



# Analyses of the proposed amendment of the Forest Code

Forest Code Observatory Technical Committee<sup>1</sup>

## Introduction

The Provisory Act (PA) 867/2018, edited by President Temer, is a proposed amendment of the Brazilian Forest Code, the main Brazilian law about natural vegetation protection in private lands. Original PA aimed at extending the period for landowners have to join the Environmental Regulation Program (PRA, in the Portuguese acronym) and start taking action to restore or compensate the native vegetation that their farms lack in order to comply with the Forest Code. In Brazil PA need to be approved by National Congress within 60 days, which also allows congressmen to make changes to the PA initially proposed.

In the National Congress, the PA 867/2018 received 35 amendments proposals, most of which have already been approved by an ad hoc Committee. The PA with its amendments are now on its way to the plenaries of the Chamber of Deputies and the Senate in urgent regime, and could be approved before the June 3. The amended PA 867/2018 goes beyond the original purpose of the Provisory Act and could bring severe negative impact on the Forest Code implementation by further delaying the compliance process and substantially reducing environmental requirements. In fact, today the PA 867/2018 represents a new large-scale amnesty for those who disregarded the previous and current Forestry Code.

In order to understand the impact of those changes, the Forest Code Observatory Technical Committee assessed the situation of Legal Reserves<sup>2</sup> in Brazil. The evaluation was made with the geospatial analysis of compliance with the Forest Code (Law 12.651/2012), with the following inputs and methods:

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<sup>2</sup> A Legal Reserve area is a minimum percent of all rural lands, which has to be conserved with natural vegetation. The percentual vary according to the Bioma and region where is the rural land located, between 80% (Amazon) to 20% (other regions) of the land.

- Land Cadaster (30m x 30m resolution) that is part of Brazilian Agricultural Atlas by IMAFLORA, which includes both official land titles and the Rural Environmental Registry (CAR, in the Portuguese acronym) datasets.
- Land use map of Mapbiomas (resolution 30m x 30m) indicating the farming and native vegetation areas.
- A spatially explicit Forest Code model that applied the rules of the Forest Code at farm level (Freitas et al., 2018a; Freitas et al., 2018b)

## Results

The analyzed area includes 3,551,286 rural lands that add up to an area of 364,160,711 hectares (ha). Of these, only 147,906 or 4% of the rural lands have any noncompliance with the Legal Reserve requirements. This 4% of rural lands with non-compliance with the law represent 20% of the total real estate analyzed (73.23 million ha) and accumulate a native vegetation deficit of 9,044,122 ha. The deficit is due on 5.05 million hectares of 34.213 large rural lands and 3.99 million hectares of 113.693 medium-sized rural lands. (Table 1). In other words, 96% of the rural lands and 80% of the area occupied by them comply with the requirements of the Forest Code.

Table 1. Distribution of the Legal Reserve deficit between medium and large rural lands in Brazil.

Rural Lands size	Legal reserve required	Legal Reserve Deficit			
	Area (ha)	Area (ha)	Number of rural lands	Rural lands with Legal Reserve Deficit in relation to a total of rural lands	Legal Reserve Deficit area in relation to a total area of rural lands
Medium	24.108.253	3.993.396	113.693	3%	1,1%
Large	83.235.925	5.050.726	34.213	1%	1,4%
<b>Total</b>	<b>107.344.178</b>	<b>9.044.122</b>	<b>147.906</b>	<b>4%</b>	<b>2,5%</b>

The Legal Reserve deficit is concentrated in the Midwest (3.8 million ha of 34.9 thousand rural lands), followed by the North (1.7 million ha in 9.5 rural lands) and in the Southeast (1.6 million ha in 54.9 rural lands). Among the states, the largest deficits are in Mato Grosso, Pará and São Paulo, indicating that this occurs both in agricultural frontier areas and in consolidated and traditional production regions (Table 2).

Table 2. Distribution of Legal Reserve Deficit in rural lands by Brazilian states and region.

FU	Legal Reserve deficit (ha)	Number of rural lands with Legal Reserve Deficit	Rural lands with Legal Reserve Deficit in relation to a total of rural lands
North	1.713.624	9.563	0
RO	314.441	1.757	2%
AC	38.415	182	1%
MA	16.008	99	0%
RR	2.915	29	0%

PA	931.444	4.682	3%
AP	51	1	0%
TO	410.350	2.813	6%
<b>Northeast</b>	<b>924.790</b>	<b>10.962</b>	<b>1%</b>
MA	426.452	2.168	3%
PI	41.210	315	0%
CE	3.671	103	0%
RN	17.660	460	1%
PB	17.980	456	1%
PE	24.883	773	0%
AL	26.947	811	2%
SE	20.456	682	2%
BA	345.531	5.194	2%
<b>Southeast</b>	<b>1.647.289</b>	<b>54.967</b>	<b>6%</b>
MG	709.583	21.269	3%
ES	20.698	421	30%
RJ	45.096	2.380	6%
SP	871.911	30.897	10%
<b>South</b>	<b>974.203</b>	<b>37.476</b>	<b>3%</b>
PR	410.919	20.725	6%
SC	74.997	3.473	1%
RS	488.288	13.278	3%
<b>Midwest</b>	<b>3.784.199</b>	<b>34.938</b>	<b>13%</b>
MS	572.772	6.899	19%
MT	2.326.070	10.207	10%
GO	866.630	17.254	13%
DF	18.726	578	9%

The detailed analysis by region, state and rural lands size confirms the concentration of the deficit in large rural lands of some states. For example, only 2,889 large rural lands in Mato Grosso account for 1.38 million Legal Reserve deficits, while in Pará 1,184 large rural lands account for 536 thousand ha of deficit (Table 3).

Table 3. Distribution of Legal Reserve Deficit by region, state and rural lands size

Federation Unit (FU)	Total of rural lands	Total area of rural lands	Rural Lands			Total Legal Reserve deficit (ha)	Legal Reserve deficit									
			Small	Medium	Large		Small		Medium		Large					
							Area (ha)	Number of lands	Area (ha)	%	Number of lands	%	Area (ha)	%	Number of lands	%
<b>North</b>	<b>343.298</b>	<b>98.863.569</b>	<b>301.725</b>	<b>29.087</b>	<b>12.486</b>	<b>1.713.624</b>	<b>0</b>	<b>0</b>	<b>753.691</b>	<b>44%</b>	<b>7.406</b>	<b>2%</b>	<b>959.940</b>	<b>56%</b>	<b>2.157</b>	<b>1%</b>
RO	81.302	11.535.436	75.754	4.251	1.297	314.441	0	0	122.405	39%	1437	2%	192.037	61%	320	0%
AC	16.443	6.436.027	15.459	437	547	38.415	0	0	18.581	48%	129	1%	19.835	52%	53	0%
MA	37.367	15.032.228	34.619	1.975	773	16.008	0	0	11.334	71%	89	0%	4.674	29%	10	0%
RR	9.088	4.219.023	6.731	1.906	451	2.915	0	0	2.290	79%	23	0%	625	21%	6	0%
PA	143.528	41.927.439	126.886	10.637	6.005	931.444	0	0	394.796	42%	3498	2%	536.652	58%	1184	1%
AP	4.549	2.040.874	3.708	697	144	51	0	0	51	100%	1	0%	0	0%	0	0%
TO	51.021	17.672.543	38.568	9.184	3.269	410.350	0	0	204.235	50%	2229	4%	206.117	50%	584	1%
<b>Northeast</b>	<b>816.582</b>	<b>61.200.372</b>	<b>775.396</b>	<b>28.082</b>	<b>13.104</b>	<b>924.790</b>	<b>0</b>	<b>0</b>	<b>445.435</b>	<b>48%</b>	<b>8.240</b>	<b>1%</b>	<b>479.356</b>	<b>52%</b>	<b>2.722</b>	<b>0%</b>
MA	64.142	15.700.307	55.797	5.891	2.454	426.452	0	0	217.981	51%	1749	3%	208.473	49%	419	1%
PI	96.628	10.591.837	91.531	3.302	1.795	41.210	0	0	15.684	38%	238	0%	25.526	62%	77	0%
CE	55.850	4.185.901	52.665	2.302	883	3.671	0	0	2.101	57%	91	0%	1.570	43%	12	0%
RN	40.686	2.483.967	38.060	1.922	704	17.660	0	0	9.534	54%	369	1%	8.126	46%	91	0%

PB	74.353	2.166.080	72.069	1.689	595	17.980	0	0	6.847	38%	310	0%	11.133	62%	146	0%
PE	156.057	4.029.686	153.002	2.128	927	24.883	0	0	10.588	43%	487	0%	14.295	57%	286	0%
AL	44.788	967.025	43.442	821	525	26.947	0	0	12.011	45%	551	1%	14.937	55%	260	1%
SE	37.270	1.049.988	35.932	996	342	20.456	0	0	10.659	52%	546	1%	9.797	48%	136	0%
BA	246.808	20.025.581	232.898	9.031	4.879	345.531	0	0	160.031	46%	3899	2%	185.500	54%	1295	1%
<b>Southeast</b>	<b>972.095</b>	<b>56.501.454</b>	<b>872.140</b>	<b>78.488</b>	<b>21.467</b>	<b>1.647.289</b>	<b>0</b>	<b>0</b>	<b>828.831</b>	<b>50%</b>	<b>44.169</b>	<b>5%</b>	<b>818.458</b>	<b>50%</b>	<b>10.798</b>	<b>1%</b>
MG	617.473	36.873.633	567.423	40.849	9.201	709.583	0	0	398.732	56%	17982	3%	310.852	44%	3287	1%
ES	1.390	470.938	654	392	344	20.698	0	0	6.992	34%	254	18%	13.706	66%	167	12%
RJ	37.770	1.767.832	32.669	3.948	1.153	45.096	0	0	25.043	56%	1936	5%	20.053	44%	444	1%
SP	315.462	17.389.052	271.394	33.299	10.769	871.911	0	0	398.063	46%	23997	8%	473.847	54%	6900	2%
<b>South</b>	<b>1.144.781</b>	<b>37.379.208</b>	<b>1.075.828</b>	<b>51.584</b>	<b>17.369</b>	<b>974.203</b>	<b>0</b>	<b>0</b>	<b>491.875</b>	<b>50%</b>	<b>29.730</b>	<b>0</b>	<b>482.328</b>	<b>50%</b>	<b>7.746</b>	<b>1%</b>
PR	375.637	13.931.525	345.344	23.078	7.215	410.919	0	0	240.716	59%	16967	5%	170.204	41%	3758	1%
SC	294.580	6.160.235	284.176	8.171	2.233	74.997	0	0	36.834	49%	2773	1%	38.162	51%	700	0%
RS	474.564	17.287.449	446.308	20.335	7.921	488.288	0	0	214.325	44%	9990	2%	273.962	56%	3288	1%
<b>Midwest</b>	<b>274.530</b>	<b>110.216.109</b>	<b>196.148</b>	<b>49.595</b>	<b>28.787</b>	<b>3.784.199</b>	<b>0</b>	<b>0</b>	<b>1.473.563</b>	<b>39%</b>	<b>24.148</b>	<b>9%</b>	<b>2.310.643</b>	<b>61%</b>	<b>10.790</b>	<b>4%</b>
MS	37.107	24.701.131	20.758	7.943	8.406	572.772	0	0	129.339	23%	3627	10%	443.433	77%	3272	9%
MT	101.914	61.718.525	73.227	17.919	10.768	2.326.070	0	0	941.097	40%	7318	7%	1.384.981	60%	2889	3%
GO	129.232	23.508.743	96.834	23.281	9.117	866.630	0	0	401.307	46%	12925	10%	465.322	54%	4329	3%
DF	6.277	287.710	5.329	452	496	18.726	0	0	1.819	10%	278	4%	16.907	90%	300	5%
<b>Brazil</b>	<b>3.551.286</b>	<b>364.160.711</b>	<b>3.221.237</b>	<b>236.836</b>	<b>93.213</b>	<b>9.044.105</b>	<b>0</b>	<b>0</b>	<b>3.993.396</b>	<b>44%</b>	<b>113.693</b>	<b>3%</b>	<b>5.050.726</b>	<b>56%</b>	<b>34.213</b>	<b>1%</b>

The stratification of real estate by size indicates that more than half of the medium and large rural lands comply with the requirements of the Forest Code. Compliance reaches 77% and 73% of rural lands in the North and Northeast regions, and has the lowest percentage of compliance in the Southeast with only 45% of rural lands. Among the large ones, compliance is 63% of total of rural lands, reaching 83% in the North region (Table 4). The highest percentage of noncompliance is in large and medium-sized rural lands in São Paulo state, where only 30% of rural lands do not have a Legal Reserve deficit.

Table 4. Distribution of medium and large rural lands that comply with Forest Code requirements by region, state and country.

FU	Private lands without Legal Reserve deficit					
	Number of mediums lands	%	Number of large lands	%	Number of large and mediums lands	%
<b>North</b>	<b>21.681</b>	<b>75%</b>	<b>10.329</b>	<b>83%</b>	<b>32.010</b>	<b>77%</b>
RO	2.814	66%	977	75%	3.791	68%
AC	308	70%	494	90%	802	82%
MA	1.886	95%	763	99%	2.649	96%
RR	1.883	99%	445	99%	2.328	99%
PA	7.139	67%	4.821	80%	11.960	72%
AP	696	100%	144	100%	840	100%
TO	6.955	76%	2.685	82%	9.640	77%
<b>Northeast</b>	<b>19.842</b>	<b>71%</b>	<b>10.382</b>	<b>79%</b>	<b>30.224</b>	<b>73%</b>
MA	4.142	70%	2.035	83%	6.177	74%
PI	3.064	93%	1.718	96%	4.782	94%
CE	2.211	96%	871	99%	3.082	97%
RN	1.553	81%	613	87%	2.166	82%
PB	1.379	82%	449	75%	1.828	80%
PE	1.641	77%	641	69%	2.282	75%
AL	270	33%	265	50%	535	40%
SE	450	45%	206	60%	656	49%
BA	5.132	57%	3.584	73%	8.716	63%
<b>Southeast</b>	<b>34.319</b>	<b>44%</b>	<b>10.669</b>	<b>50%</b>	<b>44.988</b>	<b>45%</b>
MG	22.867	56%	5.914	64%	28.781	58%
ES	138	35%	177	51%	315	43%
RJ	2.012	51%	709	61%	2.721	53%
SP	9.302	28%	3.869	36%	13.171	30%
<b>South</b>	<b>21.854</b>	<b>42%</b>	<b>9.623</b>	<b>55%</b>	<b>31.477</b>	<b>46%</b>
PR	6.111	26%	3.457	48%	9.568	32%
SC	5.398	66%	1.533	69%	6.931	67%
RS	10.345	51%	4.633	58%	14.978	53%
<b>Midwest</b>	<b>25.447</b>	<b>51%</b>	<b>17.997</b>	<b>63%</b>	<b>43.444</b>	<b>55%</b>
MS	4.316	54%	5.134	61%	9.450	58%

MT	10.601	59%	7.879	73%	18.480	64%
GO	10.356	44%	4.788	53%	15.144	47%
DF	174	38%	196	40%	370	39%
<b>Brazil</b>	<b>123.143</b>	<b>52%</b>	<b>59.000</b>	<b>63%</b>	<b>182.143</b>	<b>55%</b>

## Conclusions

The deficit of compliance with the requirements of Legal Reserve (RL) in Brazil accumulates the expressive value of 9 million ha, an area that corresponds to the sum of the states of Rio de Janeiro and Espírito Santo. Despite its magnitude, 96% of Brazilian real estate complies with RL requirements and non-compliance is concentrated in a relatively small number of large and medium real estate.

In addition, the regularization of these deficit areas can be achieved to a great extent with compensation mechanisms, since the surplus of native vegetation is larger than the deficit (Soares-Filho et al., 2016; Sparovek et al., 2015). Environmental Reserve Quotas are one of the possible mechanisms for this purpose and restoration of native vegetation may be necessary under particular conditions.

We also emphasize that Brazilian NDC (our part with the Paris Agreement) provides for the restoration of 12 million ha of native vegetation, which could be achieved by planting in APPs and RLs and the consequent total legality of the sector.

Therefore, the PA 867/2018 amendments serves the interests of the few and disregards the efforts of most rural lands owners and agricultural producers in Brazil. It also discourages compliance with Brazilian NDC and compromises the country's image and reputation in global geopolitics, the international commitments established by the agricultural sector and the possibility of attracting resources for the protection of Brazilian forests.

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