BEEF REPORT 2024

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Brazilian Beef Profile

CHAPTERS

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Antonio Jorge Camardelli

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Selma Acácia de Oliveira
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Vinicius Molina

FINANCE
Fabiano M. Conigiero
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GRAPHIC PROJECT
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VERSION ENG-US
23 de agosto de 2024

Words from the President

It is with great pleasure that we present the Beef Report 2024, a comprehensive and detailed analysis of the beef industry panorama in Brazil. This report reflects the commitment of the Brazilian Beef Exporters Association (Abiec) to transparency and the dissemination of accurate and relevant information for all links in the production chain. These attributes – accuracy and transparency – constitute the basis of trust, necessary in any sector, but essential for those who occupy global leadership in their segments, and, going further, which represent a fundamental element for the health and food safety of countless families, within and beyond borders.

In 2023, Brazil reached a historic milestone by exporting 2.29 million tons of beef, setting a new record in volume. This achievement reinforces our position as a global leader, exporting to 157 countries and generating revenue of USD 10.55 billion. We have the largest commercial herd in the world, with 197.2 million head, and the production of 10.6 million tons of carcass weight equivalent (CWE) in 2023 places us in second place worldwide, responsible for 13.8% of global production... and growing.

The data from the Beef Report 2024 are irrefutable proof of our efficiency. We are producing more meat and not just increasing our herd. This is called productivity, the result of a job well done, which includes the sector's constant investment in technological improvements and management. Increasing productivity goes hand in hand with sustainability, a word that, for us, has a very broad meaning and is a survival factor in increasingly restrictive markets, and is equally decisive in the management and financial health of companies. In addition to volume, quality and sustainability, beef production in Brazil is based on safety. The country maintains strict sanitary controls, ensuring that our product meets the highest international standards. We have not had any classic cases of Bovine Spongiform Encephalopathy (BSE) and have remained free of foot-and-mouth disease since 2005. This health status is the result of strict policies and an ongoing commitment to animal health. With the guarantee of health, the differentials in quality and sustainability, added to the volume and essential support of the Ministry of Development, Industry, Commerce and Services (MDIC), via ApexBrasil, we continue to make great strides in conquering new markets and expanding and maintaining those in which we are already present.

I invite readers to dedicate themselves to a deep dive into the data in the Beef Report 2024, a very expressive summary of the work of the entire production chain. We at Abiec hope that the report will be useful for all research purposes, but we especially hope that it will bring evidence and reasons for pride to all who read it, reinforcing, in each one, the commitment to keep Brazil at the forefront of global livestock farming.


Antonio Jorge Camardelli

1. BEEF EXPORTS

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In 2023, Brazil exported 2.29 million tons of beef, a new record in volume after the results of 2022. We export to 157 countries on all continents. The data is from the Secretariat of Foreign Trade (Secex), compiled and analyzed by the Brazilian Beef Exporters Association (ABIEC).

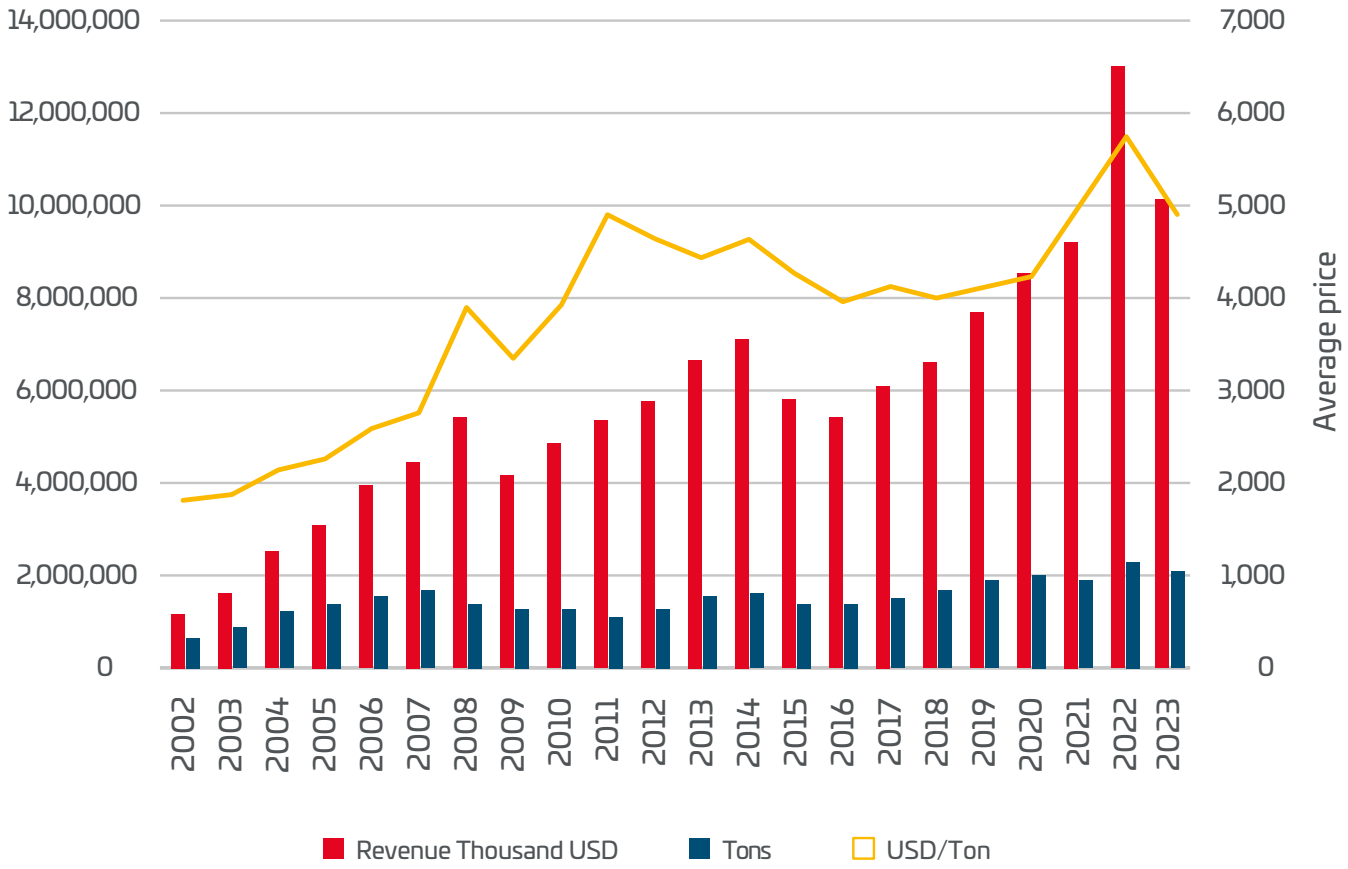
In terms of revenue, the figures reached USD 10.55 billion, one of the highest results in history, but around 18% lower than in 2022. This is because there was a readjustment in the international market after the pandemic and average world prices fell, as well as the mix of exported products was changed, including Brazilian products.

On average, the value of a ton of beef exported by Brazil in 2023 was USD 4,598, 19% lower than in the previous year.

Fresh beef continues to be the main product exported by Brazil, accounting for around 90% of the total.

China continues to be the main buyer of Brazilian beef in 2023, accounting for 54.4% of the total. Followed by the United States and the European Union.

EVOLUTION OF BRAZILIAN BEEF EXPORTS

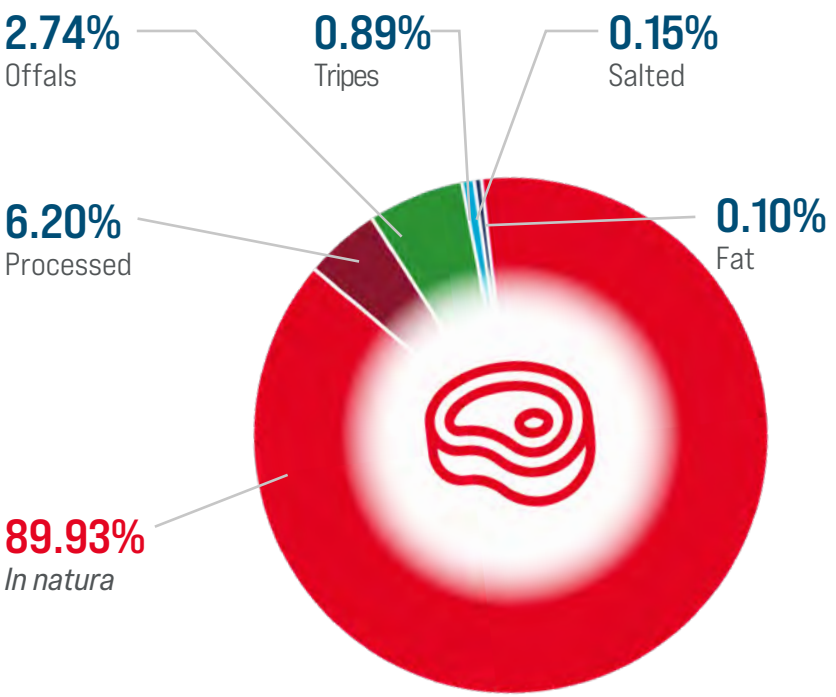


Source: SECEX/ABIEC

BEEF EXPORTS IN 2023
BY CATEGORY

Category	Thousand USD	Ton
In Natura	**9,495,556**	**2,005,907**
Processed	**654,463**	**94,946**
Offals	**289,346**	**156,877**
Casing	**93,973**	**29,998**
Salted	**15,467**	**2,776**
Fat	**10,123**	**5,666**
Total	**10,558,929**	**2,296,170**

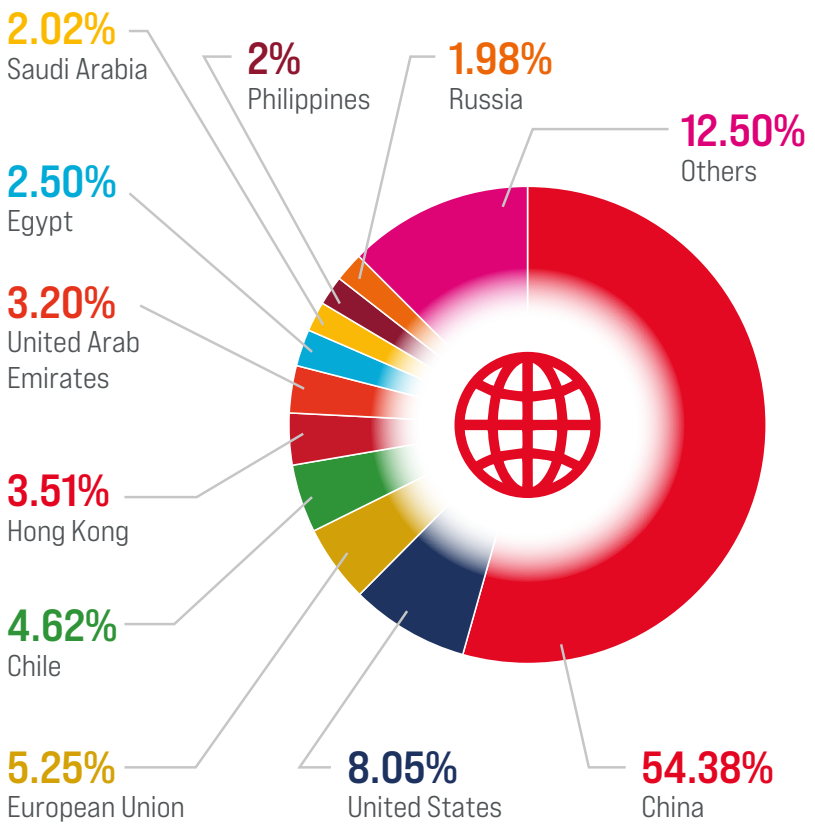
Source: SECEX/ABIEC



MAIN DESTINATIONS OF BRAZILIAN BEEF EXPORTED IN 2023 (IN REVENUE - THOUSAND USD)

Country	Revenue (thousand USD)
China	**5,741,838**
United States	**849,644**
European Union	**554,440**
Chile	**487,824**
Hong Kong	**370,368**
United Arab Emirates	**337,893**
Egypt	**263,523**
Saudi Arabia	**213,773**
Philippines	**210,835**
Russia	**208,655**
Others	**1,320,133**
Total	**10,558,929**

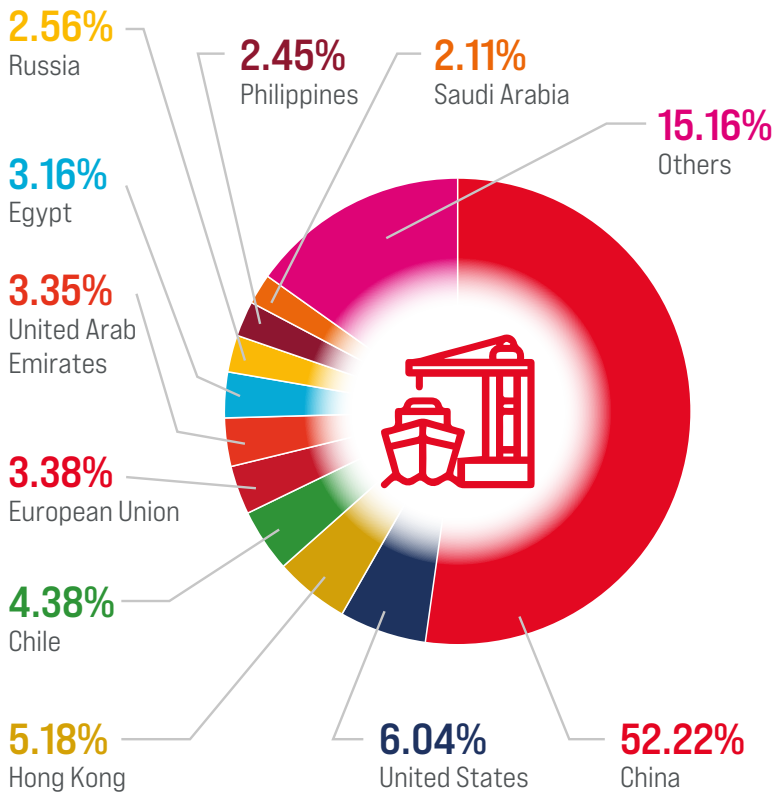
Source: SECEX/ABIEC



MAIN DESTINATIONS OF BRAZILIAN BEEF EXPORTED IN 2023 (IN VOLUME - TONS)

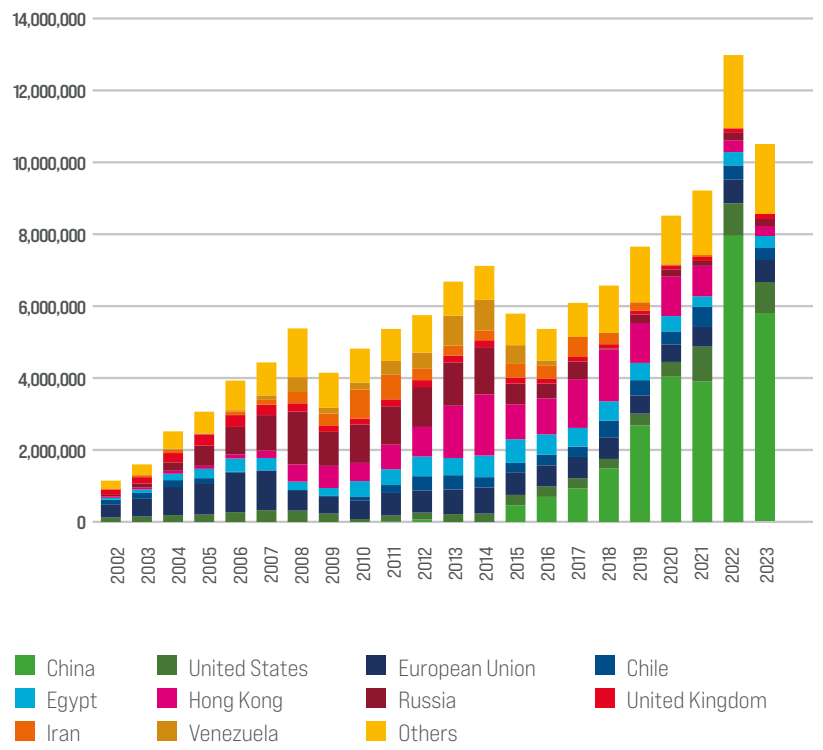
Country	Volume (ton)
China	1,199,059
United States	138,669
Hong Kong	119,035
Chile	100,542
European Union	77,687
United Arab Emirates	76,901
Egypt	72,632
Russia	58,863
Philippines	56,222
Saudi Arabia	48,414
Others	348,145
Total	**2,296,170**

Source: SECEX/ABIEC

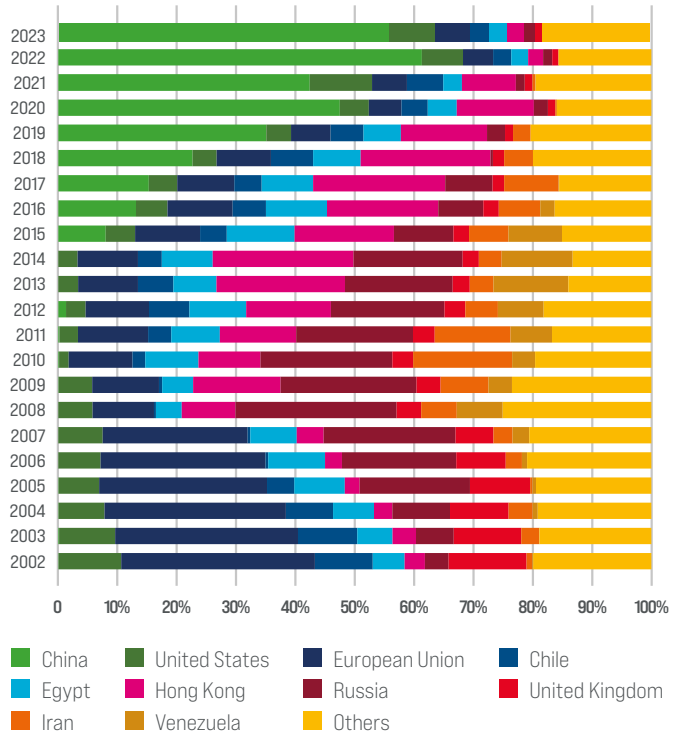


EVOLUTION OF THE RANKING OF THE LARGEST IMPORTERS OF BRAZILIAN BEEF - IN REVENUE

Largest importers of Brazilian beef - thousand USD

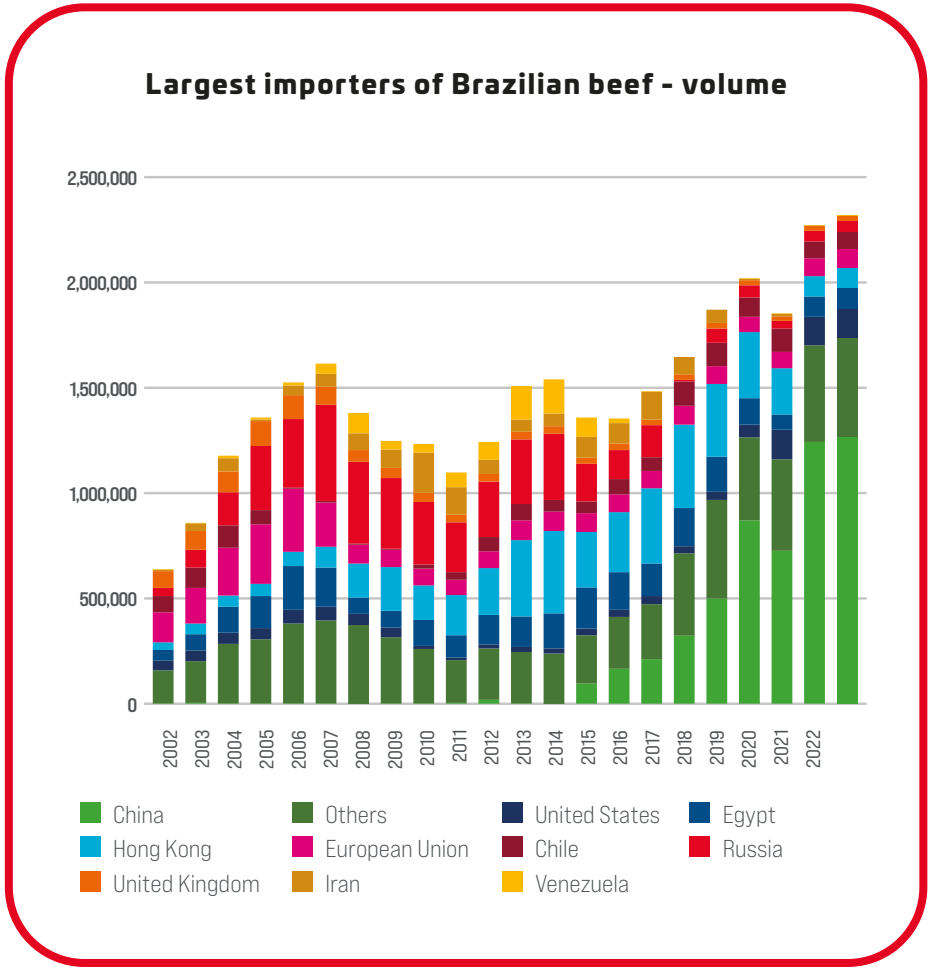


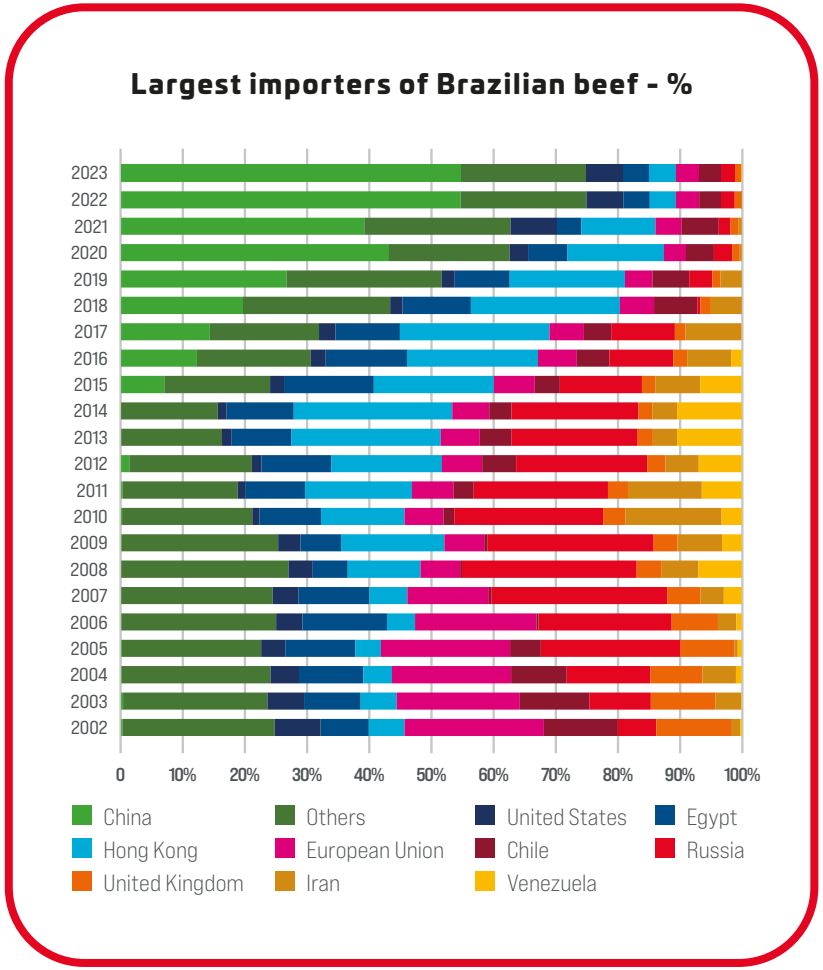
Largest importers of Brazilian beef - %



Source: SECEX/ABIEC

EVOLUTION OF THE RANKING OF THE LARGEST IMPORTERS OF BRAZILIAN BEEF - IN VOLUME





Source: SECEX/ABIEC

BRAZILIAN BEEF EXPORTS 2023 (TONS)

Country	Volume (tons)
China	**1,199,059**
United States	**138,668**
Hong Kong	**119,035**
Chile	**100,542**
European Union	**77,684**
United Arab Emirates	**76,901**
Egypt	**72,632**
Russia	**58,863**
Philippines	**56,221**
Saudi Arabia	**48,414**
Uruguay	**28,555**
United Kingdom	**26,964**
Israel	**25,437**
Libya	**20,853**
Singapore	**20,595**
Cote d'Ivoire	**15,257**

Country	Volume (tons)
Turkey	**14,074**
Malaysia	**13,136**
Congo	**12,383**
Lebanon	**11,912**
Ghana	**11,703**
Paraguay	**11,356**
Jordan	**10,977**
Angola	**9,663**
Albania	**8,237**
Canada	**8,195**
Palestine	**7,529**
Peru	**7,362**
Laos	**5,338**
Mexico	**5,094**
Georgia	**4,595**
Qatar	**4,068**

Country	Volume (tons)
Iraq	**3,938**
Gabon	**3,244**
Kuwait	**3,237**
Liberia	**2,987**
Morocco	**2,807**
Indonesia	**2,736**
Guinea	**2,725**
Serbia	**2,640**
Algeria	**2,530**
Puerto Rico	**2,521**
Myanmar	**2,306**
Vietnam	**2,156**
Aruba	**1,932**
Jamaica	**1,885**
Argentina	**1,800**
Thailand	**1,730**

Country	Volume (tons)
Curaçao	**1,719**
Bolivia	**1,541**
Tunisia	**1,330**
Mayotte	**1,193**
Bhutan	**1,058**
Sierra Leone	**1,037**
Trinidad and Tobago	**967**
Bahamas	**944**
Australia	**777**
Cuba	**681**
Republic of Korea	**679**
Oman	**649**
Azerbaijan	**612**
Bahrain	**610**
Nigeria	**526**
Guyana	**505**

Source: Comexstat / Abiec

BRAZILIAN BEEF EXPORTS 2023 (TONS)

Country	Volume (tons)
Switzerland	**504**
Seychelles	**464**
South Africa	**433**
Ukraine	**410**
Equatorial Guinea	**402**
Mauritius	**388**
Maldives	**363**
Senegal	**361**
Montenegro	**351**
Cape Verde	**338**
Gambia	**304**
Panama	**288**
Barbados	**285**
Bermuda	**259**
Grenada	**257**
Japan	**240**

Country	Volume (tons)
Tanzania	**213**
Norway	**207**
Macao	**181**
Marshall Islands	**173**
Uzbekistan	**162**
Guam	**156**
Suriname	**148**
Bonaire, Saint Eustatius and Saba	**134**
Togo	**131**
New Zealand	**119**
Comoros	**119**
Sint Maarten	**108**
Antigua and Barbuda	**92**
Kazakhstan	**88**
Kenya	**85**
Cambodia	**71**

Country	Volume (tons)
Saint Lucia	**70**
Dominica	**68**
Brunei	**66**
Macedonia	**62**
São Tome and Principe	**62**
Cayman Islands	**57**
Belize	**56**
Guinea-Bissau	**54**
Armenia	**51**
Cameroon	**46**
Bangladesh	**45**
Saint Vincent and the Grenadines	**40**
Micronesia	**38**
East Timor	**36**
French Guiana	**35**
Pacific Islands (USA)	**35**

Country	Volume (tons)
India	**27**
Honduras	**26**
Dominican Republic	**26**
Benin	**22**
Turks and Caicos Islands	**18**
Virgin Islands (UK)	**18**
Djibouti	**16**
Mauritania	**15**
Venezuela	**3**
Isle of Man	**3**
Gibraltar	**1**
Taiwan	**1**

Source: Comexstat / Abiec

2. INDUSTRY

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Total cattle slaughter in Brazil grew 1.44% last year, totaling 41.96 million head. According to estimates, this is the largest annual cattle slaughter ever seen in Brazil. Of this total, 59.3% of the animals were slaughtered in establishments with the Federal Inspection Service (SIF).

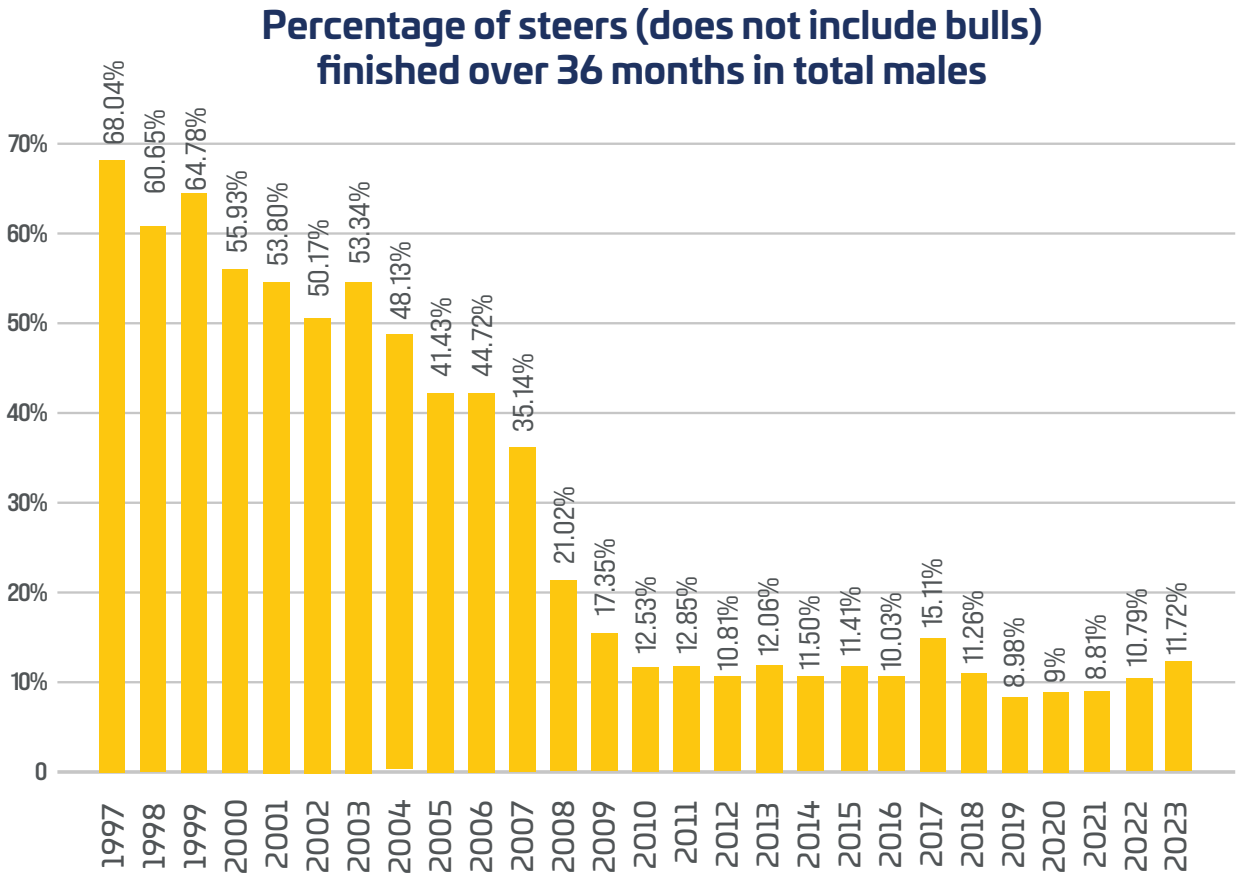
Animals finished in feedlots represented 16.6% of the total slaughter, around 6.9 million heads.

Beef exports represented, in 2023, around 3% of all Brazilian exports, which totaled USD 339.7 billion. Of the total exported by Brazilian agribusiness, beef exports accounted for 6.3%. Regarding the trade balance, agribusiness was once again fundamental to the positive result, which reached USD 98.9 billion.

Among Brazilian livestock exports in 2023, beef accounted for 38% of the total, followed by chicken with 34% and pork with 10.5%.

The figures once again reflect the importance of beef exports for the Brazilian economy.

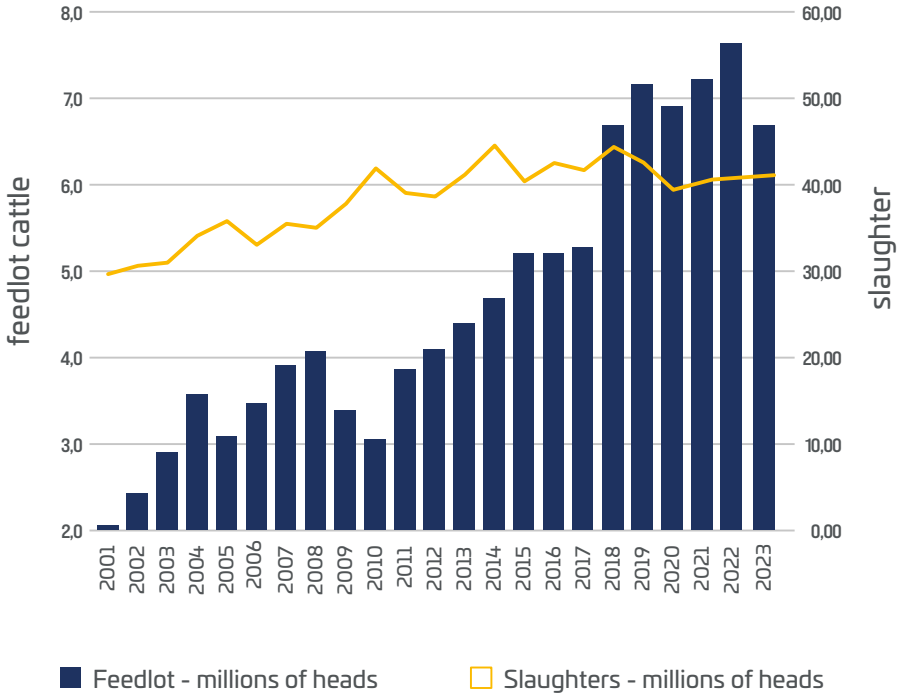
EVOLUTION OF SLAUGHTER OF MALES OVER 36 MONTHS



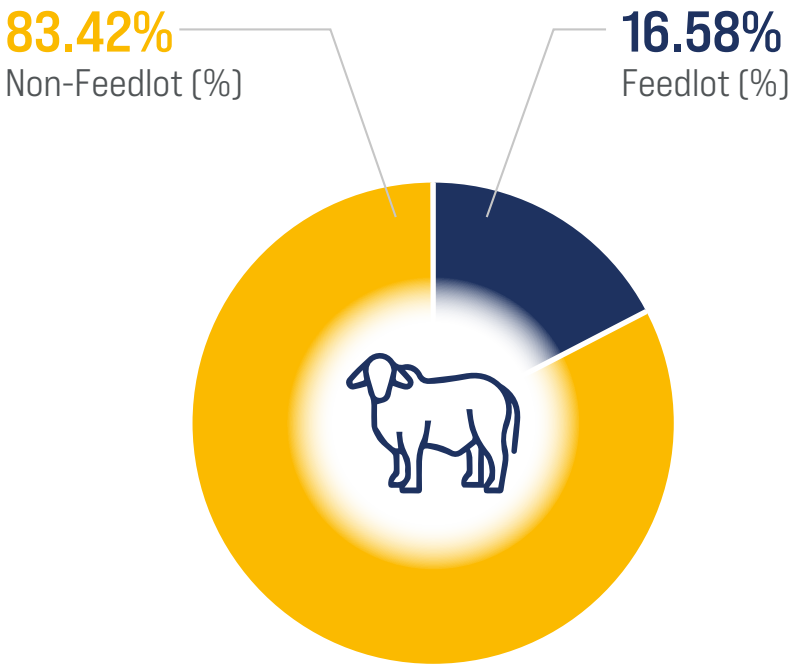
Source: Athenagro, based on data from IBGE

FEEDLOT CATTLE X SLAUGHTER

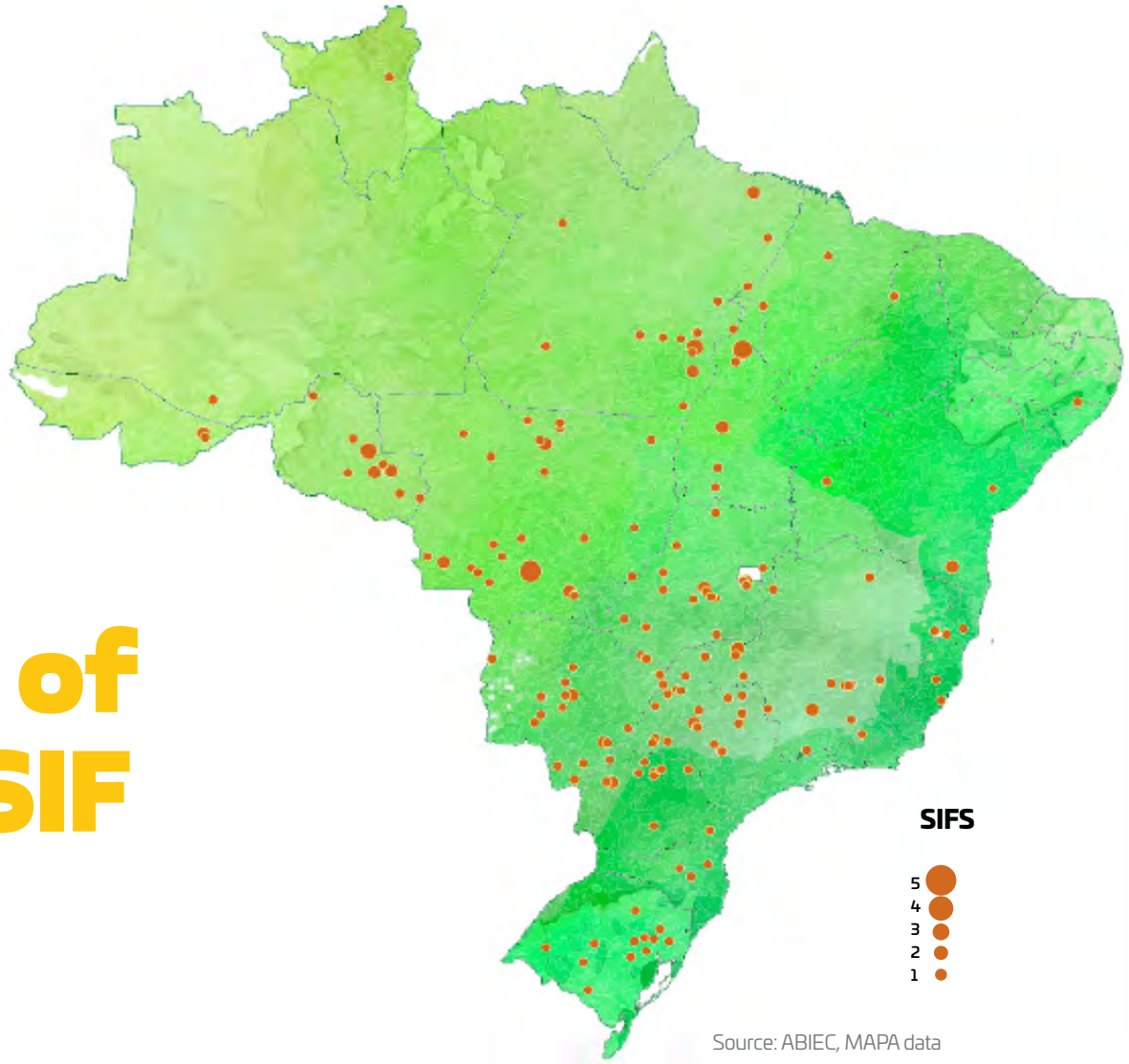
EVOLUTION OF THE PROPORTION OF FEEDLOT ANIMALS IN THE TOTAL SLAUGHTERED



Source: Athenagro, IBGE data



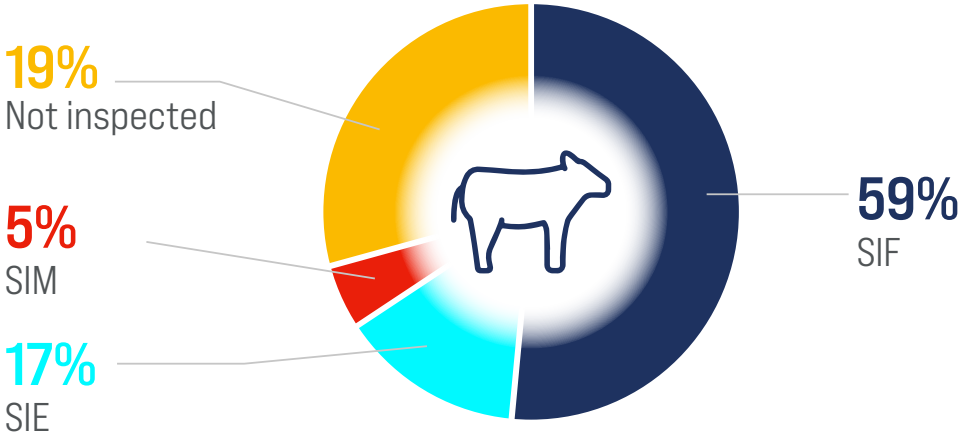
Distribution of plants with SIF in Brazil



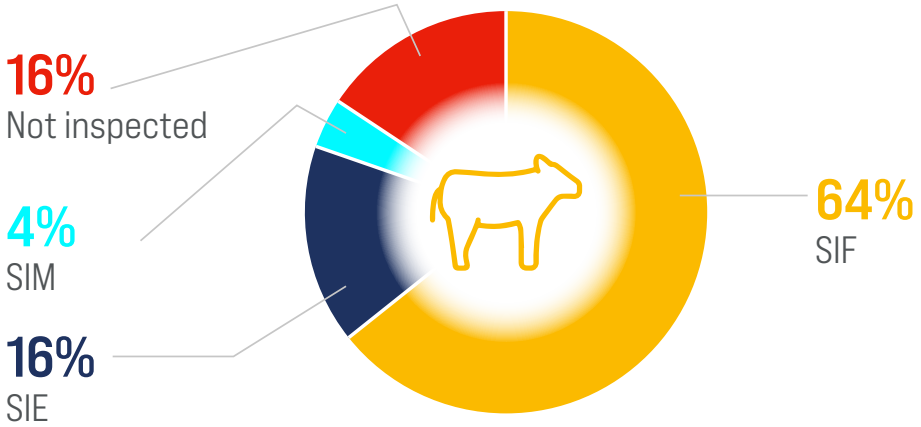
Source: ABIEC, MAPA data

SLAUGHTER BY TYPE OF INSPECTION - 2023

Slaughter by type of inspection as a % of millions of head - 2023



Production by type of inspection in % of millions of tons - 2023

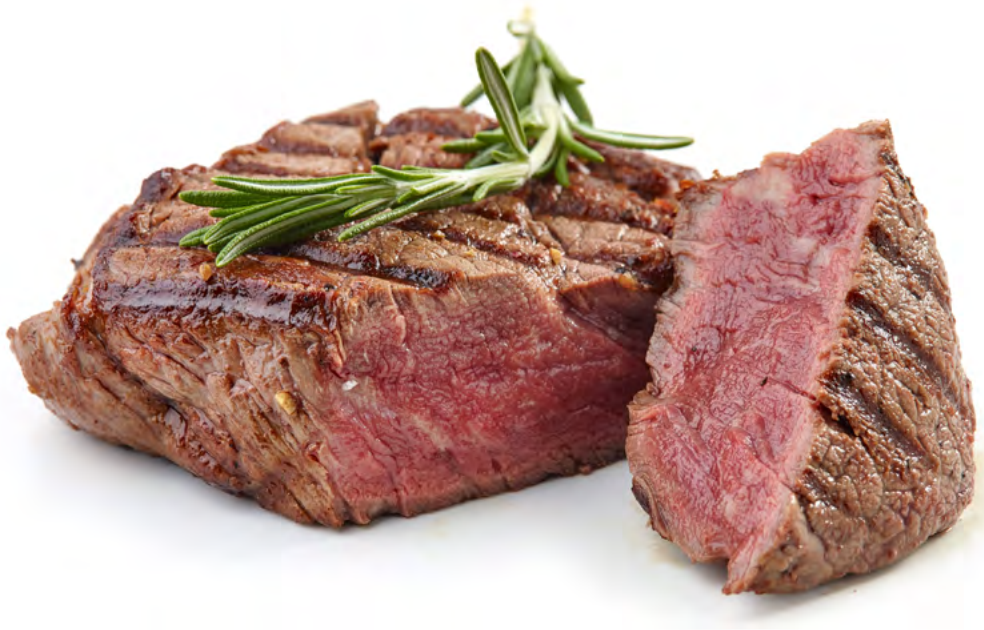


Source: Athenagro, IBGE data

SLAUGHTER BY TYPE OF INSPECTION - 2023

2023	% slaughter	% meat	Million heads	Million tons
SIF	59%	64%	24.87	6.83
SIE	17%	16%	7.25	1.70
SIM	5%	4%	1.94	0.42
Not inspected	19%	16%	7.90	1.67
Total	**100%**	**100%**	**41.96**	**10.62**

Source: Athenagro, IBGE data

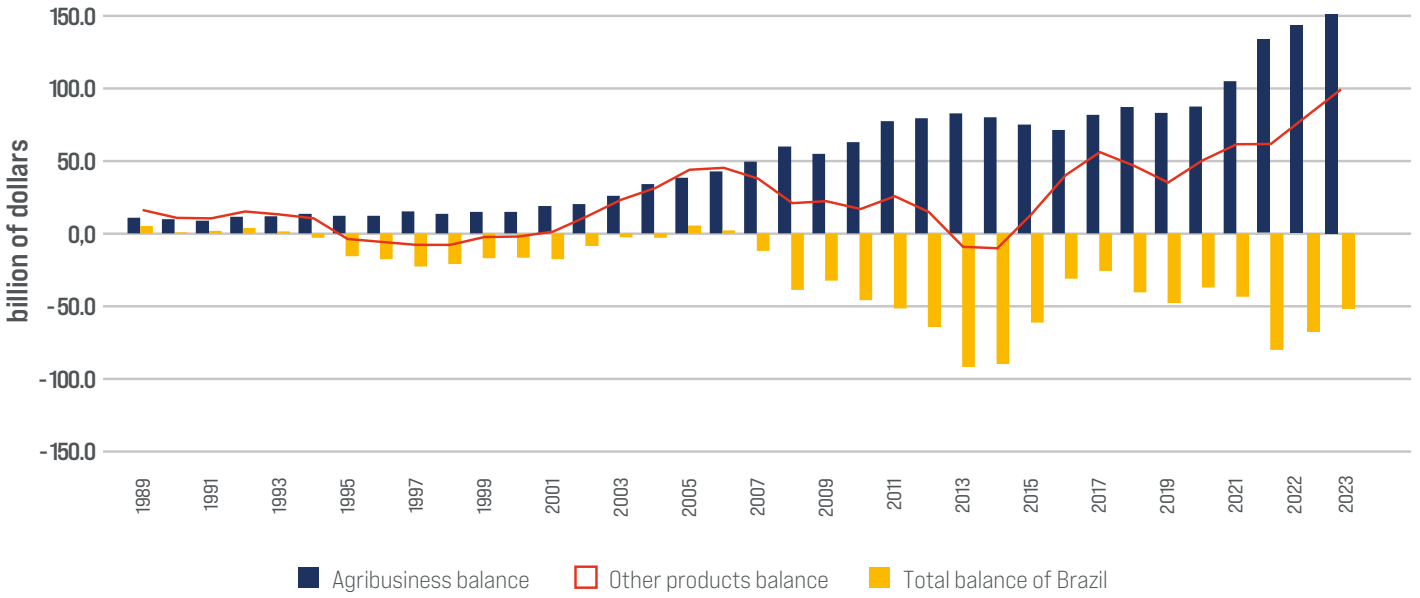


TRADE BALANCE - BILLION USD

Year	Exp. Total	Imp. Total	Total balance of Brazil	Exp. Agribusiness	Imp. Agribusiness	Agribusiness balance	Other products balance	Beef exports	% of beef in total exports by agribusiness
2003	72.78	49.31	23.47	30.61	4.72	25.88	-2.41	1.59	5.19%
2004	95.12	63.81	31.31	38.92	4.80	34.12	-2.81	2.51	6.44%
2005	118.60	74.69	43.91	43.59	5.07	38.52	5.39	3.05	7.00%
2006	137.58	92.53	45.05	49.42	6.65	42.77	2.28	3.91	7.91%
2007	159.82	122.04	37.77	58.36	8.69	49.67	-11.90	4.40	7.55%
2008	195.76	174.71	21.06	71.75	11.88	59.87	-38.81	5.29	7.37%
2009	151.79	129.40	22.39	64.74	9.90	54.84	-32.45	4.11	6.35%
2010	200.43	183.34	17.10	76.40	13.40	63.00	-45.90	4.78	6.26%
2011	253.67	227.97	25.70	94.92	17.51	77.41	-51.71	5.34	5.63%
2012	239.95	225.17	14.79	95.75	16.41	79.34	-64.55	5.73	5.98%
2013	232.54	241.50	-8.96	99.93	17.06	82.87	-91.83	6.65	6.65%
2014	220.92	230.82	-9.90	96.66	16.61	80.04	-89.94	7.09	7.33%
2015	186.78	173.10	13.68	88.17	13.07	75.10	-61.42	5.76	6.53%
2016	179.53	139.32	40.20	84.94	13.63	71.31	-31.10	5.34	6.29%
2017	214.99	158.95	56.04	96.01	14.15	81.86	-25.82	6.07	6.32%
2018	231.89	185.32	46.57	101.17	14.04	87.13	-40.56	6.54	6.47%
2019	221.13	185.93	35.20	96.85	13.78	83.07	-47.87	7.63	7.88%
2020	209.18	158.79	50.39	100.70	13.05	87.65	-37.25	8.48	8.42%
2021	280.81	219.41	61.41	120.52	15.53	104.99	-43.59	9.20	7.63%
2022	334.14	272.61	61.53	158.87	17.24	141.63	-80.10	12.96	8.16%
2023	339.70	240.79	98.90	166.49	16.61	149.88	-50.98	10.54	6.33%

Source: Athenagro, Agrostat, SECEX, Conab

TRADE BALANCE - BILLION USD



Source: Athenagro, Agrostat, SECEX, Conab

Total agribusiness exports, highlighting how much exports of beef and other beef by-products represent in this total in 2023.

LIVESTOCK EXPORTS	Million USD	Thousand Tons	% USD
Chicken Meat	**9,618.6**	**5,009.3**	**34.71%**
In Natura	9,241.8	4,894.2	33.35%
Processed	376.8	115.1	1.36%
Beef	**10,540.8**	**2,289.9**	**38.04%**
In Natura	9,495.4	2,005.9	34.27%
Processed	646.7	94.4	2.33%
Beef offals	398.8	189.7	1.44%
Pork	**2,785.4**	**1,200.8**	**10.05%**
In Natura	2,630.9	1,088.1	9.49%
Turkey Meat	**200.5**	**69.6**	**0.72%**
In Natura	166.2	62.1	0.60%
Processed	34.4	7.5	0.12%
Leather and its products	**1,523.7**	**443.1**	**5.50%**
Other livestock products	**2,003.2**	**852.7**	**7.23%**
Live animals	**617.7**	**200.5**	**2.23%**
Live cattle	488.7	198.9	1.76%
Fish	**337.6**	**60.0**	**1.22%**
Dairy products	**81.7**	**30.2**	**0.29%**

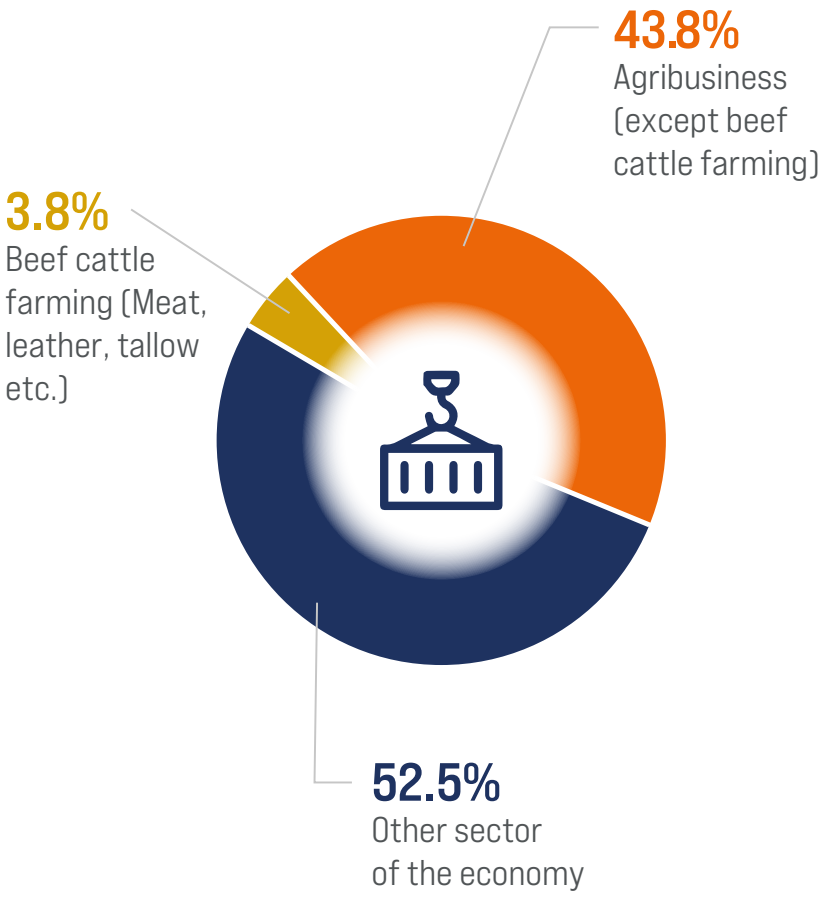
Export group - AGRIBUSINESS	USD Million	Share
Beef cattle farming (Meat, leather, tallow, etc.)	12,682.19	8%
Other proteins of animal origin	15,027.02	9%
Other agribusiness sectors	131,158.60	83%
Total exports Agribusiness	**158,867.81**	**48%**

Source: Athenagro, MAPA, Secex/Ministry of Economy, AgroStat

Export group - BRAZIL	USD Million	Share
Beef cattle farming (Meat, leather, tallow, etc.)	12,682.19	4%
Agribusiness (except beef cattle farming)	146,185.62	44%
Other sectors of the economy	175,268.23	52%
Total exports from Brazil	**334,136.04**	**100%**

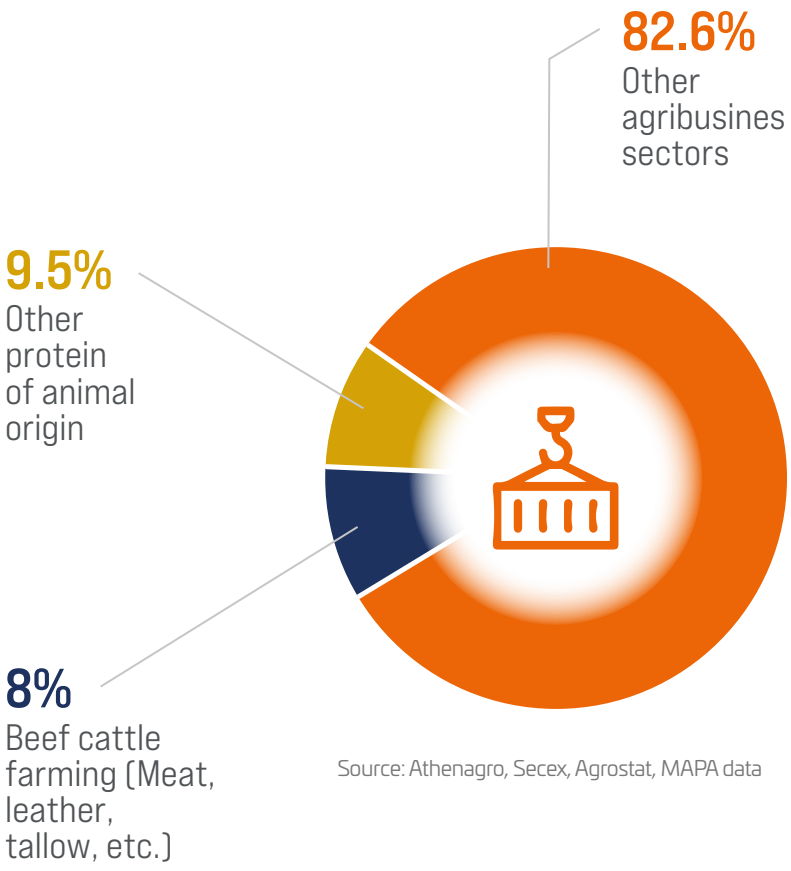
Source: Athenagro, MAPA, Secex, AgroStat

Share of Brazilian exports by sector



Source: Athenagro, Secex, Agrostat, MAPA data

Share of agribusiness exports



Source: Athenagro, Secex, Agrostat, MAPA data

3.
THE WORLD LIVESTOCK

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The Brazilian herd, estimated at 197.2 million animals, is the largest commercial herd in the world. India's figures are higher, but include cattle and buffalo and are not necessarily a commercial herd.

Around 12% of the world's cattle production is in Brazil.

In terms of meat production, Brazil continues to occupy second place in 2023, with a total of 10.6 million tons of Carcass Weight Equivalent (CWE), responsible for the production of 13.8% of all beef in the world. Behind the United States, which with a 55% smaller herd produced 15.7% more meat in 2023, due to the type of production, breed of the herd and use of technologies not used in Brazil.

Considering the evolution of beef production in the last ten years, Brazil produced an additional 1 million tons in this period, above all the major global players, such as the United States (which increased its production by 534 thousand tons), Uruguay (increase of 108 thousand tons), Argentina (more than 458 thousand tons), New Zealand (increase of 119 thousand tons) and Australia (which produced less than 90 thousand tons in the period).

In terms of exports, Brazil occupies first place, responsible for the export of 18.7% of all beef traded in the world. Followed by Australia, the United States and Argentina in terms of volume.

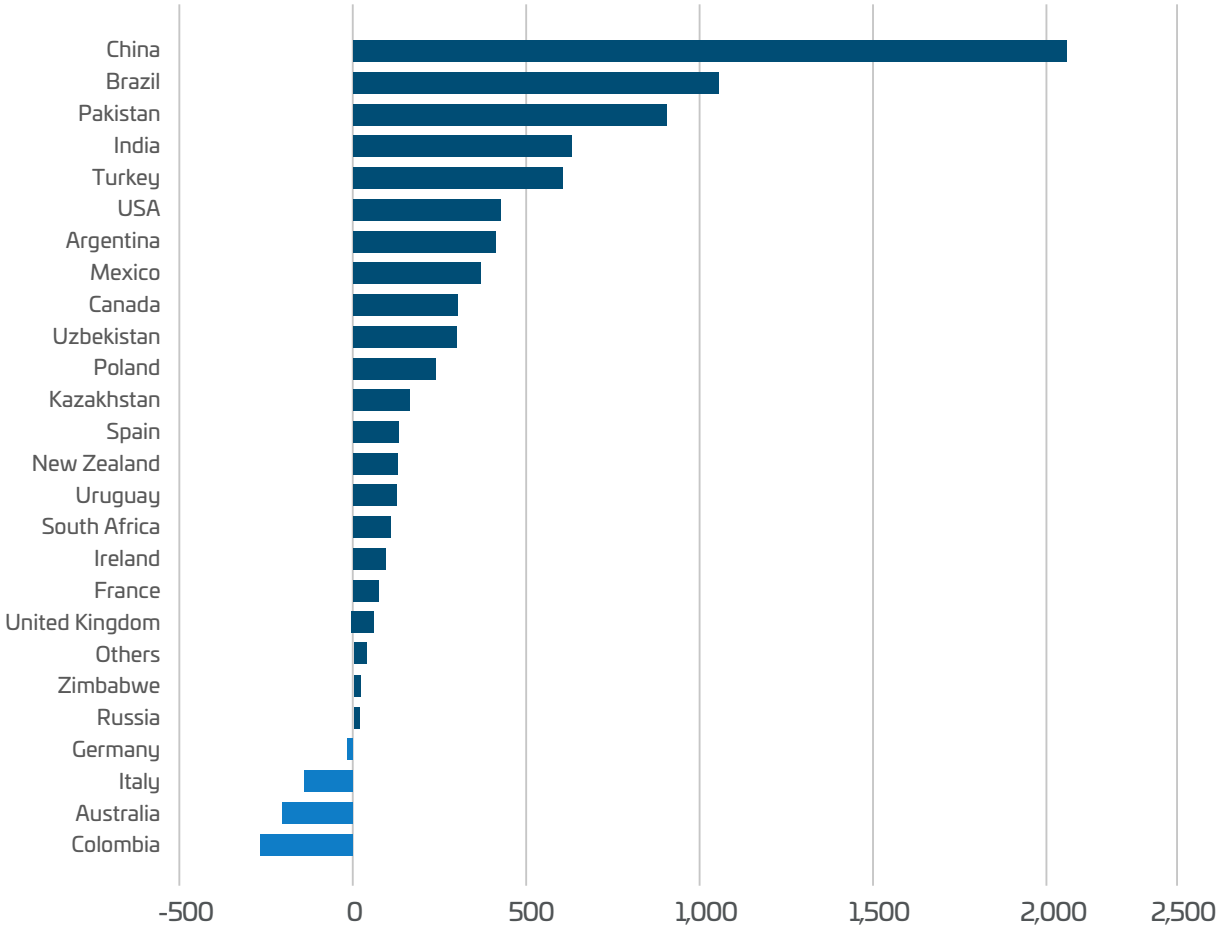
More information can be found in Chapter 3.

LARGEST HERDS AND LARGEST BEEF PRODUCERS IN THE WORLD IN 2023

Country	Herd - considering buffalo in the countries with the largest population - millions of heads	% of world herd	Beef production 1000 CWE	% world production
USA	87.2	5.2%	12,285	16.0%
Brazil	197.2	11.9%	10,619	13.8%
China	90.6	5.4%	8,234	10.7%
India	305.5	18.4%	4,470	5.8%
Argentina	53.0	3.2%	3,280	4.3%
Pakistan	96.5	5.8%	2,490	3.2%
Australia	25.6	1.5%	2,269	3.0%
Mexico	36.5	2.2%	2,217	2.9%
Russia	17.4	1.0%	1,656	2.2%
France	17.2	1.0%	1,472	1.9%
New Zealand	9.9	0.6%	748	1.0%
Colombia	29.9	1.8%	724	0.9%
Uruguay	11.4	0.7%	600	0.8%
Tanzania	31.7	1.9%	525	0.7%
Chad	35.5	2.1%	509	0.7%
Ethiopia	67.5	4.1%	422	0.5%
Indonesia	19.7	1.2%	362	0.5%
Nigeria	20.8	1.2%	360	0.5%
Kenya	23.4	1.4%	259	0.3%
Bangladesh	26.0	1.6%	212	0.3%
Others	461.2	27.7%	23,171.4	30.1%
World	**1,664**	**100.0%**	**76,883**	**100.0%**

Source: Athenagro, dados FAO, USDA, IBGE, OCDE

EVOLUTION OF BEEF PRODUCTION FROM 2013 TO 2023, IN THOUSAND CWE



Source: Athenagro, dados FAO, USDA, IBGE, OCDE

LARGEST BEEF EXPORTERS IN 2023

Ranking 2023	Exports	Production (1000 CWE)	Imports	Exports over Production + imports
Brazil	3,029.8	10,619.2	62.3	28.53%
Australia	1,681.9	2,268.6	15.8	73.62%
India	1,552.0	4,470.0	0.0	34.72%
USA	1,378.0	12,285.0	1,691.0	11.22%
Argentina	977.6	3,280.2	3.0	29.78%
New Zealand	693.7	748.0	10.6	91.44%
Netherlands	662.3	444.4	491.7	70.75%
Poland	636.2	578.8	55.6	100.28%
Canada	616.3	1,341.0	257.1	38.56%
Ireland	605.0	614.9	69.1	88.45%
Uruguay	558.3	600.0	47.0	86.29%
Paraguay	454.9	463.0	12.4	95.68%
Germany	384.2	1,116.2	473.4	24.17%
Mexico	332.7	2,217.1	209.0	13.71%
France	293.0	1,471.7	431.1	15.40%
Spain	288.3	742.1	155.0	32.14%
Belgium	202.0	255.3	101.5	56.62%
Italy	187.9	793.7	412.3	15.58%
Hong Kong	171.4	5.3	365.2	46.26%
Nicaragua	155.8	151.1	0.9	102.51%
United Kingdom	155.8	909.2	365.9	12.22%
Austria	154.0	221.2	65.7	53.68%
Others	1,041.9	31,287.7	10,917.1	2.47%
World	**16,212.8**	**76,883.5**	**16,212.8**	**21.09%**

Source: Athenagro, dados FAO, USDA,OCDE, Secex

THE LARGEST WORLD IMPORTERS OF BEEF AND BUFFALO AND THE SHARE OF BRAZILIAN BEEF IN EACH MARKET IN 2023

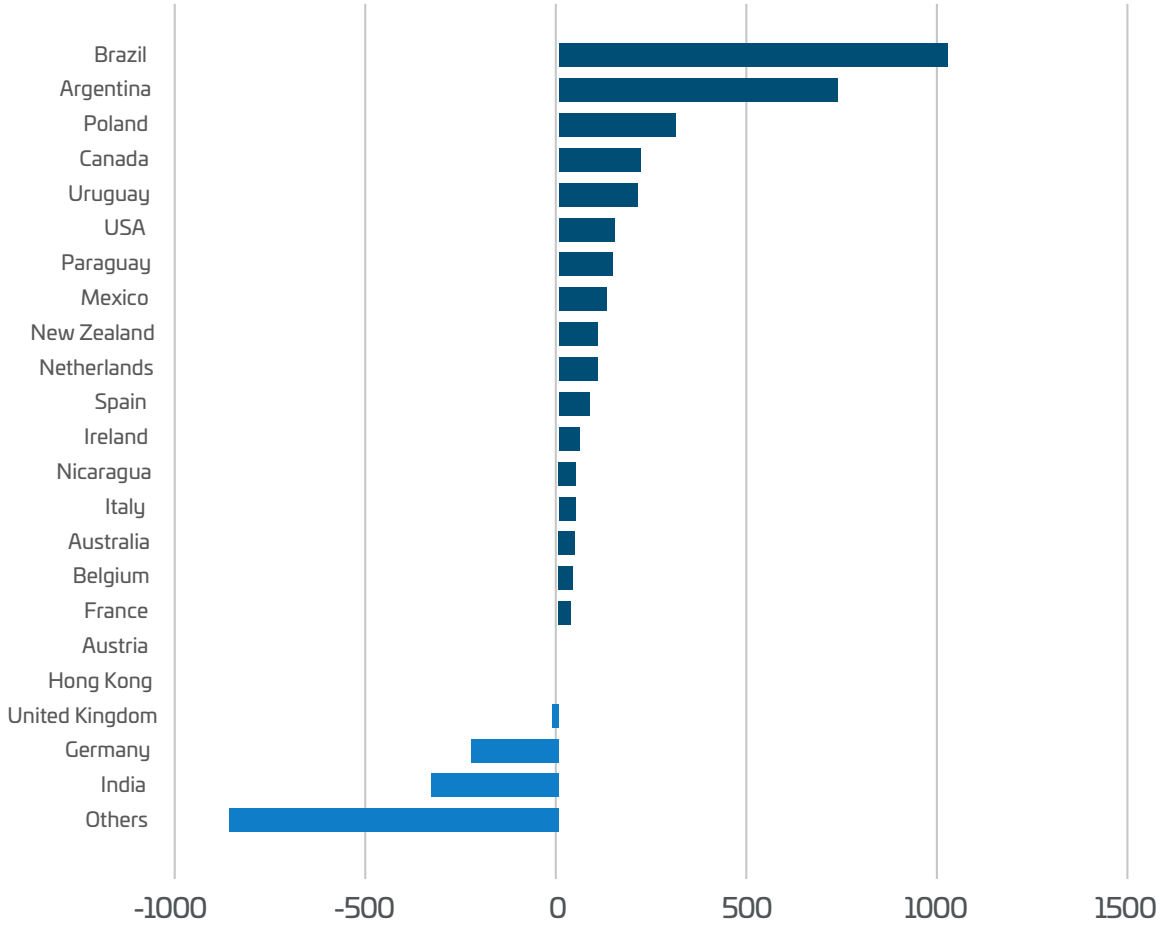
Ranking	Total imports of beef in 2023	Imports of beef from Brazil in 2023	% Brazil in total
China	3,481.3	1,554.9	44.67%
USA	1,691.0	226.3	13.38%
Japan	739.4	0.6	0.08%
Korea	605.4	0.0	0.00%
Netherlands	491.7	31.5	6.40%
Germany	473.4	9.6	2.02%
France	431.1	0.7	0.15%
Italy	412.3	36.1	8.75%
Indonesia	370.1	3.6	0.96%
United Kingdom	365.9	58.8	16.07%
Hong Kong	365.2	132.4	36.25%
Chile	353.8	132.0	37.30%
Malasia	274.4	15.8	5.75%
Rússia	268.0	74.0	27.61%
Canada	257.1	13.4	5.20%
United Arab Emirates	252.5	100.1	39.63%
Egypt	245.7	90.2	36.73%
Saudi Arabia	226.1	62.9	27.83%
Mexico	209.0	6.6	3.18%
Vietnam	207.1	2.3	1.11%
Taiwan	195.4	0.0	0.00%
Philippines	187.4	73.5	39.21%
Spain	155.0	14.2	9.15%
Others	3,954.5	395.4	10.00%
World	**16,212.8**	**3,034.7**	**18.72%**

Source: Athenagro, FAO, USDA,OCDE, Comexstat

EVOLUTION OF BEEF EXPORTS FROM 2013 TO 2023, IN THOUSAND CWE

Ranking	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Evolution from 2013 to 2023
Brazil	2,003.0	2,041.5	1,828.5	1,825.4	1,967.6	2,194.5	2,483.0	2,690.9	2,478.2	3,018.0	3,034.7	1,032
Australia	1,653.1	1,914.2	1,910.1	1,541.7	1,504.9	1,685.4	1,850.1	1,581.1	1,403.1	1,333.0	1,681.9	29
India	1,713.0	2,022.0	1,754.0	1,709.0	1,786.0	1,511.0	1,494.0	1,284.0	1,397.0	1,442.0	1,552.0	-161
USA	1,174.0	1,167.0	1,028.0	1,160.0	1,297.0	1,433.0	1,373.0	1,338.0	1,555.0	1,608.0	1,378.0	204
Argentina	285.6	292.5	279.0	306.3	393.1	613.4	870.4	924.2	821.3	912.2	977.6	692
New Zealand	518.2	587.2	646.1	596.6	576.7	614.0	636.1	650.4	685.0	650.2	693.7	175
Netherlands	518.5	530.0	572.9	622.6	690.6	696.2	711.4	638.7	641.5	653.3	662.3	144
Poland	345.1	453.2	534.3	543.8	621.4	607.6	604.4	619.1	629.9	627.6	636.2	291
Canada	341.6	391.2	400.6	444.9	471.8	496.7	547.1	529.5	628.0	628.2	616.3	275
Ireland	513.4	599.1	575.5	643.0	660.4	644.7	639.3	630.0	563.1	596.8	605.0	92
Uruguay	331.8	357.7	369.9	428.5	454.8	491.6	518.9	477.8	636.7	590.5	558.3	226
Paraguay	252.5	390.8	381.2	390.1	378.4	367.4	354.8	386.5	451.5	476.5	454.9	202
Germany	456.9	483.2	459.7	448.1	435.7	419.6	415.0	362.0	384.5	379.0	384.2	-73
Mexico	147.3	171.5	202.3	230.3	250.2	278.3	315.6	338.6	364.7	391.7	332.7	185
France	277.6	277.8	282.4	282.4	284.1	292.4	276.9	269.7	297.6	289.0	293.0	15
Spain	153.4	163.7	202.2	211.4	218.1	208.3	243.3	246.9	266.6	284.4	288.3	135
Belgium	180.9	193.2	212.2	222.3	242.8	240.1	208.7	193.4	204.8	199.3	202.0	21
Italy	157.6	174.7	184.8	187.7	189.2	181.1	170.1	164.7	192.0	185.3	187.9	30
Hong Kong	171.2	170.1	278.8	140.4	68.7	225.7	271.4	35.4	71.3	169.1	171.4	0
Nicaragua	120.0	130.1	125.3	126.1	149.5	151.8	158.9	165.4	181.4	157.9	155.8	36
United Kingdom	164.1	184.4	177.2	182.1	178.9	185.9	226.6	207.8	163.1	187.2	155.8	-8
Austria	148.5	172.7	173.8	164.8	153.5	156.8	170.5	158.4	160.7	151.9	154.0	5
Others	857.4	888.0	925.0	980.6	933.2	998.5	1,144.7	1,052.8	1,160.9	1,089.6	1,037.0	180
World	**12,484.7**	**13,755.8**	**13,503.9**	**13,388.2**	**13,906.5**	**14,694.0**	**15,684.2**	**14,945.4**	**15,338.0**	**16,020.8**	**16,212.8**	**3,728**

Source: Athenagro, FAO, USDA,OCDE, Comexstat



Source: Athenagro, FAO, USDA, OCDE, Comexstat

LARGEST BEEF CONSUMERS IN 2023

Ranking	Total consumption (thousand CWE)	Population (millions)	Availability *per capita* (kg/inhab/year)	Comparison availability *per capita* in relation to the average
USA	12,589	335	37.6	381%
China	11,701	1,411	8.3	84%
Brazil	7,652	204	37.5	380%
India	2,918	1,429	2.0	21%
Pakistan	2,419	232	10.4	106%
Argentina	2,306	47	49.4	501%
Mexico	2,090	131	15.9	162%
Rússia	1,896	146	13.0	131%
France	1,599	66	24.3	246%
Turkey	1,518	86	17.6	178%
Japan	1,242	125	10.0	101%
Germany	1,194	85	14.1	143%
United Kingdom	1,120	68	16.4	167%
Uzbekistan	1,092	36	30.3	307%
South Africa	1,060	62	17.2	175%
Italy	1,008	59	17.1	174%
Canada	981	40	24.5	249%
Korea	962	52	18.6	189%
Egypt	790	106	7.5	76%
Indonesia	741	277	2.7	27%
Zimbabwe	723	16	44.8	454%
Colombia	696	52	13.3	135%
Spain	605	48	12.7	128%
Australia	602	27	22.6	229%
Others	17,370	2,659	6.5	66%
World	**76,874**	**7,797**	**9.9**	**100%**

Source: Athenagro, dados FAO, USDA,OCDE, IBGE

4.
BRAZILIAN LIVESTOCK

abiec

The Brazilian cattle herd is estimated at 197 million head in 2023 (more information on the herd calculation methodology can be found in Chapter 9).

Among the most representative states in livestock farming, the increase in herds in Tocantins (+9.8%) and Pará (+8.1%) stands out.

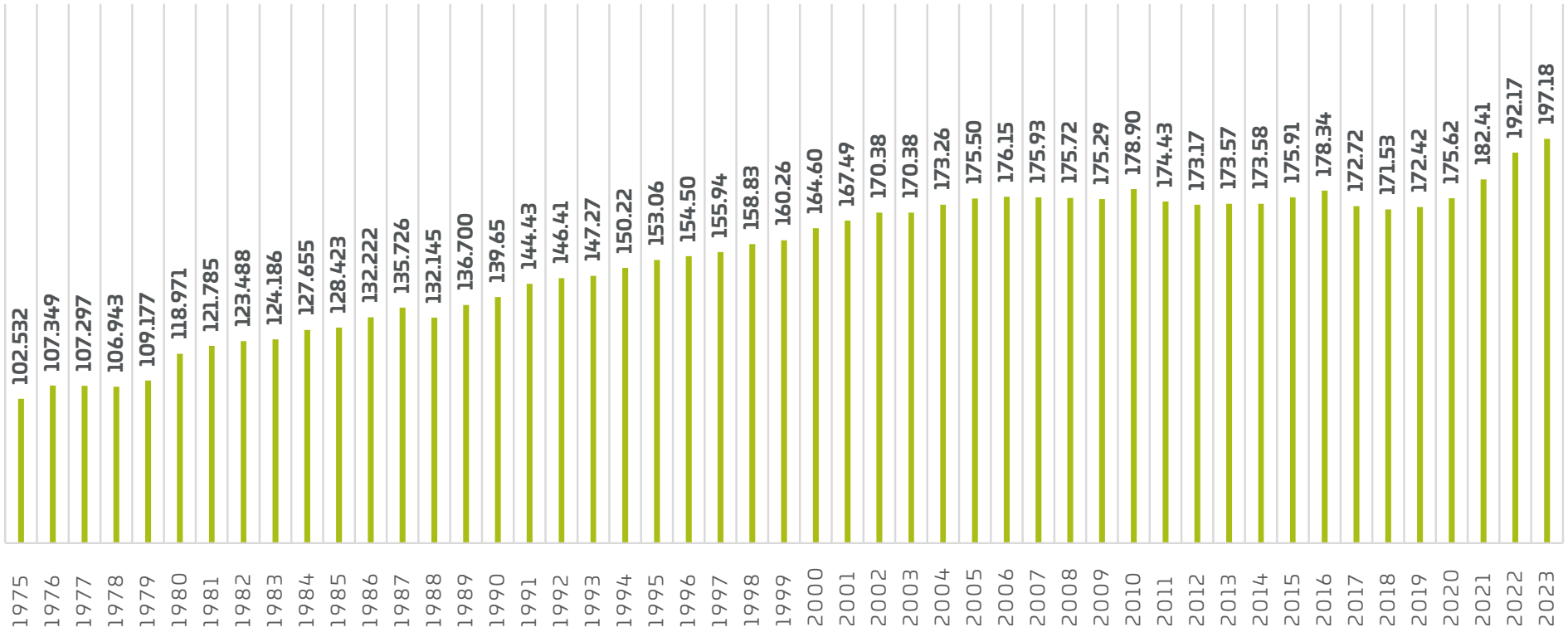
The pasture area in Brazil fell slightly between 2022 and 2023, around 0.2%, to 161 million hectares. However, in the last 20 years, the reduction in pasture area has reached 11.3%. During this period, the average Brazilian productivity almost doubled, going from 36.2 to 65.8 kilos of carcass per hectare. Brazil has improved its productivity, producing more in less area. The average weight of the Brazilian carcass in 2023 was 253 kilos.

Once again, in 2023, the share of exports in the total beef produced in Brazil did not exceed 30%, representing exactly 28.5%. This allows the Brazilian industry to easily reallocate its production and products to take advantage of market opportunities, whether domestically or abroad.

Per capita consumption of Brazilian beef remains at around 37.4 kilos per inhabitant per year, one of the highest in the world.

Chapter 4 provides more detailed data on the herd, as well as other results from Brazilian cattle farming.

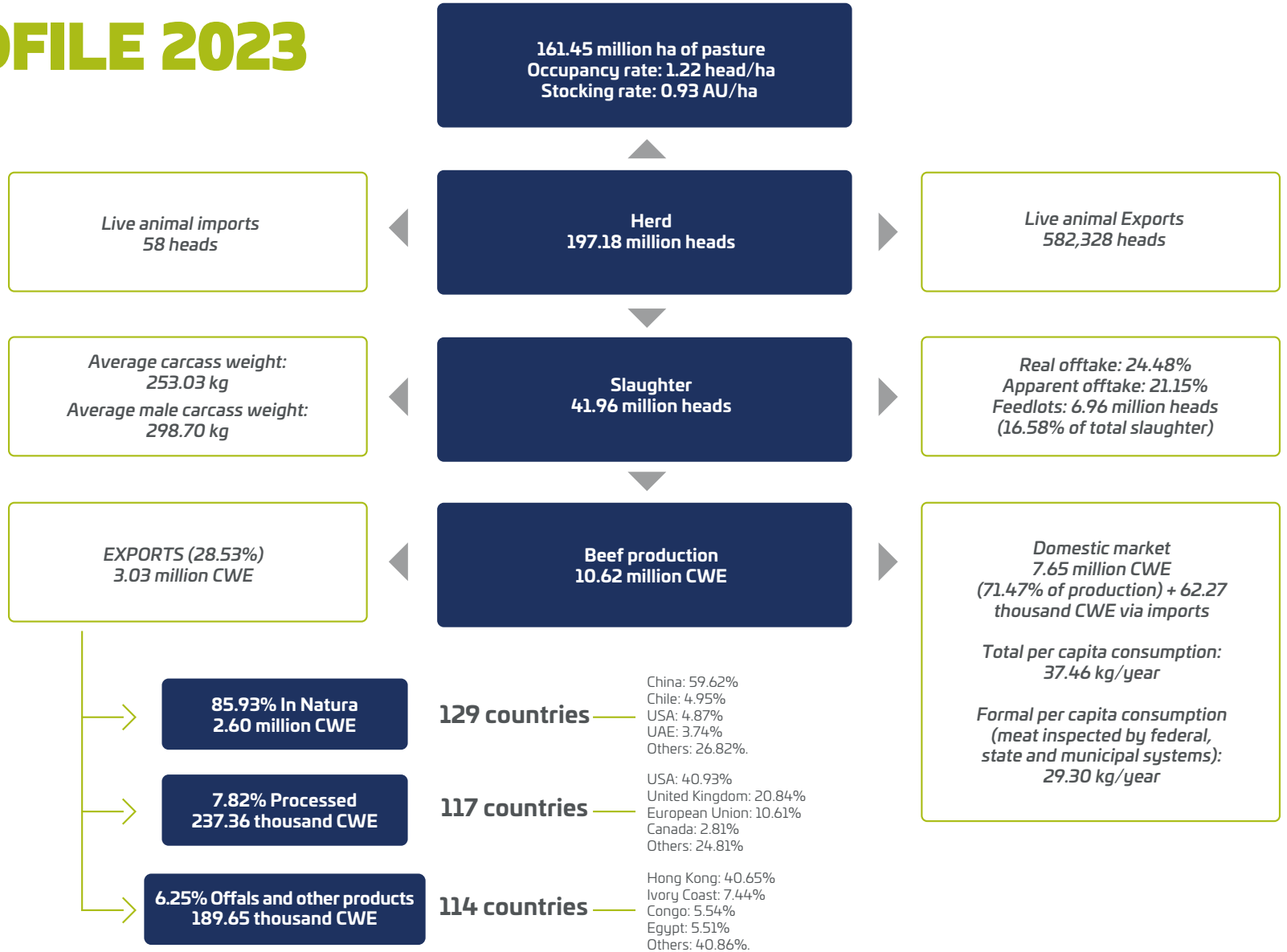
CATTLE HERD MILLION OF HEADS



Source: Athenagro, IBGE data (Census, PPM, PPT), prepared by Abiec

*Information about the herd calculation methodology can be found in "Note 2" on page 103.

BRAZILIAN BEEF PROFILE 2023

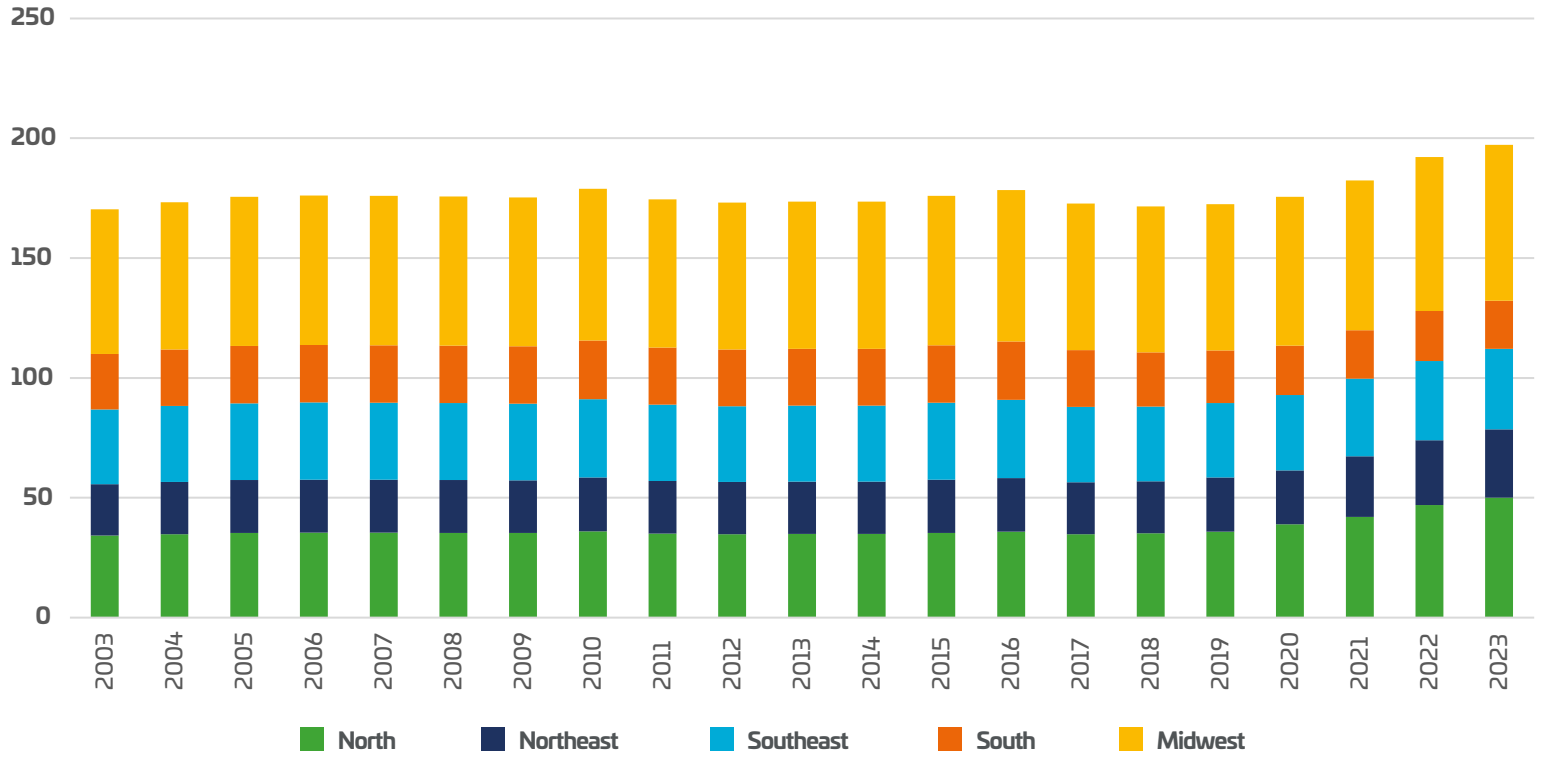


Source: Abiec, Secex data, IBGE, Livestock Rally, Athenagro

EVOLUTION OF THE BRAZILIAN CATTLE HERD BY REGION - HEADS

Year	Brazil	North	Northeast	Southeast	South	Midwest
2003	170,375,195	34,292,640	21,389,435	31,112,156	23,260,509	60,320,455
2004	173,261,348	34,873,556	21,751,772	31,639,196	23,654,541	61,342,282
2005	175,501,286	35,324,405	22,032,981	32,048,230	23,960,349	62,135,321
2006	176,147,501	35,454,473	22,114,108	32,166,235	24,048,574	62,364,110
2007	175,933,230	35,411,345	22,087,208	32,127,107	24,019,321	62,288,248
2008	175,718,959	35,368,218	22,060,308	32,087,979	23,990,067	62,212,387
2009	175,290,417	35,281,962	22,006,507	32,009,723	23,931,560	62,060,664
2010	178,904,653	36,009,425	22,460,250	32,669,718	24,424,995	63,340,266
2011	174,433,333	35,109,450	21,898,906	31,853,212	23,814,547	61,757,218
2012	173,174,168	34,856,009	21,740,827	31,623,276	23,642,639	61,311,417
2013	173,571,868	34,936,057	21,790,755	31,695,900	23,696,935	61,452,221
2014	173,576,248	34,936,939	21,791,305	31,696,700	23,697,533	61,453,771
2015	175,909,256	35,406,520	22,084,198	32,122,730	24,016,048	62,279,761
2016	178,336,981	35,895,166	22,388,983	32,566,056	24,347,493	63,139,284
2017	172,717,856	34,764,164	21,683,540	31,539,949	23,580,341	61,149,862
2018	171,529,676	35,157,723	21,733,516	31,102,309	22,676,051	60,860,077
2019	172,416,557	35,943,166	22,493,393	31,039,930	21,947,756	60,992,312
2020	175,622,799	38,899,486	22,509,940	31,440,489	20,675,217	62,097,667
2021	182,408,052	42,047,650	25,220,972	32,458,035	20,237,150	62,444,245
2022	192,166,275	46,954,845	27,115,975	32,993,519	20,891,521	64,210,415
2023	197,176,715	50,010,643	28,482,188	33,703,900	20,036,481	64,943,504

Source: IBGE, Athenagro


250
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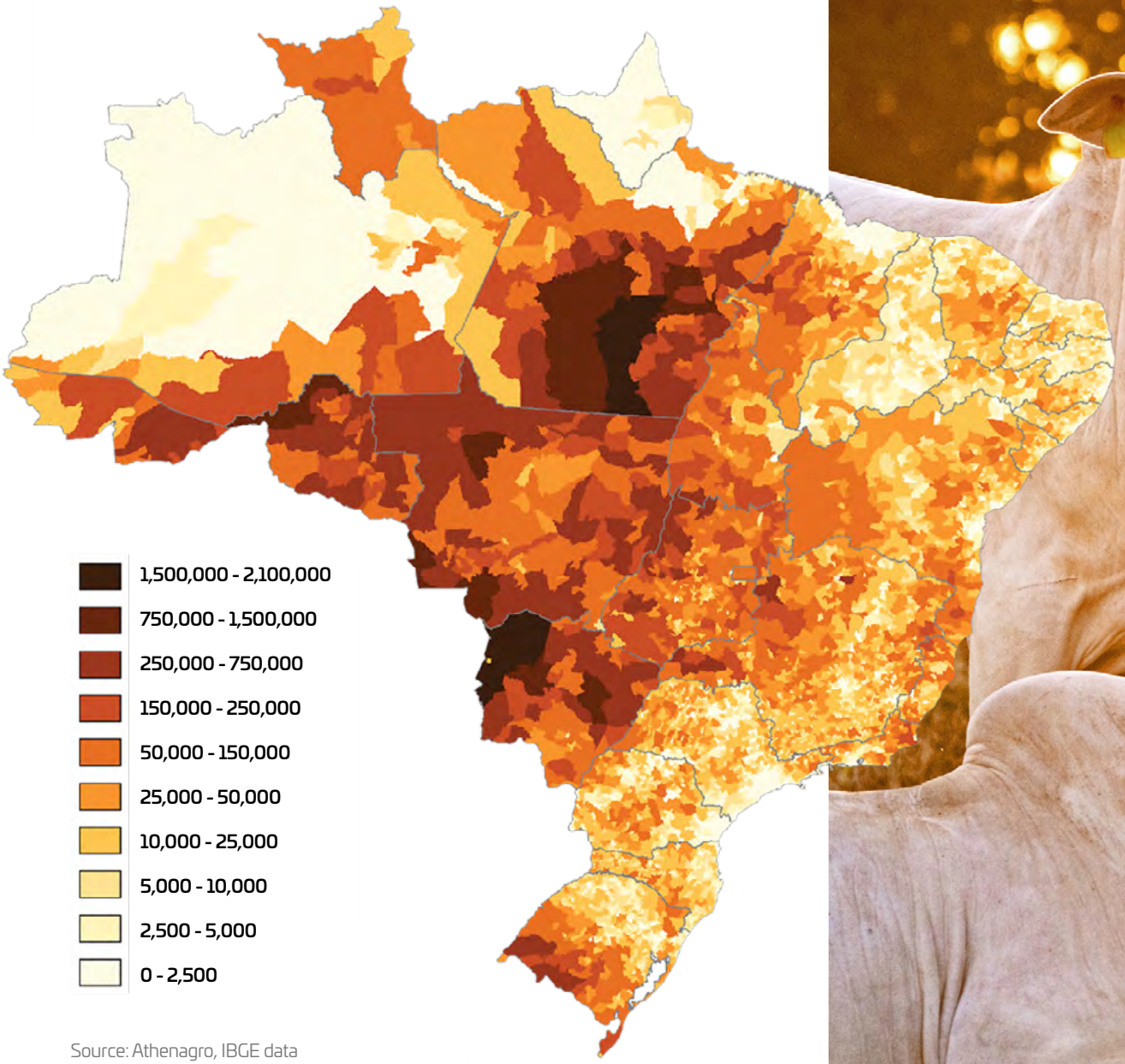
2022
2023
North
Northeast
Southeast
South
Midwest

EVOLUTION OF THE BRAZILIAN CATTLE HERD, BY STATE - IN MILLION OF HEAD

Million heads	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Brazil	**170.38**	**173.26**	**175.50**	**176.15**	**175.93**	**175.72**	**175.29**	**178.90**	**174.43**	**173.17**	**173.57**	**173.58**	**175.91**	**178.34**	**172.72**	**171.53**	**172.42**	**175.62**	**182.41**	**192.17**	**197.18**
Rondônia	9.69	9.86	9.99	10.02	10.01	10.00	9.97	10.18	9.92	9.85	9.88	9.88	10.01	10.15	9.83	10.10	10.08	10.54	10.85	13.42	13.80
Acre	2.11	2.15	2.17	2.18	2.18	2.18	2.17	2.22	2.16	2.15	2.15	2.15	2.18	2.21	2.14	2.55	2.75	3.05	3.29	3.88	4.15
Amazonas	1.24	1.26	1.27	1.28	1.28	1.27	1.27	1.30	1.27	1.26	1.26	1.26	1.28	1.29	1.25	1.29	1.37	1.35	1.41	1.47	1.49
Roraima	0.67	0.68	0.69	0.69	0.69	0.69	0.69	0.71	0.69	0.68	0.68	0.68	0.69	0.70	0.68	0.71	0.77	0.82	0.83	1.03	1.06
Pará	14.15	14.39	14.58	14.63	14.62	14.60	14.56	14.86	14.49	14.39	14.42	14.42	14.61	14.82	14.35	14.39	14.72	16.25	17.75	18.62	20.13
Amapá	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.03	0.02	0.02	0.02
Tocantins	6.39	6.50	6.58	6.61	6.60	6.59	6.57	6.71	6.54	6.49	6.51	6.51	6.60	6.69	6.48	6.09	6.22	6.87	7.90	8.51	9.35
Maranhão	5.35	5.44	5.51	5.53	5.52	5.51	5.50	5.61	5.47	5.43	5.45	5.45	5.52	5.60	5.42	5.52	5.74	6.06	6.30	7.16	7.44
Piauí	1.41	1.43	1.45	1.46	1.45	1.45	1.45	1.48	1.44	1.43	1.43	1.43	1.45	1.47	1.43	1.27	1.25	1.23	1.22	1.21	1.20
Ceará	1.87	1.90	1.92	1.93	1.93	1.93	1.92	1.96	1.91	1.90	1.90	1.90	1.93	1.95	1.89	2.01	2.09	2.16	2.21	2.29	2.35
Rio Grande do Norte	0.75	0.76	0.77	0.77	0.77	0.77	0.77	0.79	0.77	0.76	0.76	0.76	0.77	0.78	0.76	0.75	0.82	0.88	0.90	0.95	0.99
Paraíba	1.04	1.05	1.07	1.07	1.07	1.07	1.07	1.09	1.06	1.05	1.06	1.06	1.07	1.08	1.05	1.09	1.14	1.19	1.22	1.22	1.26
Pernambuco	1.27	1.29	1.31	1.31	1.31	1.31	1.30	1.33	1.30	1.29	1.29	1.29	1.31	1.33	1.28	1.34	1.42	1.36	1.66	1.76	1.88
Alagoas	0.77	0.79	0.80	0.80	0.80	0.80	0.80	0.81	0.79	0.79	0.79	0.79	0.80	0.81	0.79	0.82	0.81	0.87	0.90	0.91	0.96
Sergipe	0.88	0.89	0.90	0.90	0.90	0.90	0.90	0.92	0.90	0.89	0.89	0.89	0.90	0.92	0.89	0.86	0.87	0.87	0.91	0.94	0.96
Bahia	8.07	8.20	8.31	8.34	8.33	8.32	8.30	8.47	8.26	8.20	8.22	8.22	8.33	8.44	8.18	8.06	8.35	7.89	9.90	10.67	11.44
Minas Gerais	19.31	19.64	19.89	19.96	19.94	19.92	19.87	20.28	19.77	19.63	19.67	19.67	19.94	20.21	19.58	19.41	19.63	19.77	20.46	20.60	21.02
Espírito Santo	1.63	1.66	1.68	1.68	1.68	1.68	1.67	1.71	1.67	1.65	1.66	1.66	1.68	1.70	1.65	1.69	1.72	1.82	1.93	1.94	2.05
Rio de Janeiro	1.96	1.99	2.01	2.02	2.02	2.02	2.01	2.05	2.00	1.99	1.99	1.99	2.02	2.05	1.98	2.00	1.98	2.06	2.13	2.15	2.22
São Paulo	8.22	8.36	8.47	8.50	8.49	8.48	-	8.63	8.41	8.35	8.37	8.37	8.49	8.60	8.33	7.99	7.71	7.79	7.95	8.30	8.42
Paraná	8.28	8.42	8.53	8.56	8.55	8.54	8.52	8.70	8.48	8.42	8.44	8.44	8.55	8.67	8.40	8.30	8.00	7.49	7.11	6.95	6.51
Santa Catarina	3.68	3.74	3.79	3.80	3.80	3.79	3.78	3.86	3.76	3.74	3.74	3.74	3.80	3.85	3.73	3.72	3.88	3.96	3.97	3.91	3.95
Rio Grande do Sul	11.30	11.49	11.64	11.68	11.67	11.66	11.63	11.87	11.57	11.49	11.51	11.51	11.67	11.83	11.46	10.65	10.07	9.23	9.16	10.04	9.58
Mato Grosso do Sul	19.22	19.55	19.80	19.87	19.85	19.82	19.78	20.18	19.68	19.54	19.58	19.58	19.85	20.12	19.49	18.91	17.42	17.04	16.62	16.44	16.04
Mato Grosso	23.98	24.39	24.70	24.79	24.76	24.73	24.67	25.18	24.55	24.37	24.43	24.43	24.76	25.10	24.31	24.78	26.24	26.92	27.01	28.83	29.22
Goiás	17.06	17.35	17.57	17.64	17.61	17.59	17.55	17.91	17.46	17.34	17.38	17.38	17.61	17.85	17.29	17.11	17.28	18.08	18.76	18.88	19.63
Federal District	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.06	0.06	0.06

Source: Athenagro, IBGE data (Census, PPM, PPT)



Source: Athenagro, IBGE data

HERD SUITABILITY AND NUMBER OF PROPERTIES BY STATE

States	Herd in 2013 (heads)	Percentage of the state's herd in the total of Brazil in 2012 (%)	Estimated herd in 2023 (heads)	Share of the state's herd in the total of Brazil (%)	Growth of the herd in the last 10 years (%)	Share of animals exclusively destined for slaughter by state in 2023 (%)	Herd with genetic suitability for slaughter in 2023	Share of animals with suitability for slaughter in 2023 (%)	Number of properties with cattle (units)
Rondônia	9,875,607	5.69%	13,804,405	7.00%	39.78%	96.34%	13,682,223	99.11%	73,129
Acre	2,150,375	1.24%	4,148,949	2.10%	92.94%	98.01%	4,128,955	99.52%	22,649
Amazonas	1,259,012	0.73%	1,490,369	0.76%	18.38%	90.35%	1,455,567	97.66%	14,612
Roraima	684,429	0.39%	1,056,736	0.54%	54.40%	95.97%	1,046,427	99.02%	6,903
Pará	14,420,408	8.31%	20,133,156	10.21%	39.62%	92.34%	19,760,082	98.15%	97,769
Amapá	36,661	0.02%	24,854	0.01%	-32.21%	64.28%	22,706	91.36%	684
Tocantins	6,509,566	3.75%	9,352,176	4.74%	43.67%	89.88%	9,123,172	97.55%	50,451
Maranhão	5,445,839	3.14%	7,441,757	3.77%	36.65%	84.22%	7,157,668	96.18%	91,296
Piauí	1,434,525	0.83%	1,197,387	0.61%	-16.53%	88.91%	1,165,270	97.32%	70,480
Ceará	1,902,130	1.10%	2,352,009	1.19%	23.65%	46.62%	2,048,362	87.09%	114,714
Rio Grande do Norte	762,203	0.44%	991,943	0.50%	30.14%	51.57%	875,753	88.29%	39,150
Paraíba	1,055,807	0.61%	1,258,016	0.64%	19.15%	54.55%	1,119,728	89.01%	82,761
Pernambuco	1,291,130	0.74%	1,881,154	0.95%	45.70%	43.93%	1,626,024	86.44%	107,939
Alagoas	789,184	0.45%	956,463	0.49%	21.20%	46.67%	833,080	87.10%	42,300
Sergipe	891,742	0.51%	962,630	0.49%	7.95%	62.40%	875,078	90.90%	43,783
Bahia	8,218,196	4.73%	11,440,831	5.80%	39.21%	83.86%	10,994,147	96.10%	297,894
Minas Gerais	19,672,608	11.33%	21,015,215	10.66%	6.82%	54.95%	16,263,410	77.39%	385,488
Espírito Santo	1,658,534	0.96%	2,047,357	1.04%	23.44%	80.19%	1,949,277	95.21%	33,128
Rio de Janeiro	1,992,083	1.15%	2,223,048	1.13%	11.59%	73.40%	2,080,016	93.57%	32,273
São Paulo	8,372,674	4.82%	8,418,280	4.27%	0.54%	75.06%	7,517,058	89.29%	107,255
Paraná	8,438,727	4.86%	6,505,678	3.30%	-22.91%	54.19%	4,596,706	70.66%	170,296
Santa Catarina	3,744,663	2.16%	3,949,662	2.00%	5.47%	34.18%	2,623,085	66.41%	132,522
Rio Grande do Sul	11,513,545	6.63%	9,581,142	4.86%	-16.78%	67.07%	8,011,967	83.62%	261,717
Mato Grosso do Sul	19,581,547	11.28%	16,044,534	8.14%	-18.06%	98.36%	15,980,770	99.60%	54,931
Mato Grosso	24,429,674	14.07%	29,215,448	14.82%	19.59%	98.61%	29,117,131	99.66%	92,723
Goiás	17,377,779	10.01%	19,627,537	9.95%	12.95%	75.76%	18,132,741	92.38%	126,100
Federal District	63,221	0.04%	55,986	0.03%	-11.44%	68.97%	17,370	31.03%	1,468
BRAZIL	**173,571,868**	**100.00%**	**197,176,715**	**100.00%**	**13.60%**	**81.03%**	**182,203,773**	**92.41%**	**2,554,415**

Source: Athenagro, with data from IBGE

HERD SIZE OF THE LARGEST CATTLE-PRODUCING MUNICIPALITIES IN BRAZIL AND GROWTH IN THE LAST 10 AND 20 YEARS

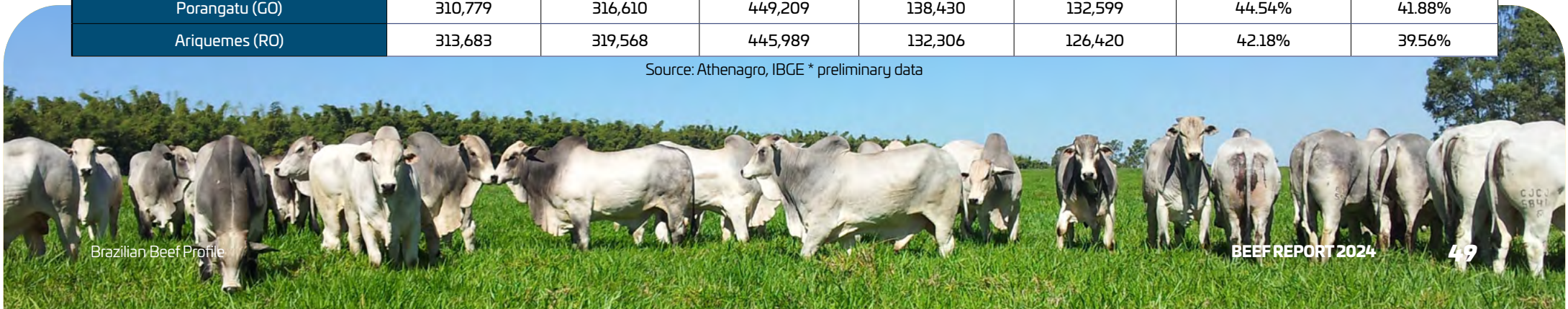
Municipality/State	Herd size in 2003 (heads)	Herd size in 2013 (heads)	Herd in 2023 (heads)*	Growth of the herd in the last 20 years (heads)	Growth of the herd in the last 10 years (heads)	Growth of the herd in the last 20 years (%)	Growth of the herd in the last 10 years (%)
Corumbá (MS)	1,900,865	1,936,530	2,052,969	152,104	116,439	8.00%	6.01%
São Félix do Xingu (PA)	1,423,758	1,450,472	1,839,061	415,302	388,589	29.17%	26.79%
Porto Velho (RO)	441,927	450,219	1,269,609	827,682	819,390	187.29%	182.00%
Novo Repartimento (PA)	631,819	643,674	1,176,557	544,738	532,883	86.22%	82.79%
Altamira (PA)	709,855	723,174	1,139,564	429,709	416,390	60.53%	57.58%
Marabá (PA)	626,333	638,085	1,080,996	454,663	442,911	72.59%	69.41%
Cáceres (MT)	788,736	803,535	1,024,328	235,592	220,793	29.87%	27.48%
Vila Bela da Santíssima Trindade (MT)	841,434	857,222	1,016,540	175,105	159,318	20.81%	18.59%
Aquidauana (MS)	784,044	798,755	808,810	24,766	10,055	3.16%	1.26%
Juara (MT)	760,143	774,405	801,817	41,673	27,411	5.48%	3.54%
Ribas do Rio Pardo (MS)	1,070,774	1,090,864	750,549	-320,225	-340,316	-29.91%	-31.20%
Nova Crixás (GO)	575,498	586,296	740,713	165,215	154,417	28.71%	26.34%
Juína (MT)	538,587	548,693	709,804	171,217	161,111	31.79%	29.36%
Nova Mamoré (RO)	296,691	302,258	699,549	402,858	397,291	135.78%	131.44%
Colniza (MT)	361,095	367,870	696,072	334,977	328,201	92.77%	89.22%
Vila Rica (MT)	507,651	517,176	661,299	153,648	144,123	30.27%	27.87%
Alta Floresta (MT)	609,773	621,214	655,670	45,897	34,456	7.53%	5.55%
Pacajá (PA)	374,935	381,969	637,209	262,274	255,240	69.95%	66.82%
São Miguel do Araguaia (GO)	474,327	483,227	596,180	121,853	112,953	25.69%	23.37%
Porto Murtinho (MS)	638,230	650,205	595,838	-42,393	-54,368	-6.64%	-8.36%
Cocalinho (MT)	448,542	456,957	577,098	128,556	120,140	28.66%	26.29%

Source: Athenagro, IBGE * preliminary data

HERD SIZE OF THE LARGEST CATTLE-PRODUCING MUNICIPALITIES IN BRAZIL AND GROWTH IN THE LAST 10 AND 20 YEARS

Municipality/State	Herd size in 2003 (heads)	Herd size in 2013 (heads)	Herd in 2023 (heads)*	Growth of the herd in the last 20 years (heads)	Growth of the herd in the last 10 years (heads)	Growth of the herd in the last 20 years (%)	Growth of the herd in the last 10 years (%)
Aripuanã (MT)	433,220	441,349	567,379	134,159	126,030	30.97%	28.56%
Nova Bandeirantes (MT)	343,072	349,509	565,713	222,641	216,204	64.90%	61.86%
Itupiranga (PA)	367,753	374,653	562,487	194,733	187,833	52.95%	50.14%
Novo Progresso (PA)	428,690	436,734	552,540	123,849	115,806	28.89%	26.52%
Santana do Araguaia (PA)	416,564	424,380	538,580	122,016	114,200	29.29%	26.91%
Rio Branco (AC)	286,316	291,688	536,598	250,282	244,910	87.41%	83.96%
Pontes e Lacerda (MT)	514,872	524,533	535,368	20,495	10,835	3.98%	2.07%
Água Azul do Norte (PA)	441,759	450,047	530,926	89,167	80,879	20.18%	17.97%
Porto Esperidião (MT)	441,365	449,646	527,694	86,329	78,048	19.56%	17.36%
Jaru (RO)	433,484	441,617	510,183	76,699	68,566	17.69%	15.53%
Rio Maria (PA)	335,585	341,881	508,393	172,808	166,511	51.49%	48.70%
Rio Verde de Mato Grosso (MS)	526,132	536,003	491,603	-34,529	-44,401	-6.56%	-8.28%
Alta Floresta D'Oeste (RO)	315,473	321,392	482,695	167,222	161,303	53.01%	50.19%
Alegrete (RS)	568,905	579,579	479,413	-89,492	-100,166	-15.73%	-17.28%
Buritis (RO)	313,792	319,680	467,869	154,077	148,189	49.10%	46.36%
Brasnorte (MT)	308,363	314,149	459,589	151,225	145,440	49.04%	46.30%
Santo Antônio do Leverger (MT)	432,989	441,113	458,596	25,606	17,482	5.91%	3.96%
Santa Rita do Pardo (MS)	537,303	547,384	453,907	-83,397	-93,478	-15.52%	-17.08%
Porangatu (GO)	310,779	316,610	449,209	138,430	132,599	44.54%	41.88%
Ariquemes (RO)	313,683	319,568	445,989	132,306	126,420	42.18%	39.56%

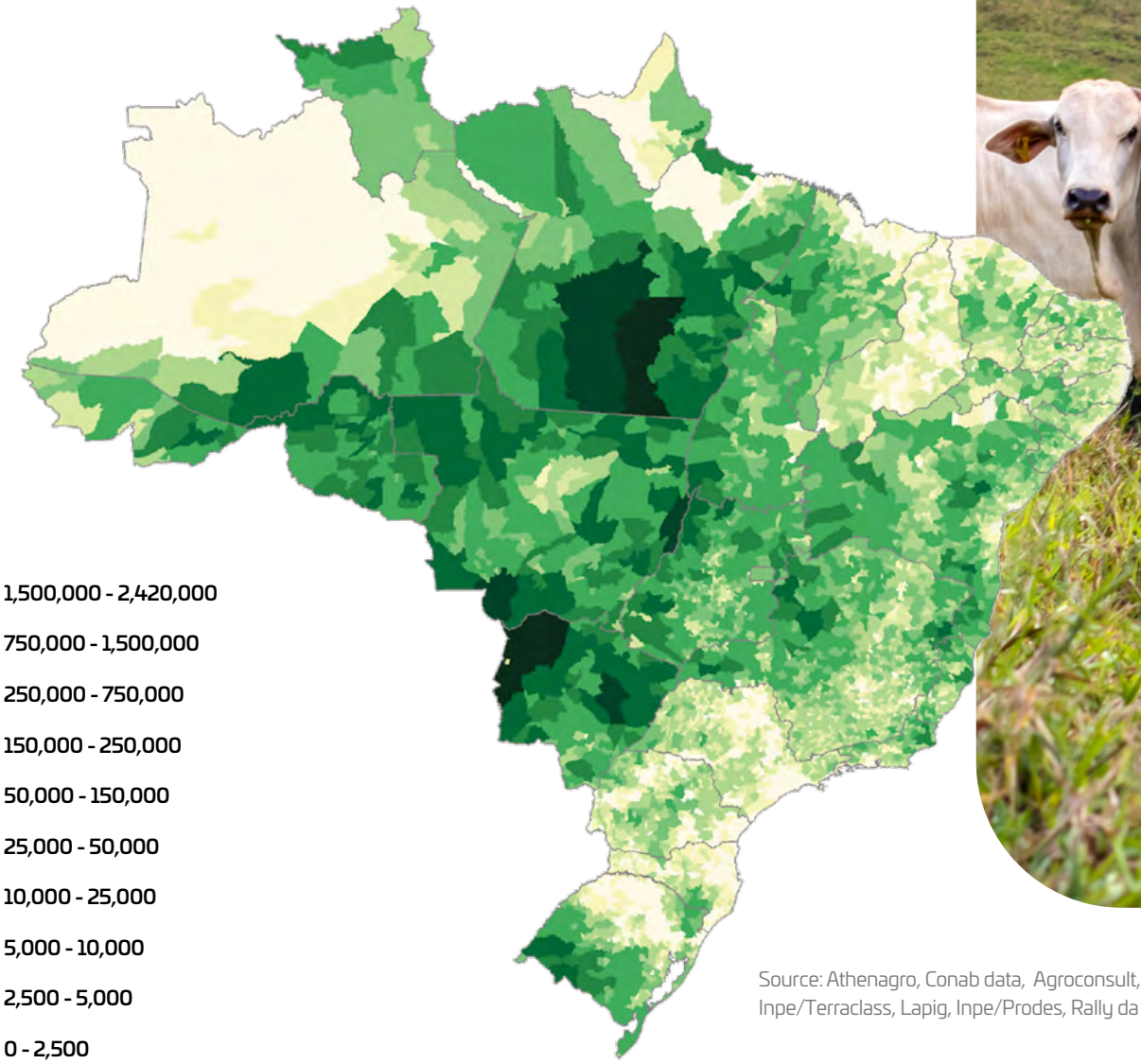
Source: Athenagro, IBGE * preliminary data



EVOLUTION OF PASTURE AREA IN BRAZIL - MILLION HECTARES

STATE	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Rondônia	7.30	7.60	7.91	8.22	8.35	8.47	8.54	8.58	8.68	8.80	7.77	7.77	7.78	7.78	7.81	7.87	7.89	7.88	7.89	7.92	7.98
Acre	1.73	1.79	1.86	1.93	1.97	2.01	2.00	2.00	2.01	2.07	1.67	1.68	1.68	1.70	1.71	1.72	1.76	1.80	1.87	1.92	1.98
Amazonas	2.59	2.67	2.77	2.88	2.95	3.01	3.07	3.11	3.16	3.22	1.98	1.87	1.78	1.72	1.67	1.61	1.59	1.56	1.63	1.73	1.88
Roraima	0.87	0.80	0.74	0.76	0.80	0.87	0.89	0.91	0.92	0.91	0.68	0.67	0.68	0.67	0.64	0.64	0.67	0.65	0.67	0.67	0.70
Pará	16.84	17.03	17.22	17.67	18.26	18.86	17.30	17.41	17.38	17.26	17.09	16.87	16.75	16.68	16.62	16.55	16.57	16.65	16.84	16.92	17.21
Amapá	0.33	0.30	0.28	0.29	0.30	0.31	0.32	0.32	0.33	0.33	0.37	0.38	0.39	0.38	0.39	0.40	0.40	0.43	0.42	0.42	0.43
Tocantins	9.22	8.97	8.72	8.36	8.29	8.34	8.29	8.24	8.22	8.13	7.76	7.56	7.45	7.32	7.22	7.13	7.01	6.89	6.73	6.59	6.54
Maranhão	6.16	6.28	6.40	6.64	6.69	6.86	6.78	6.73	6.88	6.89	6.58	6.53	6.80	6.78	6.50	6.75	6.70	6.67	6.59	6.54	6.53
Piauí	3.01	3.11	3.20	3.34	3.31	3.25	3.25	3.13	3.12	3.03	3.27	3.01	2.83	2.53	2.26	2.08	1.78	1.54	1.25	1.00	0.98
Ceará	2.89	2.92	2.96	3.04	2.98	2.91	3.21	2.88	3.26	3.55	2.79	2.69	2.61	2.42	2.32	2.27	2.12	1.98	1.85	1.72	1.73
Rio Grande do Norte	1.37	1.39	1.40	1.44	1.45	1.44	1.56	1.48	1.60	1.63	1.76	1.82	1.86	1.85	1.82	1.83	1.83	1.85	1.86	1.88	1.88
Paraíba	1.92	1.93	1.93	1.95	1.94	1.95	2.10	1.90	2.11	2.10	1.91	1.91	1.84	1.83	1.75	1.74	1.69	1.68	1.65	1.62	1.61
Pernambuco	2.28	2.29	2.31	2.35	2.30	2.34	2.32	2.26	2.47	2.82	2.65	2.66	2.70	2.82	2.75	2.75	2.72	2.73	2.82	2.70	2.70
Alagoas	0.97	0.98	0.99	1.02	0.97	1.00	1.03	1.08	1.06	1.06	1.05	1.09	1.14	1.12	1.13	1.12	1.11	1.09	1.11	1.08	1.08
Sergipe	1.12	1.11	1.10	1.08	1.07	1.06	1.05	1.22	1.22	1.23	1.34	1.35	1.38	1.40	1.45	1.46	1.47	1.49	1.49	1.51	1.51
Bahia	14.55	14.53	14.50	14.44	14.34	14.39	14.41	14.17	14.24	14.38	16.36	16.49	17.01	17.58	17.78	17.95	18.19	18.31	18.41	18.59	18.54
Minas Gerais	18.83	18.81	18.79	18.72	18.54	18.44	18.36	18.20	17.96	17.77	19.23	19.44	19.52	19.59	19.72	19.89	20.03	19.98	19.99	20.20	20.10
Espírito Santo	2.01	2.04	2.06	2.12	2.14	2.16	2.18	2.19	2.18	2.19	2.07	2.08	2.07	2.09	2.10	2.13	2.14	2.13	2.11	2.10	2.10
Rio de Janeiro	1.43	1.41	1.40	1.36	1.48	1.48	1.48	1.52	1.49	1.51	1.72	1.76	1.81	1.84	1.87	1.88	1.89	1.90	1.92	1.94	1.94
São Paulo	7.75	7.56	7.38	7.09	6.05	5.80	6.10	6.01	5.99	5.55	4.98	5.11	5.08	4.99	4.99	4.92	4.84	4.64	4.57	4.46	4.15
Paraná	5.80	5.67	5.55	5.34	5.50	5.10	4.91	4.97	5.08	5.17	4.86	4.42	4.34	4.65	4.70	4.54	4.53	4.27	3.99	3.89	3.82
Santa catarina	2.00	1.95	1.90	1.83	1.81	1.79	1.83	1.87	1.92	1.91	1.67	1.64	1.60	1.52	1.53	1.48	1.41	1.33	1.21	1.15	1.14
Rio Grande do Sul	10.19	9.97	9.76	9.39	9.20	8.99	9.14	9.00	8.84	8.42	8.44	8.12	8.30	8.16	8.18	8.15	7.98	7.53	7.17	6.93	6.83
Mato Grosso do Sul	21.52	21.43	21.35	21.11	20.89	20.87	20.77	20.62	20.53	20.29	19.65	19.13	18.71	18.36	17.82	17.32	16.82	16.18	15.65	15.28	15.15
Mato Grosso	21.94	21.97	21.99	22.06	21.70	22.07	21.90	21.49	21.00	20.43	20.67	20.66	20.82	20.78	20.63	20.32	20.06	20.01	19.75	19.62	19.60
Goiás + Federal District	17.39	17.07	16.76	16.17	15.70	15.68	15.60	15.30	15.08	14.99	15.31	15.12	15.16	14.97	14.89	14.67	14.37	13.94	13.53	13.43	13.34
Brazil	**182.00**	**181.58**	**181.21**	**180.60**	**178.99**	**179.45**	**178.40**	**176.59**	**176.71**	**175.65**	**173.66**	**171.83**	**172.09**	**171.52**	**170.25**	**169.16**	**167.58**	**165.12**	**163.00**	**161.83**	**161.45**

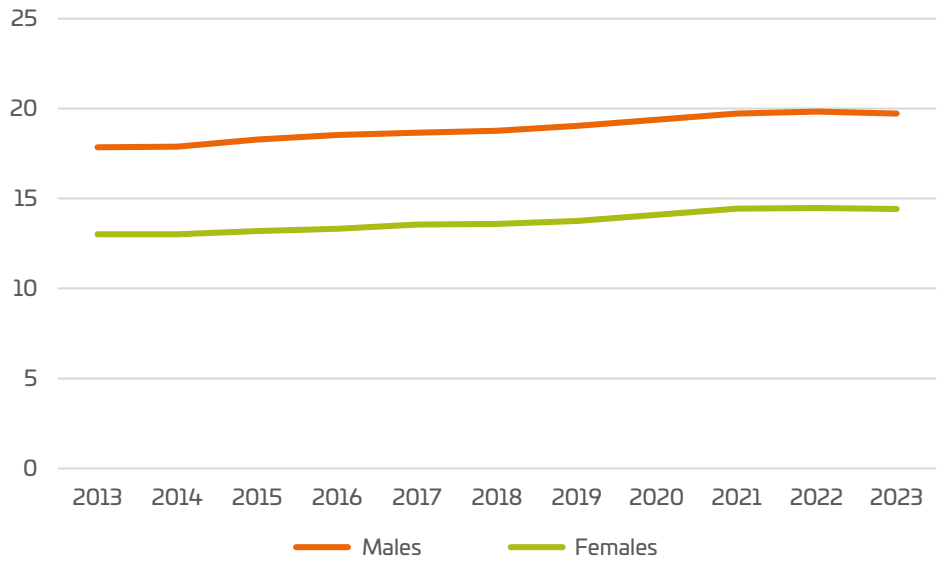
Source: Athenagro, Conab data, IBGE (PPM, PAM, Censo) , INPE (Terraclass. Prodes), Lapig, Livestock Rally



Source: Athenagro, Conab data, Agroconsult, Agrosatelite, IBGE, Inpe/Terraclass, Lapig, Inpe/Prodes, Rally da Pecuaria, Embrapa

AVERAGE CARCASS WEIGHT IN BRAZIL - IN @ (ARROBA = UNIT OF WEIGHT CORRESPONDING TO 33 POUNDS)

	Males	Females
2013	17.85	13.01
2014	17.88	13.01
2015	18.28	13.18
2016	18.52	13.32
2017	18.66	13.54
2018	18.77	13.58
2019	19.03	13.75
2020	19.38	14.08
2021	19.72	14.43
2022	19.83	14.48
2023	19.72	14.42



Source: Athenagro, IBGE data

AVERAGE CARCASS WEIGHT OF MALE AND FEMALE BY STATE - IN @ (ARROBA = UNIT OF WEIGHT CORRESPONDING TO 33 POUNDS)

	2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Brazil	**17.85**	**13.01**	**17.88**	**13.01**	**18.28**	**13.18**	**18.52**	**13.32**	**18.66**	**13.54**	**18.77**	**13.58**	**19.03**	**13.75**	**19.38**	**14.08**	**19.72**	**14.43**	**19.83**	**14.48**	**19.72**	**14.42**
Rondônia	17.88	12.93	18.02	12.91	18.36	12.94	18.91	13.22	18.90	13.36	18.90	13.33	19.19	13.34	19.54	13.64	19.93	14.04	20.09	14.08	19.62	13.91
Pará	18.47	13.29	18.13	12.97	18.56	12.95	18.84	13.18	19.02	13.07	19.13	13.19	19.32	13.49	19.62	14.12	19.74	14.50	19.98	14.32	19.98	14.17
Tocantins	18.27	12.28	18.29	12.50	18.76	12.82	19.05	12.77	18.87	13.16	19.26	12.86	19.54	13.46	19.96	13.92	20.23	14.29	20.38	14.40	20.28	14.24
Minas Gerais	17.22	12.93	17.24	12.79	17.56	13.02	17.66	13.04	17.67	13.24	17.71	13.33	18.26	13.52	18.69	13.78	19.25	14.18	19.14	13.82	18.69	13.91
São Paulo	18.84	13.47	18.75	13.67	19.25	13.97	19.56	14.01	19.61	14.18	19.66	14.19	19.97	14.55	20.21	15.13	20.38	15.44	20.48	15.13	20.30	15.00
Paraná	17.52	13.43	17.60	13.27	18.03	13.65	18.14	13.77	18.29	13.71	18.46	13.86	18.61	14.14	18.83	14.25	19.28	14.44	19.37	14.46	19.15	14.71
R. Grande do Sul	15.93	14.19	15.78	14.19	15.68	14.07	15.81	14.14	15.75	14.20	16.02	14.24	16.00	14.26	16.24	14.56	16.70	15.32	16.74	15.34	16.82	15.45
M. Grosso do Sul	18.65	13.43	18.75	13.63	19.10	13.69	19.16	14.04	19.44	14.16	19.34	14.30	19.62	14.50	19.91	14.80	20.17	14.96	20.43	15.22	20.65	15.47
Mato Grosso	19.03	13.62	19.15	13.51	19.68	13.80	20.19	14.00	20.49	14.32	20.60	14.40	20.76	14.52	21.10	14.88	21.47	15.15	21.68	15.39	21.40	15.22
Goiás	18.53	12.98	18.77	12.97	19.12	13.11	19.31	13.10	19.43	13.48	19.48	13.52	19.94	13.37	20.22	13.71	20.62	14.37	20.43	14.33	20.43	14.43

Source: Athenagro, IBGE data

PRODUCTIVITY PER STATE - IN CARCASS KG PER HECTARE

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Brazil	36.2	42.1	43.1	42.6	42.9	44.4	46.1	44.9	43.3	47.5	55.0	56.7	54.6	56.7	59.3	59.1	57.5	57.1	62.4	65.3	65.8
Rondônia	33.46	42.12	42.59	39.88	38.98	41.28	43.37	44.32	41.22	45.70	50.89	54.82	55.92	61.92	69.25	70.99	69.05	70.62	77.68	81.56	85.17
Acre	27.41	33.55	35.54	34.60	33.87	37.12	39.63	40.97	37.01	41.76	47.39	51.25	51.68	56.86	59.96	67.91	68.30	69.85	76.83	80.67	83.76
Amazonas	15.00	17.44	17.34	16.68	15.20	17.77	19.04	19.72	19.36	22.50	26.13	27.61	26.03	30.00	34.54	37.68	39.46	40.35	44.39	46.60	44.10
Roraima	19.28	24.89	27.84	26.17	26.34	26.35	26.41	30.44	30.09	35.26	41.55	42.84	43.54	47.41	53.57	55.70	54.77	56.01	61.61	64.69	64.49
Pará	21.66	31.86	32.34	29.42	26.67	28.68	29.66	30.31	28.14	31.58	35.84	38.90	38.45	42.01	45.97	46.29	44.99	46.01	50.62	53.14	54.05
Amapá	7.45	9.25	11.14	11.86	11.15	10.44	10.99	11.56	11.08	13.36	15.87	17.39	9.61	9.35	8.96	7.66	7.29	7.45	8.20	8.61	7.84
Tocantins	26.33	31.54	33.53	33.77	35.10	36.31	40.75	37.46	35.56	37.42	43.51	44.78	44.44	46.67	47.00	47.37	45.84	44.98	49.48	51.94	51.81
Maranhão	26.16	31.12	34.13	33.59	36.09	37.70	41.92	37.33	35.83	37.93	43.68	45.58	41.48	42.28	44.34	44.83	43.90	43.07	47.38	49.74	49.91
Piauí	27.14	30.15	30.35	29.29	27.27	29.93	32.58	30.38	29.89	32.82	38.48	41.32	40.32	44.24	47.45	46.44	46.73	45.84	50.43	52.94	49.87
Ceará	32.09	34.69	33.96	32.70	34.48	38.15	37.54	42.04	38.48	46.62	53.18	53.52	51.09	53.69	54.93	57.77	57.45	55.28	60.80	63.84	61.01
Rio Grande do Norte	31.52	35.81	35.86	35.34	34.49	37.74	40.73	39.55	36.69	38.80	47.81	49.28	46.06	46.04	52.06	51.56	53.04	51.04	56.14	58.94	60.05
Paraíba	25.65	28.89	29.33	29.05	31.10	33.85	33.65	34.86	33.69	33.18	40.10	41.28	41.13	42.87	45.22	44.83	42.87	41.25	45.37	47.63	47.22
Pernambuco	27.80	30.13	32.27	33.24	37.17	37.76	39.44	39.47	36.94	32.61	36.79	37.35	36.01	34.93	34.80	34.22	32.71	31.48	34.62	36.35	35.75
Alagoas	26.04	29.94	31.47	30.75	34.44	36.38	36.56	33.44	33.96	40.15	43.40	40.73	37.71	37.26	38.14	36.66	33.39	32.13	35.34	37.10	35.92
Sergipe	36.71	41.50	43.88	45.51	45.69	47.39	49.79	40.76	40.79	48.77	55.85	53.62	51.12	49.96	45.11	42.28	39.16	37.68	41.45	43.52	41.80
Bahia	22.71	26.51	27.41	28.04	31.07	31.19	31.33	28.23	26.67	26.41	31.87	32.45	30.24	29.20	28.42	29.46	28.74	28.20	31.02	32.56	32.67
Minas Gerais	36.88	42.61	43.01	45.02	46.10	46.87	47.49	45.57	46.28	50.84	57.19	57.00	54.75	54.61	52.62	51.54	50.67	50.39	55.42	58.19	57.86
Espírito Santo	27.31	32.02	33.85	34.68	37.27	38.22	40.62	39.60	39.69	45.72	52.96	54.79	52.33	49.28	49.19	50.16	49.31	49.03	53.94	56.63	56.54

Source: Athenagro, IBGE, INPE, LAPIG, IBGE data, Livestock Rally

KG OF CARCASS PER HECTARE

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Rio de Janeiro	39.41	45.66	47.63	49.33	48.72	51.02	51.39	47.48	46.46	50.37	58.30	59.25	54.83	55.65	59.83	59.71	57.55	57.23	62.96	66.10	67.02
São Paulo	49.90	55.84	56.82	56.83	58.64	62.28	61.39	60.32	58.58	68.83	79.63	77.95	78.28	85.00	90.64	88.13	86.52	86.04	94.64	99.36	107.03
Paraná	98.86	112.35	115.87	115.52	104.51	114.78	119.38	112.61	107.79	119.28	145.51	160.29	157.01	150.83	158.82	162.10	151.47	147.52	162.27	170.36	171.00
Santa Catarina	73.04	84.00	89.84	95.20	95.48	108.16	110.14	105.99	103.02	119.85	145.36	149.93	147.70	163.52	167.28	167.75	172.51	168.01	184.81	194.03	194.00
Rio Grande do Sul	78.83	88.48	88.12	88.89	94.18	97.28	94.95	91.20	87.53	98.27	112.67	112.72	100.07	99.95	102.64	90.45	80.18	78.09	85.90	90.18	85.57
Mato Grosso do Sul	39.39	43.55	44.24	43.33	40.73	42.70	44.61	43.60	41.06	45.68	53.74	57.13	56.72	60.69	65.96	66.60	62.91	63.59	69.95	73.44	73.91
Mato Grosso	29.83	34.93	36.61	35.71	37.65	37.33	40.28	40.80	40.29	43.69	52.16	54.07	52.14	54.98	57.69	59.47	62.01	62.69	68.96	72.40	74.19
Goiás	30.63	35.15	37.07	38.28	40.79	41.28	43.41	43.08	42.53	46.96	54.30	56.56	54.35	58.87	62.68	63.20	63.38	64.08	70.49	74.01	75.45
Federal District	30.63	35.15	37.07	38.28	40.79	41.28	43.41	43.08	42.53	46.96	54.30	56.56	54.35	58.87	62.68	63.20	63.38	64.08	70.49	74.01	75.45

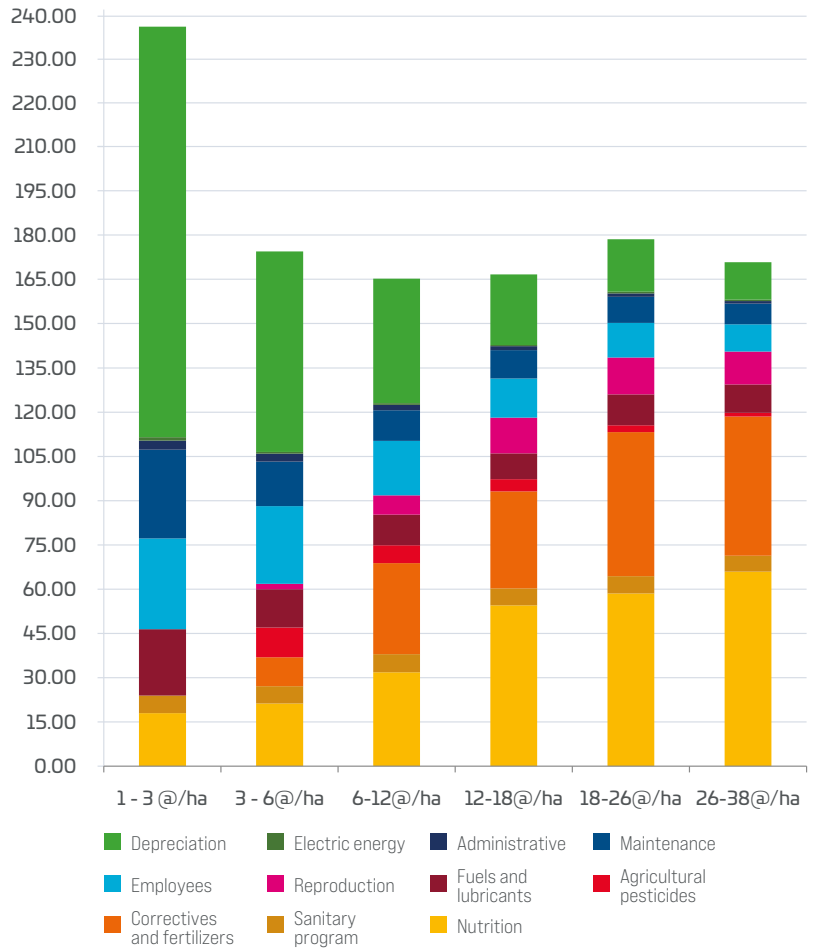
Source: Athenagro, IBGE, INPE, LAPIG, IBGE data, Livestock Rally

COMPLETE CYCLE CATTLE PRODUCTION RESULTS 2023 - R$/@

RESULT COMPOSITION	Extractive 1 - 3 @/ha	Low Tec 3-6 @/ha	Medium Tec 6-12@/ha	Adequate 12-18@/ha	High Tec 18-26@/ha	Intensive 26-38@/ha
Nutrition	17.98	21.28	31.78	54.48	58.51	65.98
Sanitary program	5.97	5.84	6.20	5.85	5.93	5.30
Correctives and fertilizers	0.00	9.86	30.87	32.78	48.81	47.19
Agricultural pesticides	0.00	10.03	5.99	4.16	2.27	1.27
Fuels and lubricants	22.47	12.97	10.44	8.76	10.51	9.61
Reproduction	0.00	1.87	6.55	12.13	12.44	11.14
Employees	30.79	26.33	18.41	13.24	11.78	9.30
Maintenance	30.09	15.09	10.41	9.59	8.81	6.94
Administrative	3.08	2.63	1.84	1.32	1.18	0.93
Electric energy	1.12	0.65	0.52	0.44	0.53	0.48
Depreciation	127.05	67.87	42.23	23.90	17.84	12.67
Total operating costs	**238.55**	**174.42**	**165.26**	**166.66**	**178.61**	**170.83**

Source: Athenagro

Cost of production of beef cattle in size levels of technology - Complete Cycle - Average BR2023 R$/15 KG

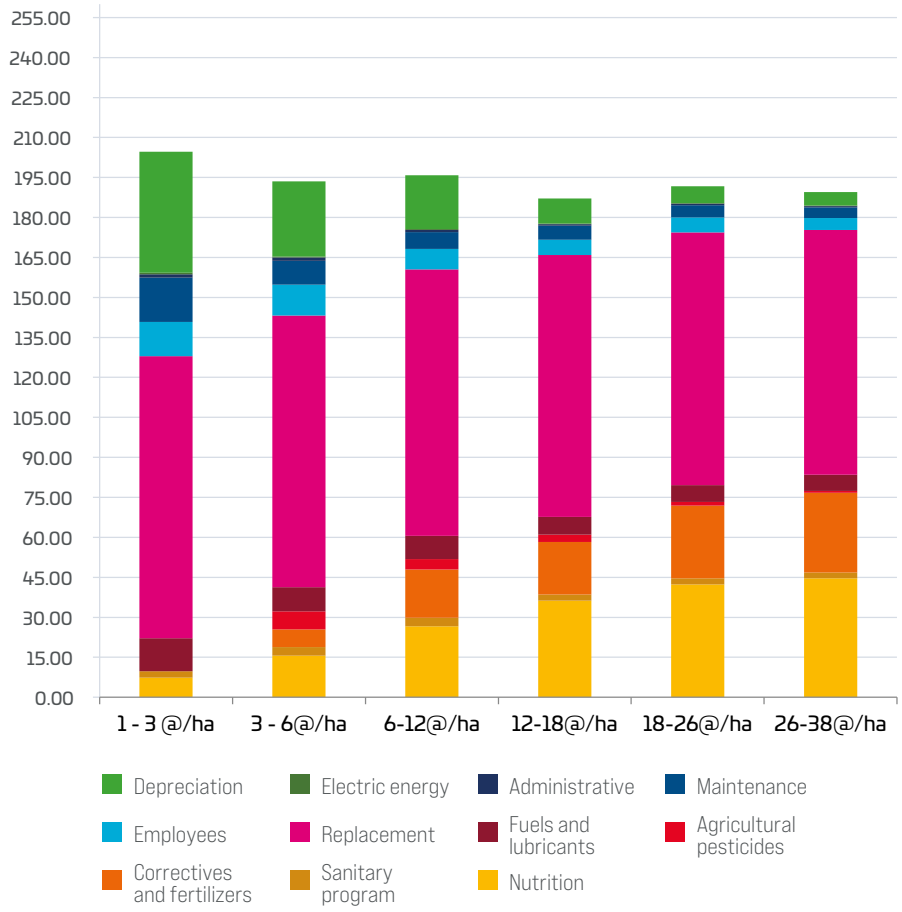


RESULTS IN STOCKING AND FATTENING CATTLE-FARMING - 2023 - R$/@

RESULT COMPOSITION	Extractive 1 - 3 @/ha	Low Tec 3-6 @/ha	Medium Tec 6-12@/ha	Adequate 12-18@/ha	High Tec 18-26@/ha	Intensive 26-38@/ha
Nutrition	7.36	15.67	26.63	36.22	42.34	44.66
Sanitary program	2.44	3.16	3.24	2.35	2.25	2.18
Correctives and fertilizers	0.00	6.67	18.04	19.71	27.31	29.84
Agricultural pesticides	0.00	6.79	3.96	2.76	1.39	0.75
Fuels and lubricants	12.35	9.00	8.64	6.60	6.27	6.10
Replacement	105.83	101.91	100.06	98.27	94.88	91.72
Employees	12.81	11.64	7.67	5.79	5.60	4.56
Maintenance	16.61	8.94	6.24	5.16	4.54	3.94
Administrative	1.28	1.16	0.77	0.58	0.56	0.46
Electric energy	0.62	0.45	0.43	0.33	0.31	0.31
Depreciation	45.34	28.21	20.10	9.34	6.24	4.95
Total operating costs	**204.65**	**193.59**	**195.79**	**187.11**	**191.70**	**189.48**

Source: Athenagro

Cost of production of beef cattle in size levels of technology - Stocking and Fattening - Average BR2023 R$/15 KG



CATTLE BREEDING RESULTS - 2023 - R$/@

RESULT COMPOSITION	Extractive 1 - 3 @/ha	Low Tec 3-6 @/ha	Medium Tec 6-12@/ha	Adequate 12-18@/ha	High Tec 18-26@/ha	Intensive 26-38@/ha
Nutrition	15.14	16.04	54.76	74.89	94.72	110.68
Sanitary program	5.12	5.65	7.18	7.18	7.08	6.81
Correctives and fertilizers	0.00	9.70	30.53	33.76	46.32	48.66
Agricultural pesticides	0.00	9.87	6.69	4.73	2.17	1.35
Fuels and lubricants	15.85	12.03	13.07	11.46	10.68	10.63
Reproduction	0.00	3.32	11.20	20.28	18.99	18.26
Employees	21.02	25.91	22.18	16.07	12.91	10.84
Maintenance	22.02	13.64	11.07	9.58	7.51	6.49
Administrative	2.10	2.59	2.22	1.61	1.29	1.08
Electric energy	0.79	0.60	0.65	0.57	0.53	0.53
Depreciation	66.12	38.76	24.71	18.87	13.51	11.19
Total operating costs	**148.17**	**138.10**	**184.27**	**199.01**	**215.70**	**226.52**

Source: Athenagro

Cost of production of beef cattle in size levels of technology - Cattle Breeding- Average BR2023 R$/15 KG

5. QUANTIFICATION OF THE CHAIN

abiec

USD 179.2
billion in 2023

The beef agroindustry system generated R$ 895 billion in 2023, around 8.2% of Brazil's Gross Domestic Product (GDP).

In dollars, the turnover was USD 179.2 billion.

Compared to the previous year, the sector's total revenue decreased by 12.5%, mainly due to the reduction in cattle and meat prices in the domestic and foreign markets.

BEEF CATTLE AGRIBUSINESS MOVEMENT IN 2023 - 895.32 R$ BILLION

Inputs and services for livestock production 148.67 R$ billions	Total revenue in livestock farming 185.76 R$ billions		Inputs and services in industry 46.70 R$ billions	Slaughterhouses' revenue 216.43 R$ billions	Inputs and services in retail 15,569 R$ billions	Total retail revenue 280.10 R$ billions
Nutrition 22,320.1 R$ millions		Slaughtered cattle 143,877.5 R$ millions	Packaging 2,380.5 R$ millions	Meat domestic market 134,496.8 R$ millions		Meat sales at retail 240,306.3 R$ millions
Protocols, materials and semen 1,448.8 R$ millions		Males 92,036.2 R$ millions	Electricity 2,100.5 R$ millions	Meat exports 49,935.7 R$ millions		Sales of other products 39,797,097 R$ millions
Animal health 5,316.2 R$ milhões		Females 51,841.3 R$ millions	PPE 99.5 R$ millions	Leather exports 5,525.4 R$ millions		
Fuels, lubricants and electrical energy 18,791.3 R$ millions	Replacement animals 36,566.8 R$ millions		Operational supplies 4,077.5 R$ millions	Leather in the domestic market 1,325.4 R$ millions		
Fertilizers, pesticides and seeds 26,310.3 R$ millions	Males 28,429.5 R$ millions		Services provided 1,176.9 R$ millions	Tallow in the domestic market 2,869.5 R$ millions		
Maintenance, services, parts and expenses 16,035.1 R$ millions	Females 8,137.3 R$ millions		Freight of live cattle 2,944.1 R$ millions	Other by-products 22,274.0 R$ millions		
Employees, charges and pro labore 22,596.9 R$ millions	Genetically improved animals for breeding 2,788.1 R$ millions	Livestock exports 2,422.2 R$ millions	Meat freight 99.5 R$ millions			
Bulls 4,164.1 R$ millions		Semen exports 19.3 R$ millions	Hired employees 14,629.1 R$ millions			
Machinery, equipment and animals for work 5,663.4 R$ millions		Other livestock revenues 87.7 R$ millions	Administrative, associations and marketing 2,420.0 R$ millions			
Improvements and construction materials 11,883.2 R$ millions			Other fixed costs 16,776.6 R$ millions			

Source: Athenagro/ Data: Athenagro, Abiec, Secex, IBGE, Cepea, BNDES
New methodology: Developed by Athenagro, based on the livestock universe and technical and market indicators
Data checking: performed using information from Sindirações, Conab, CNA, Sindan, Asbram, Asbia, BNDES, Frigoríficos Balance, Firjan and Athenagro

Services for supply and farms	R$ millions	Industrial demand for supplies	R$ millions	Services and costs for retailers	R$ millions
Auctions and brokers	1,700.1	Advertising, marketing and events	1,526.5	Employees and services	14,106.9
Shipping supplies	7,153.7	Private studies and research	76.3	Packaging and intra-retail shipping	742.7
Technical services	434.6	Support services	480.8	Services and supplies in butcher shops	719.0
Administrative and accounting services	109.3				
Shipping of live animals between farms	859.3				
Cattle for slaughter on the property	3,882.9				

Estimation of social impacts related to the production chain *	R$ millions
Taxes and union contributions **	145,704.1
External wages created by income effect ***	35,559.9

Valuation of livestock stock	R$ millions
	-143,483.42
Calculated by the average stock in arrobas weighted by the price of each category	

Source: Athenagro/ Data: Athenagro, Abiec, Secex, IBGE, Cepea, BNDES

New methodology: Developed by Athenagro, based on the livestock universe and technical and market indicators

Data checking: performed using information from Sindirações, Conab, CNA, Sindan, Asbram, Asbia, BNDES, Frigoríficos Balance, Firjan and Athenagro

Other socioeconomic impacts related to the production chain *

Taxes and union contributions **

External wages created by income effect ***

* item not added to the movement of the production chain / ** total is already included in prices and costs

*** Estimated by income effect; the total will comprise other production chains, proportionally

BEEF CATTLE AGRIBUSINESS MOVEMENT IN 2023 - 179.21 US$ BILLION

Inputs and services for livestock production
29.76
US$ billions

- Nutrition
  29.76
  US$ millions
- Protocols, materials and semen
  290.0
  US$ millions
- Animal health
  1,064.1
  US$ millions
- Fuels, lubricants and electrical energy
  3,761.4
  US$ millions
- Fertilizers, pesticides and seeds
  5,266.4
  US$ millions
- Maintenance, services, parts and expenses
  3,209.7
  US$ millions
- Employees, charges and pro labore
  4,523.1
  US$ millions
- Bulls
  833.5
  US$ millions
- Machinery, equipment and animals for work
  1,133.6
  US$ millions
- Improvements and construction materials
  2,378.6
  US$ millions

Total revenue in livestock farming
37.18
US$ billions

- Slaughtered cattle
  28,799.3
  US$ millions
  - Males
    18,422.5
    US$ millions
  - Females
    10,376.8
    US$ millions
- Replacement animals
  7,319.4
  US$ millions
  - Males
    5,690.6
    US$ millions
  - Females
    1,628.8
    US$ millions
- Genetically improved animals for breeding
  558.1
  US$ millions
- Livestock exports
  484.8
  US$ millions
- Semen exports
  3.9
  US$ millions
- Other livestock revenues
  17.6
  US$ millions

Inputs and services in industry
9.35
US$ billions

- Packaging
  476.5
  US$ millions
- Electricity
  420.5
  US$ millions
- PPE
  19.9
  US$ millions
- Operational supplies
  816.2
  US$ millions
- Services provided
  235.6
  US$ millions
- Freight of live cattle
  589.3
  US$ millions
- Meat freight
  19.9
  US$ millions
- Hired employees
  2,928.3
  US$ millions
- Administrative, associations and marketing
  484.4
  US$ millions
- Other fixed costs
  3,358.1
  US$ millions

Slaughterhouses' revenue
43.32
US$ billions

- Meat domestic market
  26,921.6
  US$ millions
- Meat exports
  9,995.4
  US$ millions
- Leather exports
  1,106.0
  US$ millions
- Leather in the domestic market
  265.3
  US$ millions
- Tallow in the domestic market
  574.4
  US$ millions
- Other by-products
  4,458.5
  US$ millions

Inputs and services in retail
3,116
US$ billions

Total retail revenue
56.07
US$ billions

- Meat sales at retail
  48,101.1
  US$ millions
- Sales of other products
  7,966,013
  US$ millions

Source: Athenagro/ Data: Athenagro, Abiec, Secex, IBGE, Cepea, BNDES

New methodology: Developed by Athenagro, based on the livestock universe and technical and market indicators

Data checking: performed using information from Sindirações, Conab, CNA, Sindan, Asbram, Asbia, BNDES, Frigoríficos Balance, Firjan and Athenagro

Services for supply and farms	US$ millions	Industrial demand for supplies	US$ millions	Services and costs for retailers	US$ millions
Auctions and brokers	340.3	Advertising, marketing and events	305.5	Employees and services	2,823.7
Shipping supplies	1,431.9	Private studies and research	15.3	Packaging and intra-retail shipping	148.7
Technical services	87.0	Support services	96.2	Services and supplies in butcher shops	143.9
Administrative and accounting services	21.9				
Shipping of live animals between farms	172.0				
Cattle for slaughter on the property	777.2				

Estimation of social impacts related to the production chain *	US$ millions
Taxes and union contributions **	29,165.0
External wages created by income effect ***	7,117.9

Valuation of livestock stock	US$ millions
	-28,720.46
Calculated by the average stock in arrobas weighted by the price of each category	

Source: Athenagro/ Data: Athenagro, Abiec, Secex, IBGE, Cepea, BNDES

New methodology: Developed by Athenagro, based on the livestock universe and technical and market indicators

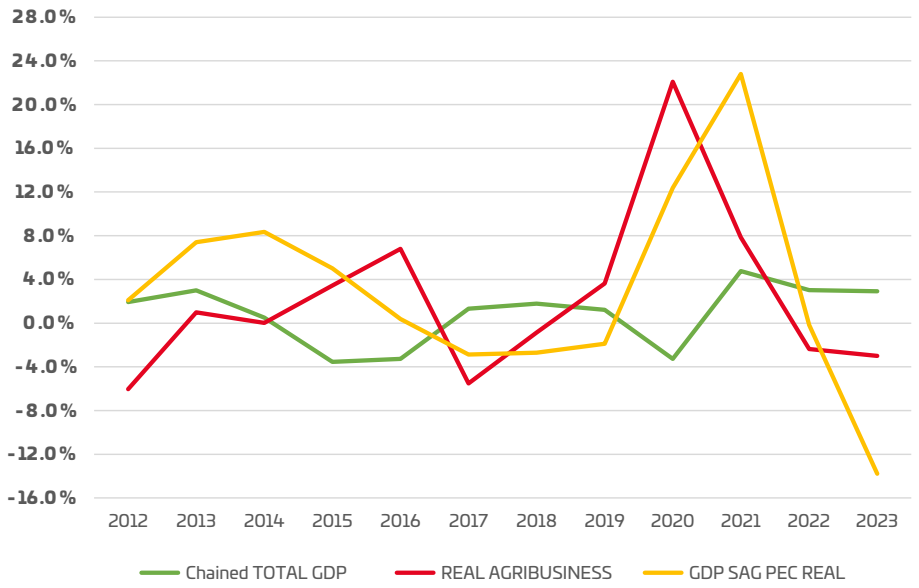
Data checking: performed using information from Sindirações, Conab, CNA, Sindan, Asbram, Asbia, BNDES, Frigoríficos Balance, Firjan and Athenagro

TOTAL GDP, AGRIBUSINESS GDP AND LIVESTOCK GDP (CURRENT AND REAL VALUES BASED ON 2007 AND 2023) - R$ BILLION

R$/Billion - Real (chained)			
YEAR	TOTAL GDP (Real)	TOTAL AGRIBUSINESS	GDP SAG PEC
2007	8,380.72	1,899.76	540.71
2008	8,807.65	1,988.49	683.12
2009	8,796.56	1,874.80	661.10
2010	9,458.79	2,028.98	644.70
2011	9,834.72	2,034.24	648.98
2012	10,023.66	1,911.36	662.65
2013	10,324.86	1,930.20	711.78
2014	10,376.89	1,930.65	771.17
2015	10,008.95	1,996.88	809.86
2016	9,681.07	2,132.54	812.90
2017	9,809.13	2,014.77	789.61
2018	9,984.10	1,997.38	768.27
2019	10,105.98	2,070.07	753.74
2020	9,774.83	2,527.20	847.04
2021	10,240.37	2,725.44	1,040.27
2022	10,549.29	2,660.92	1,038.48
2023	10,856.11	2,581.34	895.32

Source: Athenagro, CEPEA, IBGE data

Average growth rate of GDP of the agribusiness of Beef Cattle (Athenagro), of the Total GDP (IBGE) and of the GDP of Agribusiness (Cepea) - Real Values



Source: Athenagro/ Data: Athenagro, IBGE, Cepea

6.
SUSTAINABILITY

abiec

INTRODUCTION AND POSITIONING

Research, technology and innovation are the factors that most contribute to enabling Brazilian livestock farming to continue increasing its efficiency to meet growing global demand, and to do so in a sustainable way, mitigating climate change and preserving biodiversity.

Brazil has become the second largest producer and the world's largest beef exporter. This position is the result of a number of conditions that were built over an extended period.

Among these we highlight: the country's natural conditions in terms of availability of agricultural land, water and sunlight, the growth of the herd based on a zebu matrix adapted to Brazilian conditions and the use of tropical grasses as pasture, the evolution of technologies aimed at production in a tropical environment, entrepreneurial livestock farmers, the evolution of health controls in the country and a modern industrial hub prepared to meet the demands of different markets.

According to the FAO (Food and Agriculture of the United Nations), approximately 1.3 billion people's lives are supported by animal production, and proteins comprise a fundamental part of healthy diets for people around the world. In 2022, the number of people facing hunger in the world was estimated to be between 691 and 783 million. Food insecurity currently affects 900 million people globally. By 2050, a result of the growth of the population, we will have 2 billion more inhabitants in the world, especially in developing countries.

But considering the expansion of agricultural activities in natural ecosystems and their role in greenhouse gas emissions, it is a global challenge to reconcile the food security agenda with climate change mitigation and biodiversity preservation. With the growth in global demand for protein, society's concern regarding the environmental impacts that this increase in demand may represent is fair.

As the main entity representing the beef industry in Brazil, our position in relation to the sustainability of the meat agro-industrial system can be summarized in the following points:

1 Beef is an essential nutritional source for healthy diets. There is a growing demand for proteins driven by growth in population and income especially in emerging countries. Brazil can potentially meet the domestic and global demand for beef protein in a sustainable way, preserving biodiversity and contributing to climate change mitigation and global food security;

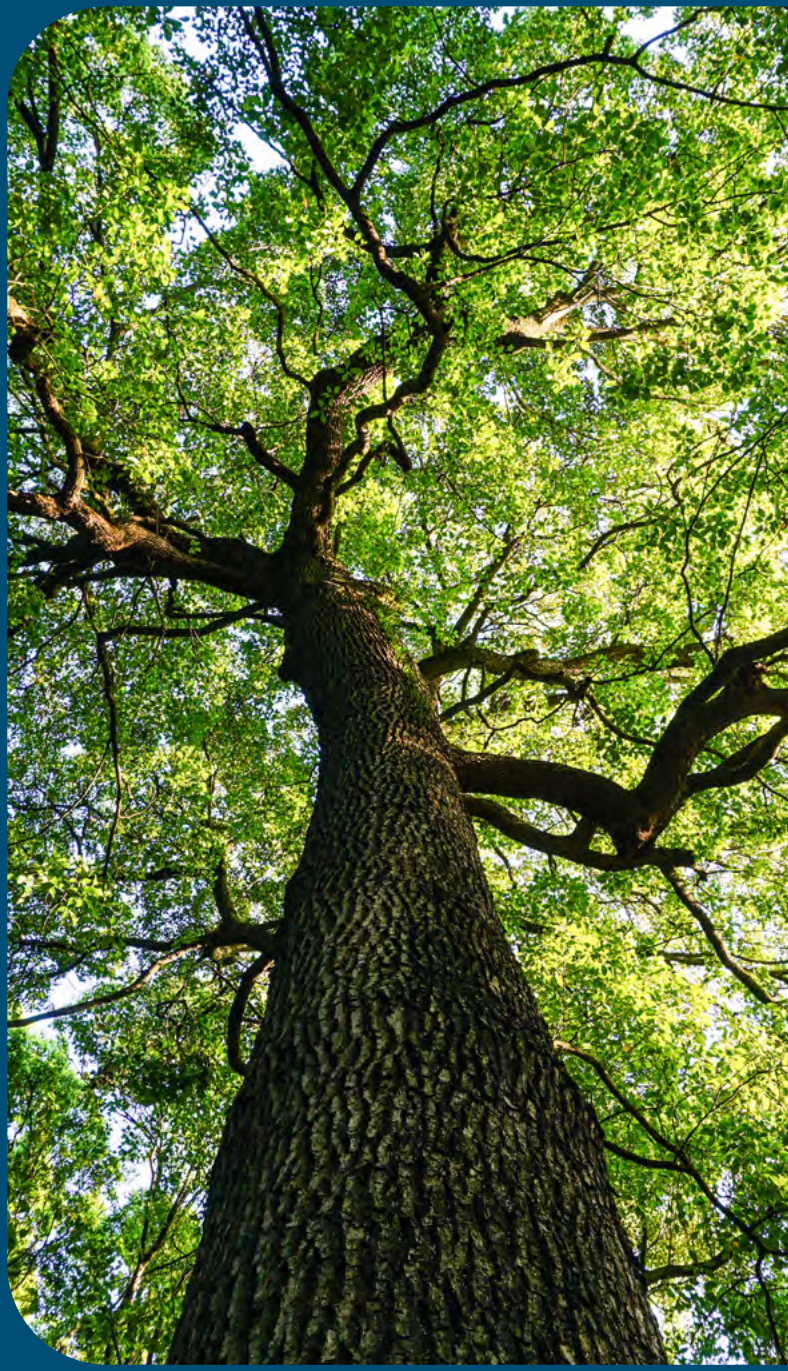
2 Brazilian livestock farming has increased its efficiency in recent decades by enlarging meat production per animal and per area. We are producing more using fewer natural resources and reducing emissions with each kilo of meat produced, thanks to the use of technology, good practices and low-carbon such as pasture restoration and integrated crop-livestockforest system (ICLFS);

3 We see the market as a great engine of efficiency in livestock production, and our gains in productivity reflect the incentive promoted by the production in this market. Restricting access to markets also representes a barrier to continuous improvement in the industry;

4 Despite all the developments in recente years, there is still a large productivity gap in livestock farming, which allows us to affirm that we can further increase beef production without the need to expand the agricultural activity into new areas. Reducing this gap implies targeting investments and technical assistance at farmers, who are at the base of the pyramid;

5 Brazil has a robust public policy framework to achieve the objective of sustainable production. Among these policies we highlight the Plans for the Prevention and Control of Deforestation in the Amazon and Cerrado – PPCDAM and PPCerrado, the Brazilian Forestry Code and the Low Carbon Agriculture including the objective of zero deforestation by 2030 set out in Brazilian commitments;

6 Creating incentive mechanisms to support good farming practices, the preservation of native vegetation and payment for environmental services should be the focus of international cooperation and publicprivate partnerships;



Brazilian Beef Profile

7

The advance of livestock farming on Brazilian territory is the result of a historical process of territorial occupation and expansion of borders planned and encouraged by successive governments since the 1970s based on large infrastructure and colonization projects, which led in the recent past to opening new areas for farm and livestock production in the country. However, today, the deforestation that occurs in Brazil is predominantly illegal. In 2022 in the Amazon, approximately 75% of such deforestation occurred in public areas, and Only 25% in private areas. Since 2009, our companies in the Amazon have made public commitments and invested heavily in systems that use geotechnology and artificial Intelligence to monitor socio-environmental criteria in the origination of animals in the Amazon, including illegal deforestation, environmental regularization and respect for Indigenous territories. Currently, this control is conducted on direct suppliers of cattle to slaughterhouses, in partnerships with the third sector and the Federal Public Prosecutor's Office;

8 Monitoring the other links in the production chain is the major sectoral challenge, which has been tackled by the industry with investments in technology and engagement with farmers. Brazil has a traceability system based on animal transit control built as part of an agriculture and livestock health system for health control purposes. This system guarantees access of Brazilian meat to more than 150 markets globally. The use of the traceability system for socio-environmental control purposes across the chain, including indirect suppliers, implies improvements that are being built in a dialogue between the industry and the Brazilian government. Among these improvements is the integration of public databases for health control and animal transit and environmental information such as the Rural Environmental Registry (CAR);

9 As an Association that currently representes 80% of slaughter and 98% of exports, we are working to achieve a production chain free of illegalities, joining public and private efforts with this objective, in an inclusive and continuous manner.

Throughout this chapter, we will provide data and information that help support this position and understand the real Brazilian scenario in relation to the sustainability of Brazilian production.

HISTORICAL CONTEXT OF LIVESTOCK IN BRAZIL

Livestock farming in Brazil began in the 16th century. To avoid interference with sugar cane production in the northeast region of colonial Brazil, cattle ranchers decided to establish their activities in the interior of the territory, moving away from coastal areas. This strategy allowed cattle farming to expand across the interior of the country, following the course of the rivers.

From the 19th century onwards, the southern region of Brazil, with a temperate climate and natural fields, would become the major hub for livestock production.

The dried meat plants were born there, centers for the production of jerked beef and leather that supplied the rest of the country.

It was at the beginning of the 20th century that zebu cattle were introduced in Brazil, brought from India by pioneers from the state of Minas Gerais.

From this we have the expansion of the herd that accompanies a process of territorial occupation that is stimulated by the State and steps up from the 1960s onwards.

Through infrastructure works and incentive programs for the occupation of the Midwest and North of the country, Brazilians were called upon to occupy and develop the region. This initiative played a fundamental role in strengthening livestock farming and promoting the growth of the activity in these regions.

ABIEC is aware of the historical and current importance of the livestock industry and is committed to supporting and promoting its continued sustainable development.

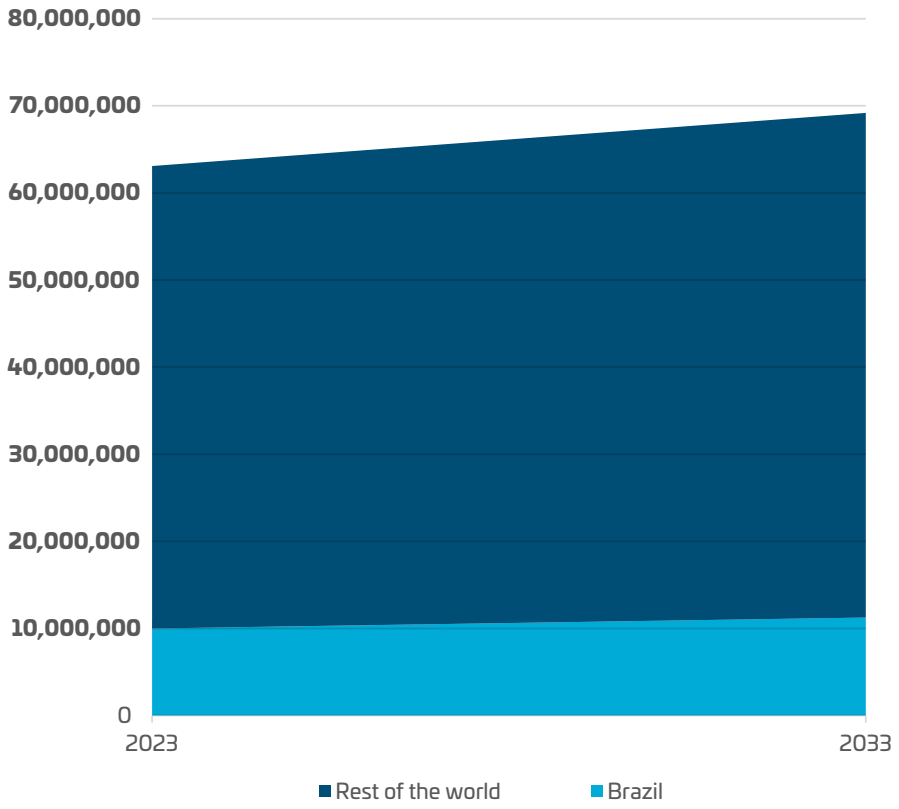
INCREASE IN GLOBAL DEMAND / THE ROLE OF PROTEINS

According to Agricultural Outlook produced by the FAO and the OECD, the outlook of global beef consumption is expected to reach 81 million tons in the next decade. The global per capita consumption has fluctuated around 6 kg for the past decade and tends to remain stable in the next decade. While in most regions it tends to reduce slightly, in the Asia- Pacifi c region it is expected to increase by 0.4 kg per capita per year over the next ten years. In China specifi cally, it should increase double that, that is, 0.8 kg per capita per year, which is mainly due to the increase in the Chinese middle class.

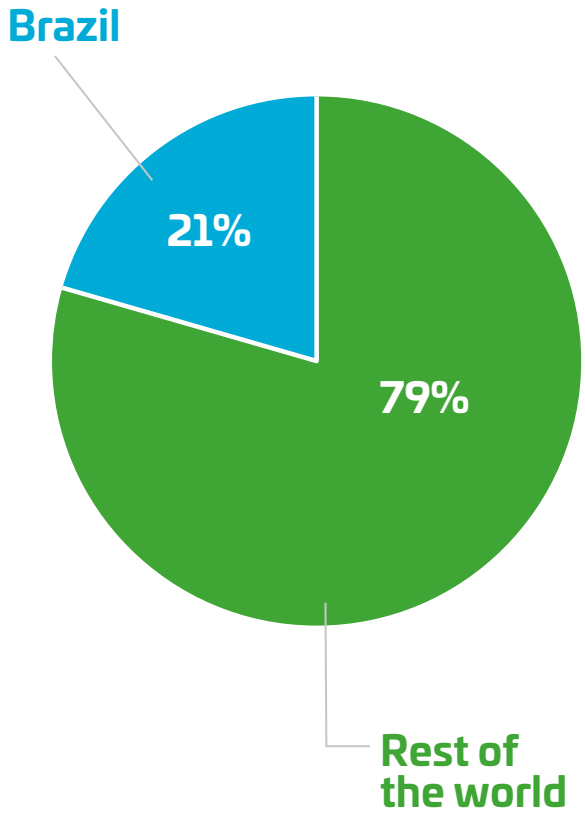
In response, beef production is expected to increase by 8% and contribute with 12% of the increase in global meat production by 2033. In general, the FAO predicts that this increase will mainly come from a better yield, that is, the production of more meat per animal due to the use of technology, better genetics and feed supplements.

Brazil in particular, has the estimative to contribute for Around 21% of the global beef demand in this period.

World beef production in 2023 and estimate for 2033 - CWE



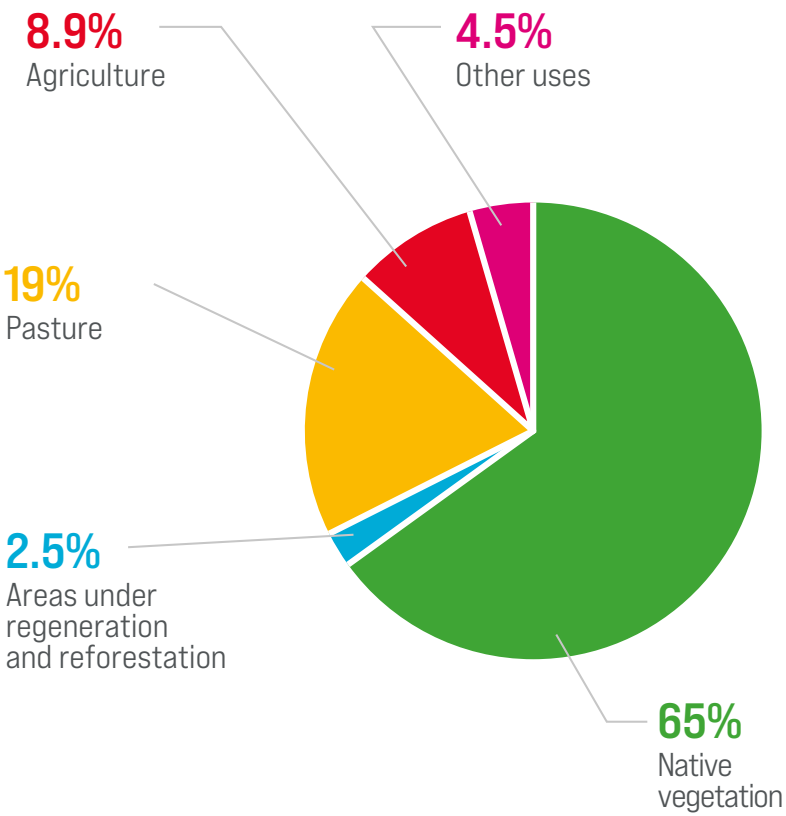
Where will the increase in beef production come from in the next 10 years?



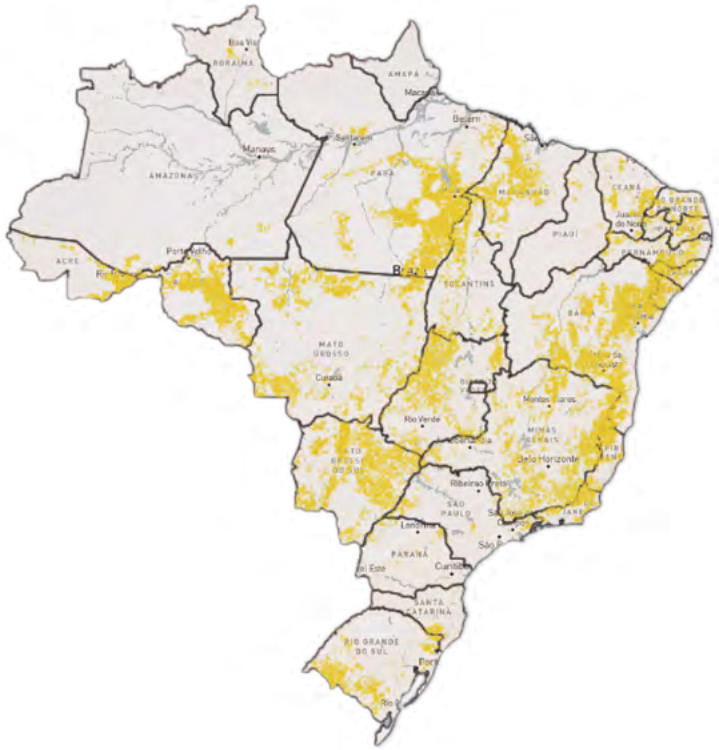
Source: OECD / Athenagro

LAND USE IN BRAZIL - 2023

ORGANIZATION OF LAND USE IN BRAZIL, IN 2023

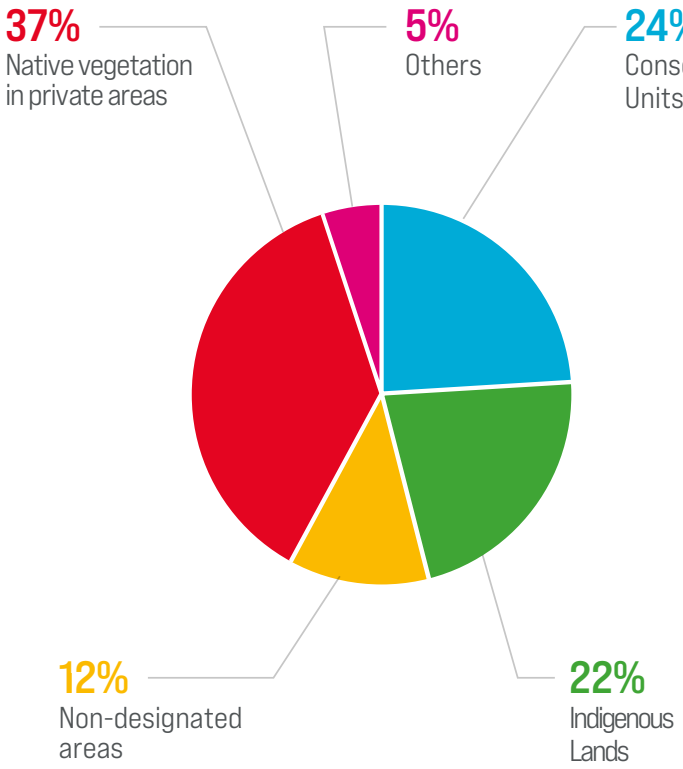


DISTRIBUTION OF PASTURE AREAS IN BRAZIL



Source: Athenagro data, IBGE (PPM, PAM, Censo) , INPE (Terraclass. Prodes), Lapig, Livestock Rally, Embrapa

LOCATION OF NATIVE VEGETATION ACCORDING TO LAND CATEGORIES IN BRAZIL

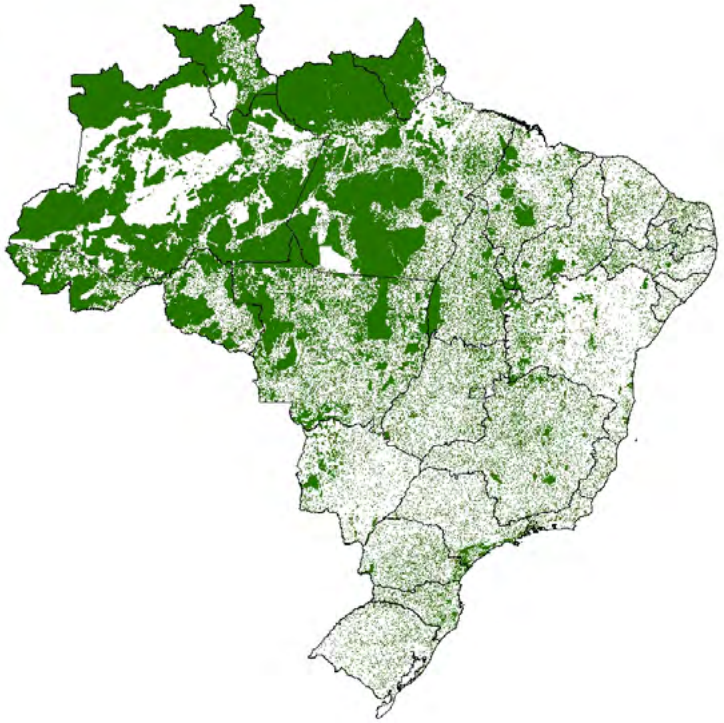


Source: CNI 2021

AREAS DEDICATED TO THE PROTECTION AND PRESERVATION OF BRAZIL'S NATIVE VEGETATION

Protected areas (public lands)

Preserved areas (private land)



Source: Embrapa Territorial, 2021

THE BRAZILIAN FORESTRY CODE AND CAR

Law 12,651 approved in 2012 and recognized as the Forestry Code sets forth that farms must preserve native vegetation through two mechanisms:

Legal Reserve Areas (LR) are a percentage of the property area to be maintained as native vegetation. This percentage varies from 80 to 50% in the Amazon (depending on the year of occupation), 35% in the Cerrado, including within the Legal Amazon, and 20% in the other biomes in the country.

Permanent Preservation Areas (Áreas de Preservação Permanente — APP) area areas to be preserved on properties aiming at protecting water resources. These are areas around river springs, watercourses (from 5 to 500 meters) and hillsides and hilltops that must be permanently covered by natural vegetation.

To comply with legislation, every rural property must register with the Rural Environmental Registration – CAR. The CAR contains the georeferenced perimeter of the property and the remaining native vegetation. After analysis, the responsible agency in each State validates this registration. Farmers who are passive in relation to what is required by legislation must then prepare an Environmental Recovery Program – PRA, providing for the restoration or compensation of vegetation areas necessary for their regularization.

Further information:
www.car.gov.br

PRODUCTION EFFICIENCY

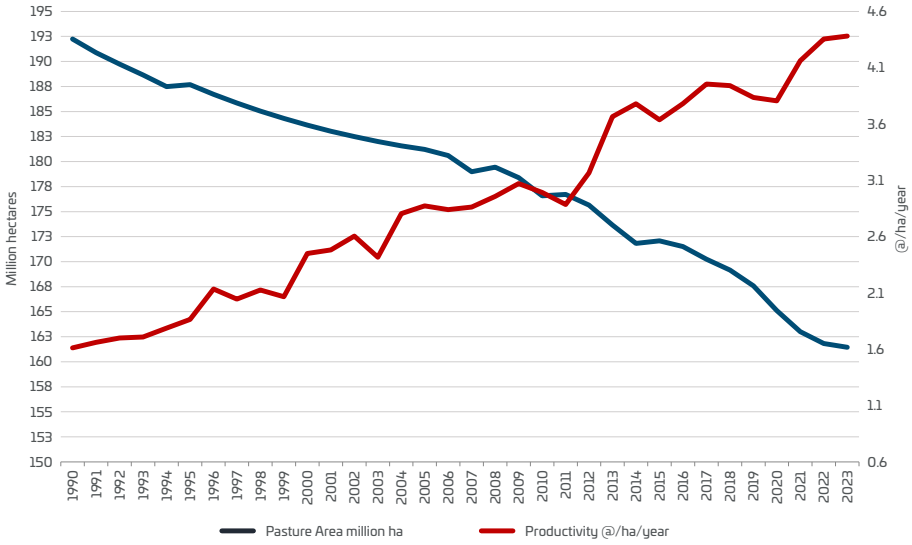
Over the last 30 years, there has been a significant increase in the efficiency of livestock activity, with a 172% increase in productivity. At the same time, the area of pasture used decreased by 16%, reaching about 161 million hectares in 2023.

Former pasture areas end up being designated for other uses, mainly in agriculture, in crops such as grains, sugarcane and planted forests. In the last 30 years around 27.9 million hectares of pastures were transformed into farming areas and other activities, according to consulting firm, Athenagro.

At the same time, the quality of the meat produced in Brazil continues to increase. This is explained by the increased use of technology in livestock farming. Practices such as pasture management and recovery, integrated crop-livestock-forestry systems (ICLFS) allow more animals to be produced in the same area unit.

Other technologies such as genetic improvement, nutritional supplements, welfare practices and animal health allow more meat to be produced per animal.

Evolution of pasture area and livestock productivity



Source: Athenagro, IBGE data (PPM, PPT, PAM, Census), INPE (Terraclass/Prodes), Lapig, Rally da Pecuária, Embrapa

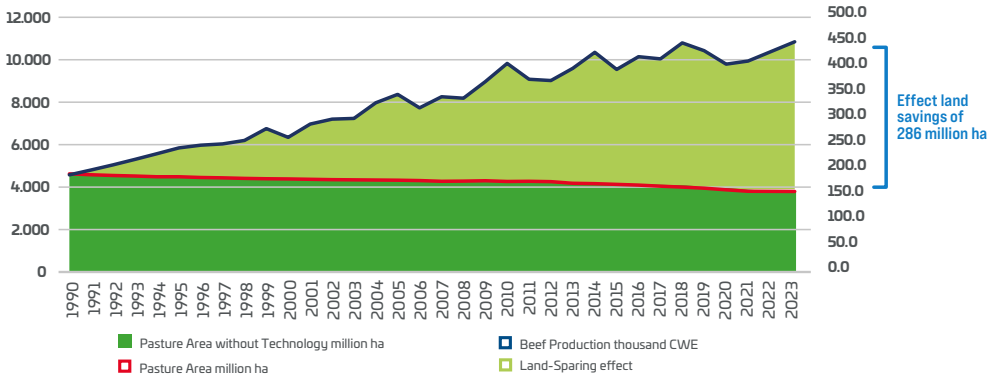
LAND-SPARING EFFECT

It is called the land-saving effect, a concept created by Embrapa in Brazil, which is the effect generated by the application of technology in reducing demand for new areas for production.

If Brazil produced beef today with the same technology as 30 years ago, we would need to occupy an additional 286 million hectares of the country with livestock to have the current production of beef. The use of technology rendered this unnecessary.

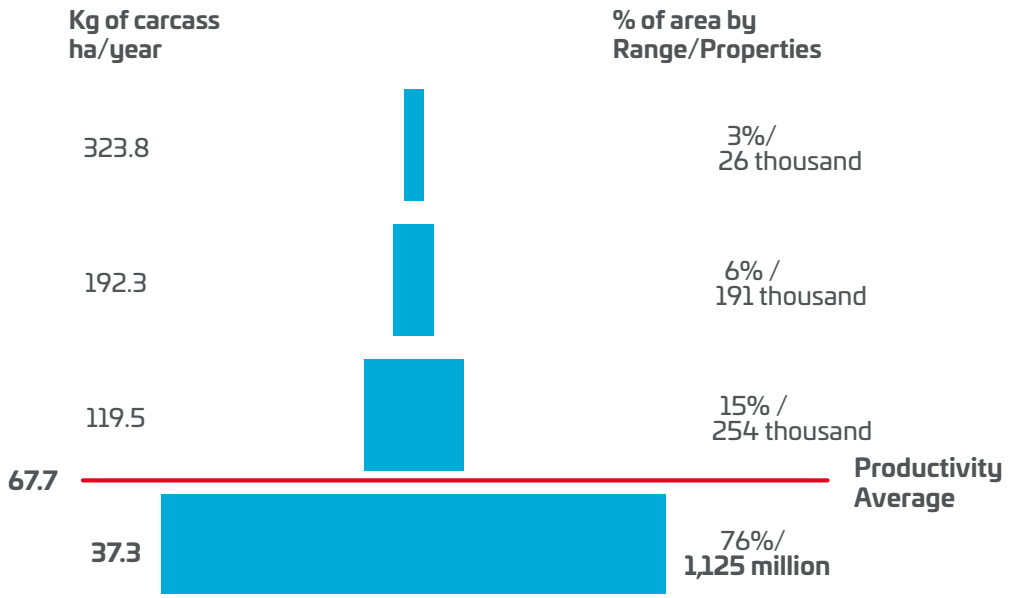
LAND-SPARING EFFECT

How much pasture area would we need to produce the same amount of beef considering technology dating back 30 years



Source: Athenagro, IBGE data (PPM, PPT, PAM, Census), INPE (Terraclass/Prodes), Lapig, Rally da Pecuária, Embrapa

Number of properties by productivity level



Source: Athenagro, based on data from IBGE and Livestock Rally

Still, there is enormous potential for Brazil to further increase its production, even without the need to increase the area.

Please see in the diagram below, the various levels of technology that we fi nd today in Brazilian livestock farming:

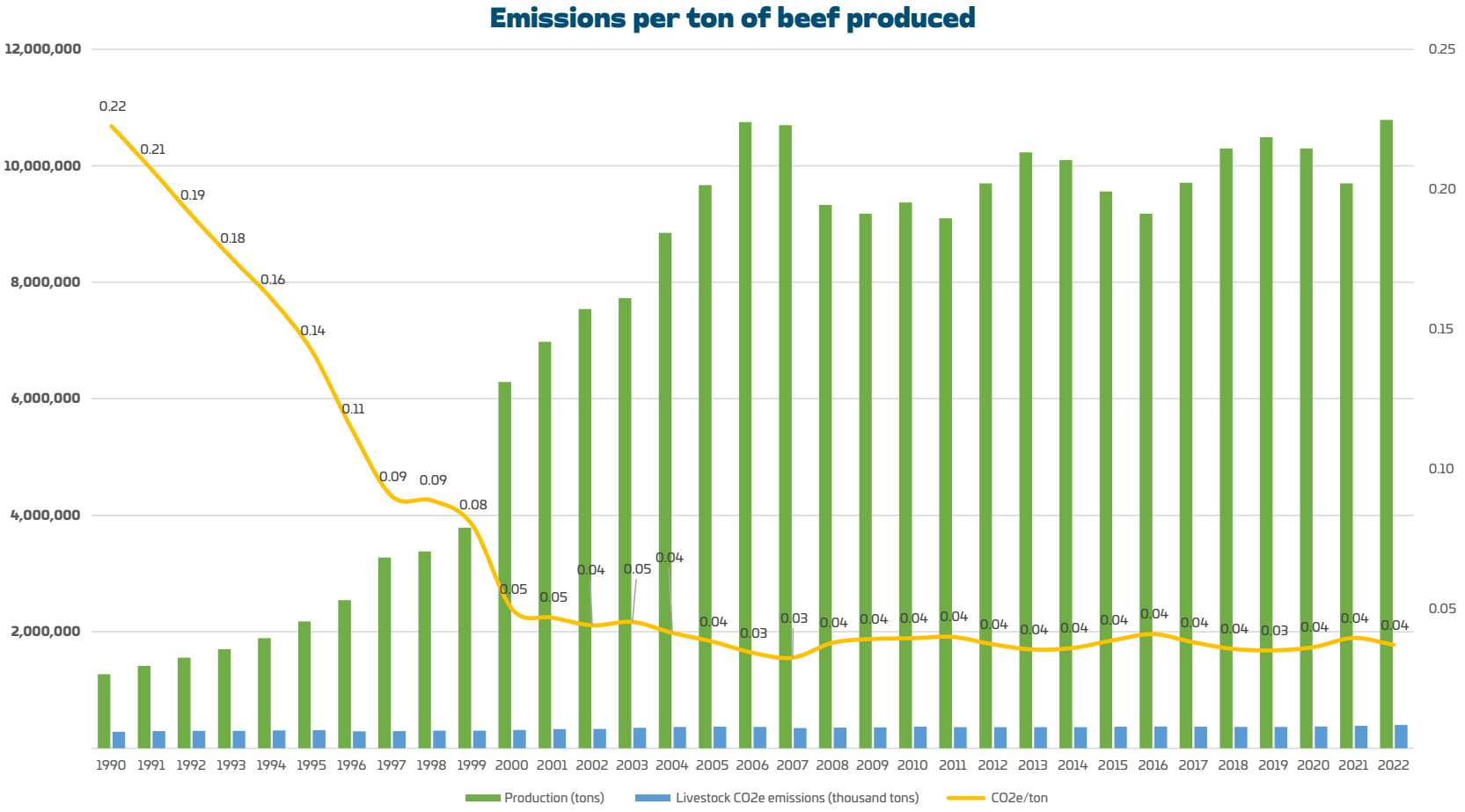
The average productivity of Brazilian livestock farming is 67.7 kg of carcasses per hectare/year. This is an important measure to assess the efficiency of the industry.

It is worth noting that production is lower than that average of 76% of the total area of pastures in Brazil today. If this entire area had the same level of technology as the top of the pyramid, Brazil alone could supply around 68.61% of the global demand for beef. In other words, we can produce much more, without any need to expand the area used for livestock farming.

For this to happen, producers at the base of the pyramid need to have more access to investments and technical assistance to adopt recent Technologies.

EMISSIONS

In the Brazilian emissions inventory, enteric fermentation in livestock accounts for 17% of total emissions. However, the increased use of technologies has allowed the life cycle of animals for slaughter to become shorter over the years. The effect of this can be seen when we see the descending curve of livestock emissions per kg of meat produced:



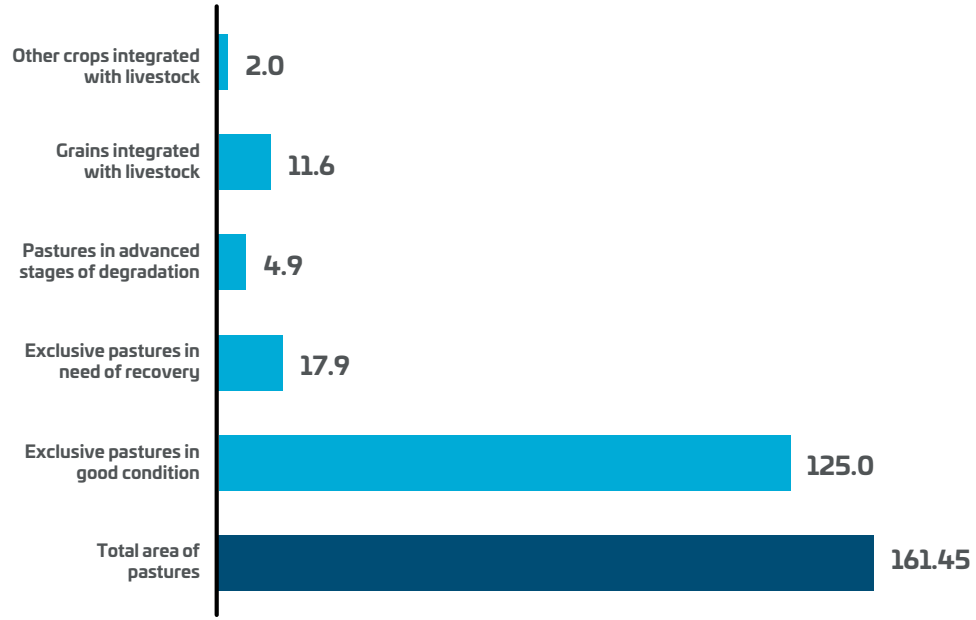
Source: SEEG

However, it is important to note that the basis of Brazilian livestock production is pasture. Wellmanaged pastures have the potential to sequester carbon in the soil. The work of Oliveira Silva, et al., 2016, demonstrates that it is possible for Brazilian livestock farming to increase its production and at the same time reduce emissions, as long as it is dissociated from deforestation. Low-carbon agricultural production techniques are part of the public policy known as Plan ABC+, which, like controlling deforestation, is at the center of Brazilian climate commitments.

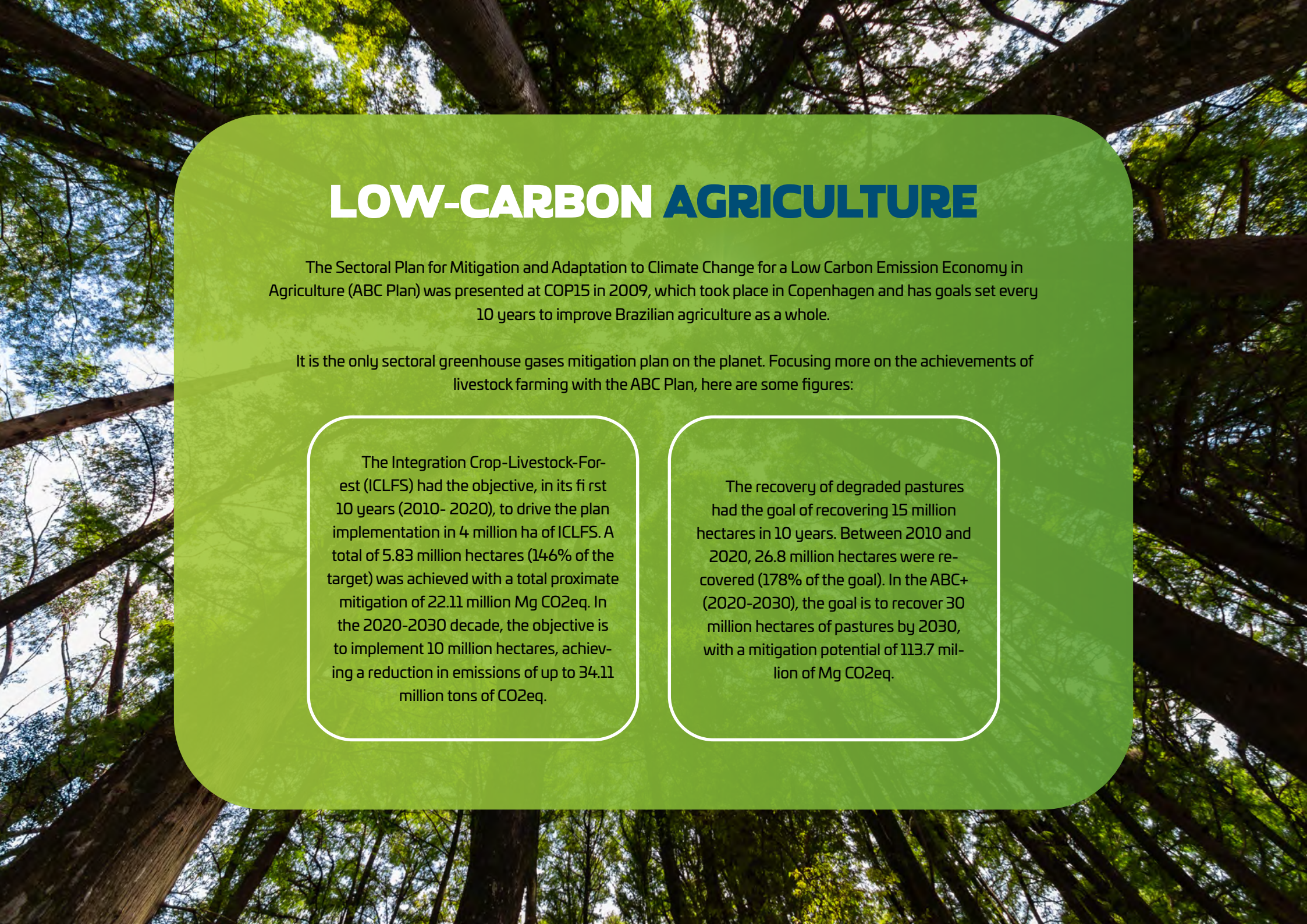
Recovery of degraded pastures has been one of the policy focuses of the ABC Plan since its first edition. According to Athenagro figures, 17.9 million hectares of pasture need recovery and another 4.9 million hectares are already at advanced levels of degradation.

DETAIL OF PASTURE AREAS IN BRAZIL, IN MILLIONS OF HECTARES

Total 161.45 million hectares



Source: Athenagro, IBGE data (PPM, PAM, Census), INPE (Terraclass, Prodes), Lapig, Rally da Pecuária, Embrapa



LOW-CARBON AGRICULTURE

The Sectoral Plan for Mitigation and Adaptation to Climate Change for a Low Carbon Emission Economy in Agriculture (ABC Plan) was presented at COP15 in 2009, which took place in Copenhagen and has goals set every 10 years to improve Brazilian agriculture as a whole.

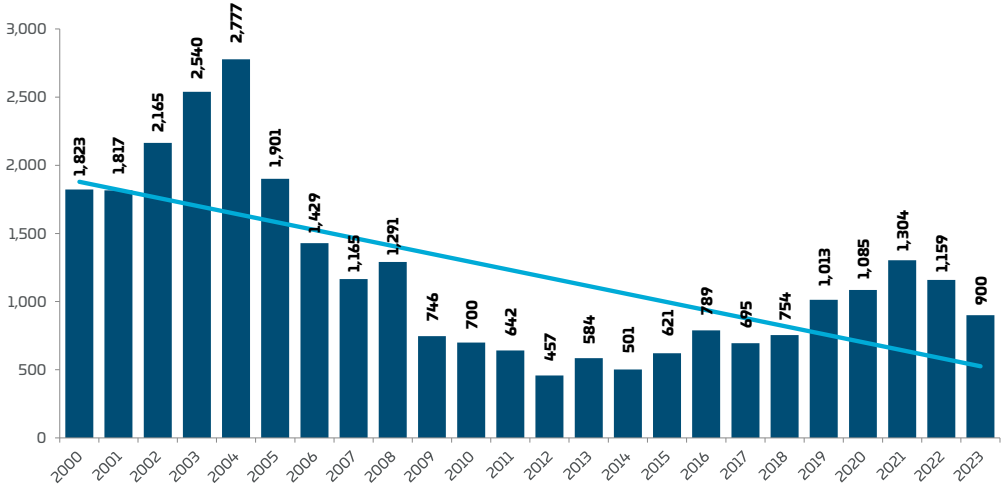
It is the only sectoral greenhouse gases mitigation plan on the planet. Focusing more on the achievements of livestock farming with the ABC Plan, here are some figures:

The Integration Crop-Livestock-Forest (ICLFS) had the objective, in its first 10 years (2010- 2020), to drive the plan implementation in 4 million ha of ICLFS. A total of 5.83 million hectares (146% of the target) was achieved with a total proximate mitigation of 22.11 million Mg CO2eq. In the 2020-2030 decade, the objective is to implement 10 million hectares, achieving a reduction in emissions of up to 34.11 million tons of CO2eq.

The recovery of degraded pastures had the goal of recovering 15 million hectares in 10 years. Between 2010 and 2020, 26.8 million hectares were recovered (178% of the goal). In the ABC+ (2020-2030), the goal is to recover 30 million hectares of pastures by 2030, with a mitigation potential of 113.7 million of Mg CO2eq.

DEFORESTATION

Annual deforestation rates in the Legal Amazon in km2 and hectares



Source: Athenagro, data from PRODES/National Institute for Space Research (INPE)

Prodes

The Prodes project monitors shallow cut deforestation by satellite in the Legal amazon and has produced, since 1988, the annual rates of deforestation in the region, which are used by the Brazilian government to establish public policies. The annual rates are estimated based on the deforestation increments identified in each satellite image that covers the Legal Amazon.

Further information:
www.obt.inpe.br/OBT/assuntos/programas/amazonia/prodes

terrabrasilis.dpi.inpe.br

Starting in 2004, a series of public and private actions contributed to the decline in deforestation in the Amazon. The main public policy that managed to leverage this result was the Plan for the Prevention and Control of Deforestation in the Amazon – PPCDAM.

Among private actions, the Soy Moratorium of 2006 and the agreements signed by the slaughterhouse industry with the Public Prosecutor's Office from 2009 onwards, the so-called Meat Agreements, stand out.

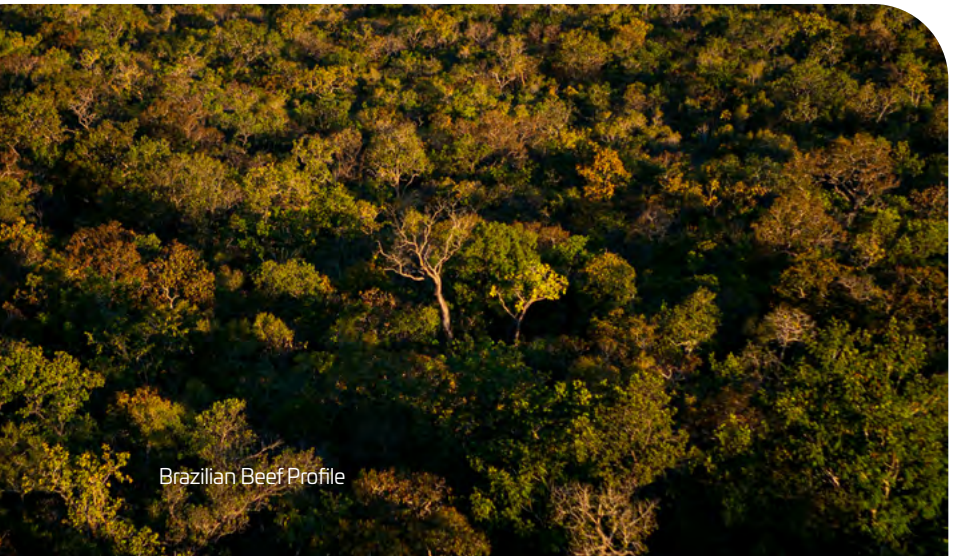
NDC

Presented by the Brazilian government, it aims to reduce greenhouse gas emissions by 48% by 2025 and by 53% by 2030, compared to 2005 levels.

This progressive commitment reflects Brazil's determination to adopt more ambitious emissions reduction targets, with the goal of achieving net zero emissions by 2050.

The Brazilian commitment includes the protection of native vegetation through public protection areas and indigenous territories, and through the Forest Code in private areas. It also includes achieving zero deforestation in the Amazon by 2030, through the PPCDAm and the creation of plans to reduce deforestation in other biomes, such as the PPCerrado.

And Brazil is the only country to have a sectoral plan aimed at reducing emissions in agriculture, the ABC+ Plan.



Plans for the Prevention and Control of Deforestation

PPCDAM:

Created in 2004, the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (PPCDAM) was mainly responsible for the 83% drop in deforestation up to 2012, according to data from the National Institute for Space Research (Inpe). The plan's initiatives kept deforestation below 8,000 km² until 2018.

The 5th phase of the plan, relaunched in 2023, sets the goal of zero deforestation by 2030. It was structured into 4 thematic axes: sustainable production activities; environmental monitoring and control; land and territorial planning; and normative and economic instruments aimed at reducing deforestation and implementing actions covered by the other axes.

Further information:
www.gov.br/mma/pt-br/assuntos/prevencao-e-controle-do-desmatamento/amazonia-ppcdam-1

PPCerrado:

The main objective of the Action Plan for the Prevention and Control of Deforestation and Fires in the Cerrado Biome is to continuously reduce deforestation and create the necessary conditions for the transition to a sustainable development model in the Cerrado.

The PPCerrado approach recognizes that combating the causes of deforestation requires joint and coordinated action, involving different ministries and sectors of society. This plan is a crucial step towards ensuring the preservation of the Cerrado, promoting sustainable practices and strengthening the protection of this important biome.

PNCPD:

In December 2023, at the COP in Dubai, the Federal Government established the National Program for the Conversion of Degraded Pastures into Sustainable Agricultural and Forestry Production Systems (PNCPD) and created its Interministerial Steering Committee. This program aims to recover and convert up to 40 million hectares of low-productivity pastures into arable areas over the next ten years.

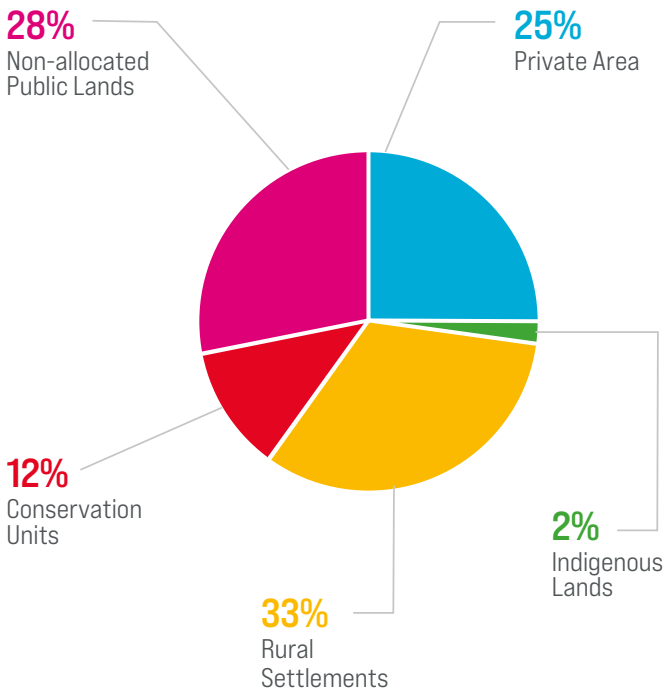
With the implementation of the PNCPD, the government intends to practically double the area of food production in Brazil without resorting to deforestation.

By revitalizing degraded pastures, the program seeks to avoid expansion into areas of native vegetation, promoting sustainability and efficiency in agricultural production.

Unlike a historical process of territorial occupation, the deforestation that occurs in the Amazon region today is predominantly illegal. In 2022, approximately 75% of such deforestation occurred in public areas, and only 25% in private areas.

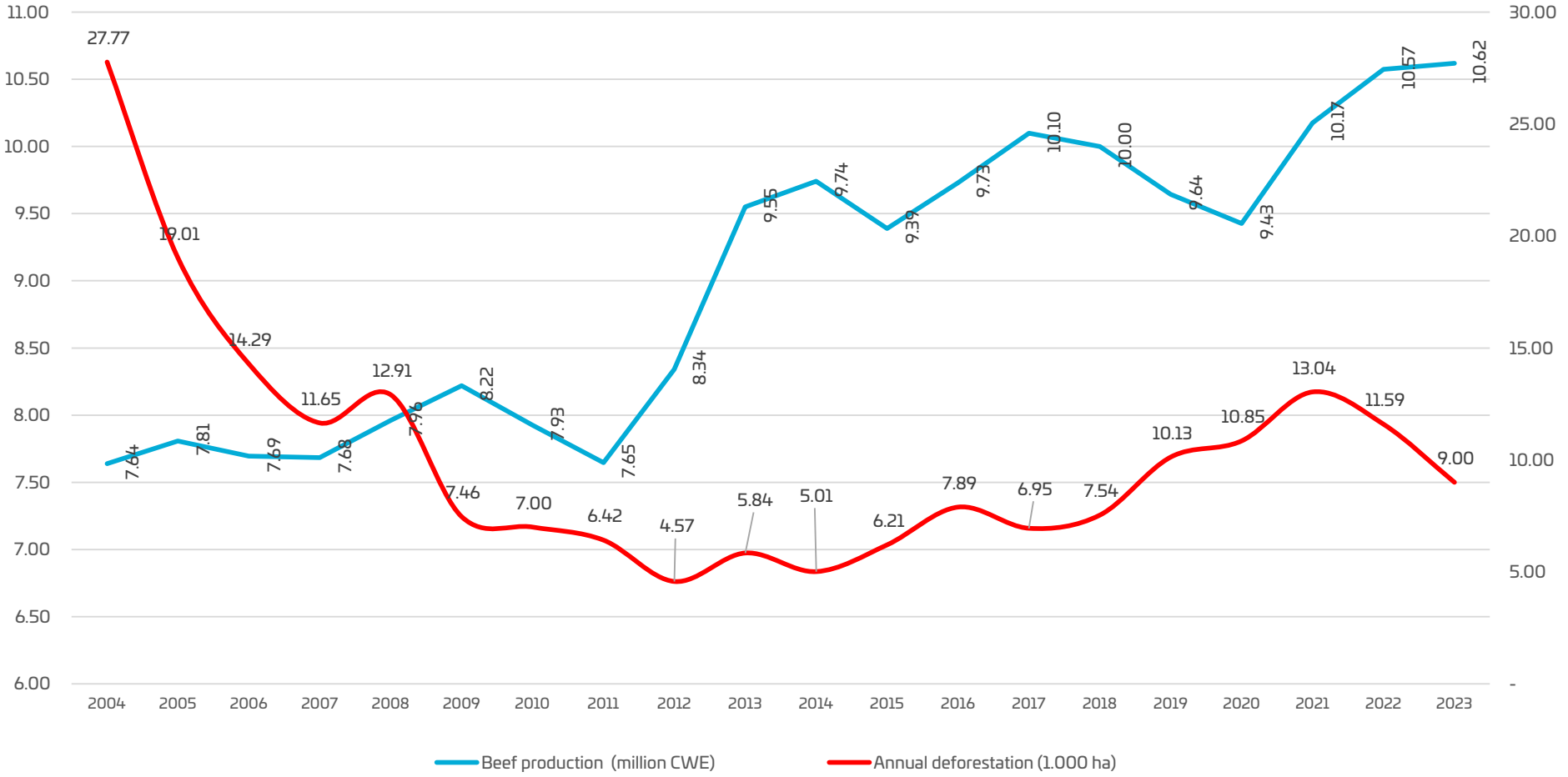
The vast majority of new deforestation converts forests into pastures, and livestock farming is used as a way to guarantee the occupation of these lands, which creates a major challenge for a sustainable production chain.

DEFORESTATION IN THE AMAZON BY LAND USE CATEGORY



Source: PPDCAM 2023-2027

BEEF PRODUCTION AND ANNUAL DEFORESTATION (MILLION HECTARES)



Source: Athenago, data from Agroconsult, Agrosatellite, IBGE, Inpe/Terraclass, Lapig, Prodes, Rally da Pecuária

The conclusion is that the correlation between these two processes is very low. **Brazil does not produce or export more beef because deforestation increases, nor less when deforestation decreases.**

The fight against illegal deforestation depends on public and private actions that can inhibit the ilegal occupation of land and avoid contamination of the chain with the raw material originating from the ilegal occupation.

According to the study The rotten apples of Brazil's agribusiness, a small number of properties with irregularities have the potential to contaminate a significant part of the livestock chain. According to the study, 2% of properties are potentially responsible for 62% of deforestation in the Amazon and Cerrado.

At the same time that it is necessary to eliminate illegality in the production chain, it is necessary to create paths for the regularization of a large Number of producers with non-compliances, but who have the possibility of regularization through the repair of environmental damage. It is also the duty of the public sector to accelerate the regularization of these producers.

INDUSTRY ACTIONS

Since 2009, our associated industries in the Amazon have made public commitments to monitor socioenvironmental criteria of their direct suppliers. These criteria were defined together with the Public Prosecutor's Office, and later unified in a protocol known as Beef on Track.

The map below shows the location of our industries on Brazilian territory.

ABIEC ASSOCIATED SIFS

ABIEC ASSOCIATED SIFS - AMAZON

Source: ABIEC

CURRENTLY, COMPANIES THAT ARE MEMBERS OF ABIEC ACCOUNT FOR:

84% OF SIF SLAUGHTERING IN THE AMAZON

94% OF TOTAL SLAUGHTER OF MEMBERS IN THE AMAZON BIOME HAVE A CATTLE PURCHASE POLICY

87% OF THE TOTAL SLAUGHTER OF MEMBERS IN THE AMAZON BIOME APPLY ALL

Through a cooperation agreement with Imaflora, the non-governmental organization responsible for the development of Beef on Track, ABIEC is implementing a sustainability development plan that is comprised of applying a basic criteria for all members. With this, we intend to have 100% of the slaughter activities monitored in the Amazon by the end of 2024.

BEEF ON TRACK

Created in 2019 as an initiative of Imafl ora, in partnership with the Public Prosecutor's Offi ce, Beef on Track recognizes the complexity of the industry and aims at expediting the implementation of the commitments made by the beef chain in the Amazon and encourage a chain free of socio-environmental irregularities.

The journey of cattle raised on millions of Brazilian farms to the beef arriving on the consumer's table involves an extensive production chain. On this journey, the commitments of the beef chain are central.

With its initiatives, Beef on Track aims at placing cattle ranchers, slaughterhouses, supermarkets, investors, public players and civil society organizations on the same page. The center's objective is to promote good practices through monitoring, auditing and reporting of processes and tools, increasing transparency, pursuing a cattle chain free from deforestation, slave labor or invasion of public lands.

The program also collaborates with the production and sharing of technical knowledge, with the aim of encouraging the creation of policies and procedures for responsible livestock farming.

Further information:
www.boinalinha.org

Among the criteria established by the Beef on Track Protocol and monitored by slaughterhouses are:

- Illegal deforestation
- Overlap with conservation units and Indigenous lands
- Environmental embargoes
- Rural Environmental Register
- Work similar to slavery

CERRADO PROTOCOL

The Voluntary Monitoring Protocol for Cattle Suppliers in the Cerrado was launched on April 23, 2024, with the aim of promoting best practices in socio-environmental monitoring when purchasing beef products in the Cerrado biome.

The protocol establishes a series of criteria and parameters for responsible purchasing that companies must follow to ensure that their supply chains are free from socio-environmental problems. All monitoring criteria are based on open public data. The definition of the criteria included was the result of a rigorous process of public consultations, involving the main stakeholders.

A significant step towards sustainability and socio-environmental responsibility in the beef supply chain in the Cerrado.

Further information:
www.cerradoprotocol.net

TRACEABILITY

Brazil has a traceability system based on animal group movement control. The traceability system is part of an agriculture and livestock health system for health control purposes. This system allows Brazil to have access to more than 150 markets around the world. The European Union market is one of the markets that Brazil has access to that requires individual traceability, but only 90 days before slaughter. The requirement was also motivated by greater health control.

The databases that contain animal movement information belong to the agricultural and livestock health agencies of each state of the Federation, but do not offer public access and are not tools built for socio-environmental control purposes.

Therefore, extending the socio-environmental control conducted by the industry to the entire production chain, depends on improving the already existing traceability systems. That implies in expanding data transparency, as well as movement data integration with environmental information, such as the Rural Environmental Registry.

ABIEC is in constant dialogue with the Brazilian Ministry of Agriculture, Livestock and Supply in Brazil to improve existing tools.

FORUNS

Several forums and multisectoral initiatives are committed to building proposals for the continuous improvement of livestock production and to overcome the challenges that Brazil faces in reducing deforestation and reconciling production, preservation and socio-productive inclusion.

ABIEC is now a protagonist in these initiatives and actively contributes to pursue solutions that can guarantee sustainable production.

Furthermore, we have established technical agreements with organizations such as IMAFLORA and CICB (Centre for the Brazilian Tanning Industry) to strengthen our initiatives and ensure the implementation of good practices in our production chain.

AMONG THE MAIN MOVEMENTS OF WHICH WE ARE PART ARE:

- Coalizão Clima, Florestas e Agricultura
coalizaobr.com.br

- Instituto Pacto Nacional pela Erradicação do Trabalho Escravo
inpacto.org.br

- Mesa Brasileira da Pecuária Sustentável
pecuariasustentavel.org.br

- A ABIEC ainda é membro da Global Roundtable for Sustainable Beef
grsbeef.org

7.
RETROSPECTIVE
AND PROJECTIONS OF LIVESTOCK FARMING

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Projections for the coming years for Brazilian beef cattle farming indicate growth. The herd is expected to grow, as well as slaughter and meat production, in a smaller pasture area.

The Brazilian herd is expected to grow by around 1.4% per year over the next 10 years. During the same period, production is expected to grow at a rate of 3.4% due to gains in efficiency from the growing use of technology, with increases in the occupancy rate and average carcass weight.

For exports, the estimate is for an annual increase of around 2.4% over the next decade.

HISTORICAL DATA AND PROJECTIONS OF LIVESTOCK UNTIL 2033

Variable	Unit	2003	2008	2013	2018	2023	2028	2033
Total Herd	1,000 heads	170,375	175,719	173,572	171,530	197,177	203,060	225,117
Production	1,000 CWE	6,597	7,960	9,550	9,999	10,619	12,436	14,677
Exports	1,000 CWE	1,278	1,978	2,003	2,194	3,030	3,598	3,819
Imports	1,000 CWE	66	32	57	47	62	60	58
Domestic Consumption	1,000 CWE	5,385	6,014	7,605	7,852	7,652	8,898	10,916
Per capita availability	kg of carcass/ inhab/year	31	32	39	39	37	42	50
Estimated beef consumption*	kg of meat/ inhab/year	25	26	32	32	30	34	40
Slaughter	1,000 heads	27,888	33,740	40,526	40,812	41,959	46,046	50,981
Pasture area	1.000 hectares	182,004	179,446	173,652	169,152	161,446	157,067	152,876
Occupancy rate	heads/ha	0.94	0.98	1.00	1.01	1.22	1.29	1.47
Stocking rate	animal units/ha	0.78	0.79	0.78	0.80	0.93	0.98	1.11
Average carcass weight	kg/head slaughtered	236.56	235.94	235.66	245.00	253.08	270.08	287.89
Offtake (slaughter rate)	Percentage	16%	19%	23%	24%	21%	23%	23%

Source: Athenagro, IBGE, Secex | *disregards the carcass bones

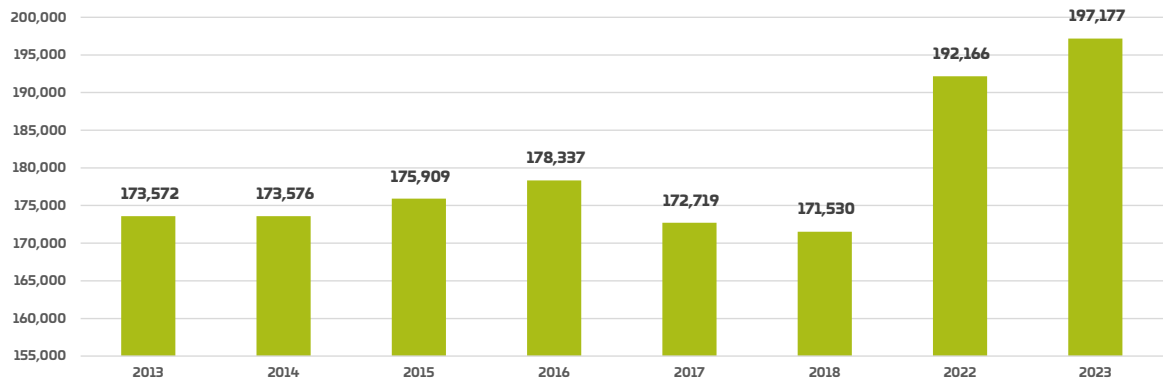
HISTORY OF THE BRAZILIAN HERD, MEAT PRODUCTION, EXPORT, IMPORT, CONSUMPTION, PER CAPITA CONSUMPTION OF BEEF IN THE LAST TEN YEARS

Variable	Unit	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Herd	Mi heads	173,572	173,576	175,909	178,337	172,719	171,530	192,166	197,177	182,4	192,2	197,2
Beef production	Thousand CWE	9,550	9,742	9,389	9,730	10,099	9,999	10,574	10,619	10,174	10,574	10,619
Export	Thousand CWE	2,003	2,042	1,828	1,825	1,968	2,194	3,018	3,030	2,478	3,018	3,030
Import	Thousand CWE	57	77	59	64	57	47	81	62	71	81	62
Consumption	Thousand CWE	7,605	7,777	7,620	7,969	8,188	7,852	7,637	7,652	7,767	7,637	7,652
Per capita consumption	kg/head/year	39	40	39	40	41	39	38	37	38	38	37

Source: Athenagro, Secex, IBGE

HERD EVOLUTION

Millions of heads



Source: Athenagro, IBGE data (Census, PPM, PPT)

8.

ANIMAL HEALTH

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BOVINE SPONGIFORM ENCEPHALOPATHY

Brazil has never had a case of classic BSE. To date there have been 5 atypical cases occurring in the following states: Paraná (PR — 2010), Mato Grosso (MT — 2014, 2019 and 2021), Minas Gerais (MG — 2021) and Pará (PA — 2023).

By means of Normative Instruction no. 44, dated September 17, 2013, Brazil created the National Program for the Prevention and Surveillance of Bovine Spongiform Encephalopathy (PNEEB), which is structured into subprograms for control, surveillance and assessment of possible outbreaks.

Brazil has been recognized by the World Organization for Animal Health (WOAH) since 2012 as being at negligible risk for the disease; this recognition is due to precautions taken by Brazil to ensure that the disease does not enter the country, as well as conditions which do not favor the spread of the disease because of the production systems used in the country, and owing to the country's climate.

FOOT AND MOUTH DISEASE

The most recent outbreaks of foot and mouth disease in Brazil occurred back in 2005. In 1992, MAPA implemented the Strategic Plan of Brazil's National Program for Surveillance of Foot and Mouth Disease (PE-PNEFA), whose objective is "to create and maintain sustainable conditions for ensuring Brazil's status as a country free of foot and mouth disease, and to extend the zones that are free of foot and mouth disease where vaccination is not practiced, in order to protect Brazil's livestock wealth and generate the greatest possible benefi t both for the actors involved, and for Brazilian society as a whole."

This plan was designed to be executed over a ten-year period from 2017 to 2026, using vaccines, serological assays, and the ante-mortem and post-mortem inspection of 100% of the slaughtered animals.

Brazil has advanced in its OIE (WOAH) status, and currently the entire territory of the country is deemed FMD-free; the following states: Rio Grande do Sul (RS), Santa Catarina (SC), Paraná (PR), Acre (AC), Rondônia (RO) and parts of Amazonas (AM) and Mato Grosso (MT) are FMD-free where vaccination is not practiced.

ON MAY 24, 2018, BRAZIL WAS RECOGNIZED BY OIE AS AN FMDFREE COUNTRY WHERE VACCINATION IS PRACTICED.

SUPPLYERS


3R
FRIGORÍFICO
LOANDA - PARANÁ


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FOODS


FRIGORÍFICO
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Pantanal


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Frigorífico
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9.
CLARIFICATIONS

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NOTE 1: ABOUT USING THE BEEF REPORT

Every year, Abiec, with the support of Apex, publishes the Beef Report on the content of Brazilian livestock farming.

Working with statistics in Brazil is not an easy task, especially in livestock farming, an activity present in all municipalities in the country. The land structure in Brazil is complex, with approximately 75% of producers owning less than 50 hectares, holding 16.5% of the herd. It may not seem like much, but that's 32 million head of cattle. If you add the producers with 50 to 100 hectares, the total herd on properties smaller than 100 hectares will be almost 60 million head distributed across 2.1 million rural registrations.

And the difficulties don't stop there. The criterion for calculating land exploitation efficiency, established by INCRA through normative instruction No. 11, of April 4, 2003, uses the age of the animals to estimate the weight for conversion into animal units. As the herd has become increasingly younger, some producers end up keeping a non-existent stock of older animals in their accounts, creating statistical distortions in the herd.

In Brazil's livestock sector, any small variation in the data for each property can lead to a huge difference in the statistics, precisely because of the size of the livestock sector. In addition to the delay in releasing information, there are constant revisions that end up being made to the official figures.

An example of this difficulty is the publication of the Beef Report 2023, published in 2024. After all the data was finalized, the municipal livestock survey (IBGE), the main source of regionalized information for the Brazilian herd, had not yet been released for the year 2023. Only after the publication of the final data will it be possible to quantify with greater accuracy information related to informal slaughter and the number of males slaughtered over 36 months of age.

Another relevant piece of data published by IBGE and MAPA refers to slaughter by federal, state and municipal inspections. Although they are available at the time of the data finalization, revisions to the statistics from previous months are still expected. Any change in statistics also ends up impacting the movement of the GDP of the production chain and other related indicators, including productivity calculations.

In view of this reality, at the suggestion of Athenagro, Abiec chose to publish preliminary information updating historical data, instead of waiting for the official statistics to be defined. Since the 2015 edition, Athenagro has been responsible for organizing the livestock statistics that will make up the publication.

It is important to remember that, even if there are differences in the final numbers between one edition and another, each publication will always update the numbers of previous ones and will also allow for the review of methodologies to monitor the most sensitive livestock data, such as total herd and pastures.

Therefore, the editors of the Beef Report suggest that you always use data from the same edition, avoiding comparing statistics from different editions.

NOTE 2: ABOUT REVISIONS TO HERD NUMBERS

Until the 2020 edition, the number of heads of cattle in the Brazilian herd was disclosed according to the Municipal Livestock Survey, by the IBGE (Brazilian Institute of Geography and Statistics). However, the behavior of the market between 2019 and 2021 proved the impossibility of having a herd of that size in Brazilian territory, a situation frequently discussed among livestock technicians. Based on official data from Brazil and several other studies conducted by the private sector, it is increasingly accepted that the Brazilian herd, in that period, was between 175 and 190 million heads.

Therefore, Athenagro began testing two different methodologies to monitor the herd based on official IBGE figures.

The first methodology consists of using municipal data identified by the 2017 Census, adding, for each year, the variation in the herd identified by the municipal livestock survey, also by the IBGE. The sum of all municipalities would generate the data for each state and, subsequently, the sum of the states would generate the herd for Brazil. The following year, the same criterion would be adopted based on the number calculated in the previous year, adding again the variation in each municipality and so on. When there is a negative variation that leads to negative numbers for the herd, the data for that year is disregarded, keeping the previous one. For 2022, according to this methodology, the herd would reach 192.2 million head, lower than the 234.4 million from the municipal livestock survey, the latest data available. In 2023, considering the slaughter movement and indicator estimates, the preliminary number of the herd, according to this methodology, is 197.17 million head.

The second methodology uses the same criteria, but assumes that the animals slaughtered during the year have remained in the herd for at least half of the year. Therefore, 50% of the total number of animals slaughtered in the inspected market (federal, state and municipal systems) are added proportionally by state, according to the Quarterly Livestock Survey, also from IBGE.

According to this criterion, the 2022 herd would have 202.8 million head and would reach 211 million in 2023.

The second herd criterion was adopted for the publication of the Beef Report in the 2022 and 2023 reports. However, at the end of 2023, through a comparative analysis between census data and field research conducted by Athenagro – the Livestock Rally, it was possible to estimate the Brazilian commercial herd, separating what is produced as surplus for sales from what is kept for own use, with inconsistent sales by properties. In order to avoid using numbers estimated by a consultancy, Athenagro suggested to Abiec that the data published in the Beef Report be those of the first methodology, which generated different information published in the Beef Report 2024, referring to the 2023 movement.

Despite the disruptions of these two changes, it is important to remember that this is an ongoing search to improve the data analyzed, always using official information as a statistical basis.

Another relevant piece of information is that, after meetings mediated by Abiec between Athenagro and the USDA team responsible for the surveys in Brazil, the North American institution began to adopt the same methodology as the 2024 publication. The differences between the final USDA figures and those published in the Beef Report are explained by the methodology for weighting data year after year.

NOTE 3: ABOUT CHANGES IN PASTURE FIGURES

Athenagro's current pasture area is based on the Lapig area with some revisions made based on census data, developments in the agricultural area (PAM, Agroconsult, Conab) and the process of pasture degradation identified in the latest editions of the Livestock Rally.

Lapig is an initiative in constant development. Therefore, the databases are frequently updated with the insertion of new data that also cause changes in Athenagro's final figures.

Between the 2023 and 2024 publications, there was an increase of 18.3 million hectares in the pasture area in the data for the years 2021 and 2022. Since no explanations were published that would allow for better understanding, we adjusted the pasture area based on comparisons with other databases, already used to identify annual changes in pasture areas.

Athenagro assumes that all deforested areas would be converted to pasture. Although this represents a trend, it does not imply a rule, but it will be treated as such in the statistics. If all deforested areas are considered pasture, the agricultural area can only grow over pasture areas, for the purpose of calculating by area difference. This is why regional agricultural development bases are important for calculating pasture areas.

The sum of all areas dedicated to agricultural and forestry crops is identified and the evolution of these areas is used to calculate the previous pasture balance. The same criterion is used for deforestation, the source of which is Prodes/INPE.

We used this data from the current known area back to the known points from the censuses of the 1980s and 1990s, whose data is more accepted. When we applied this methodology, a considerable difference began to emerge in the areas. This difference was treated as an area in regeneration, or the sum of the area of degraded pastures.

NOTE 4: EXPLANATIONS ON EXPORT DATA

CWE (Carcass Weight Equivalent) is the indicator used to standardize the quantity traded with the quantity of carcasses. It is generally used to calculate exports.

Based on the weight of the fresh or processed meat, the weight loss resulting from deboning and processing (in the case of processed meat) is estimated. The calculation is obtained from the following relationships:

Carcass equivalent: Each 1 kg

= fresh meat with bone x 1.0

= fresh meat without bone x 1.3

= processed meat x 2.5

Metric ton, in the case of beef, is the quantity in standardized mass units. This is the total weight, regardless of whether it is a carcass, boneless meat, processed meat or offals.

Brazilian Beef

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BRAZILIAN GOVERNMENT
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abiec@abiec.com.br

Escritório São Paulo - SP
Avenida Brigadeiro Faria Lima, 1912
14º andar | Conjunto J | CEP 01451 - 000
São Paulo - SP | +55 11 3531 7888

Escritório Brasília - DF
SGAN 601, Bloco H
Sala 25, SS1 - Ed. Ion | CEP 70830 - 010
Brasília - DF | +55 61 3772 6530