666	81	MT	NOVA MARINGÁ	57
750	126	MT	NOVA MARINGÁ	51
774	93	MT	NOVA MARINGÁ	50
817	55	MT	NOVA MARINGÁ	48

TABLE 8.1.
POLYGONS WITH SOY IN MATO GROSSO STATE

1736	40	MT	NOVA MARINGÁ	40
769	1100	MT	NOVA MARINGÁ	40
701	47	MT	NOVA MARINGÁ	38
1802	53	MT	NOVA MARINGÁ	27
889	26	MT	NOVA MARINGÁ	26
696	31	MT	NOVA MARINGÁ	25
870	27	MT	NOVA MARINGÁ	24
794	32	MT	NOVA MARINGÁ	17
819	48	MT	NOVA MARINGÁ	16
782	26	MT	NOVA MARINGÁ	8
674	36	MT	NOVA MARINGÁ	8
796	48	MT	NOVA MARINGÁ	6
3184	145	MT	NOVA SANTA HELENA	136
2892	121	MT	NOVA SANTA HELENA	117
2992	61	MT	NOVA SANTA HELENA	61
3029	40	MT	NOVA SANTA HELENA	40
2904	36	MT	NOVA SANTA HELENA	36
2876	32	MT	NOVA SANTA HELENA	32
2905	37	MT	NOVA SANTA HELENA	18
2908	28	MT	NOVA SANTA HELENA	16
3145	58	MT	NOVA SANTA HELENA	8
2901	34	MT	NOVA SANTA HELENA	2
1565	653	MT	NOVA UBIRATÁ	614
484	332	MT	NOVA UBIRATÁ	289
422	263	MT	NOVA UBIRATÁ	240
673	225	MT	NOVA UBIRATÁ	217
669	232	MT	NOVA UBIRATÁ	203
483	189	MT	NOVA UBIRATÁ	189
465	958	MT	NOVA UBIRATÁ	149
886	141	MT	NOVA UBIRATÁ	140
803	109	MT	NOVA UBIRATÁ	106
867	95	MT	NOVA UBIRATÁ	94
1084	89	MT	NOVA UBIRATÁ	89
713	69	MT	NOVA UBIRATÁ	54
695	400	MT	NOVA UBIRATÁ	49
793	43	MT	NOVA UBIRATÁ	42
665	33	MT	NOVA UBIRATÁ	27
700	27	MT	NOVA UBIRATÁ	19

TABLE 8.1.
POLYGONS WITH SOY IN MATO GROSSO STATE

897	47	MT	NOVA UBIRATÁ	15
4381	81	MT	NOVO MUNDO	54
4970	57	MT	NOVO MUNDO	53
4642	54	MT	NOVO MUNDO	49
5205	136	MT	NOVO MUNDO	32
4363	61	MT	NOVO MUNDO	28
4788	34	MT	NOVO MUNDO	23
4878	31	MT	NOVO MUNDO	20
5237	114	MT	PARANAÍTA	89
816	1745	MT	PARANATINGA	30
3502	733	MT	PEIXOTO DE AZEVEDO	718
3783	85	MT	PEIXOTO DE AZEVEDO	43
3587	298	MT	PEIXOTO DE AZEVEDO	27
3588	54	MT	PEIXOTO DE AZEVEDO	6
30	49	MT	PONTES E LACERDA	47
3285	291	MT	PORTO ALEGRE DO NORTE	273
3302	179	MT	PORTO ALEGRE DO NORTE	110
3053	39	MT	PORTO ALEGRE DO NORTE	29
3054	171	MT	PORTO ALEGRE DO NORTE	15
2111	1195	MT	PORTO DOS GAÚCHOS	1,031
2078	886	MT	PORTO DOS GAÚCHOS	842
2240	812	MT	PORTO DOS GAÚCHOS	675
2044	707	MT	PORTO DOS GAÚCHOS	501
2084	303	MT	PORTO DOS GAÚCHOS	264
2198	130	MT	PORTO DOS GAÚCHOS	128
2202	99	MT	PORTO DOS GAÚCHOS	95
2034	173	MT	PORTO DOS GAÚCHOS	84
2068	68	MT	PORTO DOS GAÚCHOS	54
2346	286	MT	PORTO DOS GAÚCHOS	48
1947	63	MT	PORTO DOS GAÚCHOS	48
2194	41	MT	PORTO DOS GAÚCHOS	38
2183	90	MT	PORTO DOS GAÚCHOS	37
2010	34	MT	PORTO DOS GAÚCHOS	34
2013	30	MT	PORTO DOS GAÚCHOS	30
2298	48	MT	PORTO DOS GAÚCHOS	28
1988	28	MT	PORTO DOS GAÚCHOS	26
2023	1542	MT	PORTO DOS GAÚCHOS	25
2073	27	MT	PORTO DOS GAÚCHOS	23

TABLE 8.1.
POLYGONS WITH SOY IN MATO GROSSO STATE

2020	31	MT	PORTO DOS GAÚCHOS	23
2207	28	MT	PORTO DOS GAÚCHOS	21
2196	57	MT	PORTO DOS GAÚCHOS	7
1178	126	MT	QUERÊNCIA	116
1027	103	MT	QUERÊNCIA	97
958	46	MT	QUERÊNCIA	43
647	43	MT	QUERÊNCIA	43
1020	52	MT	QUERÊNCIA	39
1771	5399	MT	QUERÊNCIA	26
894	290	MT	QUERÊNCIA	3
1937	1562	MT	SANTA CARMEM	1,518
1973	1113	MT	SANTA CARMEM	1,047
2205	874	MT	SANTA CARMEM	858
2185	620	MT	SANTA CARMEM	609
1917	500	MT	SANTA CARMEM	491
2055	481	MT	SANTA CARMEM	457
1953	355	MT	SANTA CARMEM	328
1976	533	MT	SANTA CARMEM	299
2204	1946	MT	SANTA CARMEM	277
2174	229	MT	SANTA CARMEM	218
1814	220	MT	SANTA CARMEM	209
2203	684	MT	SANTA CARMEM	192
1986	167	MT	SANTA CARMEM	162
2030	152	MT	SANTA CARMEM	152
2228	126	MT	SANTA CARMEM	109
1950	98	MT	SANTA CARMEM	90
1853	70	MT	SANTA CARMEM	65
2041	58	MT	SANTA CARMEM	58
1871	129	MT	SANTA CARMEM	49
1900	46	MT	SANTA CARMEM	41
1846	45	MT	SANTA CARMEM	41
1941	44	MT	SANTA CARMEM	39
1995	54	MT	SANTA CARMEM	35
1826	36	MT	SANTA CARMEM	33
1942	49	MT	SANTA CARMEM	27
2046	94	MT	SANTA CARMEM	18
2006	37	MT	SANTA CARMEM	13
2067	30	MT	SANTA CARMEM	9

TABLE 8.1.
POLYGONS WITH SOY IN MATO GROSSO STATE

2057	43	MT	SANTA CARMEM	7
1970	160	MT	SANTA CARMEM	2
4222	768	MT	SANTA CRUZ DO XINGU	153
4241	119	MT	SANTA CRUZ DO XINGU	65
2419	523	MT	SÃO FÉLIX DO ARAGUAIA	434
2404	79	MT	SÃO FÉLIX DO ARAGUAIA	65
2442	36	MT	SÃO FÉLIX DO ARAGUAIA	31
2528	32	MT	SÃO FÉLIX DO ARAGUAIA	29
2398	32	MT	SÃO FÉLIX DO ARAGUAIA	28
2467	28	MT	SÃO FÉLIX DO ARAGUAIA	27
2409	27	MT	SÃO FÉLIX DO ARAGUAIA	27
2415	64	MT	SÃO FÉLIX DO ARAGUAIA	25
2476	30	MT	SÃO FÉLIX DO ARAGUAIA	21
582	2726	MT	SÃO JOSÉ DO RIO CLARO	355
605	46	MT	SÃO JOSÉ DO RIO CLARO	39
524	38	MT	SÃO JOSÉ DO RIO CLARO	29
471	34	MT	SÃO JOSÉ DO RIO CLARO	5
3309	29	MT	SÃO JOSÉ DO XINGU	27
3407	44	MT	SÃO JOSÉ DO XINGU	18
2357	437	MT	SINOP	421
2032	273	MT	SINOP	234
2177	167	MT	SINOP	152
2721	1550	MT	SINOP	131
2188	105	MT	SINOP	100
2212	53	MT	SINOP	46
2314	89	MT	SINOP	31
2199	25	MT	SINOP	19
2361	28	MT	SINOP	19
2124	28	MT	SINOP	12
1586	175	MT	SORRISO	174
2588	942	MT	TABAPORÃ	447
2392	484	MT	TABAPORÃ	434
2462	376	MT	TABAPORÃ	360
2416	395	MT	TABAPORÃ	360
2322	323	MT	TABAPORÃ	277
2478	241	MT	TABAPORÃ	224
2942	180	MT	TABAPORÃ	160
2430	103	MT	TABAPORÃ	96
2484	51	MT	TABAPORÃ	50

TABLE 8.1.
POLYGONS WITH SOY IN MATO GROSSO STATE

2504	41	MT	TABAPORÃ	40
1029	386	MT	TAPURAH	355
1350	388	MT	TAPURAH	340
1344	285	MT	TAPURAH	270
1095	606	MT	TAPURAH	245
1296	187	MT	TAPURAH	180
874	207	MT	TAPURAH	162
1066	160	MT	Tapurah	153
1119	148	MT	Tapurah	141
966	258	MT	Tapurah	104
808	127	MT	Tapurah	89
852	161	MT	Tapurah	86
1112	87	MT	Tapurah	81
1120	74	MT	Tapurah	73
1087	79	MT	Tapurah	70
871	42	MT	Tapurah	42
1098	39	MT	Tapurah	38
1310	235	MT	Tapurah	35
1102	38	MT	Tapurah	33
1109	31	MT	Tapurah	31
877	43	MT	Tapurah	30
973	27	MT	Tapurah	27
1353	28	MT	Tapurah	25
1077	28	MT	Tapurah	19
1384	63	MT	Tapurah	1
3350	883	MT	Terra Nova do Norte	476
3402	83	MT	Terra Nova do Norte	80
3326	84	MT	Terra Nova do Norte	72
3657	45	MT	Terra Nova do Norte	40
3303	62	MT	Terra Nova do Norte	39
3713	30	MT	Terra Nova do Norte	28
3359	47	MT	Terra Nova do Norte	18
3701	49	MT	Terra Nova do Norte	5
3306	81	MT	Terra Nova do Norte	3
2331	2146	MT	União do Sul	1,489
2094	1450	MT	União do Sul	1,403
2247	1247	MT	União do Sul	1,159
2401	960	MT	União do Sul	950
2300	689	MT	União do Sul	689

TABLE 8.1.
POLYGONS WITH SOY IN MATO GROSSO STATE

2168	555	MT	União do Sul	542
2225	558	MT	União do Sul	524
2237	396	MT	União do Sul	274
2330	228	MT	União do Sul	208
2157	695	MT	União do Sul	195
2143	191	MT	União do Sul	188
2085	140	MT	União do Sul	130
2297	139	MT	União do Sul	107
2348	84	MT	União do Sul	84
2306	82	MT	União do Sul	71
2087	78	MT	União do Sul	69
2538	53	MT	União do Sul	45
2621	38	MT	União do Sul	37
2328	373	MT	União do Sul	35
2244	36	MT	União do Sul	32
2521	30	MT	União do Sul	29
2580	633	MT	União do Sul	28
2285	39	MT	União do Sul	23
2620	29	MT	União do Sul	23
2302	152	MT	União do Sul	22
1751	1223	MT	Vera	521
1587	396	MT	Vera	349
1004	203	MT	Vera	200
1078	139	MT	Vera	137
984	123	MT	Vera	123
1532	144	MT	Vera	121
1613	98	MT	Vera	77
1643	39	MT	Vera	31
1695	31	MT	Vera	28
1630	39	MT	Vera	24
153	49	MT	Vila Bela da Santíssima Trindade	40
199	27	MT	Vila Bela da Santíssima Trindade	26
4440	41	MT	Vila Rica	31
4320	29	MT	Vila Rica	29
4372	45	MT	Vila Rica	24
4341	32	MT	Vila Rica	16
4087	111	MT	Vila Rica	12
TOTAL for Mato Grosso				84,623

TABLE 8.2.
POLYGONS WITH SOY IN PARÁ STATE

ID	Area of Polygon (ha)	State	Municipality	Soy Area (ha)
8515	647	PA	ALTAMIRA	331
9778	158	PA	ALTAMIRA	127
10580	5954	PA	ALTAMIRA	57
8555	62	PA	ALTAMIRA	54
8575	65	PA	ALTAMIRA	54
10450	13985	PA	ALTAMIRA	40
8679	525	PA	ALTAMIRA	39
10503	44	PA	ALTAMIRA	37
8570	48	PA	ALTAMIRA	22
8590	42	PA	ALTAMIRA	15
9059	699	PA	ALTAMIRA	14
14662	135	PA	BELTERRA	96
14090	171	PA	BELTERRA	75
14351	102	PA	BELTERRA	60
14091	26	PA	BELTERRA	25
13753	27	PA	BELTERRA	20
14067	34	PA	BELTERRA	7
13414	585	PA	DOM ELISEU	318
12678	324	PA	DOM ELISEU	277
12873	298	PA	DOM ELISEU	269
13316	749	PA	DOM ELISEU	263
12735	179	PA	DOM ELISEU	174
13098	621	PA	DOM ELISEU	172
12677	142	PA	DOM ELISEU	127
12957	120	PA	DOM ELISEU	111
13045	111	PA	DOM ELISEU	99
12929	100	PA	DOM ELISEU	98
13357	376	PA	DOM ELISEU	93
12712	88	PA	DOM ELISEU	85
13142	92	PA	DOM ELISEU	68
12738	82	PA	DOM ELISEU	68
12939	155	PA	DOM ELISEU	60
12889	56	PA	DOM ELISEU	56
12959	46	PA	DOM ELISEU	46
13022	107	PA	DOM ELISEU	45
12966	55	PA	DOM ELISEU	44

TABLE 8.2.
POLYGONS WITH SOY IN PARÁ STATE

13014	40	PA	DOM ELISEU	39
12824	630	PA	DOM ELISEU	39
12949	42	PA	DOM ELISEU	36
12781	37	PA	DOM ELISEU	36
13157	41	PA	DOM ELISEU	34
12941	67	PA	DOM ELISEU	32
12673	37	PA	DOM ELISEU	31
13215	385	PA	DOM ELISEU	30
12851	35	PA	DOM ELISEU	30
12896	32	PA	DOM ELISEU	28
12826	34	PA	DOM ELISEU	28
12842	27	PA	DOM ELISEU	25
12943	57	PA	DOM ELISEU	22
13021	40	PA	DOM ELISEU	21
12765	65	PA	DOM ELISEU	19
13092	83	PA	DOM ELISEU	19
13135	35	PA	DOM ELISEU	19
12846	31	PA	DOM ELISEU	18
13175	98	PA	DOM ELISEU	16
12750	79	PA	DOM ELISEU	15
12885	59	PA	DOM ELISEU	14
12900	29	PA	DOM ELISEU	13
13209	27	PA	DOM ELISEU	12
13123	27	PA	DOM ELISEU	12
12835	231	PA	DOM ELISEU	9
13184	139	PA	DOM ELISEU	9
12620	26	PA	DOM ELISEU	8
12782	41	PA	DOM ELISEU	7
14509	67	PA	IPIXUNA DO PARÁ	64
14571	52	PA	IPIXUNA DO PARÁ	47
14491	30	PA	IPIXUNA DO PARÁ	27
14621	31	PA	MOJUÍ DOS CAMPOS	31
14795	28	PA	MOJUÍ DOS CAMPOS	27
14679	30	PA	MOJUÍ DOS CAMPOS	26
14465	38	PA	MOJUÍ DOS CAMPOS	25
14794	32	PA	MOJUÍ DOS CAMPOS	23
14577	26	PA	MOJUÍ DOS CAMPOS	20
14462	25	PA	MOJUÍ DOS CAMPOS	19

TABLE 8.2.
POLYGONS WITH SOY IN PARÁ STATE

14538	56	PA	MOJUÍ DOS CAMPOS	18
14586	26	PA	MOJUÍ DOS CAMPOS	17
14802	41	PA	MOJUÍ DOS CAMPOS	16
14601	34	PA	MOJUÍ DOS CAMPOS	16
14615	41	PA	MOJUÍ DOS CAMPOS	8
14663	25	PA	MOJUÍ DOS CAMPOS	7
14569	28	PA	MOJUÍ DOS CAMPOS	6
14495	25	PA	MOJUÍ DOS CAMPOS	6
14496	52	PA	MOJUÍ DOS CAMPOS	5
14506	35	PA	MOJUÍ DOS CAMPOS	5
14718	111	PA	NOVA ESPERANÇA DO PIRIÁ	84
14647	39	PA	NOVA ESPERANÇA DO PIRIÁ	21
14791	34	PA	NOVA ESPERANÇA DO PIRIÁ	12
14672	59	PA	NOVA ESPERANÇA DO PIRIÁ	11
14644	38	PA	NOVA ESPERANÇA DO PIRIÁ	11
9465	154	PA	NOVO PROGRESSO	129
9456	43	PA	NOVO PROGRESSO	32
6374	35	PA	NOVO PROGRESSO	27
9372	53	PA	NOVO PROGRESSO	25
9443	33	PA	NOVO PROGRESSO	21
9384	138	PA	NOVO PROGRESSO	16
9439	44	PA	NOVO PROGRESSO	11
9369	65	PA	NOVO PROGRESSO	5
14126	1768	PA	PARAGOMINAS	1,524
14060	439	PA	PARAGOMINAS	366
14285	622	PA	PARAGOMINAS	238
14225	546	PA	PARAGOMINAS	234
13867	184	PA	PARAGOMINAS	177
14447	153	PA	PARAGOMINAS	137
14048	150	PA	PARAGOMINAS	128
14166	243	PA	PARAGOMINAS	115
14133	115	PA	PARAGOMINAS	81
14287	455	PA	PARAGOMINAS	76
14055	84	PA	PARAGOMINAS	76
14492	133	PA	PARAGOMINAS	71
14089	124	PA	PARAGOMINAS	70
14282	84	PA	PARAGOMINAS	61
14624	63	PA	PARAGOMINAS	58

TABLE 8.2.
POLYGONS WITH SOY IN PARÁ STATE

14525	100	PA	PARAGOMINAS	57
13780	75	PA	PARAGOMINAS	54
14027	50	PA	PARAGOMINAS	48
14107	44	PA	PARAGOMINAS	40
14337	52	PA	PARAGOMINAS	35
14104	53	PA	PARAGOMINAS	32
13949	67	PA	PARAGOMINAS	31
14435	30	PA	PARAGOMINAS	29
14004	28	PA	PARAGOMINAS	26
14099	115	PA	PARAGOMINAS	19
14397	28	PA	PARAGOMINAS	12
14275	75	PA	PARAGOMINAS	11
14187	39	PA	PARAGOMINAS	7
12670	828	PA	RONDON DO PARÁ	746
13001	3230	PA	RONDON DO PARÁ	732
12702	400	PA	RONDON DO PARÁ	295
12382	319	PA	RONDON DO PARÁ	158
12968	464	PA	RONDON DO PARÁ	89
12708	465	PA	RONDON DO PARÁ	78
12691	33	PA	RONDON DO PARÁ	33
12515	31	PA	RONDON DO PARÁ	30
12635	44	PA	RONDON DO PARÁ	27
12586	25	PA	RONDON DO PARÁ	23
12417	31	PA	RONDON DO PARÁ	18
12511	30	PA	RONDON DO PARÁ	12
12428	25	PA	RONDON DO PARÁ	7
12441	35	PA	RONDON DO PARÁ	5
12742	54	PA	RONDON DO PARÁ	3
12429	58	PA	RONDON DO PARÁ	2
7697	145	PA	SANTA MARIA DAS BARREIRAS	16
7142	60	PA	SANTANA DO ARAGUAIA	31
6758	49	PA	SANTANA DO ARAGUAIA	23
5334	44	PA	SANTANA DO ARAGUAIA	14
14646	55	PA	SANTARÉM	49
14730	36	PA	SANTARÉM	26
14740	107	PA	SANTARÉM	9
6843	37	PA	SÃO FÉLIX DO XINGU	6
13905	81	PA	TAILÂNDIA	66

TABLE 8.2.
POLYGONS WITH SOY IN PARÁ STATE

14280	38	PA	TAILÂNDIA	29
14139	33	PA	TAILÂNDIA	14
14171	106	PA	TAILÂNDIA	11
13710	1799	PA	ULIANÓPOLIS	957
13495	1363	PA	ULIANÓPOLIS	458
13479	311	PA	ULIANÓPOLIS	264
13430	370	PA	ULIANÓPOLIS	212
13737	149	PA	ULIANÓPOLIS	142
13745	1616	PA	ULIANÓPOLIS	105
13483	135	PA	ULIANÓPOLIS	93
13467	102	PA	ULIANÓPOLIS	80
13476	82	PA	ULIANÓPOLIS	76
13725	76	PA	ULIANÓPOLIS	69
13384	86	PA	ULIANÓPOLIS	64
13738	57	PA	ULIANÓPOLIS	57
13363	115	PA	ULIANÓPOLIS	38
13368	90	PA	ULIANÓPOLIS	33
13755	57	PA	ULIANÓPOLIS	30
13711	38	PA	ULIANÓPOLIS	27
13386	45	PA	ULIANÓPOLIS	20
13728	33	PA	ULIANÓPOLIS	20
13417	43	PA	ULIANÓPOLIS	18
13358	26	PA	ULIANÓPOLIS	17
13284	37	PA	ULIANÓPOLIS	7
13494	157	PA	ULIANÓPOLIS	6
TOTAL for Pará				14,144

TABLE 8.3.
POLYGONS WITH SOY IN RONDÔNIA STATE

ID	Area of Polygon (ha)	State	Municipality	Soy Area (ha)
6172	95	RO	ALTO PARAÍSO	73
5993	118	RO	ALTO PARAÍSO	70
5073	63	RO	ALTO PARAÍSO	51
5100	55	RO	ALTO PARAÍSO	43
5734	61	RO	ALTO PARAÍSO	40
5931	153	RO	ALTO PARAÍSO	27

TABLE 8.3.
POLYGONS WITH SOY IN RONDÔNIA STATE

5328	79	RO	ALTO PARAÍSO	21
5517	85	RO	ALTO PARAÍSO	20
5496	34	RO	ALTO PARAÍSO	17
5130	32	RO	ALTO PARAÍSO	12
5875	27	RO	ALTO PARAÍSO	10
5714	126	RO	ALTO PARAÍSO	6
6105	36	RO	ALTO PARAÍSO	5
5616	31	RO	ALTO PARAÍSO	3
4709	32	RO	ARIQUEMES	30
4854	35	RO	ARIQUEMES	23
4271	28	RO	ARIQUEMES	5
403	354	RO	CABIXI	95
333	106	RO	CABIXI	69
407	63	RO	CABIXI	54
401	37	RO	CABIXI	34
419	104	RO	CABIXI	33
373	42	RO	CABIXI	31
454	28	RO	CABIXI	7
392	48	RO	CABIXI	3
7106	211	RO	CANDEIAS DO JAMARI	196
6745	98	RO	CANDEIAS DO JAMARI	61
7013	59	RO	CANDEIAS DO JAMARI	46
7204	55	RO	CANDEIAS DO JAMARI	42
7417	67	RO	CANDEIAS DO JAMARI	35
6813	31	RO	CANDEIAS DO JAMARI	22
6766	220	RO	CANDEIAS DO JAMARI	11
571	75	RO	CEREJEIRAS	70
546	62	RO	CEREJEIRAS	57
549	67	RO	CEREJEIRAS	56
499	53	RO	CEREJEIRAS	52
570	49	RO	CEREJEIRAS	42
550	43	RO	CEREJEIRAS	32
552	28	RO	CEREJEIRAS	25
551	38	RO	CEREJEIRAS	24
615	35	RO	CEREJEIRAS	24
574	28	RO	CEREJEIRAS	23
527	25	RO	CEREJEIRAS	22
508	26	RO	CEREJEIRAS	19
486	95	RO	CEREJEIRAS	17

TABLE 8.3.
POLYGONS WITH SOY IN RONDÔNIA STATE

763	83	RO	CORUMBIARA	79
861	96	RO	CORUMBIARA	46
709	35	RO	CORUMBIARA	23
639	31	RO	CORUMBIARA	19
6934	74	RO	CUJUBIM	20
488	900	RO	PIMENTEIRAS DO OESTE	779
477	389	RO	PIMENTEIRAS DO OESTE	359
479	151	RO	PIMENTEIRAS DO OESTE	145
456	65	RO	PIMENTEIRAS DO OESTE	56
442	50	RO	PIMENTEIRAS DO OESTE	43
349	40	RO	PIMENTEIRAS DO OESTE	37
501	36	RO	PIMENTEIRAS DO OESTE	35
451	108	RO	PIMENTEIRAS DO OESTE	16
6128	117	RO	RIO CRESPO	54
5956	67	RO	RIO CRESPO	33
5907	37	RO	RIO CRESPO	29
5737	40	RO	RIO CRESPO	28
5945	46	RO	RIO CRESPO	21
5896	27	RO	RIO CRESPO	19
5760	26	RO	RIO CRESPO	5
1909	502	RO	SÃO MIGUEL DO GUAPORÉ	128
1761	645	RO	SÃO MIGUEL DO GUAPORÉ	67
1746	249	RO	SÃO MIGUEL DO GUAPORÉ	63
1764	55	RO	SÃO MIGUEL DO GUAPORÉ	45
1922	34	RO	SÃO MIGUEL DO GUAPORÉ	29
2229	29	RO	SÃO MIGUEL DO GUAPORÉ	27
1739	38	RO	SÃO MIGUEL DO GUAPORÉ	21
2210	89	RO	SÃO MIGUEL DO GUAPORÉ	12
912	449	RO	VILHENA	124
862	203	RO	VILHENA	111
1064	34	RO	VILHENA	16
864	31	RO	VILHENA	10
888	443	RO	VILHENA	7
866	110	RO	VILHENA	6
TOTAL for Rondônia				4,172

TABLE 8.4.
POLYGONS WITH SOY IN MARANHÃO STATE

ID	Area of Polygon (ha)	State	Municipality	Soy Area (ha)
12407	302	MA	AÇAILÂNDIA	289
12420	383	MA	AÇAILÂNDIA	275
12696	193	MA	AÇAILÂNDIA	187
12431	163	MA	AÇAILÂNDIA	120
12550	123	MA	AÇAILÂNDIA	97
12724	93	MA	AÇAILÂNDIA	89
12786	183	MA	AÇAILÂNDIA	69
12339	61	MA	AÇAILÂNDIA	55
12579	67	MA	AÇAILÂNDIA	52
12743	83	MA	AÇAILÂNDIA	49
12400	46	MA	AÇAILÂNDIA	44
12344	59	MA	AÇAILÂNDIA	44
12343	46	MA	AÇAILÂNDIA	43
12544	57	MA	AÇAILÂNDIA	39
12581	46	MA	AÇAILÂNDIA	37
12495	40	MA	AÇAILÂNDIA	37
12337	73	MA	AÇAILÂNDIA	33
12403	31	MA	AÇAILÂNDIA	31
12426	34	MA	AÇAILÂNDIA	28
12442	46	MA	AÇAILÂNDIA	28
12438	27	MA	AÇAILÂNDIA	27
12469	30	MA	AÇAILÂNDIA	23
12766	29	MA	AÇAILÂNDIA	18
12787	27	MA	AÇAILÂNDIA	16
12756	32	MA	AÇAILÂNDIA	13
12617	90	MA	AÇAILÂNDIA	7
12556	99	MA	AÇAILÂNDIA	6
12661	123	MA	AÇAILÂNDIA	5
12451	28	MA	AÇAILÂNDIA	4
12729	111	MA	AÇAILÂNDIA	3
12902	130	MA	BOM JARDIM	101
13160	108	MA	BOM JARDIM	73
13050	292	MA	BOM JARDIM	65
12884	53	MA	BOM JARDIM	49
12489	226	MA	BURITICUPU	114
12482	510	MA	BURITICUPU	104
12464	107	MA	BURITICUPU	101

TABLE 8.4.
POLYGONS WITH SOY IN MARANHÃO STATE

12601	94	MA	BURITICUPU	94
12440	49	MA	BURITICUPU	49
12667	189	MA	BURITICUPU	44
12662	306	MA	BURITICUPU	42
12707	70	MA	BURITICUPU	40
12436	45	MA	BURITICUPU	38
12458	32	MA	BURITICUPU	32
12675	30	MA	BURITICUPU	30
12450	29	MA	BURITICUPU	29
12596	28	MA	BURITICUPU	27
12697	33	MA	BURITICUPU	22
12672	61	MA	BURITICUPU	14
12679	51	MA	BURITICUPU	8
12626	33	MA	BURITICUPU	3
12504	108	MA	BURITICUPU	2
12643	34	MA	BURITICUPU	1
12399	318	MA	CIDELÂNDIA	204
12354	83	MA	CIDELÂNDIA	75
12381	25	MA	CIDELÂNDIA	25
12374	42	MA	CIDELÂNDIA	14
12762	681	MA	ITINGA DO MARANHÃO	533
13268	408	MA	ITINGA DO MARANHÃO	284
13214	750	MA	ITINGA DO MARANHÃO	129
12875	119	MA	ITINGA DO MARANHÃO	106
12944	75	MA	ITINGA DO MARANHÃO	66
12763	69	MA	ITINGA DO MARANHÃO	52
12921	59	MA	ITINGA DO MARANHÃO	51
12730	69	MA	ITINGA DO MARANHÃO	45
12916	46	MA	ITINGA DO MARANHÃO	43
13278	60	MA	ITINGA DO MARANHÃO	37
12955	54	MA	ITINGA DO MARANHÃO	33
13066	89	MA	ITINGA DO MARANHÃO	27
12975	294	MA	ITINGA DO MARANHÃO	22
12898	56	MA	ITINGA DO MARANHÃO	19
12936	42	MA	ITINGA DO MARANHÃO	16
12815	34	MA	SANTA LUZIA	25
12790	49	MA	SANTA LUZIA	8
12800	38	MA	SANTA LUZIA	7
TOTAL for Maranhão				4,672

TABLE 8.5.
POLYGONS WITH SOY IN AMAPÁ STATE

ID	Area of Polygon (ha)	State	Municipality	Soy Area (ha)
15106	32	AP	MACAPÁ	30
15109	29	AP	MACAPÁ	26
TOTAL for Amapá				56

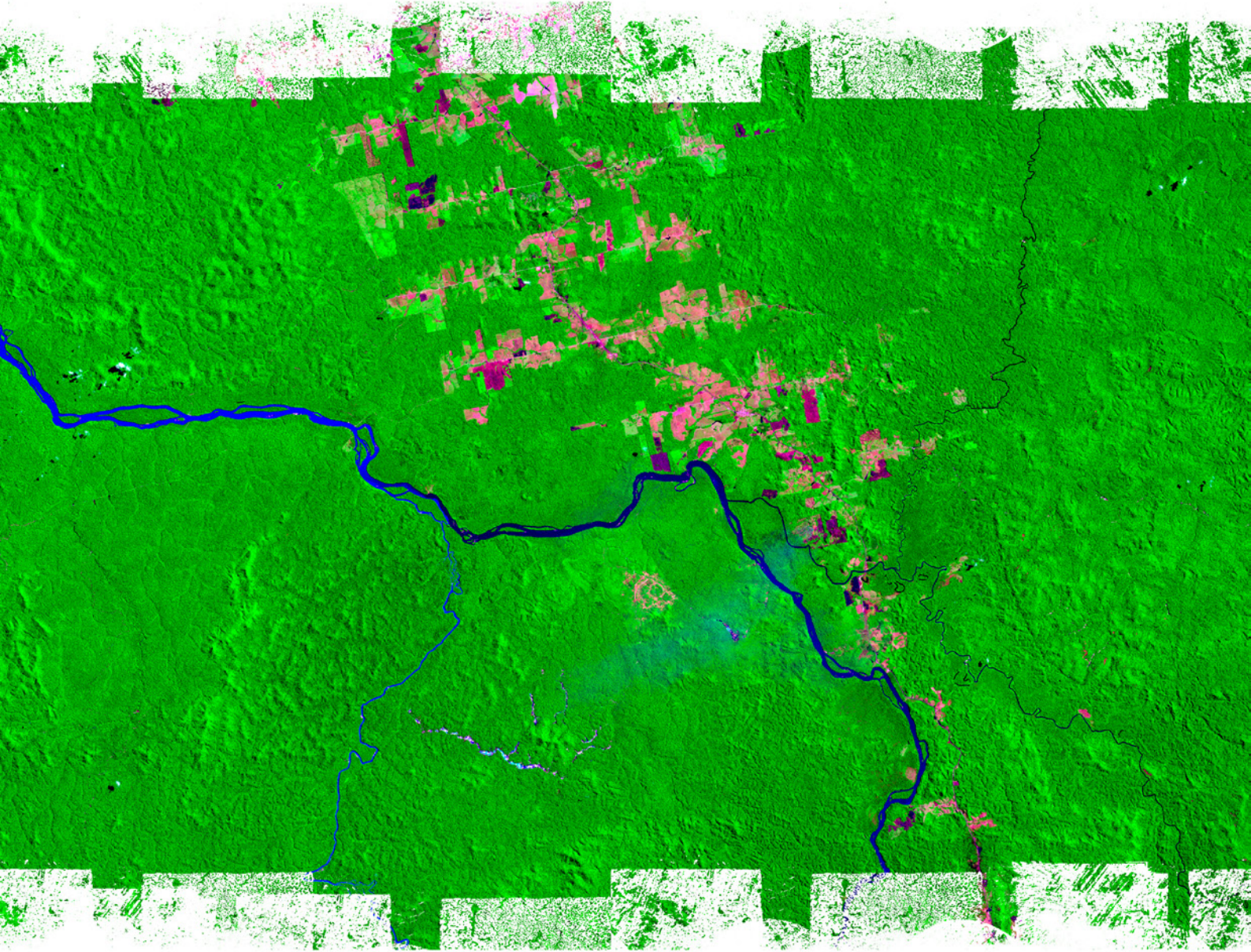
TABLE 8.6.
POLYGONS WITH SOY IN RORAIMA STATE

ID	Area of Polygon (ha)	State	Municipality	Soy Area (ha)
15263	39	RR	ALTO ALEGRE	8
TOTAL for Roraima				8



SOY

MORATORIUM



| CROP YEAR 2019/20 |