

## The Battle of the Amazon Homeland

Andrea Knutsen, Mathea Oceana, Verena Seelos and Ingrid Guttormsen

### Introduction

Deforestation has been a major issue in the Amazon rainforest, affecting the traditional livelihoods and food systems of indigenous communities. The loss of plant and animal species, as well as the degradation of ecosystems, has had a significant impact on the ability of indigenous communities to maintain their cultural and economic practices. This paper will examine the impact of deforestation on food security for indigenous communities in the Amazon region, using the Kayapo people in the Brazilian state of Rondonia as an example.

Deforestation in the Amazon region has led to the loss of many plant and animal species that are important to the traditional livelihoods and food systems of indigenous communities. The indigenous lands in the Amazon region are home to the highest concentration of indigenous people in the world (Rorato *et al.*, 2020). This region is housing almost 355 thousand people divided into 150 ethnic groups (Rorato *et al.*, 2020).

Tropical forests, including the Brazilian Legal Amazon, are crucial for environmental sustainability, but they are facing significant changes and disturbances worldwide (Mataveli *et al.*, 2022). Deforestation, wildfires, and high-impact logging are the primary drivers of these alterations, induced mostly by anthropogenic activities. Deforestation has reached nearly 20% of the Brazilian Legal Amazon, and the primary drivers of deforestation are supplying the global markets of cattle, crop, and timber, local demands for food crops, and road expansion networks and the mining sector (Mataveli *et al.*, 2022). Indigenous Lands have historically acted as a barrier to sustaining remaining forests and guaranteeing the well-being of traditional Amazonians, but they have been experiencing a higher deforestation rate than the average rate of the past nine years, affecting the environment and the indigenous people's rights (Mataveli *et al.*, 2022).

### Main issues

A lot of indigenous communities in the Amazon have a deep cultural connection to the forest and have been practicing sustainable land management for centuries. The Kayapo people of Brazil are an indigenous group that lives in the Brazilian Amazon region. They have traditionally relied on the forest for food, medicine, and other resources, and have developed sustainable land use practices that allow them to maintain the biodiversity of the region while meeting their basic needs (Langlois, 2022). However, the Kayapo and other indigenous communities in the Amazon face numerous challenges due to deforestation. For decades, the Kayapo have fought to protect their territory from outsiders wanting to exploit their resources and land for their own gain. Deforestation on Indigenous land – illegal in Brazil under federal law – has been the main issue for a long time and continues to threaten their traditional livelihoods (Langlois, 2022). This deforestation disrupts the natural balance of the ecosystem, threatens biodiversity, and directly impacts the availability of traditional food sources (Mataveli *et al.*, 2022). Deforestation has profound impacts on the environment, leading to the degradation of habitats, diminishing levels of biodiversity, and negatively affecting food resources.

### Main drivers of deforestation

There are several main drivers that contribute to deforestation on Kayapo land such as gold miners, oil drilling, soy production and illegal loggers. Illegal mining and logging are a growing threat within indigenous lands of the Brazilian Amazon, and the Kayapo lands are not an exception. These activities pose a significant threat to the Kayapo, and are driven by the demand for valuable timber, minerals, and precious metals (Mataveli *et al.*, 2022). Unregulated logging and mining operations often result in extensive forest clearing and degradation, leading to deforestation (Mataveli *et al.*, 2022). Soybean production is considered a significant driver of deforestation in various regions, particularly in South America (Langlois, 2022). A study from 2021 noted that in the last 20 years, soy production was responsible for 10 percent of deforestation across South America - the most rapid expansion occurred in the Brazilian Amazon (Song *et al.*, 2021). There are also plans for a railway, which its main objective is to help transport soybeans from farms within the region (Langlois, 2022). The possible railway will bring more soybean farmers close to their land and therefore accelerate deforestation.

While oil drilling itself is not a direct driver of deforestation, it contributes to deforestation in indirect ways, typically associated with supporting activities and infrastructure development. Therefore, oil drilling poses a specific threat to indigenous territories and the ecosystems they rely on for their livelihoods and cultural practices. Addressing these drivers requires a multi-faceted approach that includes strengthening land rights for indigenous communities, enhancing law enforcement and governance, promoting sustainable land management practices, and supporting sustainable livelihood options for local communities.

### **Consequences on indigenous communities**

Deforestation has great impacts on local indigenous groups who rely on surrounding natural resources. There is a variety of activities that harm life on land in the region, some of the most prevalent are as mentioned gold mining, illegal logging, soy production, etc. Disruption of the natural habitat has resulted in the loss of land and resources, pollution of vital rivers, and loss of culturally significant lands. In and around the Amazon, many indigenous peoples have lived in harmony with nature for thousands of years, some estimate the earliest arrivals of humans as early as 39 000 years ago (WWF, N.D.)

Allocating other areas and forcing the indigenous communities to move is therefore not feasible, as the land holds great value, culturally, and in food production and housing. Unfortunately, indigenous people have been forcefully moved from their homes. As a result, people who once were self-sufficient are now either relying on government handouts or living on the side of the road, which has led to a skyrocketing of diseases, alcoholism, malnutrition, and suicide (*Deforestation, 2019*)

Food insecurity is a result of deforestation, the indigenous communities utilize resources in the rainforest to feed the people. When deforestation becomes widespread, there is a lack of food. In addition, water sources, vegetation, and air are polluted because of mercury waste after mining. Even though Brazilian authorities try to tackle illegal mining operations, the traces mining leaves behind are difficult to erase (Mowbray, 2023).

The Amazon holds great vegetational resources, where plants and herbs are used for medicinal purposes. A study found that deforestation in the Amazon can lead to the extinction of what is the sole healthcare option for many rural societies (Shanley & Luz, 2003). Also, the high biodiversity in the Amazon results in the low density of each species. Therefore, logging and so on results in increased distances between medicinal species (Shanley & Luz, 2003). This damages the indigenous communities that have utilized these medicinal resources for thousands of years and are not able to travel to the next hotspot for the wanted species.

Human rights violation is a great issue, with a documented 400 murders, 500 attempted murders, 2200 death threats, 2000 assaults, and 80 cases of torture committed against land defenders between 2011 and 2022 (Brown, 2023). Even though deforestation, logging, and mining are in many areas illegal, and the pursuit of enforcing the laws even leads to the murder of land protectors, a great number of cases go uninvestigated and unpunished. Research shows that between 1985 to 2021, only 10% of all murders committed against land defenders were brought to trial. The numbers speak for themselves and draw attention to the severity and urgency of the issue (Brown, 2023).

### **The Kayapo project**

The Kayapo project was founded in the 1990s. Since 2008, the non-profit organization International Conservation Fund of Canada (ICFC) is the main partner. The Kayapo Project aims to ensure the protection of over 9 million hectares of Amazon rainforest and the Kayapo people which it belongs to. The goal is to create long-term solutions that benefit the environment and people. The project has three main objectives: land protection, sustainable development, and knowledge exchange [1]. To monitor the approximately 2,200 km long border of the Kayapo area and to protect it from unauthorized intruders, there is the guard post program. Three NGOs assist the Kayapo in organizing and managing the 15 Kayapo guard posts [2]. Guard duty additionally generates income that is distributed equally within the Kayapo communities. Every adult, male or female, has the opportunity to earn a weekly wage as a guard. This prevents corruption by illegal loggers and gold miners (Evtimov, 2022). Supporting sustainable development projects that provide economic opportunities for the Kayapo people while protecting the environment is intended to promote sustainable development [1]. One example is the harvest and sale of Brazil nuts. Unlike many other crops and tree species, the Brazil nut has never been domesticated and is completely dependent on primary forests for its existence [3]. These nuts are abundant, and their production combines the ecology of the

forest with reliable domestic markets in the food industry. There is an opportunity for families or individuals to collect and sell the nuts. The Kayapo have practiced Brazil nut gathering for many generations and have effective methods of harvesting and processing that fit well with their traditional way of life and cultural identity. Industrial activities such as gold mining or logging may bring greater profits in the short term, but in the long term they benefit only a few, while the natural forest and its associated benefits, including sustainable development opportunities for local people, are destroyed forever. In contrast, the Kayapo Brazil nut company shows how sustainable income opportunities can be created for forest communities by ensuring sustainable use of natural resources. In this way, many people can reap the benefits of natural resources without harming the environment [3]. In addition, the Kayapo project aims to facilitate the exchange of knowledge and skills between the Kayapo, conservationists, and researchers [1]. Offerings such as the ICFC's Kayapo Field Course Internship enables students and researchers to engage in a learning experience with the Kayapo people. Participants can work alongside the Kayapo community and gain valuable insights from their knowledge and practices [4]. Successes of the program can be achieved by observing from space. Partnerships with NGOs successfully protected nine million hectares of Kayapo territory from new invasions, while 1.2 million hectares without such partnerships suffered degradation from logging and gold mining (Evtimov, 2021). Although Kayapo's surveillance initiative has been successful, it would be a mistake to assume that their land and future are guaranteed. As the global economy expands, pressure on the remaining pockets of the world's wilderness intensifies (Evtimov, 2022).

### **Relevance to life on land and other SDGs**

Deforestation interferes with the achievement of Sustainable Development Goal 15, which provides for the protection, restoration, and promotion of sustainable use of terrestrial ecosystems, including forests, and the sustainable management of forests to combat desertification, halt land degradation, and prevent biodiversity loss. Sustainable management of the Amazon not only promotes forest conservation and restoration, but also ensures food security for indigenous people. The protection of indigenous people can lead to more sustainable forest management in the long run. Furthermore, the issue of deforestation and the resulting harm to indigenous people's way of life is interconnected with multiple Sustainable Development Goals. Deforestation can lead to reduced availability of wild foods and access to traditional agricultural practices. Consequently, food security for indigenous peoples may no longer be guaranteed whereby Goal 2- Zero Hunger is affected. Loss of important medicinal plants may impact the achievement of Goal 3 - Good health and well-being. Not only are indigenous peoples restricted, but potential discoveries for medicine in the future are limited. Pollution of rivers endangers Goal 6 - Clean water and sanitation. Drinking water safety is perhaps no longer guaranteed. SDG11 aims to ensure that all people have access to adequate housing and basic services. This cannot be achieved by the destruction of indigenous peoples' livelihoods. The Amazon rainforest stores an enormous amount of carbon dioxide and is also important for the water cycle. Therefore, it plays a major role in the Earth's climate and thus in Goal 13 - Climate action. Finally, the Kayapo project is related to SDG17, which seeks to strengthen global partnerships. The Kayapo project shows how important partnerships between the indigenous communities, NGOs and other stakeholders are to protect their land and promote sustainable practices.

### **Conclusion**

The case of the Kayapo people serves as an important example of the intricate link between deforestation, food security, and indigenous communities in the Amazon. Ultimately, by working in partnership with indigenous communities, policymakers, conservation organizations, and other stakeholders, we can strive towards a more sustainable future, where indigenous rights are respected, biodiversity is preserved, and the impacts of deforestation on habitats, food security, and the environment are mitigated. This aligns with SDG15's overarching objective of ensuring the conservation, restoration, and sustainable use of terrestrial ecosystems for the benefit of present and future generations.

## References

- Brown, K. (2023) Violence in Brazil's Amazon are also crimes against humanity, lawyers tell international court. *Mongabay* Available at: <https://news.mongabay.com/2023/01/violence-in-brazils-amazon-are-also-crimes-against-humanity-lawyers-tell-international-court/>. [Accessed 11 May 2023]
- Evtimov, A. (2021) The brilliant success of Kayapo alliances visible from space, *The Kayapo Project*. Available at: <https://kayapo.org/report-2020/> [Accessed: May 13<sup>th</sup>, 2023]
- Evtimov, A. (2022) The successful surveillance of Kayapo's indigenous land, *The Kayapo Project*. Available at: <https://kayapo.org/territorial-surveillance/> [Accessed: May 13<sup>th</sup>, 2023]
- Langlois, J. (2022) For the Kayapó, a Long Battle to Save Their Amazon Homeland, *Yale Environment 360*. Available at: <https://e360.yale.edu/features/for-the-kayapo-a-long-battle-to-save-their-amazon-homeland> [Accessed: May 11<sup>th</sup>, 2023]
- Mataveli, G. et al. (2022) 'Mining Is a Growing Threat within Indigenous Lands of the Brazilian Amazon', *Remote Sensing*, 14(16), p. 4092. <https://doi.org/10.3390/rs14164092>.
- Mowbray, S. (2023) Brazil tackles illegal miners, but finds their mercury legacy harder to erase, *Mongabay* Available at: <https://news.mongabay.com/2023/03/brazil-tackles-illegal-miners-but-finds-their-mercury-legacy-harder-to-erase/> [Accessed May 2<sup>nd</sup>, 2023]
- Shanley, P. & Luz, L. (2003) The Impacts of Forest Degradation on Medicinal Plant Use and Implications for Health Care in Eastern Amazonia. *BioScience*, Volume 53, Issue 6. Available at: <https://academic.oup.com/bioscience/article/53/6/573/224740> [Accessed May 8<sup>th</sup>, 2023]
- Song, XP. et al. (2021) Massive soybean expansion in South America since 2000 and implications for conservation, *Nature Sustainability*, 4, p. 784-792. <https://doi.org/10.1038/s41893-021-00729-z>
- Survival (2019) Deforestation. Available at: <https://www.survivalinternational.org/about/deforestation> [Accessed May 14<sup>th</sup>, 2023]
- WWF (n.d.) Amazon People, *WWF*. Available at: [https://wwf.panda.org/discover/knowledge\\_hub/where\\_we\\_work/amazon/about\\_the\\_amazon/people\\_amazon\\_](https://wwf.panda.org/discover/knowledge_hub/where_we_work/amazon/about_the_amazon/people_amazon_) [Accessed April 29<sup>th</sup>, 2023]
- [1] About, *The Kayapo Project*. Available at: <https://kayapo.org/about/> [Accessed: May 13<sup>th</sup>, 2023]
- [2] Guard posts program, *The Kayapo Project*. Available at: <https://kayapo.org/defend/> [Accessed: May 13<sup>th</sup>, 2023]
- [3] Brazil Nut Harvest, *The Kayapo Project*. Available at: <https://kayapo.org/brazil-nut/> [Accessed: May 13<sup>th</sup>, 2023]
- [4] Field Course Internship, *The Kayapo Project*. Available at: <https://kayapo.org/fieldcourse/> [Accessed: May 13<sup>th</sup>, 2023]