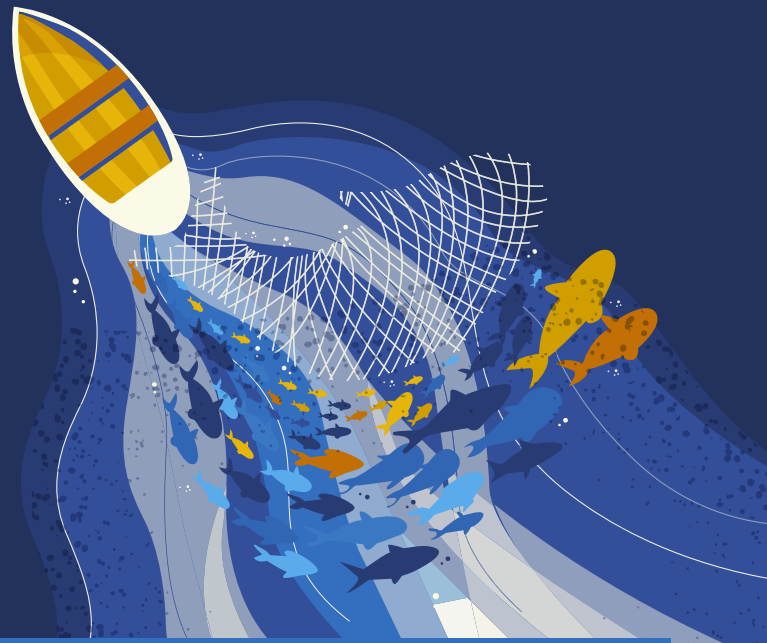


CASE STUDY

Brazil –

AMADOR



GEOGRAPHICAL CONTEXT

The Amador community is a small riverine settlement located in the municipality of Óbidos, Pará, Brazil. It consists of 22 houses and 97 residents and is situated in the Várzea ecosystem, an Amazonian floodplain marked by seasonal inundations and igarapés (small forest streams) essential for freshwater access, transportation, and fishing.

These environmental features are not just physical elements of the landscape but integral to the community's cultural identity, food systems, and social fabric. Like many other fisher communities in the Brazilian Amazon, Amador depends heavily on artisanal fishing, subsistence agriculture, and the harvesting of aquatic and forest resources for its livelihood.

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ECOLOGICAL AND TERRITORIAL DISRUPTION FROM CLIMATE CHANGE AND HUMAN ACTIVITY

The community of Amador is experiencing profound disruptions due to climate change and unsustainable land use:

- SEVERE AND PROLONGED DROUGHTS:** In recent years, droughts in Amador have become more intense and longer lasting than ever before. Streams that once supported biodiversity and provided freshwater now dry out for 3-4 months each year.
- The 2023 drought, widely recognized as the most extreme in recorded Amazonian history, hit Pará especially hard. Satellite analysis revealed that Pará alone accounted for 25.5% of surface water loss across the Amazon Basin, amounting over 840,000 hectares of rivers, lakes, and wetlands disappearing.¹

¹ C. M. Souza Jr. et al., "Amazon Severe Drought in 2023 Triggered Surface Water Loss," *Environmental Research Letters*, 2024.

These hydrological shifts are transforming ecosystems and threatening the survival of riverine communities like Amador. Rising water temperatures, reduced flow, and hypoxic (low-oxygen) conditions have led to mass fish die-offs. These events severely affect local nutrition, as fish are main source of both protein and income. The situation is worsened by +3°C temperature anomalies recorded in 2023 across parts of the Amazon, including western Pará, which increase metabolic stress in aquatic life and risk further biodiversity collapse.²



DISRUPTION OF SEASONAL CYCLES AND ECOSYSTEM COLLAPSE: Residents of Amador report that the seasonal patterns they have relied on for generations are no longer predictable. Rain comes too early or too late, annual floods are more aggressive and erratic, and dry periods stretch beyond their historical norms. These patterns mirror scientific findings that show Amazonian hydrology is destabilizing due to climate change and widespread deforestation.³

The frequency of landslides along the banks of the Amazon River are also increasing, often triggered by erratic rainfall followed by sudden dry spells. Such events endanger homes and farmlands, forcing displacement and fracturing community cohesion.

Large-scale deforestation in the Tapajós River Basin, driven by industrial agriculture, logging, and mining, has further reduced evapotranspiration, decreasing regional rainfall and intensifying drought.⁴ Additionally, upstream hydroelectric dams have altered sediment flows and river dynamics, weakening the ecosystem's overall resilience.

2 J. Barichivich et al., "The Drought of Amazonia in 2023–2024," *American Journal of Climate Change*, 2024.

3 J. C. Espinoza et al., "Climate Change and the Breakdown of Hydrological Cycles in the Amazon," *Scientific Reports*, 2024.

4 T. E. Lovejoy and C. Nobre, "Amazon Tipping Point: Last Chance for Action," *Science Advances*, 2021.



THE IMPACTS OF CLIMATE CHANGE ON FISHERS' RIGHTS, LIVELIHOODS, AND WAYS OF LIVING

RIGHT TO FOOD AND NUTRITION

Amador's traditional livelihood is based on artisanal fishing and floodplain agriculture that has become increasingly unviable. The degradation of aquatic ecosystems and prolonged droughts have led to sharp declines in fish⁵ populations. As a result, families are eating less fish and earning less income from fish sales, undermining both nutrition and economic stability.

To cope, many have shifted toward store-bought, processed foods which are often less nutritious options than traditional fish-based diets. This dietary transition reflects the broader erosion of local food systems due to environmental degradation.

Seasonal extremes, particularly droughts and floods, also damage fishing boats and gear. During droughts, equipment left on dry land is exposed to sun damage and deterioration, resulting in major material losses. In the 2023-24 drought, local streams and igarapés became unnavigable, cutting off access to markets and preventing families from selling fish or buying essential goods, thus further threatening food sovereignty.

Many families live on the equivalent of a minimum wage (about USD 265) or less. Women play a vital role in supporting household income: some work as artisans, weaving fishing nets (*malhadeiras*) or making gear for others; others fish themselves or engage in small-scale enterprises like producing sweets, snacks, or crafts. These creative strategies reflect women's resilience and adaptability amid worsening conditions.

In 2023, the federal government introduced emergency aid equivalent to two minimum wages per family, but only for a two-year period—and not all affected families qualified.⁶ Moreover, even for those who did, federal assistance has proven insufficient. With droughts lasting up to four months and rising food prices in the Amazon, this aid has failed to ensure food security and protect livelihoods.

The community also faces irregular distribution of government food baskets (*cestas básicas*), and children's nutrition is suffering due to the reduced availability of protein and fresh produce. Agriculture is becoming unsustainable due to unpredictable floods and droughts. While food baskets are sometimes delivered during major flood or drought events, they typically arrive only once per year, and not all families receive them. Residents have also raised concerns about quality: baskets often contain low-nutrition items, and in some cases, expired products. As such, this emergency assistance does little to meet the population's basic dietary needs.

⁵ The wetland and lowland topography and ecology only allow for agricultural production for six months during the dry season, and only a few fishers grow crops such as corn and watermelon to supplement their households. For the remaining months, the land remains submerged.

⁶ Ministério do Desenvolvimento Social, Portaria 438: *Auxílio Emergencial para Populações Tradicionais*, 2023.

RIGHT TO TERRITORIES AND RIGHT TO HOUSING

One of the most visible impacts of climate change in Amador is physical isolation of the community. During the 2023–2024 drought, local streams and igarapés became unnavigable, cutting off the community from transportation routes and essential services. Families were left without access to markets, health clinics, or schools for months at a time.

Floods also routinely damage cultivated land and compromise housing structures. Without consistent municipal or federal support, some families are being pushed from their territory, forced to migrate to nearby urban centers like Óbidos, Alenquer, and Curuá. This migration is not voluntary, and associated displacement reflects a broader process of dispossession driven by climate instability.

RIGHT TO HEALTH

Health risks in Amador are growing. Waterborne diseases like diarrhea, skin infections, and gastrointestinal parasites are widespread, particularly among children and the elderly. These issues are exacerbated by a lack of basic sanitation and clean water infrastructure.

Droughts and fires also worsen respiratory problems due to increased smoke and dust exposure.⁷ Meanwhile, vector-borne diseases, such as malaria and dengue, are expected to intensify with shifting rainfall patterns and expanding mosquito habitats. Rising temperatures and water storage practices contribute to the spread of *Aedes aegypti* mosquitoes, especially in floodplain zones like Amador.⁸

Residents also report a growing mental health crisis. Constant uncertainty, resource losses, and environmental stressors are triggering anxiety, depression, and emotional distress. Women, in particular, face heightened strain, as they are often the ones remaining in the territory, caring for dependents, and witnessing firsthand the slow erosion of their community's wellbeing.

RIGHT TO EDUCATION

Access to education has also been disrupted. Although children remain formally enrolled in school, reaching classrooms has become increasingly difficult. During droughts, they must walk long distances across dry riverbeds; during floods, they risk navigating dangerous boat routes. These obstacles interrupt learning and weaken the intergenerational transmission of cultural knowledge.

RIGHT TO CULTURE

Fishing in Amador is not just an economic activity; it forms the backbone of the community's cultural, spiritual, and intergenerational life. As rivers dry, fish disappear, and mobility is curtailed, younger generations become increasingly disconnected from traditional practices.

⁷ R. Silva et al., "Wildfire Exposure and Respiratory Health in the Brazilian Amazon," *The Lancet Planetary Health*, 2022.

⁸ A. L. M. Ribeiro et al., "Climate-Driven Expansion of Dengue in Pará," *Cadernos de Saúde Pública*, 2023.

Although Brazil has ratified international agreements, such as the Paris Accord, and has committed to halting deforestation by 2030, implementation at the local level remains weak. This is especially visible as Brazil prepares to host COP30 in Belém, Pará.

Communities like Amador are among the most affected by climate change but remain excluded from adaptation and mitigation planning. They face worsening droughts, floods, declining fish stocks, and isolation. Despite this, they receive little public support or institutional recognition.

Environmental governance mechanisms, such as REDD+ projects, carbon markets, and conservation concessions, have been shaped by top-down models dominated by government and private sector actors. Affected communities have experienced minimal consultation in establishing grievance mechanisms and consequently they have been shaped by little to no community participation. For example, in Pará, the state government auctioned about 4.2 million hectares of public forest for REDD+ carbon credits. Companies involved include Carbonext, Biofíllica Ambipar, and Permian. Civil society groups have criticized these projects for lacking transparency and community consultation.^{9 10}

Similarly, Pará is also part of the LEAF Coalition, backed by Amazon, H&M, Walmart, and the governments of the U.S., UK, and Norway. The initiative involves selling up to 12 million tons of carbon credits between 2023 and 2026. Local communities have raised concerns about benefit distribution and decision-making power.¹¹

These exclusions are especially problematic given the strong track record of Indigenous Peoples and local communities in protecting forests. Research shows they maintain lower deforestation rates and higher biodiversity and carbon storage than other governance models.

Traditional communities have been opposing new conservation initiatives like “30x30” and emerging carbon markets. These programs risk restricting access to land and fishing grounds, echoing past land grabs under a new label.¹²

To achieve real climate justice, Brazil must shift toward inclusive, community-led approaches. This includes securing land rights, protecting resource access, and ensuring Free, Prior, and Informed Consent. Without these steps, climate policy will continue to marginalize those most impacted – and most essential to preserving the Amazon.

0 Instituto Socioambiental (ISA), “Concessões Florestais no Pará Excluem Comunidades Tradicionais,” 2023, <https://www.socioambiental.org/>.

10 e Olho nos Ruralistas, “Governança Climática no Pará Favorece Empresas e Ignora Povos Tradicionais,” 2024, <https://deolhonosruralistas.com.br/>.

11 Emergent Climate, “Para ERPA Announcement,” 2024, <https://emergentclimate.com/wp-content/uploads/2024/09/Para-ERPA-announcement-Emergent-Final.pdf>.

12 R. L. Silva et al., “Social Justice Risks of Blue Carbon Projects in Amazonian Floodplains,” *Conservation and Society*, 2023.



RESISTANCE OF FISHERS AND SOLUTIONS TO CLIMATE CHANGE

Despite these overlapping crises, the Amador community continues to resist with creativity and solidarity. Mutual aid remains central to survival. Families share farinha (cassava flour), fish, and information on climate events. Women have played a key role in organizing local food systems.

The community has also partnered with regional fisher movements and environmental justice organizations to document their experiences, raise awareness, and demand state accountability. Through testimonies and community assemblies, community members have emphasized that their participation must be included in any climate responses from the outset.

Their demands include:

- A climate emergency response plan tailored to their needs, based on the right to remain, fish, and thrive;
- Public investment clean water, healthcare, transportation, and communications infrastructure;
- Recognition of their territorial rights and stewardship role in conserving Amazonian ecosystems;
- Guaranteed Free, Prior, and Informed Consent before any conservation or climate-related project is implemented.

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