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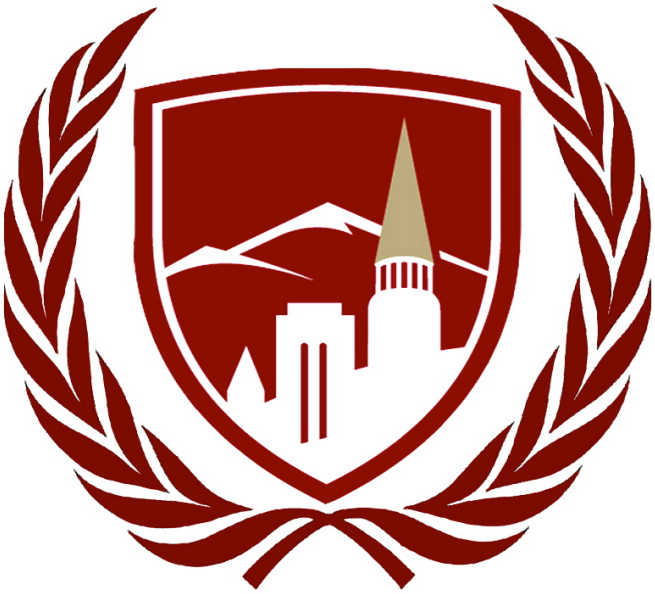

INTERMEDIATE ORGANIZATION OF AMERICAN STATES

Preservation of the Brazilian Rainforests

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Introduction

The Brazilian Amazon has long been home to indigenous tribes of South America; these small communities who's involvement in the jungle predates the arrival of Europeans to the Western Hemisphere, laid the foundation for future and more extensive human involvement in the Amazon. Its vast array of natural resources leaves endless possibilities to benefit mankind. Throughout the centuries, humans have perfected the cultivation of a vast number of plants for human consumption. This involvement has greatly decreased the size of the vast rainforest as well as depleted soil nutrients, reducing the possibilities for reforestation. Additionally, the deforestation of the Brazilian Amazon has been positively correlated with rising atmospheric carbon dioxide levels.

History

The Amazon rainforest has felt the impact of mankind since well before the Europeans made contact with the Western hemisphere at the end of the 15th century. Indigenous communities have been utilizing the vast resources of the rainforest for centuries: the insects, plants, and animals of the region have proved incredibly valuable in agriculture, clothing, as well as medicine[1]. While these indigenous communities helped proliferate the forest by aiding the dispersion and growth of Brazilian nut trees, their impact helped to destroy the forest bordering the Atlantic Ocean in the south-central part of what is now Brazil. For three centuries of human habitation of the Amazon, the forest was easily able to repair itself due to low population size. However, after the arrival of Europeans and the advent of colonization, the damage brought about by mankind quickly superseded the forest's regrowth abilities. Colonization brought about the harvesting of rubber, soybeans, cocoa, coffee, exotic plants and animals, as well as the ranching of cattle. All of these industries required massive highways and transportation systems, as well as larger communities, which required massive amounts of forest clearings[2]. These

[1] "Amazon," World Wildlife Fund.
[2] "Deforestation in Amazonia," The Encyclopedia of Earth.

enterprises not only helped deforest the Amazon, but also destroyed the soil composition from which it grew, preventing or severely inhibiting potential future regrowth[3].

Since the 1970s, the Brazilian Amazon has lost over 600,000 squared kilometers (approximately 232,000 squared miles) of forest coverage. Between 2000 and 2005 alone, Brazil lost over 132,000 squared kilometers—an area larger than the size of Greece—of amazon forest. The emissions released from the massive deforestation that takes place each year in the Brazilian Amazon has accounted for about 80% of the nation's yearly emissions output since 1996[4]. While significant deforestation levels have been actively recorded since the 1970s, the problem has been one of Brazil's primary focuses since the early 1960s, when the Forest Code was enacted. This code required owners of rainforest land to maintain at least 80% of native vegetation on their land[5]. However, since its enactment, the code has not been enforced with overwhelming support from the government, law enforcement, or citizens. Further legislation was enacted in the 1970s and 80s in an attempt to further protect the Brazilian Amazon, however, these attempts were met with the same effect as the Forest Code[6].

In 2002, the Convention on International Trade of Endangered Species restricted the trade of Brazilian mahogany[7], thus helping to rejuvenate the tree's prominence throughout the Brazilian Amazon along with demonstrating that restricting the trade of certain Amazonian tree species can, in fact, facilitate their regrowth. After the mahogany resurgence the Brazilian government implemented laws restricting the allotted amount of logging to certain Amazonian tree species, and prohibiting the logging of others to all but indigenous people. However, these indigenous communities still see hundreds of violent loggers illegally taking prohibited trees each year.

Typically, tropical rainforests are correctly associated with the absorption of Carbon Dioxide, thus somewhat reversing the harmful effects of the human race and industrialization. In fact, the Brazilian segment of the Amazon is typically responsible for absorbing about 1.5 billion tons of carbon from the Earth's atmosphere each year[8]. However, in 2005, a severe Amazonian drought –brought about by abnormally high mid-Atlantic temperatures during the forest's dry season— led to a highly destructive, forest-wide fire[9]. The results when the smoke cleared were devastating: the fire dried out river beds turning them into muddy ponds, thus reducing the electric power generated by hydro plants, which accounted for at least three quarters of the nation's electricity as well as separating and isolating river-based communities and halting river-based commerce. Due to the large presence of the Amazon River and its streams, these upsets devastated the nation's economy. Additionally, this fire caused the release of over one gigattone of carbon into the atmosphere, equivalent to one tenth of mankind's average annual carbon footprint[10]. This drought was followed by a similarly structured one in 2010, which severely hampered the forest's ability to absorb its average, annual 1.5 billion tons of carbon for both 2010 and 2011; additionally, the hundreds of trees burnt in the fire are estimated to have released

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[3] Eduardo Galleano, *Open Veins of Latin America*, (New York: Monthly Review Press).
[4] "The Amazon," Mongabay.
[5] "Environmental Law in Brazil: Compromise or Deadlock?" *The Economist*.
[6] "Deforestation in Amazonia," The Encyclopedia of Earth.
[7] "The Amazon," Mongabay.
[8] "Amazon rainforest drought caused huge carbon emissions," Mother Nature Network.
[9] "The Amazon," Mongabay.
[10] "Drying in the Amazon rainforest - what could it mean for climate change?" The Carbon Brief.

5 billion tons of gas within these two years. Scientists additionally believe that the total effect of the 2010 destruction negated the forest's absorption of carbon from the previous decade[11]. The fires of 2005 and 2010 are concurrent with findings of 1979 that the dry spell in the southern Amazon forest increases by seven days each decade[12]. This theory predicts longer and much more devastating dry spells in the future[13].

In recent years, Brazil and its environmental activists have made the deforestation of the Brazilian Amazon, and Amazon in general, a primary concern for the Kyoto Protocol and its subsequent conferences. However, while this has helped alert the international community at large to the issue of tropical deforestation, it has also demonstrated across the years, Brazil's lack of commitment to protecting its own land. Brazil has argued, and presumably will continue to argue in future conferences, that it's rainforest is dealing with the effects of over 150 years of industrialization by the world's top economic powers[14], and thus Brazil should not have to forfeit its industrialization potential.

Current Status

Today, the Brazilian Amazon accounts for about 5 million acres, an area over twice the size of Portugal. Brazil's legal Amazonian region accounts for the largest expanse of intact rainforest worldwide[15]. However, this amount, while large, is much smaller than its estimated original size[16]; currently the Amazon is disappearing at a rate of 6000 acres per hour[17]. This is mostly due to human influence over the natural system, however, each year, approximately two percent of the forest dies of its own, natural accord[18]. The reforestation of the Brazilian Amazon has the potential to once again offset billions of tons of human-released carbon in the Earth's atmosphere. Scientists estimate that it has the capacity to store 120 billion tons of carbon[19]. A slight reduction in emissions caused by deforestation, which currently account for 70% of Brazil's gas emission[20], between 2013 and 2030 would generate between $37 and $111 billion in additional revenue for Brazil. This reduction would also reduce Brazil's carbon emissions by up to 4.8 billion tons, an amount greater than the combined annual emissions of Canada and the entire European Union combined[21]. However, scientists predict that for the immediate upcoming years, the Amazon will output 5 billion tons of Carbon Dioxide per year until reductions regulations are better enforced[22]. Some basic potential steps towards massive reforestation include: the selective felling of trees so as to minimize tree-impact, the establishment of vegetation stream-buffer zones, the implementation of technological advancements to reduce soil erosion and nutrient loss in the cultivation of popular Amazonian products, the careful planning of all future roads into the forest so as to minimize their size and impact on the vegetation and

[11] "Amazon rainforest drought caused huge carbon emissions," Mother Nature Network.
[12] "Drying in the Amazon rainforest - what could it mean for climate change?" The Carbon Brief.
[13] "Amazon rainforest drought caused huge carbon emissions," Mother Nature Network.
[14] "The Amazon," Mongabay.
[15] "Brazil Protects the Amazon," The World Bank.
[16] "Brazil," The Nature Conservancy.
[17] "Preserving the Rainforests," California Institute of Technology.
[18] "Amazon Rainforest Breathes In More Than It Breathes Out," Live Science.
[19] "Brazil Protects the Amazon," The World Bank.
[20] "Brazil," The Nature Conservancy.
[21] "The Amazon," Mongabay.
[22] "Amazon Rainforest Preservation Law: A Work in Progress," The Pachamama Alliance.

wildlife, and the reduction of tree waste in the cultivation of forest woods; additionally, the construction of all new plantations should be installed on previously deforested land to reduce the impact of new settlements[23]. These measures would allow for the continuation of human consumption of the Brazilian Amazon, while still working to minimize the impact of consumption.

Over the past eight years, the Brazilian government has set over 150 million acres of forested area aside as specifically for conservation only; subsequently the rate of deforestation of the Brazilian Amazon has fallen by over 80%[24]. However, the Brazilian government has not proved to be overly effective at enforcing its own legislation. Many environmental protection agencies have stepped up to push for greater reforms to help reforest the Amazon. The Amazon Regional Protected Areas (ARPA) has been working to expand conservation regions, and has effectively, over ten years, established 62 million hectares of new protected forest areas. Many worldwide organizations have donated millions of dollars to ARPA and the cause of protecting the Brazilian Amazon from further deforestation. The Global Environment Facility donated $15.9 million (from their $30 million budget provided by the World Bank) to ARPA in 2013 for the purpose of strengthening management infrastructure within federal forest-protection agencies. Additionally this same year, the World Wildlife Fund provided $26.5 million to the same cause, the German Development Bank donated $44.4 million, and the Brazilian government donated $48.1 million[25].

One of the current ways the Brazilian government is working to propagate reforms is through amendments made to the Forest Code, which was established in 1965. The most recent, 2012 amendments include: a statement that property owners responsible for forest destruction will be required to complete full forestation as well a statement that unregistered rainforest land owners will receive fines and be denied access to bank loans[26]. However, while these measures may aid

Seeing the wood for the trees

Brazil's forest code, selected provisions

	Current law	As approved by Congress	As promulgated by the president
Specially protected areas	Riverbanks protected to 30-500 metres depending on the river's width. Other biodiverse or erosion-prone areas also protected	Most special protections reduced; some removed entirely	Riverbanks still protected, but in narrower strips: 5-100 metres. Mangrove swamps protected, but activities such as shrimp farming allowed around their edges
Compulsory forest reserve	Amazon: 80% *Cerrado* (savannah): 35% Everywhere else: 20% Specially protected areas cannot count towards the total percentage	Specially protected areas count towards the total. Amazonian states with little overall deforestation can cut the reserve to 50%. Smallholders exempt from reforesting areas cleared before June 2008	Specially protected areas count towards the total. Small farmers who deforested illegally, in whatever region, need only reforest 20% of their land. Others must comply in full
Amnesty	*na*	All penalties from before June 2008 written off. No new penalties for farmers who sign up for a vague and leisurely compliance process	Only small farmers have any exemption from reforestation. Everyone else can escape fines only by complying
Environmental Registry	*na*	Landowners must register their properties, but infractions largely penalty-free	Landowners must register and comply with the code within five years or face fines and denial of bank loans

Source: Brazil's Senate

[23] "The Amazon," Mongabay.
[24] "In Brazil, Fears of a Slide Back for Amazon Protection," *The New York Times*.
[25] "Brazil Protects the Amazon," The World Bank.
[26] "Amazon Rainforest Preservation Law: A Work in Progress," The Pachamama Alliance.

in solving the greater problem of Amazon deforestation, many officials worry the codes are now trying to do too much with too few resources[27]. Another, more effective method of reducing deforestation is through creating sustainable growth opportunities within rainforest communities. The Achuar society, a hunter-gatherer tribe, for example, has integrated fish farming and permaculture into their food-sourcing routines, thus increasing the food available to the community and reducing the impact of their use of local plants[28].

While there are many hopes for the future of the Brazilian Amazon's reforestation and reduction of carbon emissions, the advent of human industry is currently jeopardizing most potential reforms. Most notably among all industries that affect the Amazon are logging and cattle ranching. The IBAMA, Brazil's premier environmental protection agency, estimates that 80% of current logging of the forest is illegal[29], indicating that current federal regulations are in effective. The establishment of communities within the rainforest requires logging to clear acreage for the town as well as roads leading into the communities; additionally the planting of extraneous crops such as soybeans also requires logging to clear plots of land. This newly cleared land is most often used for cattle ranching; Brazilian beef is one of the most widely consumed varieties worldwide. This incentivizes the ranching industry, creating greater pressure on the Amazon[30]. In addition to logging and cattle, most manufactured products, such as rubber, are tied to the Amazon. Rubber trees thrive in tropical forests but void the soil of most nutrients. While manufactured products can devastate the Amazon, over-cultivated produce can as well. The Amazon is responsible for much of the world's coffee, chocolate, bananas, and soy products, all of which also deplete the nutrient-rich soil of much of its value, value that takes years to accumulate.

Bloc Positions

Brazil: The Amazon Rainforest is concentrated mostly within the state of Brazil, meaning the preservation of the Brazilian Amazon will lead to the largest global impact. The Amazon is closely tied to Brazil's economy and reforestation efforts need to reflect and respect the state's focus on industrialization and self-sustainment. Federal money is best used to industrialize Brazil to allow it to catch up to the developed world—as Brazil's Amazon absorbs a good share of the world's CO2, the task of funding its protection needs to be equally distributed as such. While Brazilian law enforcement should have the final say in enforcing regulations that will lead to the reforestation of the Amazon, reversing the human impact that has devastated the region is a global task.

United States: The Amazon Rainforest is an incredibly valuable and delicate resource that aids in the combat of climate change as aids in medicinal and scientific discoveries. Protecting the largest segment is Brazil is of the utmost importance for the entire globe and the United States is willing to donate its share to facilitate this. However, it should not be overlooked that, while the largest section of the Amazon is within Brazilian borders, its expanse supersedes the Brazilian state. Emphasis on protecting the rainforest as a whole needs to take precedence over protecting the Brazilian portion in order to gain maximum global benefit.

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[27] "Environmental Law in Brazil: Compromise or Deadlock?" *The Economist*.
[28] "Amazon Rainforest Preservation Law: A Work in Progress," The Pachamama Alliance.
[29] "The Amazon," Mongabay.
[30] "Deforestation in Amazonia," The Encyclopedia of Earth.

Environmental Protection Agency: The Amazon Rainforest is a vital natural resource that has tremendous global benefits in addition to vast potential. Its protection and reforestation is of the utmost importance. Its ability to absorb billions of tons of Carbon Dioxide each year has, in recent years, been put in jeopardy by rising temperatures and severe droughts, thus causing it to release more Carbon Dioxide than it has absorbed in ten years. Additionally, the vast number of plant and animal species that inhabit the rainforest are constantly jeopardized by human contact and exploitation. The Amazon must be protected from deforestation and extensive future human involvement for a global benefit; it is the responsibility of all states to aid its protection.

Prep Questions

- How could current legislation be improved to be more effective and more widely enforced?
- What other federal reforms could be implemented to reduce deforestation?
- What is the benefit to focusing on the Brazilian Amazon as opposed to the entire Amazon?
- How could reforestation measures be implemented so as to be effective while minimally impacting the industries based in the rainforest and the Brazilian national economy?
- Should there be distinctions between the use of the Amazon by indigenous tribes and the general population?
- How could new reforms and legislation be enforced?
- Should more focus be placed on the physical destruction of the rainforest or on the changing dynamic of its ability to absorb Carbon Dioxide?

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