

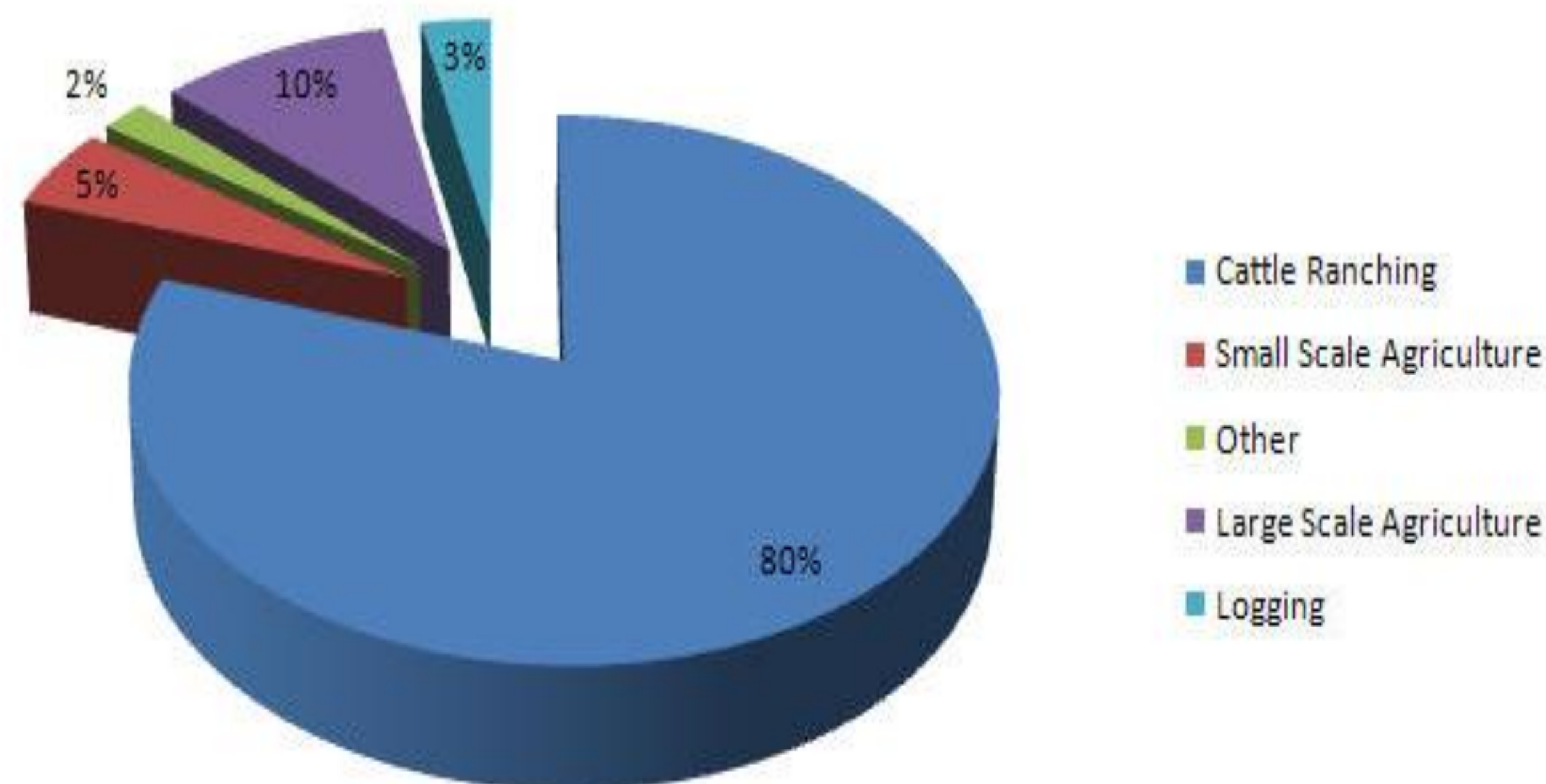
# Deforestation in the Brazilian Amazon

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## Drivers

- Brazil has the largest forested area cleared annually of any country.
- Raising beef accounts for 80% of deforestation in the Amazon rainforest.
- Another 10% is due to large scale farming of mainly soy, which is used as feedstock for the cattle
- 20% of the rainforest has been cleared since 1970
- Cattle has exploded from 26 million in 1990 to 90 million, with over 550 000 square kilometres of pasture, an area larger than France.
- The land tenure laws in Brazil state that clearing the forest and placing cattle on the land entitles you to that land, essentially free land purchase

Causes of Deforestation In Brazilian Amazon



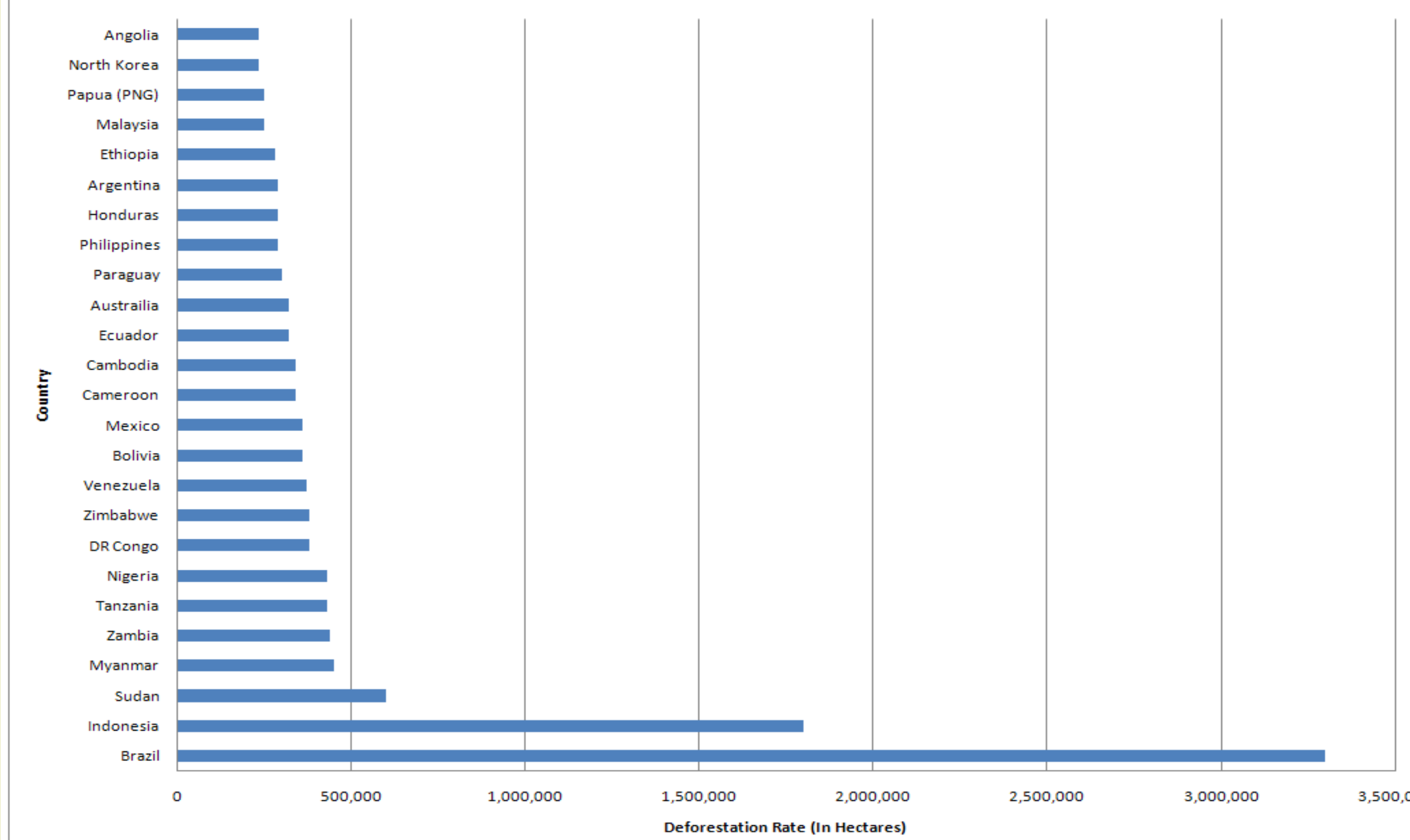
## Impact: GHG emissions

- Majority of deforestation is done by controlled burning of the land, releasing millions of tonnes of carbon dioxides and nitrogen oxides into the atmosphere.
- The amount of carbon that the Amazon rainforest is absorbing from the atmosphere and storing each year has **fallen by 1/3** in the last 10 years
- This decline in the Amazon carbon sink amounts to one billion tonnes of carbon dioxide remaining in the atmosphere, more than double Brazil's annual emissions
- If this pattern continues worldwide, deeper cuts in human-caused carbon dioxide emissions are needed to meet climate targets.

## Impact: Biodiversity loss

- Biodiversity loss is currently estimated at 1000 times the 'natural' rate of extinction
- 57% of the 15,000 Amazonian tree species –wild cacao and açai – face extinction at current rates of land clearance along with 30% of the worlds terrestrial species
- Global wildlife populations have declined 58% since 1970, primarily due to habitat destruction
- Amazonian forests account for about 10% of the world's terrestrial primary productivity and 10% of the carbon stores in ecosystems
- Loss of plant biomass along with land clearance is accelerating the rate of climate change

Average Annual Deforestation Rates in hectares 2000-2005



## Conclusions

- Computer models show severely reduced rainfall and increased temperatures could lead to an almost complete loss of rainforest cover in the Amazon by 2100
- In November 2017, 15,364 world scientists signed a Warning to Humanity calling for drastically diminishing our per capita consumption of meat.

## Impact: Rain Pattern changes

- Sao Paulo underwent the worst drought in 80 years between 2014 and 2015
- The loss to farmers is estimated at \$6.25bn US as a result of the drought
- The Amazon rainforests create the “flying rivers” that bring rain to the central and south areas of the country
- Deforestation has led to decreased rainfall in the area that supplies 30% of the countries wealth.



Without the flying river, much of southern Brazil, which produces approximately 70% of the country's GNP would be arid desert

## References

- Figure1 (left): Lind, D, 2010, Impacts and Causes of Deforestation in the Amazon Basin, Johnston State College, <http://kanat.jsc.vsc.edu/student/lind/main.htm>
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