

# Amazonas, Brazil



## Jurisdictional indicators brief

State area:	1,559,149 km <sup>2</sup> (18.31% of Brazil)
Original forest area:	1,458,477 km <sup>2</sup>
Current forest area (2019):	1,423,167 km <sup>2</sup> (91.3% of Amazonas)
Yearly deforestation (2019)	1,434 km <sup>2</sup>
Yearly deforestation rate (2019)	0.1%
Interannual deforestation change (2018-2019)	+37%
Accumulated deforestation (2001-2019):	15,515 km <sup>2</sup>
Protected conservation areas:	412,668 km <sup>2</sup> (26.5% of Amazonas)
Carbon stocks (2015):	17,639 millions tons (above ground biomass)
Representative crops (2018):	Cassava (889,002 tons); Sugarcane (252,734 tons); Pineapple (89,196 tons)
Value of agricultural production (2016):	\$1,873,012,970 USD
More on jurisdictional sustainability	<a href="#">State of jurisdictional sustainability</a>

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## Forest and people

In 2019, the estimated area of tropical forest in the state of Amazonas was 1,423,167 km<sup>2</sup>, equivalent to 91.3% of the state's total area, and to 44.7% of the tropical forest remaining in the nine states of the Brazilian legal Amazon. The total accumulated forest lost during the period 2001-2019 was 15,515 km<sup>2</sup>, equivalent to 1% of the forest area remaining in 2001. Amazonas concentrated about 47.1% of the carbon reserves stored in the biomass of the Brazilian tropical forest (about 17,639 mt C as of 2019).

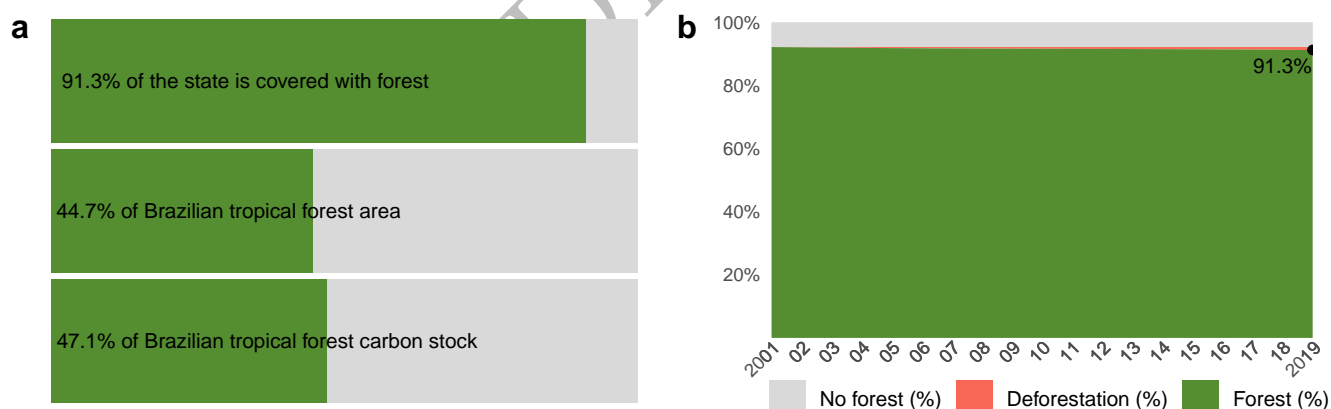


Figure 1: a) forest share and b) transition of forest to deforestation over the last years

There were 4.3 million people living in Amazonas as of 2020, distributed in 19 municipalities, with 2.1 million people living in the capital city of Manaus. The state has formally designated conservation areas and indigenous territories, which respectively represent 26% and 29% of the state. There were an estimated 167,123 indigenous people living in the state in 2010 (see Figure 2).

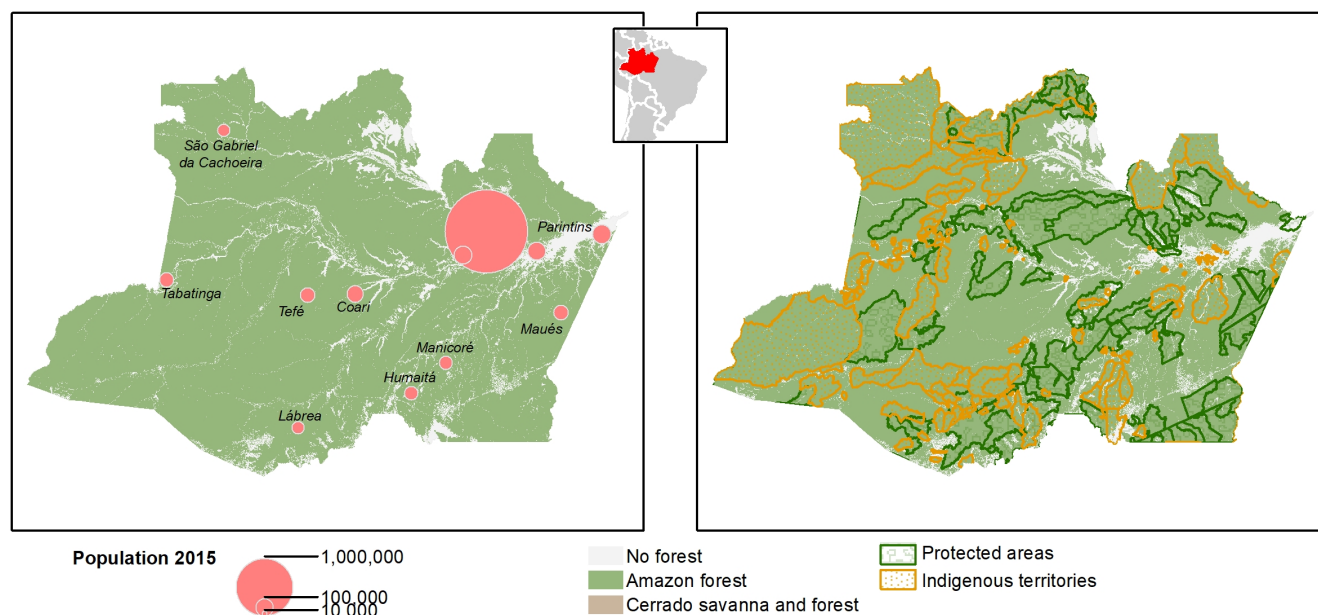


Figure 2: Map of most populated places (> 40,000 people) and indigenous and protected areas in Amazonas

## Deforestation

The state of Amazonas reduced its yearly deforestation rate rapidly after reaching a maximum of 1,558 km<sup>2</sup> in 2003. In 2009 the state registered the minimum yearly forest loss with 405 km<sup>2</sup>. Deforestation increased rapidly thereafter, and since 2016, the yearly deforestation has remained above 1,000 km<sup>2</sup>. Deforestation in Amazonas in 2019 was 1,434 km<sup>2</sup> representing an interannual increase of 37% with respect to 2018 and amounting to 14% of the total deforestation in the legal Amazon. With the 2019 increase, Amazonas positioned as the state with the third largest yearly deforestation area, after Para and Mato Grosso. The state deforestation rate in 2019 was 0.1%, the second lowest among the Amazon states in 2019.

The state's current deforestation is 65% above the reference baseline 1996-2005, and 98% above the reference baseline 1996-2015 (see Figure 3).

80% of the deforestation is located in the five most affected municipalities in the state (see Figure 4). The municipality of Lábrea consistently registered the largest loss of tropical forest over the last years, reaching a maximum of 429 km<sup>2</sup> lost in 2003. In 2019 the deforestation in Lábrea was 390 km<sup>2</sup>.

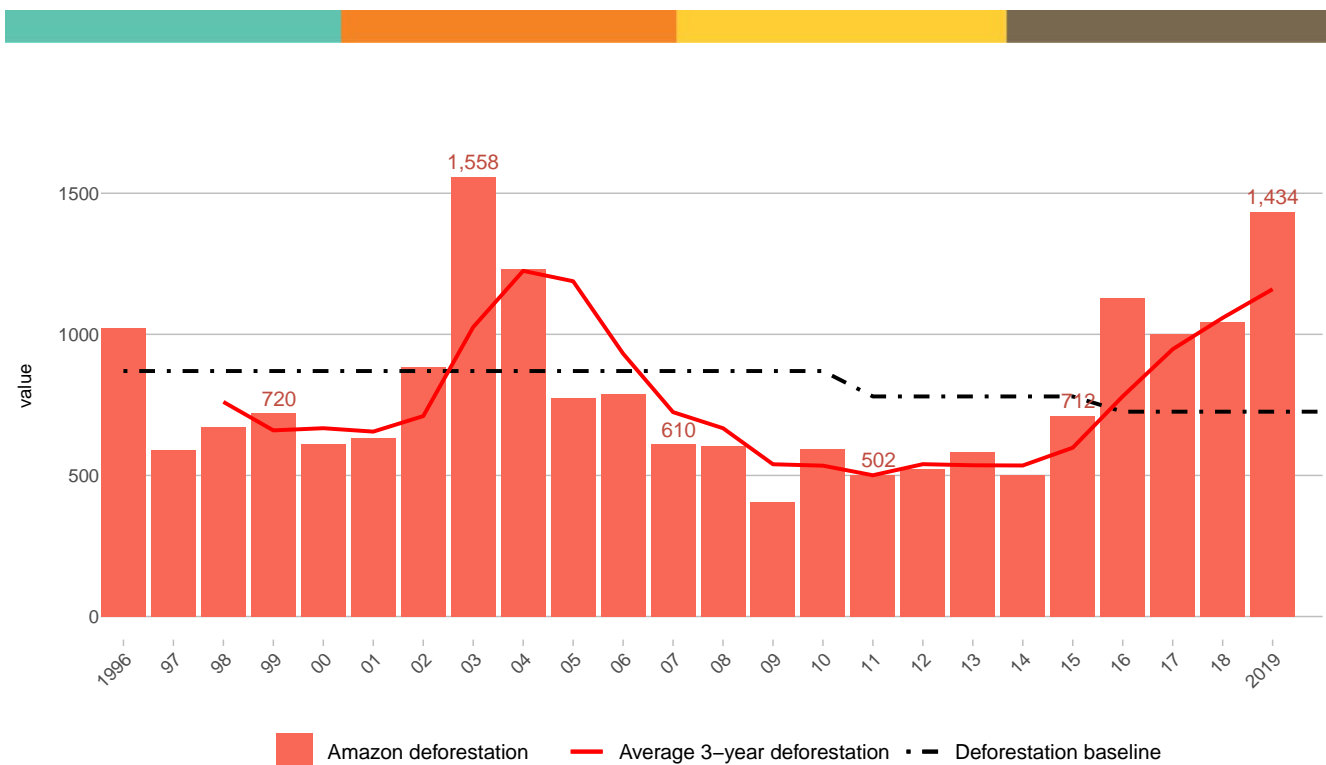


Figure 3: Yearly deforestation ( $km^2$ ) and deforestation baseline

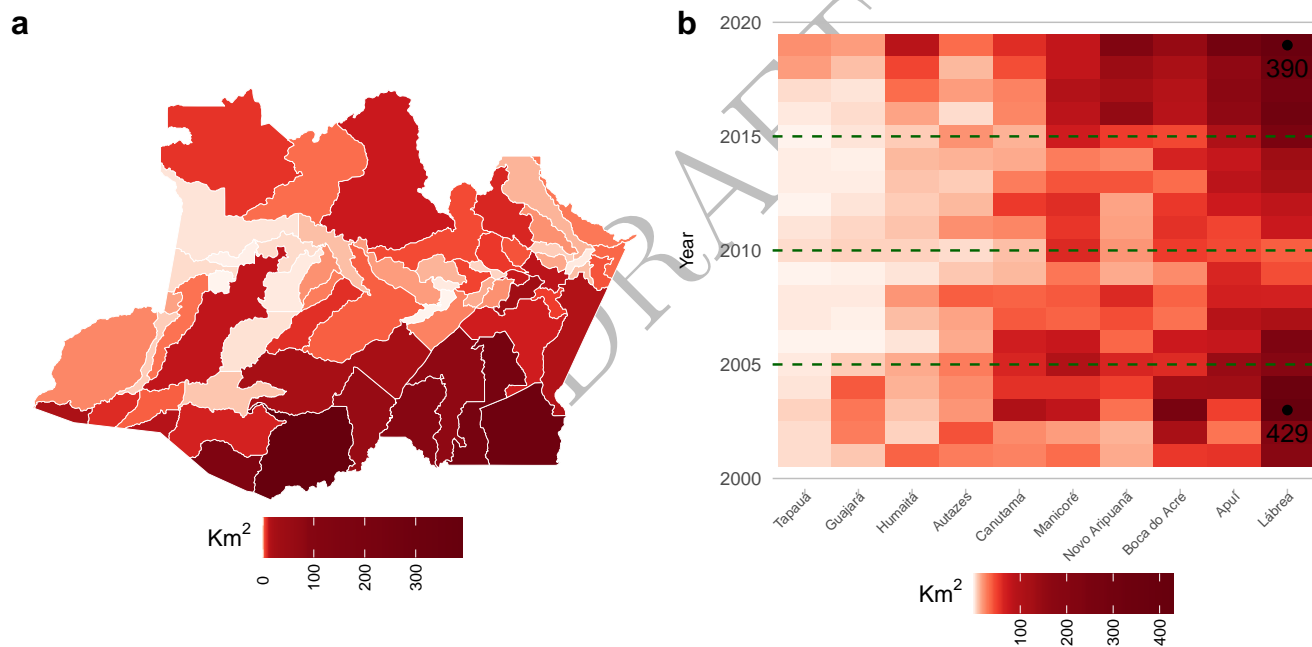


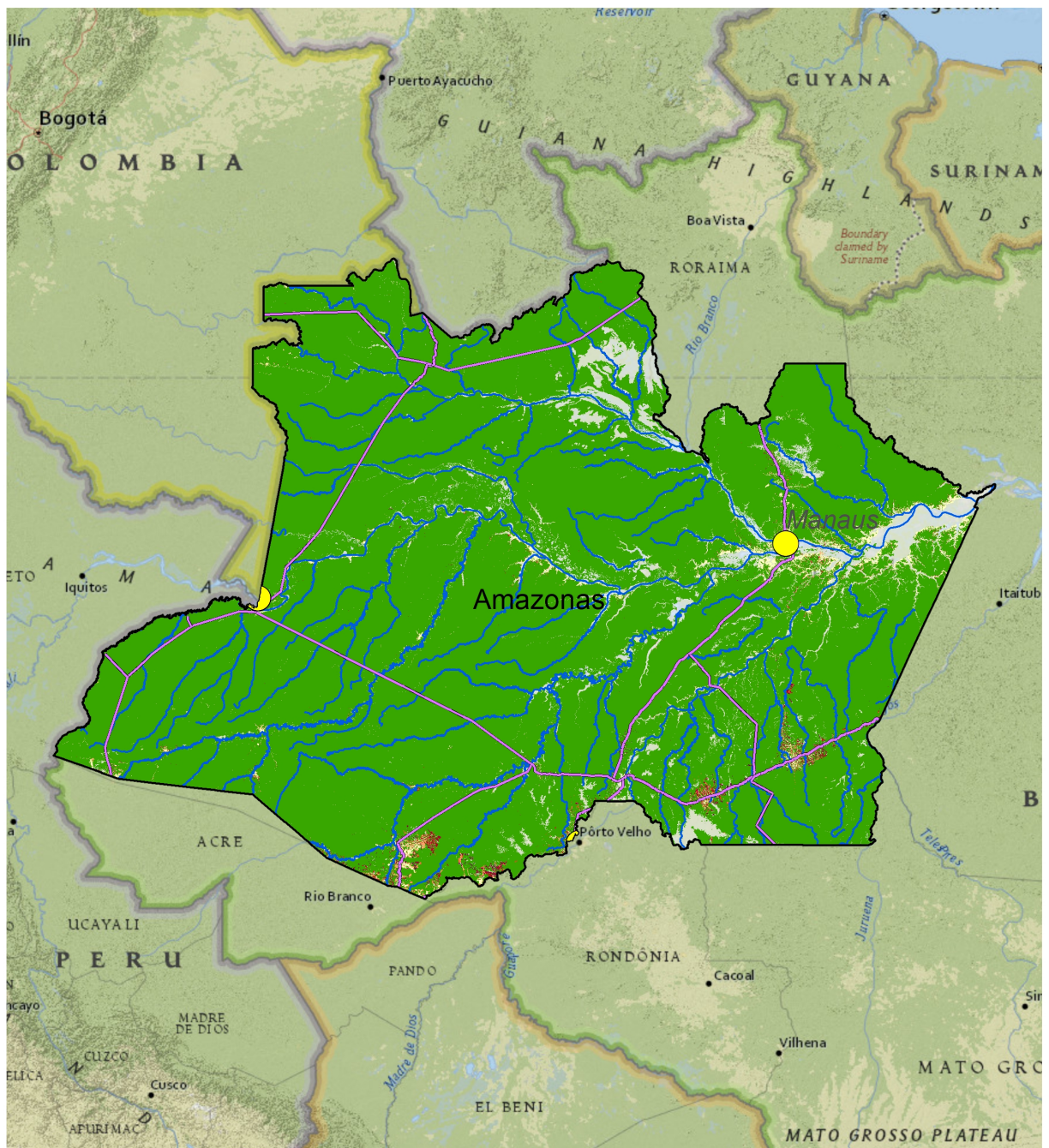
Figure 4: a) Yearly deforestation by municipalities in 2019 b) Yearly deforestation in top 10 most affected municipalities ( $km^2$ )



Table 1: Forest and deforestation indicators in the state of Amazonas

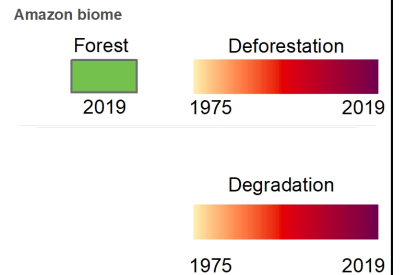
Year	Forest (km <sup>2</sup> )	Deforestation	Deforestation rate (%)	Annual variation (%)
2001	1,437,909	634	0.04	3.6
2002	1,436,507	885	0.06	39.6
2003	1,435,482	1,558	0.11	76
2004	1,433,872	1,232	0.09	-20.9
2005	1,432,736	775	0.05	-37.1
2006	1,431,864	788	0.06	1.7
2007	1,431,137	610	0.04	-22.6
2008	1,430,593	604	0.04	-1
2009	1,429,971	405	0.03	-33
2010	1,429,622	595	0.04	46.9
2011	1,429,069	502	0.04	-15.6
2012	1,428,552	523	0.04	4.2
2013	1,428,073	583	0.04	11.5
2014	1,427,579	500	0.04	-14.2
2015	1,427,016	712	0.05	42.4
2016	1,426,318	1,129	0.08	58.6
2017	1,425,301	1,001	0.07	-11.3
2018	1,424,255	1,045	0.07	4.4
2019	1,423,167	1,434	0.10	37.2





### Amazonas, Brazil Forest and accumulated deforestation

The map shows the most recent forest cover and yearly deforestation mapped by PRODES, Brazil. Intense red colors represent the most recent deforestation whereas light orange colors earlier deforestation as noted in the legend



Prepared by Earth Innovation Institute

## Burned area

According to the NASA-USGS analysis of MODIS satellite observations, the average yearly burned area in Amazonas was 2,139 km<sup>2</sup> for the period 2010-2020. This figure includes burned areas due to fires in forest, savannahs and opened agricultural areas. The burned area in 2019 was 3,672 km<sup>2</sup> and the worst year in the last decade was 2010 with 3,833 km<sup>2</sup> burned. In most years, the months of August and September represented the peak of the fire season (see Figure 5).

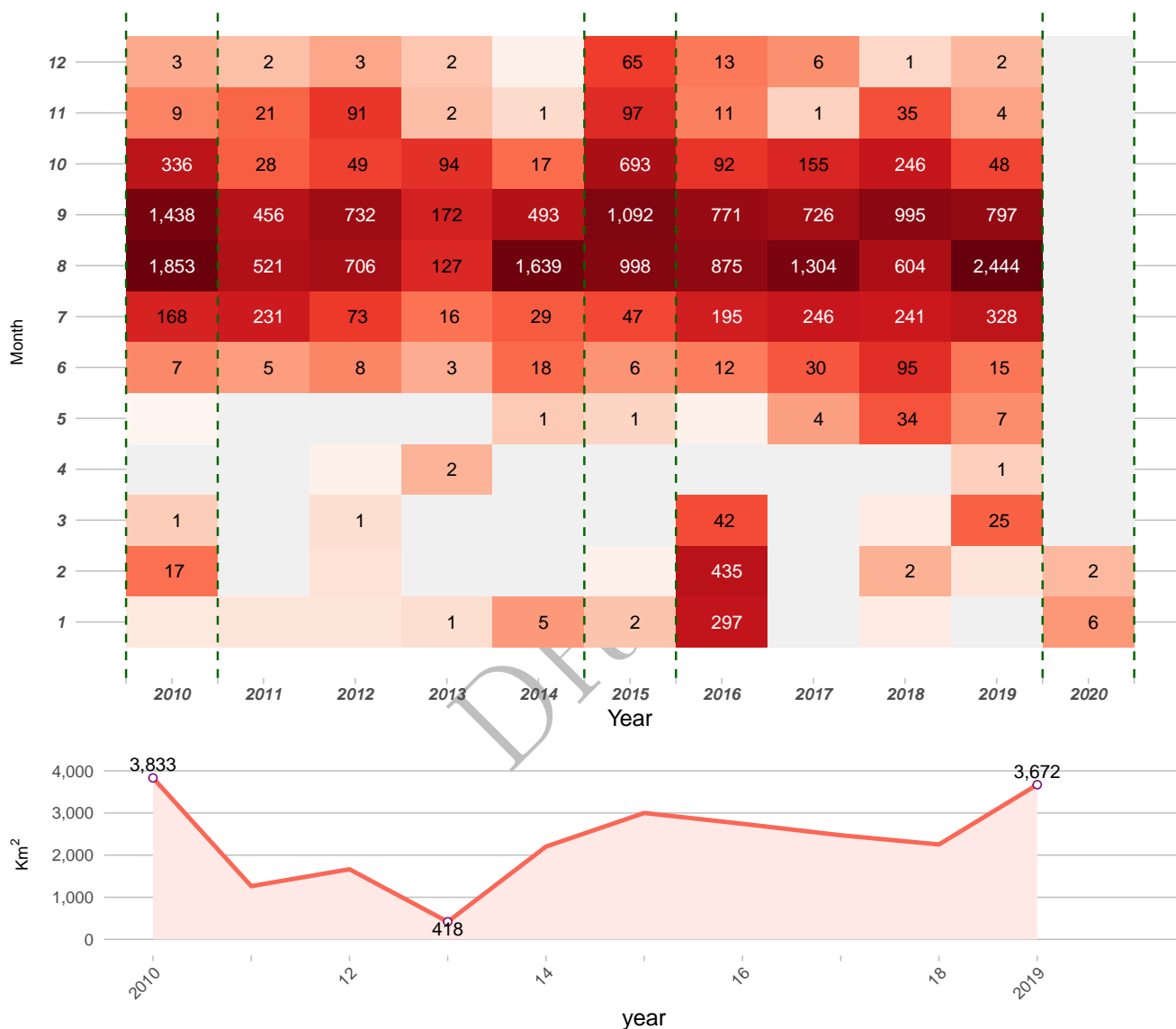


Figure 5: Monthly burned area since 2010 (km<sup>2</sup>). Source: EII analysis of MODIS-MCD64

## Emissions from deforestation

The accumulated emissions from deforestation in the state of Amazonas between 2000 and 2019 amount to 957 million tons of CO<sub>2</sub>eq, which was equivalent to 7.4% of the total emissions from deforestation in the legal Amazon during this period. Considering the observed yearly deforestation, the mean carbon density of the state's forest and the business as usual deforestation baseline, the accumulated gross avoided emissions from deforestation during the period from 2006 to 2019 was 166 million tons of CO<sub>2</sub>eq. This results from summing avoided emissions during the period from 2006 to 2019 in which the deforestation was lower than the business as usual deforestation baseline.

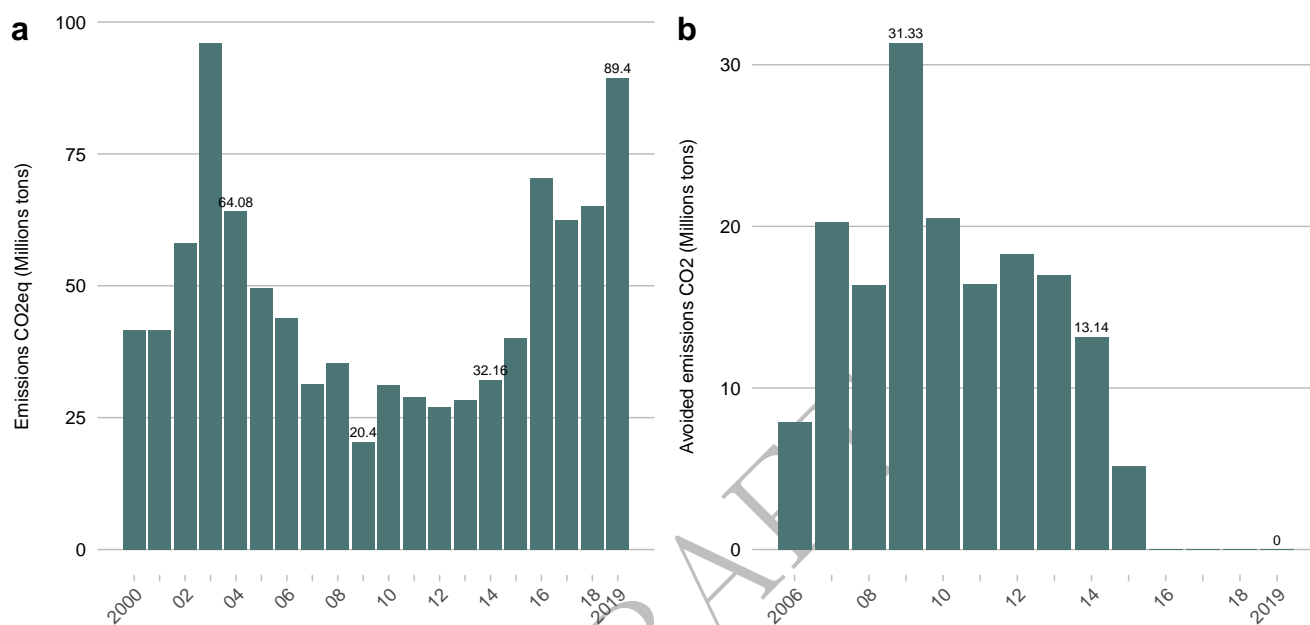




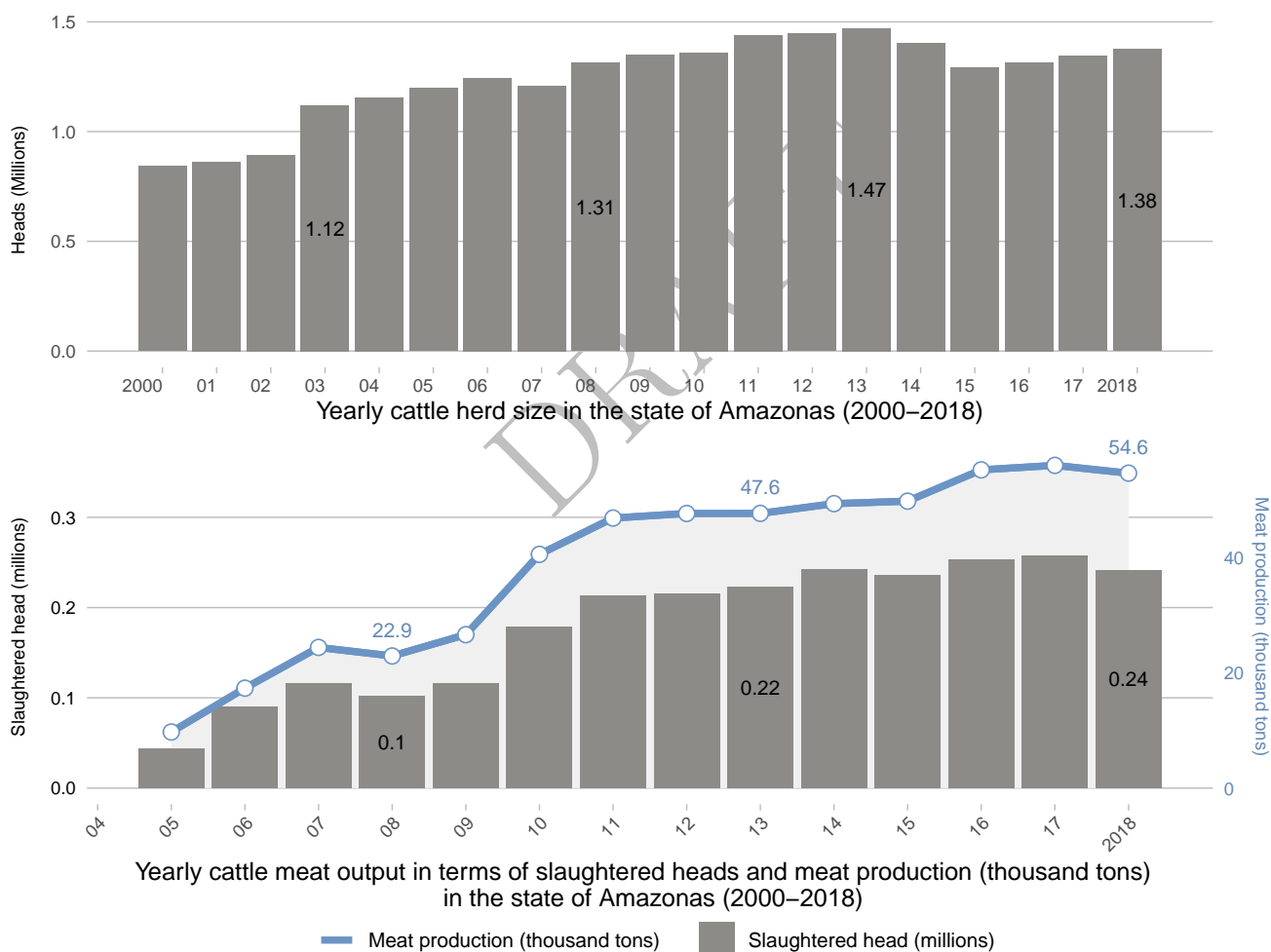


Figure 6: Emissions from deforestation (left) and avoided emissions (right) (CO<sub>2</sub>eq Millions tons)

## Livestock

Table 2: Livestock indicators in Amazonas

				
	<b>Cattle</b>	<b>Pig</b>	<b>Poultry</b>	<b>Fish</b>
Year	2018	2018	2018	2015
Herd size:	1,376,210	76,273	3,887,275	
Slaughtered heads:	241,531	NA	NA	
Meat production (tons):	54,611	NA	NA	
Value (thousands):				R\$166,762 BRL





## Agriculture

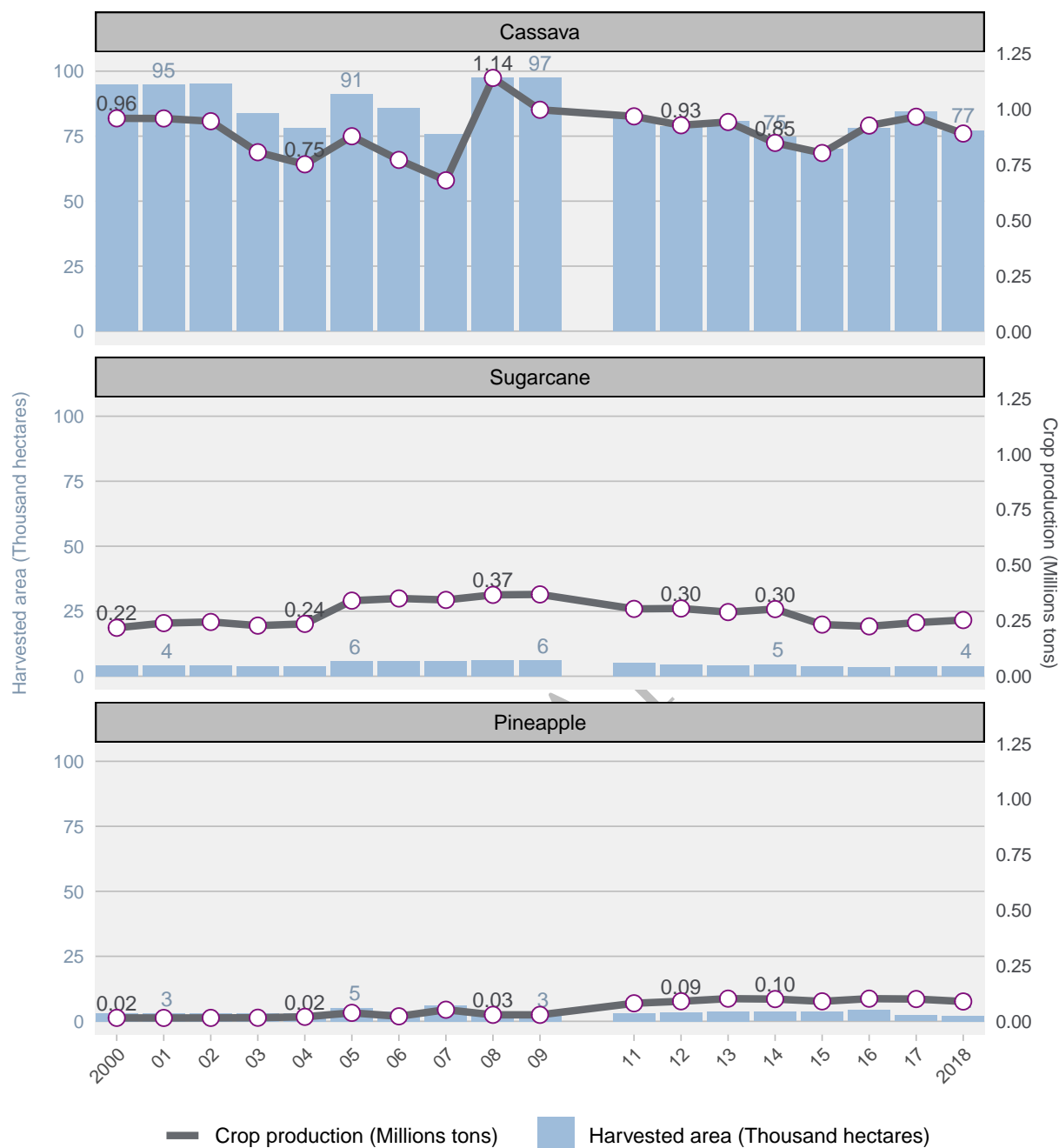


Figure 7: Harvested area and production of the three crops most produced in Amazonas



## Aquaculture

The plot shows the aquaculture production in the state of Amazonas over the last 6 years and the value of this production. The data includes production of fish such as Tambaqui, firewood catfish, Giant arapaima, Arapaima or Pirapitinga and includes only activities related with fish farming under controlled conditions. Does not include fishing activities.<sup>1</sup>

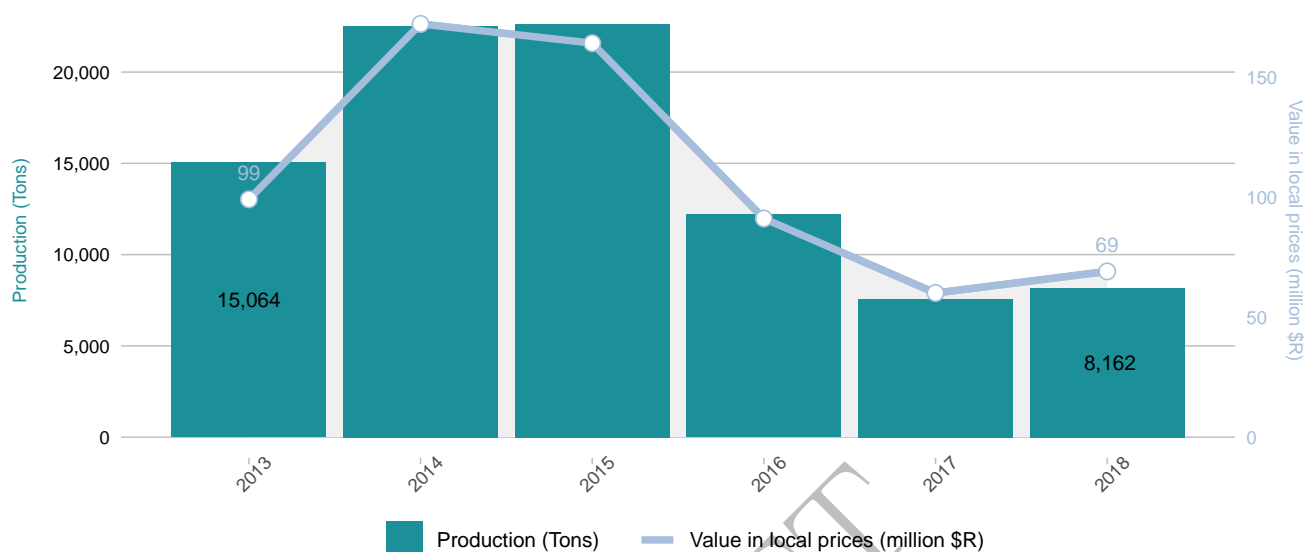
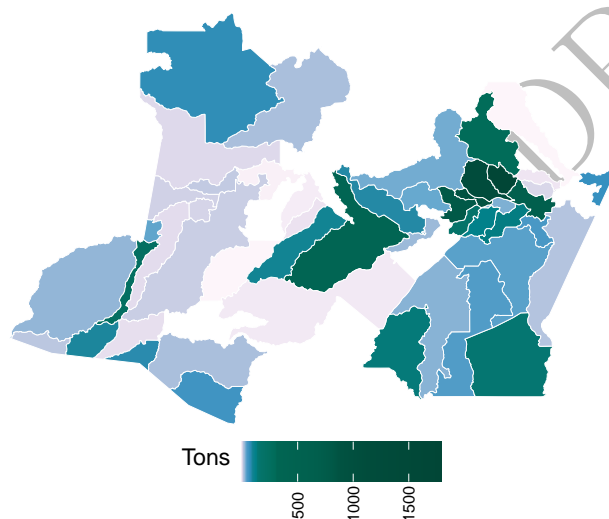


Figure 8: Yearly aquaculture production (tons) and value of production (Reales) in Amazonas

a



b

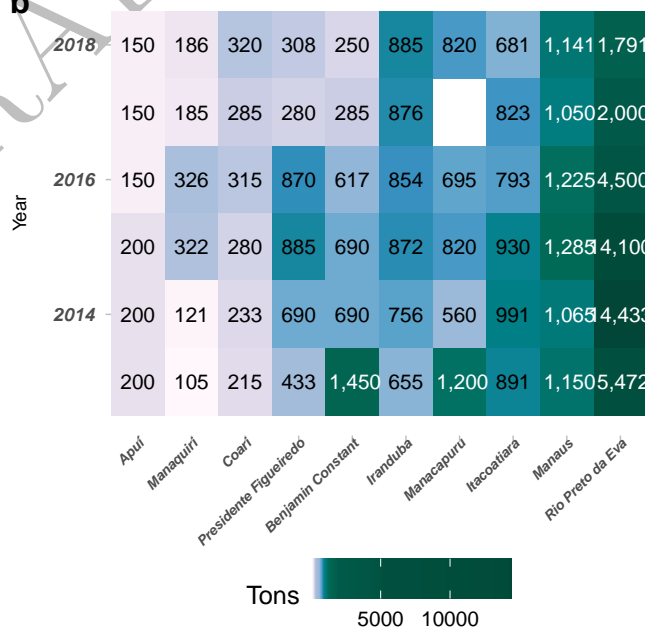


Figure 9: a) Yearly aquaculture production (tons) in municipalities of Amazonas in 2018. b) Yearly aquaculture production by municipalities (Tons)

<sup>1</sup>The value of production don't include the class Shellfish seeds, Shrimp, Shrimp larvae and post-larvae, Oysters, scallops and mussels, Other products (frog, alligator, crab, lobster, etc.) and Alevinos.