

CLIMATE SOLUTIONS THROUGH THE PERSPECTIVE OF INDIGENOUS PEOPLES AND TRADITIONAL COMMUNITIES:

Case Studies from the Youth for Climate Initiative

Support:



Produced by:



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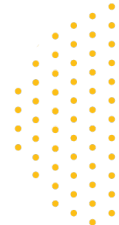
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Juventude pelo Clima



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Preface



The accumulation of greenhouse gas emissions and the rise in global temperatures over the past two centuries have significantly altered the climate. High emissions, primarily from Global North countries, lead to climate changes that negatively affect Indigenous Peoples and traditional communities around the world, especially in the Global South. In the Amazon, Indigenous groups and traditional populations are recognized as central to maintaining climate balance, precisely through the preservation of standing forests, key ecosystems, and biodiversity.

Over the last century, Indigenous knowledge has been systematically marginalized in public policy formulation, particularly in the fields of climate change mitigation and adaptation. Nevertheless, Indigenous Peoples and traditional communities have historically developed autonomous strategies within their territories to adapt to and respond to extreme events, positioning them as fundamental actors in contemporary climate action.

This publication aims to give visibility to the ways of addressing climate change that have been built within territories from the perspective of Indigenous, Quilombola, and Traditional youth of the Brazilian Legal Amazon. The initiative supported 18 young people from six states in designing community adaptation projects, demonstrating how, through their own languages and cultural references, these youth combine leadership, identity, territorial relevance, and the preservation of livelihoods, health, culture, and the forest.

Support for these young leaders included presenting scientific concepts from the literature on climate change and climate justice. Thus, this document reflects a participatory construction between academia, Indigenous Peoples, and traditional communities, combining scientific evidence on climate change with courses and workshops delivered by researchers, alongside concepts, perspectives, and strategies from Indigenous Peoples and traditional populations. This exchange allows dialogue on data as well as the sharing of local perceptions and approaches to territorial management.

More than simply reporting an experience, the following pages seek to inspire and strengthen climate action initiatives rooted in local knowledge, community autonomy, and the defense of territories—foundations upon which public policies can be anchored. The document begins by exploring the origins of climate change, followed by experiences that precede and inspire the “Youth for Climate” initiative. Finally, it reflects on the challenges and opportunities involved in implementing community adaptation projects in the Brazilian Legal Amazon.

Introduction: The Roots of Climate Change



PREHISTORIC CLIMATE AND ITS CHANGES

Planet Earth has gone through many phases. Geological eras passed, accompanied by changes in the composition of the atmosphere and in the living beings that make up the immense diversity we know today. In the beginning, the concentrations of nitrogen and carbon dioxide were higher than current averages, which changed drastically with the emergence of the first plants. Through photosynthesis, carbon began to be incorporated into leaves, roots, trunks, and fruits, while oxygen was released into the air. As these processes occurred, global temperatures gradually decreased (Hart, 1978).

Over time, the climate stabilized and fluctuated only slightly over the last 800,000 years. During the prehistoric period, as climatic equilibrium was taking shape into the form we recognize today, carbon was one of the central chemical elements in relation to climate change. For more than a century, it has been known that increases in atmospheric carbon dioxide are directly linked to rising temperatures (Siegert et al., 2020).

The architecture of photosynthesis plays a crucial role in the carbon cycle as we know it, beginning with the capture of carbon by plants and other photosynthetic organisms, and then its incorporation into other living beings. Approximately 50% of plant composition consists of carbon; for this reason, native vegetation and large forests, such as the Amazon and many others around the world, are considered vast carbon reservoirs. When these forests are cleared, carbon dioxide is released back into the atmosphere through the decomposition of vegetation.

Changes in ecosystems, with direct effects on climate and its conditions, have always occurred, but at a very slow pace. This gradual change allowed living beings time to respond evolutionarily to the new climatic conditions emerging on the planet. Thus, the diversity of current biomes and landscapes results from this slow process, which formed glaciers at the poles, deserts along the equator, and abundant tropical forests that remain in dynamic equilibrium (Kweku et al., 2018).

In order to understand major climatic zones, academic science began systematically recording temperature, precipitation, and physical, chemical, and biological characteristics for roughly three consecutive decades. It is based on this accumulation of information about “weather” that the “climate” of a region is determined (Figure 1).

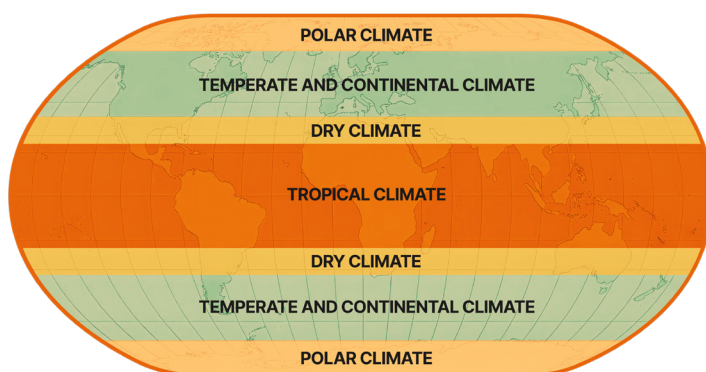


Figure 1. Climatologist Wladimir Köppen was a pioneer in defining major climate zones worldwide in 1884.

Source: Adapted from Met Office, 2025.

These “bands,” or climate zones, represent interpretations of the climate in each major region of the world. From the Equator to the poles, each zone has distinct

temperature and rainfall patterns, strongly influenced by solar radiation. The closer to the center—the tropical climate—the higher the temperatures and precipitation levels, while the polar regions are colder and drier.

Solar radiation in the equatorial zone is a decisive factor for the existence of large forests, such as the Amazon, because it provides ideal conditions for growth: abundant water, light, and energy, which are converted into nutrients that sustain life. For this reason, half of the world's largest forests are concentrated in the tropical zone (Figure 2).

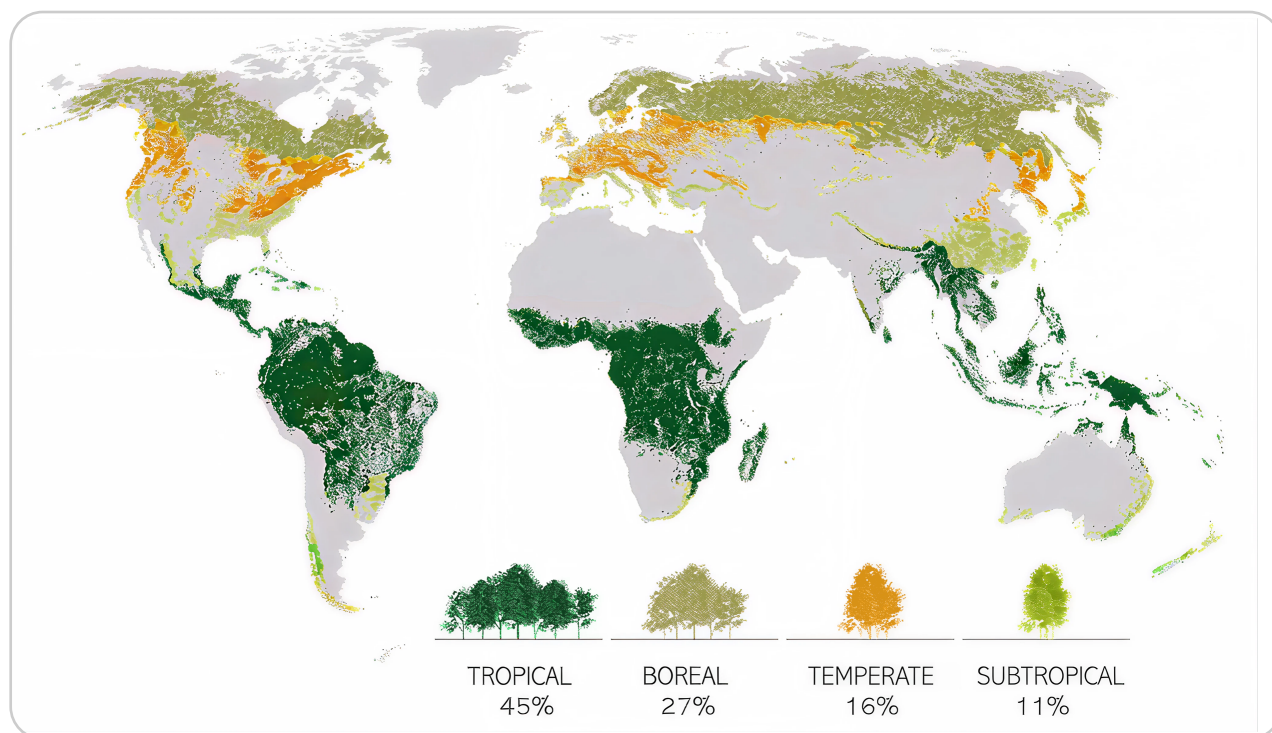


Figure 2. Nearly half of the world's forests are located in the tropical region, where the Amazon is situated. Source: Adapted from Baccini et al., 2019.

Internally, climate zones also exhibit variations depending on landscape composition. If one were to follow a straight line from the Amapá coastline, across the Roraima Lavrado, and up to the Andes, it would become evident how the ocean, vegetation, and mountains also exert a direct influence on local climate patterns (Carvalho et al., 2016; Martínez et al., 2012; Neves, 2012).

THE IMPACT OF THE INDUSTRIAL REVOLUTION ON THE PRESENT

Understanding the past helps us comprehend the present and plan for the future. Throughout human history, natural disasters have affected peoples since time immemorial, shaping the ways in which they relate to their environments (Laoupi, 2017). Today, however, the unprecedented pace of climate change has disrupted natural cycles, impacting life in traditional territories (Dourado et al., 2016). The rapid rise in global temperatures carries invaluable consequences for the people of the Amazon.

In recent years, both the frequency and intensity of extreme climate events have increased, generating large-scale impacts. This process is directly linked to climate change, which is expected to intensify in the coming decades (McPhillips et al., 2018). Although the term “global warming” has become popularized, the rise in the planet’s average temperature represents only part of a broader problem.

The Industrial Revolution marked a turning point in this process, initiating a cycle of gradual temperature increase driven by excessive greenhouse gas emissions. Much of the technology developed during this period relied on the combustion of fossil fuels, a highly polluting energy source.

Despite technological advances over the centuries, the global economy remains heavily dependent on these sources¹. Como resultado, desde 1850, a temperatura global As a result, since 1850, global temperatures have risen by an average of 0.06°C per decade. However, from 1982 onward, each decade has recorded a threefold increase, approximately 0.2°C (Figure 3).

INCREASE IN CARBON DIOXIDE AND GLOBAL TEMPERATURE (1850–2024)

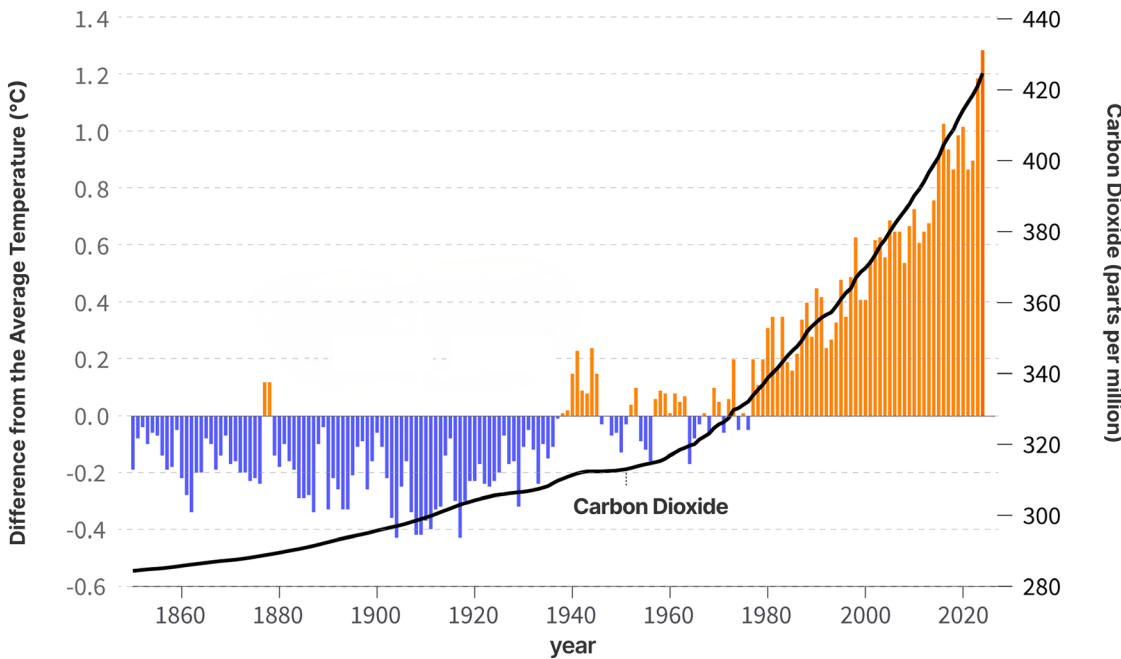


Figure 3. Annual temperature compared to the 20th-century average, from 1850 to 2024. Orange bars indicate years warmer than average. Purple bars indicate years colder than average. The black line indicates atmospheric carbon dioxide levels: 1850–1958 from the IAC, 1959–2023 from NOAA’s Global Monitoring Laboratory. Source: Adapted from NOAA-IAC (2025).

The United States, European countries (including Russia), and Asian countries such as Japan and China rank among the largest contributors to cumulative greenhouse

¹ For more information, visit: <https://resourcewatch.org/dashboards/energy?tab=global>. Accessed on July 3, 2025.

² <https://www.energy.gov/sites/default/files/2024-06/133.%20Rebecca%20Lindsey%20and%20Luann%20Dahlman%2C%20Climate%20Change%20Global%20Temperature.pdf>

gas (GHG) emissions (IPCC, 2023). Without physical barriers, these gases and their effects cross borders. According to the latest report from the Intergovernmental Panel on Climate Change (IPCC), the populations that emit the least GHGs are often the most affected by climate change.

Impacts include food and water insecurity, increased human mortality from floods, as well as droughts and extreme winds. Indigenous Peoples and traditional communities are particularly vulnerable, being up to 15 times more exposed to these risks than populations in less vulnerable regions (IPCC, 2023).

Over the past five decades, the accumulation of evidence on climate change has made its impacts increasingly evident. Rising temperatures and ocean and sea acidification reduce fish availability, compromising food security for a significant portion of the global population. Extreme droughts, combined with higher temperatures, have facilitated the spread of disease vectors, directly affecting human health and quality of life, and may ultimately lead to forced migrations of communities facing the climate crisis (Birkmann et al., 2022).

Extreme climate events have become more frequent, including heavy rainfall that causes flooding, inundations, and landslides, while prolonged droughts increase the likelihood of wildfires, worsening air quality and the health of the populations most exposed (IPCC, 2021; Marengo et al., 2009).

In the Brazilian Amazon, the impacts of climate change affect people and environments unevenly, highlighting the urgent need to advance climate justice (Pinho et al., 2025).

HISTORY OF CLIMATE CHANGE RESPONSES FROM THE PERSPECTIVE OF INDIGENOUS PEOPLES AND TRADITIONAL COMMUNITIES

Indigenous Peoples and traditional communities have autonomously sought ways to address the effects of climate change. Initially, different communities discussed the phenomenon with the aim of understanding what their elders had long warned about. As changes began to manifest, multiple efforts were made to assess the impacts of climate change. Over the years, the Coordination of Indigenous Organizations of the Brazilian Amazon (COIAB) has organized courses to allow Indigenous perspectives on climate issues to emerge (COIAB, 2009, 2011).

In this first initiative conducted by COIAB, through the Amazonian Center for Indigenous Training (CAFI), participants related the concepts presented in the courses to their own ways of understanding the subject. The courses addressed aspects of natural cycles, with emphasis on the carbon cycle,

the functioning of international negotiations at the Conferences of the Parties (COPs), and strategies for political advocacy, both in global forums and within national public policy frameworks (Figure 4).

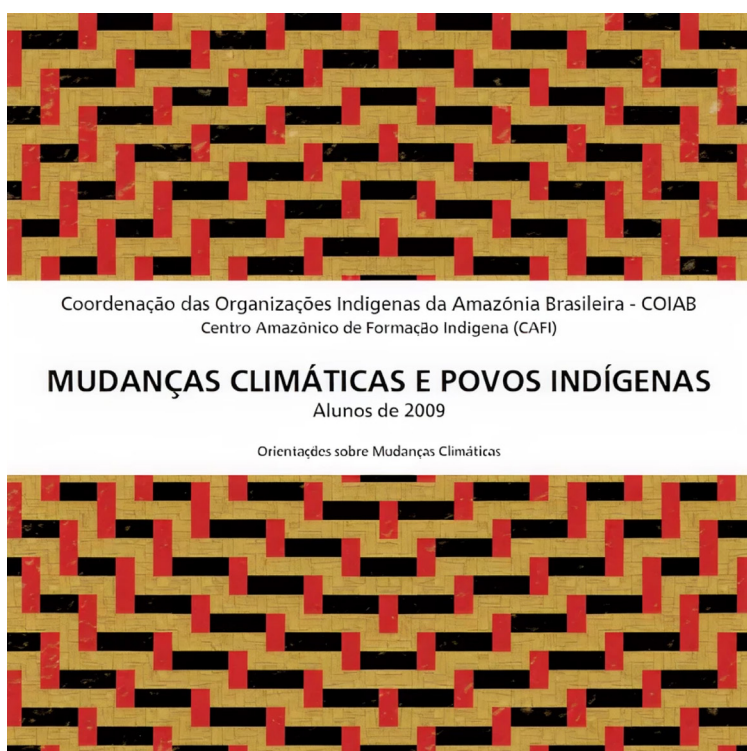


Figure 4. COIAB, in partnership with IPAM and The Nature Conservancy (TNC), published several booklets to share the results of the first courses, presenting Indigenous perspectives on climate change. In 2009, 21 leaders from nine states participated in the CAFI climate change training. Source: COIAB, 2009.

country, the Philippines, committed to connecting Indigenous organizations worldwide. Within its extensive network, the Indigenous Council of Roraima (CIR) stood out for its work in Brazil (Vale, 2025). Located in the state of Roraima, CIR is one of the oldest Indigenous organizations, with a history spanning more than 50 years marked by unity, struggle, resistance, and achievements.

To implement climate change response actions, CIR's environmental department was pioneering in publishing *Amazad Pana'Adinhan: Indigenous Communities' Perceptions of Climate Change*. The initiative was led by Sineia do Vale of the Wapichana people, one of the foremost Indigenous experts on the topic, with deep knowledge of her state's territories and extensive experience in international debates. This long-term effort resulted in the creation of a book that became one of Brazil's first Indigenous adaptation plans (Oliveira & Vale, 2014). Co-created by many hands, the publication has become a national and international reference (Figure 5).

Indigenous Peoples have long had their own ways of understanding climate changes and narrating this phenomenon within their communities and villages. The creation of CAFI sought to build bridges between Indigenous Science and the concepts emerging from the COPs, connecting these perspectives. In this way, COIAB helped break down barriers by proposing new approaches, knowledge, and solutions to address climate change.

On the other side of the globe, Tebtebba emerged as a prominent international Indigenous organization based in its home

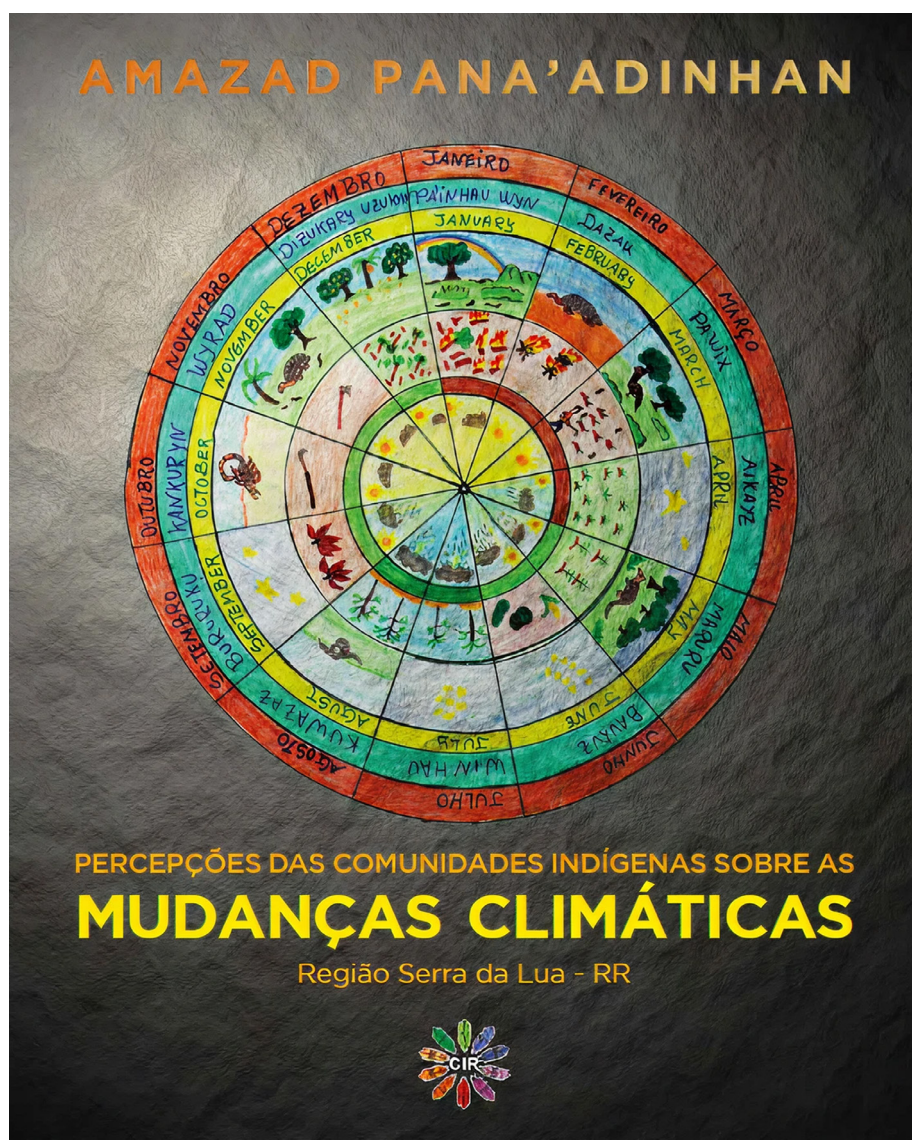


Figure 5. Cover of the CIR publication presenting how Indigenous Peoples from three Indigenous Territories in the Serra da Lua Region relate to climate change. Source: Oliveira and do Vale, 2014.

The term adaptation, as proposed by the IPCC, refers to the promotion of actions and strategies capable of adjusting natural and human systems to respond to the current and future impacts of climate change (IPCC, 2023). This way of understanding adaptation is often linked to climate resilience and the strengthening of human societies and their systems (Schipper, Revi, et al., 2022; UNFCCC, 2012).

However, many Indigenous Peoples—particularly those communities where the CIR operates—have developed their own understanding of what it means to adapt to climate change. The outcome of this effort in the Serra da Lua region, located in the Lavrado of Roraima, brought to public debate concrete actions conceived and promoted by Indigenous Peoples to confront climate change. During this period, the term “confrontation” emerged. From the perspective of these peoples, adapting can mean losing one’s essence and way of life; while the verb “to confront” reinforces their resilience and determination to actively keep their worldviews alive, even in the face of a new climate scenario.



“I see that both concepts came together there. He (Professor Alessandro Oliveira) talked about a Climate Change Confrontation Plan, and we thought, based on our struggles, that we do not want to adapt in the sense of conforming. We want to confront climate change!”

Figure 6. Sineia do Vale, *Transformations of Time and Climate Politics of Indigenous Peoples*, 2025, p. 157

This rich publication was followed by others. CIR itself released two adaptation plans recognizing that other communities in Roraima were also being affected by the impacts of climate change. These plans emphasized the importance of confronting the climate crisis, a decade after the debate over the terms “adaptation” and “confrontation” first arose³. Thus, the Indigenous Council of Roraima served as inspiration for other Indigenous Peoples and traditional communities to embrace the struggle for climate justice. Subsequent work followed a similar logical path, identifying solutions from the past for the future (Barcellos, 2015).



³ For more information, visit: <http://bit.ly/3VMLV01>.

Methodology of the Youth for Climate Initiative



INITIATIVE DESIGN AND YOUTH SELECTION

With the aim of strengthening the traditional territories of the Brazilian Amazon in the face of climate change, an initiative was created to equip Indigenous, Quilombola, and Traditional Communities youth with tools to develop community adaptation projects. The development of these projects began long before the selection of the youth who would join the group.

Teams from the Amazon Environmental Research Institute (IPAM) and Cultural Survival (CS) recognized that, despite abundant existing evidence about the causes and consequences of climate change, there remains a gap in implementing actions to reverse its impacts. Influenced by earlier efforts such as the Indigenous adaptation plans by CIR, the National Climate Adaptation Plan, and projects developed by Cultural Survival elsewhere in the world, the “Youth for Climate” initiative emerged.

During its conception, IPAM and CS aimed to empower youth both in their communities and universities. For a long time, academic science was distant from the knowledge promoted in villages and traditional communities, often ignoring the rich knowledge produced by forest peoples which, although sometimes used to support university research, has not received proper recognition (Levis et al., 2024). In recent years, the presence of Indigenous, Quilombola, and Traditional Communities youth in universities has increased, paving the way to combine multiple scientific perspectives.

Still, these students face significant challenges staying in higher education. They often must leave their home communities to enter academic environments that can be unfamiliar and sometimes hostile. This is due to the persistence of teaching models that limit students’ expression by frequently excluding linguistic diversity and the knowledge that stems from their peoples.

The call for applications that selected the 18-youth set key criteria based on candidates’ ties to their home communities and their universities. Each youth submitted a letter of support from local leaders—preferably collective—and a recommendation letter from a reference person at their educational institution. Thus, the community adaptation projects would be the result of shared authorship, expressing both the vision and needs of each people, while also contributing to the valuing of intergenerational knowledge exchange.

After selection, the group began training cycles following the methodological structure established by IPAM and CS and shared with the youth. Over time, a collective identity marked by companionship and solidarity was forged. Composed of seven Indigenous, seven Quilombola, and four people from Traditional Communities youth from the Legal Amazon, the group engaged in dialogue that combined the knowledge learned in universities with that cultivated in the “living laboratories” of their territories.

THEMATIC CYCLES AND KNOWLEDGE EXCHANGE

Weekly meetings became spaces for exchange (Figure 7). In these gatherings, the youth positioned themselves within the international climate change debate—its

causes, impacts, and emerging public policies—while deepening dialogue with their communities, bringing collective experiences, diagnoses, and locally rooted adaptation paths.

Although they came from different backgrounds, the youth shared the same urgency: to combat the impacts of the climate emergency. In addition to the technical teams from IPAM and CS, the activities included the participation of Indigenous

specialists in areas related to the initiative's central theme. Climate justice was addressed by Joziléia Kaingang, PhD and a leading expert in education and gender, who leads the Climate Change Technical Chamber of the Management Committee for the National Policy on Territorial and Environmental Management of Indigenous Lands (PNGATI). Maria Hildete, from the Federation of Indigenous Organizations of the Rio Negro (FOIRN), presented their experience in developing adaptation plans and projects. Roiti Metuktire shared the ongoing experience of the Raoni Institute in fire management and suppression by Indigenous brigades in the Capoto/Jarina territory, in response to the severe drought

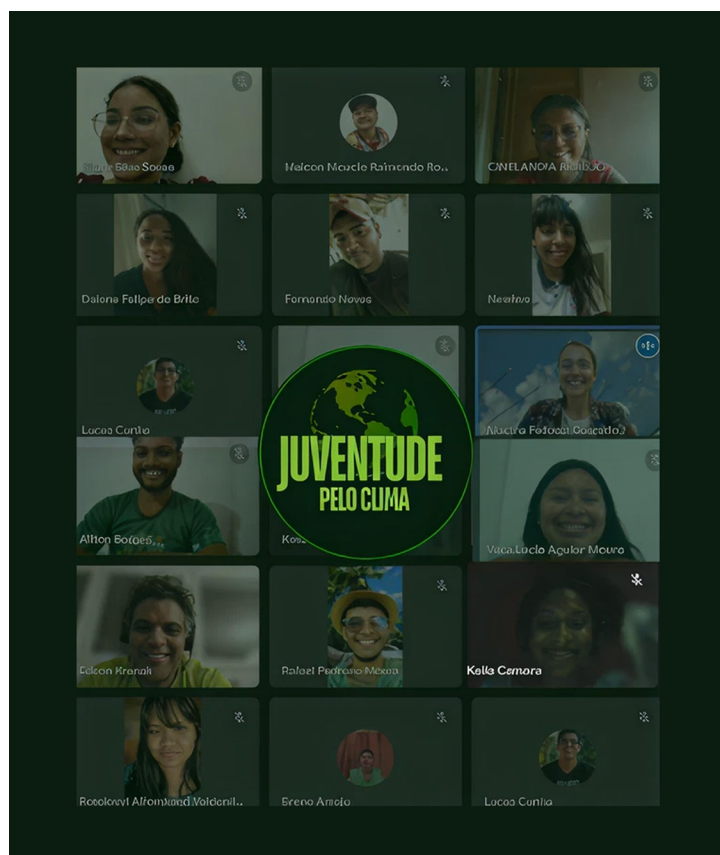


Figure 7. Weekly meetings where climate change concepts were presented to the youth. Source: IPAM Archives.

observed in the state of Mato Grosso, which has also been noted in other regions.

The group also benefited from the contributions of international CS members and Djalma Aranã Caboclo, a communications specialist. During these meetings, essential tools were presented to enable the youth to develop media projects that would document and give visibility to community adaptation actions. In this way, the youth were exposed to different ways of thinking about climate change, allowing each participant to interpret and convey what their elders had long been communicating.

COMMUNITY DIALOGUE CIRCLES

In addition to the weekly meetings, each youth participant received exercises aimed at applying the concepts learned in class and relating them to discussions on how climate changes affect their territories. Community adaptation projects began to take shape in the third cycle, when participants developed an initial assessment of the main climate risks perceived in their communities.

To create a complete picture, they were responsible for building bridges and fostering dialogue with their peers to capture collective perceptions. Knowing in advance that a change in the local climate pattern takes about three decades, the elders were consulted. Conversations were also encouraged with children, youth, and adults; women and men; farmers; and health and education professionals (Figure 8). In this way, the scholarship youth gained a broader and more detailed understanding of how the climate is changing locally.



Figure 8. Dialogue circles organized by the youth. Source: Rilary Borari, Alter do Chão – PA (A); Cinelândia Araújo, Quilombo Cascavel – MA (B); Brenda Alencar, Quilombo Mel da Pedreira – AM (C); Lucas Cunha, Santa Maria Community – PA (D).

DEVELOPMENT OF ADAPTATION PROJECTS

Each youth participant received guidance to gather at least ten community members with complementary profiles. In total, 181 people participated in virtual and in-person dialogue circles, providing a broad perspective on climate over the years in their traditional territories. Guiding questions were proposed to map the main climate threats and their impacts.

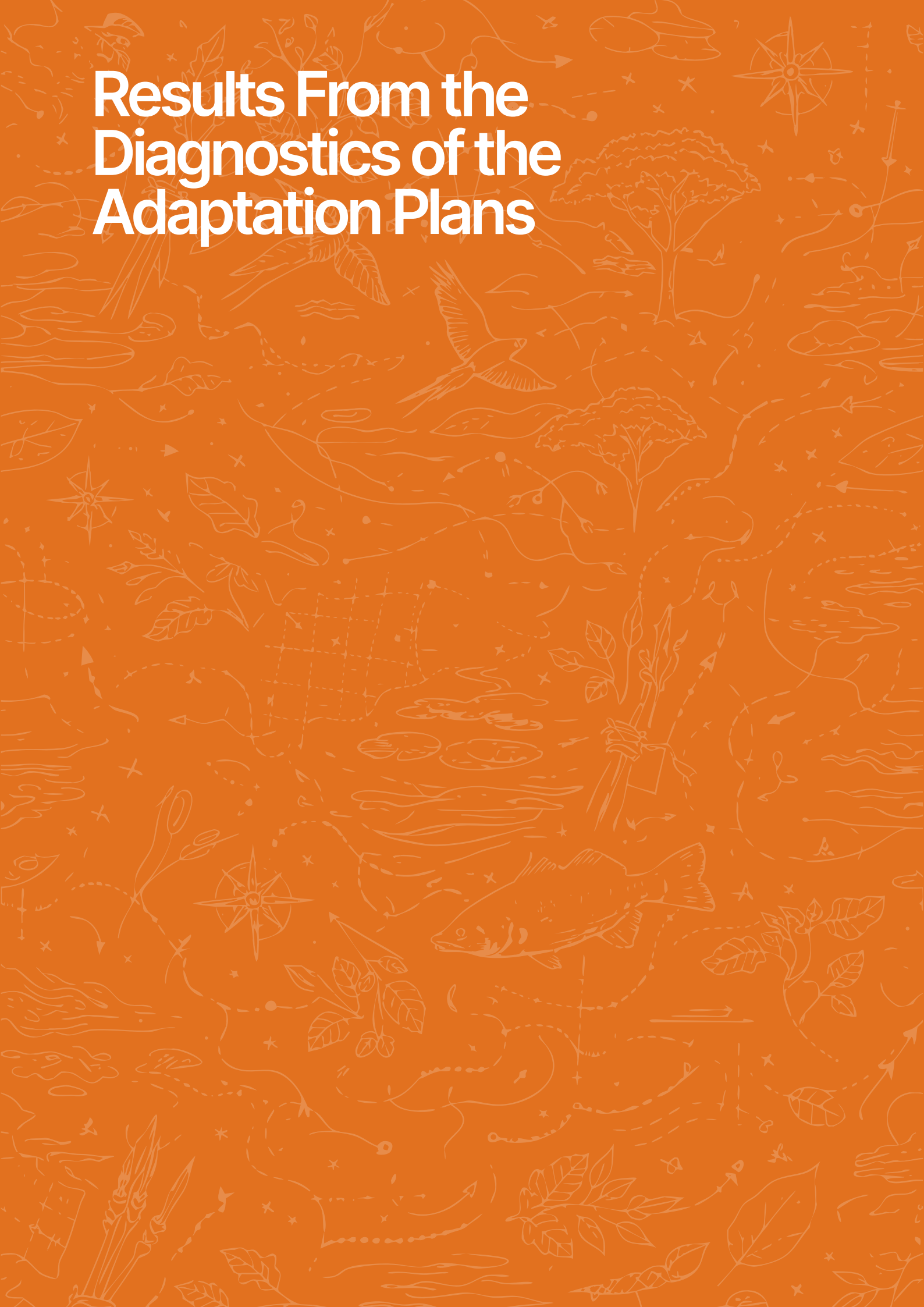
The youth were instructed to introduce the topic of climate change, presenting the concepts learned during the weekly meetings, such as the difference between weather and climate, the impacts of greenhouse gases, and other relevant topics to establish a common knowledge base. They then asked participants for their views on local climate changes, presenting practical examples such as rising temperatures, altered rainfall patterns, and severe droughts.

This approach served as a didactic way to ground the conversation and interviews in situations directly linked to climate change, since the terms used in villages and

traditional territories may differ from those discussed in the youth group meetings. Finally, participants were invited to connect the observed climate changes to their consequences.



Results From the Diagnostics of the Adaptation Plans



CLIMATE IMPACTS, ECONOMIC LOSSES, AND NON-ECONOMIC LOSSES

The evidence from the adaptation plans developed from the perspective of Indigenous, Quilombola, and Traditional Communities youth highlights the core pillar of the Youth for Climate initiative: shedding light on this worldview of how the climate has been changing over the years. The insights of the 18 students and their communities resulted in a rich collection of information that served as the basis for the development of community adaptation projects.

Through these projects, the participants created materials such as collective memory calendars for the seasons and other cultural markers, like those of the Kuikuro and Yawalapiti peoples of the Xingu Indigenous Territory (Figure 13). Developed based on the ancestral knowledge of these two peoples, the calendars are guided by the creator figures Taugi and Aulukuma, which in Portuguese could be translated as “Sun and Moon.” Unlike Western cultures, time is marked by changes in nature, reflecting the life, memory, and organization of these peoples beyond mere numbers or dates.

Used to teach youth and children about the culture of the Kuikuro and Yawalapiti peoples, the calendar provides lessons on the territory and helps recognize signs of changes in weather and daily life in the village. While the Gregorian calendar (widely used in the West) is based on the passage of days, months, and weeks, for these peoples, life in their traditional territories follows the rhythm of natural cycles: time to fish, time to plant, time to harvest, time to manage the soil, and time to celebrate.

Another outcome of the dialogues with community members, carried out by the Youth for Climate participants in their communities, relates to the various impacts of climate change (Figure 10). These reports provided important information to develop a comprehensive diagnosis that guided the youth in seeking actions to confront climate impacts.

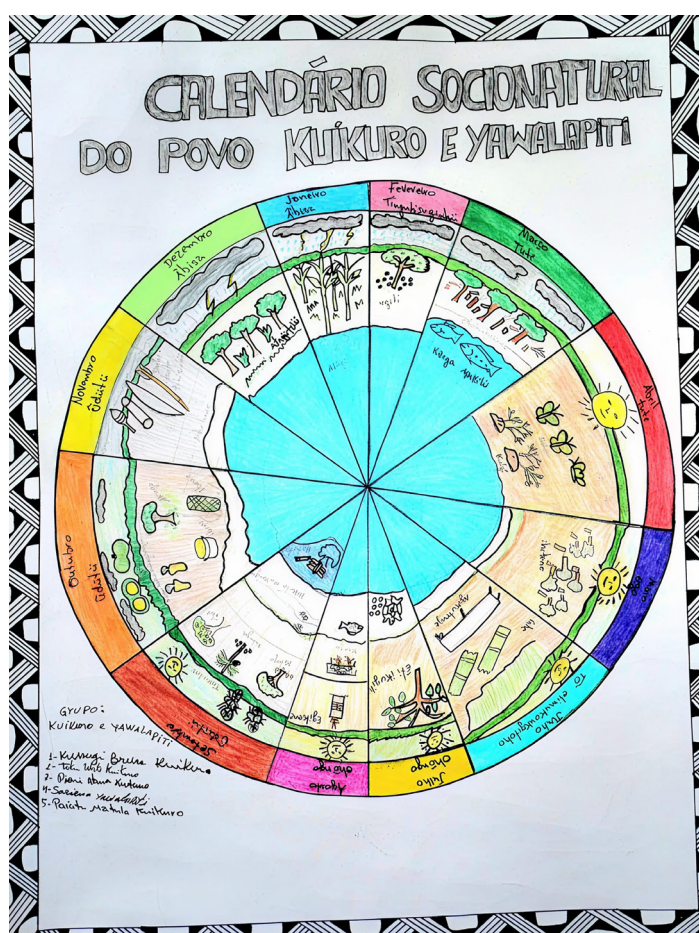


Figure 9. The calendar of the Kuikuro and Yawalapiti peoples is a way to honor and represent time while preserving their traditions. Angagu Kuikuro, a youth participant in the Youth for Climate initiative, is one of the authors of this calendar. Source: Kuikuro and Yawalapiti peoples from Kaluani Paraíso village, 2025.

RECORDED CLIMATE IMPACTS

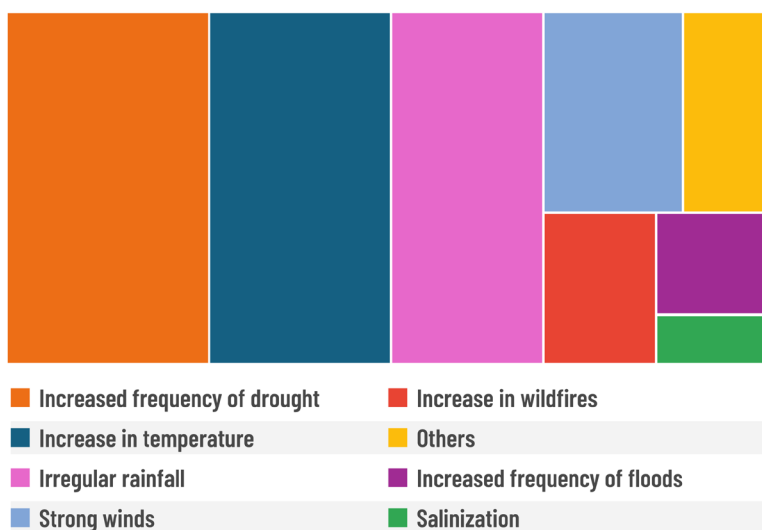


Figure 10. The profile of climate change impacts recorded shows a higher frequency of drought, followed by increased temperatures and irregular rainfall. Source: Prepared by the authors, based on interviews collected by the Youth for Climate initiative.

The main climate events identified are directly linked to variations in rainfall, with severe droughts and storms (14), and rising temperatures (13). These factors are directly connected to the wildfires observed by the communities, as reduced or irregular rainfall and higher temperatures leave vegetation drier, making the landscape more susceptible to fire (Alencar et al., 2019). An increase in the frequency of strong winds was also observed, a phenomenon related to changes in climate patterns (Emmert et al., 2024). The only coastal community, located in Amapá, reported river salinization as a severe impact.

The youth participants indicated that their communities as a whole have been affected by climate risks. However, some groups stand out, particularly farmers, followed by Extractivists from Traditional Communities (Figure 11). These groups perceive climate change in multiple ways, from production losses due to altered rainfall (droughts or severe floods) to rising temperatures that prevent work in the fields due to heat.

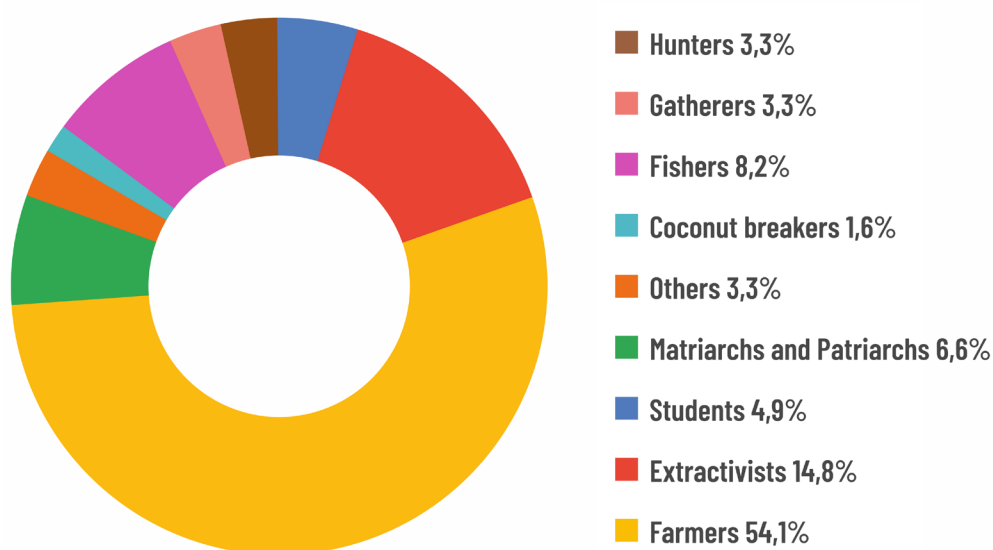
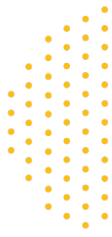


Figure 11. Farmers are the groups most affected by climate change, according to the survey conducted by the youth in their 18 communities. Source: Prepared by the authors, based on interviews collected by the Youth for Climate initiative.



The results regarding non-material losses illustrate how the fields and food production are essential for keeping the connection between people and their territories alive. Approximately one-third (42) of the reports mention the loss of animals and plants as a consequence of climate change (Figure 12). The fields are not only a source of food but also a fundamental part of the culture and identity of Indigenous Peoples and traditional communities.

For the Tukano people, for example, the loss of cassava roots affects their ancestral identity, as their history and memory are closely tied to its cultivation. In the case of the Xavante, the reduction in cotton productivity goes beyond just a plant. This people, living in the transition zone between the Cerrado and the Amazon, use cotton as the raw material to make the Xavante Warã tie, a symbol of their culture.

Health was also highlighted as a sensitive point by some of the youth. In areas where droughts have been more frequent, wildfires occur with greater intensity, worsening air quality. Mental health was also reported, especially by matriarchs and patriarchs, as a feeling of abandonment in the face of climate impacts.

NON-ECONOMIC LOSSES

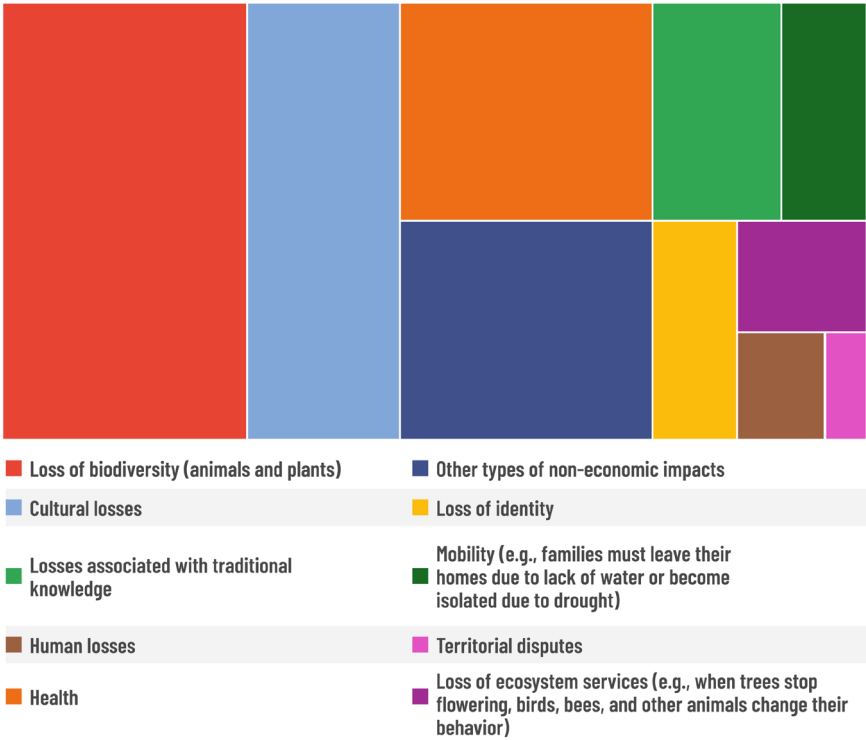


Figure 12. Non-economic losses recorded in the communities. Source: Prepared by the authors, based on interviews collected by the Youth for Climate initiative.

The diagnostic phase and the understanding of risks and threats were fundamental for the next steps in developing the adaptation projects. The following phase began with the formulation of a general

objective that connected the problem to potential solutions, and then collectively reached the core of the projects, consisting of goals and actions. After a descriptive presentation, informational tables were created to compile the key information needed for the implementation of the community adaptation projects (Table 1).

TABLE 1. ILLUSTRATIVE EXAMPLE OF HOW TO PROPOSE GOALS AND ACTIONS, AS WELL AS STRATEGIES TO IMPLEMENT THEM. SOURCE: PREPARED BY THE AUTHORS.

WHAT? /GOALS	ACTIONS	HOW	HOW	WHEN
Increase resilience of houses	Identify houses at greatest risk	Community work	Knowledgeable community members	Identify houses by the end of the year
	Improve buildings by combining different technologies	Community fund	Community association	Continuous improvement
		Housing programs	City hall	
			Partners	

The section of the projects was dedicated to closure, serving as an invitation to both current and potential partners. The final structure of the projects reflects the logic presented in Table 2, always respecting the cultural, identity-based, social, and historical diversity of each group.

TABLE 2. FINAL STRUCTURE OF ADAPTATION PROJECTS DEVELOPED BY JUVENTUDE PELO CLIMA

Chapter 1 Context and History	Space to tell the community's story as if no one had ever heard it before, providing information on: Name; • Location (municipality, state, biome); • The history of the people/community; • The community's vision/relationship with the climate.
Chapter 2 Multiple Sciences	This section was designed for the youth to introduce themselves, bridging traditional knowledge with academic sciences.
Chapter 3 Risks and Threats	Presentation of the results from community discussions about people's perceptions of climate change.
Chapter 4 Objective	The objective serves as a guide for the youth and their communities to envision a future space that offers better quality of life.
Chapter 5 Goals and Actions	Goals are measurable, and actions are everything put into practice to achieve these goals. Includes a timeline for the implementation of actions so that each project can reach its main objectives.
Chapter 6 Budget	The amounts presented should be consistent with the goals and activities proposed in the adaptation project as a whole.
Chapter 7 Final Considerations	Close the project with final remarks, words of motivation, and an invitation for respectful partnerships that support these dreams.

Although the adaptation project model had been previously established, the youth and their communities were responsible for filling in each section. The technical teams from IPAM and Cultural Survival (CS) acted as mentors and guides, explaining the purpose behind each chapter and assisting in the development process of each project, always respecting the group's autonomy.

Considering the diversity of realities present in the 18 territories across six of the nine states of the Legal Amazon involved in this initiative, the outcome is a set of robust projects grounded in climate science that emerged from the youth and their communities themselves, in dialogue with academic sciences.

As the chapters were completed, the youth had the opportunity to discuss how each participant developed their work in the territories, creating a space for cross-learning. It is important to highlight that the group experienced two key moments that resulted in significant leaps in learning, maturity, and intergenerational interaction, all essential to the formation of these young leaders.

PRESENCE AND ENGAGEMENT

The first in-person meeting of Youth for Climate took place in Brasília, where the participants were able to meet face-to-face and strengthen their bonds. During this meeting, IPAM and CS revisited the main climate and project concepts learned up to that point, reserving the final day for the participation of partners and funding organizations. In small discussion circles, each youth presented their project and demonstrated their capacity for community mobilization to implement projects with a real potential to address climate change (Figure 13).



Figure 13. Record of the participants at the in-person meeting in July 2025, which brought together Youth for Climate, representatives from partner organizations and funding bodies, government, and civil society. Source: IPAM Archive.

The second key moment took place during the 30th Conference of the Parties (COP30) in Belém. Five of the 18 youth were able to attend the COP, actively participating in side events organized through joint collaboration. Bringing the initiative to the international stage reinvigorated the group, allowing these five representatives to showcase to the world how young people from the Amazon are finding ways to adapt to climate change. The events were attended by both Brazilian and international organizations that, despite the distance, face challenges similar to those encountered in the Brazilian Amazon (Figure 14).



Figure 14. Ailton Borges, Breno Amaju, Lucas Cunha, Newiwe Top'tiro, and Safira Ribeiro represented the Youth for Climate initiative at side events during COP30 in Belém, Pará. Source: IPAM Archive.

Now, with robust projects aimed at improving quality of life in the territories in the face of the climate crisis, new challenges arise for the youth, such as securing funding—essential for turning their collective ideas into concrete actions.



Discussion of Climate from the Territories



Indigenous Peoples, Quilombolas, and Traditional Communities have a deep knowledge of seasonal markers, such as constellations, the sky, animal sounds, and changes in plants, which signal the arrival of a new season (Orlove et al., 2019; Barcellos, 2015; Oliveira & Vale, 2014; Orlove et al., 2003). Their sciences develop organically through direct contact with nature, managing and conserving it. As a result of this relationship between people and their territories, these areas have historically been among the best preserved, playing a key role in maintaining climate balance (Alejo et al., 2021; Walker et al., 2014).

However, with the advent of climate change, records indicate that the losses and damages experienced in collective territories are responses to events such as rising temperatures, prolonged droughts, and extreme events like storms and floods. These events can occur gradually or abruptly as climatic conditions change. The losses and damages affecting Indigenous Peoples and traditional communities in the Amazon—and in many other parts of Brazil and the world—add to long-standing layers of injustice passed down through generations (Coutinho Louback & R. T. Lima, 2023). The debate on climate justice arises from the concerns coming from these traditional territories and has increasingly reached international spaces (Robinson & Palmer, 2018). Part of what the youth documented in their communities is presented below.

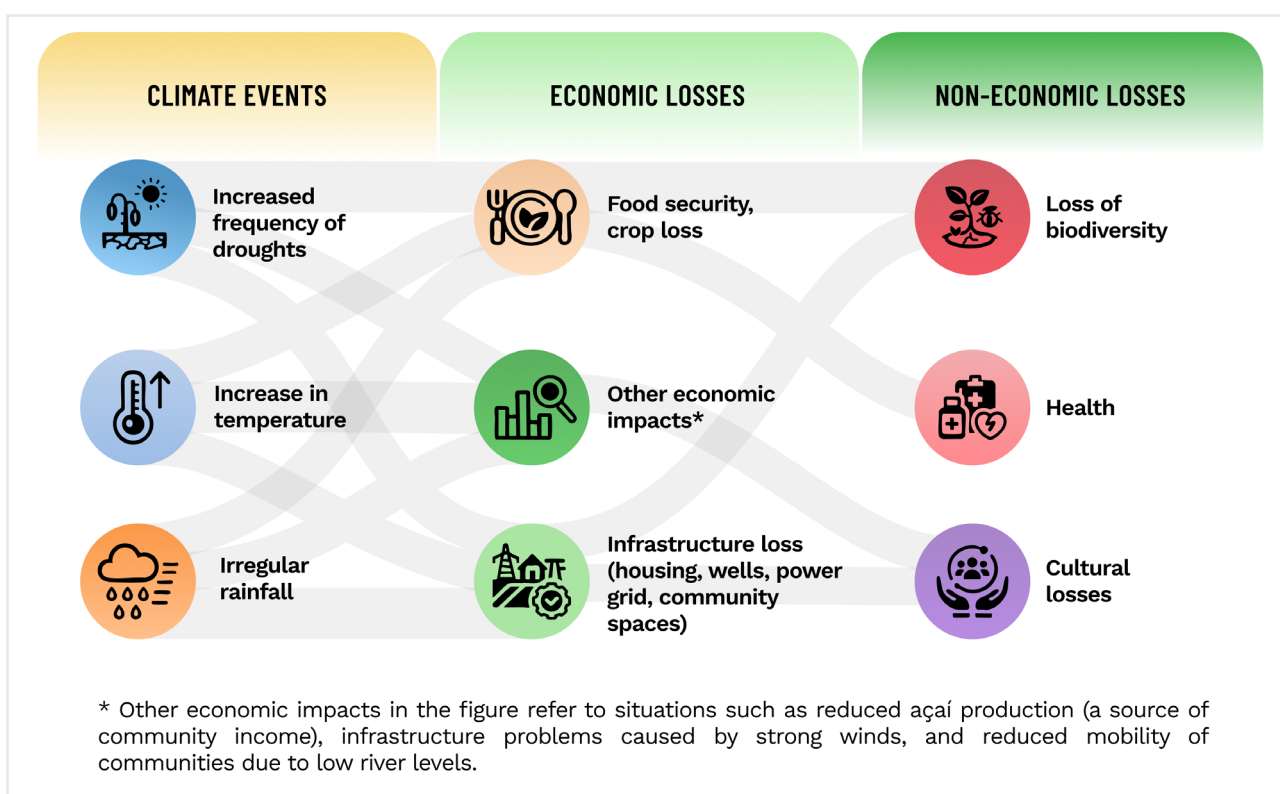


Figure 15. Diagram showing the main impacts reported in interviews conducted by Juventude pelo Clima in their territories. Source: Own elaboration, based on the systematization of interviews conducted by Juventude pelo Clima.



“Climate justice, in Quilombola territories, is more than a concept — it is a call to life. It means recognizing that protecting the forest is protecting our home, our memory, our knowledge, and our futures. Here, where the land holds the footprints of our ancestors, we resist with care, friendship, and culture. In the Quilombos, climate justice is about tending to nature as you would your family: with respect, love, and responsibility. It is about ensuring an education that values our history, empowers our youth, and honors our elders.”

Figure 16. Maicon Oliveira - Quilombola and leader of the Quilombo São Sebastião Cipoal de Portel (PA)

HEAT AND FARMING

According to the youth and their communities, heat waves, followed by abrupt climate changes, affect working hours in the fields. There are health risks for farmers who feel the sun’s heat on their skin; at the same time, the fields lose their productive capacity due to soil degradation, and the flowering period of plants shifts, disrupting planting and harvest routines. In some cases, cassava — a staple food for many communities — rots in the soil, causing food insecurity. Those who rely on agriculture for their income suffer from reduced crop production, lack of access to food, and loss of livelihood for their families.



It is a reality that only we, who live here in the territory, can truly recount and explain, feeling it on our own skin. A temperature that, by 9 a.m., you can no longer endure being in your field, because the heat is too intense.

Figure 17. Thais Cunha - Quilombola and leader of the Quilombo de Guajará-Miri (PA)

WATER AND SALINIZATION

There are reports from communities in Amapá, Maranhão, and Pará that açai production — an Amazonian icon — has also declined. During the Amazonian winter, the palm trees are not fruiting as they used to due to changes in rainfall patterns. Even with careful management by extractive populations, the açai groves have lost their production potential, affecting entire communities that depend on them and whose identity and culture are closely tied to them.

The daily lives of Quilombola children have also been affected by rising temperatures and changing rainfall patterns. Without access to community wells, water insecurity leads to illnesses and, consequently, school absenteeism, compromising both the health and education of these young people, resulting in intangible losses.

Water insecurity also affects traditional communities due to changing tides. In the state of Amapá, for example, extractive communities have observed the sea advancing over the igarapés. River silting blocks communities from carrying out their daily activities,

which can endanger the health of the sick who cannot reach advanced health centers. Water salinization has also had consequences for the health of local populations. To avoid a shortage of potable fresh water, families store rainwater to prevent consuming brackish water, which can cause skin and intestinal diseases.



“In recent years, we have been affected by ocean waters. This has worried each of us very deeply. The first issue is silting, which closes our rivers and makes it difficult for us to move from one place to another to carry out our activities — fishing, extractivism, transporting patients, etc. Salinization is also one of our major concerns. In recent years, saltwater has entered our igarapés, putting us in a very critical situation.”

Figure 18. José Cordeiro, community health agent and farmer, Comunidade Extrativista Arraiol (AP)

DROUGHT AND WILDFIRES

According to community reports, rising temperatures have caused the loss of plant species traditionally used by these peoples for food, medicinal, and cultural purposes.

The heat, combined with drought, has also increased the frequency and intensity of wildfires across several collective territories, such as in Tocantins and Maranhão. Fire, an element that is part of the cultural practices of various peoples in managing their territories, contrasts with uncontrolled forest fires (Falleiro et al., 2021; Santa-Rosa et al., 2019; Schmidt et al., 2011). While fire has multiple uses, from clearing land for planting roças (small-scale fields) to ancestral hunting and fishing, wildfires have caused losses and damages to communities.

Although the Amazon is not a biome that naturally burns, prolonged droughts combined with deforestation have transformed the native vegetation, creating an arid environment conducive to illegal fires (Alencar et al., 2019). Fire has spread more easily, reaching previously wet areas like igarapés, burning centuries-old trees and medicinal plants.

Communities across the Amazon have noticed an increased risk of fire spreading, with severe consequences for air quality. Prolonged exposure to smoke can negatively affect health, especially among children (Smith et al., 2015; Jacobson et al., 2014). Communities involved in tourism also see their income decline during wildfire events. Beyond the impacts on health and the economy of traditional communities, fires release additional greenhouse gases into the atmosphere, exacerbating climate change.



“For us in the Quilombo, the fall of centuries-old trees is very painful. They are not just wood; they are part of our history. Many provided shade for our ancestors, marked our paths, offered shelter and food. When the wind knocks down such a tree, it feels like a piece of our memory and identity falls too. It’s as if nature is reminding us that everything has its time, but also calling us to take better care of what we still have.”

Figure 19. Antônia Almeida Gomes, elder of Quilombo Campo Redondo (MA)

DECLINE IN EXTRACTIVE PRODUCTION

Beekeeping management is also affected by the increase in wildfires in Quilombos in Amapá. These communities, which rely on apiculture for income, experience both economic and non-economic losses due to the reduction of local biodiversity. A similar impact is reported by babaçu coconut breakers, whose mother palms die from a combination of factors. Increased deforestation, combined with climate change, has reduced the productivity of babaçu groves, affecting the lives of these communities—especially the livelihoods and identities of women.



“The babaçu coconut palm, or rather, the beloved mother-palm, nourishes us, sustains us, and teaches us to resist. From its fruits come food, art, and life. Through the hands of women, it raises its children—among them, me. And when a palm dies, it is not only the land that becomes empty; the mourning of a people who loses a mother is born as well. Each palm defeated is an open wound in our memory and our hope.”

Figure 20. Maria de Deus (Deusa), babaçu coconut breaker from Morada Nova Village (TO)



Bottlenecks to the Implementation of Community Adaption Projects

Edson Krenak (Krenak People), Brazil Program Manager at Cultural Survival and PhD Candidate at the University of Vienna

THE TERRITORY AT THE COSMOLOGICAL CROSSROADS

Social, political, and scientific discourses about the climate crisis describe the moment we are living in as a historic decision in which humanity's choices will determine the future of life on the planet — at least human life. The human world, as we know it, faces an existential threat.

Indigenous Peoples describe this crossroads as a meeting of worlds, an ancestral crossroads that is not unprecedented. As Ailton Krenak would say, it is a point at which humanity needs to act to “postpone the end of the world,” choosing the path of re-enchantment, reciprocity, and respect for Mother Earth, instead of the destruction promoted by an endless extractivist model.

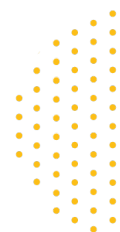
In this context, the critical moment of this ancestral crossroads has a very concrete and defined place: the territory where communities, Indigenous Peoples, traditional populations, and Quilombolas live. In the territory, the crossroads converge in climate degradation, which makes livelihoods and ways of life more vulnerable.

The lack of visibility of Indigenous Peoples and traditional communities, as well as the impacts and risks they face in the Amazon context, combined with limited economic and financial capacity, is repeated in other contexts, such as northern Minas Gerais, in the Jequitinhonha Valley. These populations face similar structural challenges, associated with high poverty rates, limited access to qualified technical information, low institutional capacity to engage on equal terms with companies and regulatory bodies, and severe restrictions in access to financial resources.

At the same time, initiatives aimed at environmental preservation and so-called sustainable development have, over the past decades, mobilized large-scale projects with budgets on the order of billions of Reais, which are often concentrated in government-led megaprojects or intermediaries, without these resources translating into community strengthening, local climate adaptation, or the effective guarantee of territorial rights.

The result of these bottlenecks is a profound asymmetry: territories that concentrate environmental risks, extractive pressures, and climate vulnerability remain with limited political influence and autonomous management capacity, while financial flows, strategic decisions, and effective political participation remain distant from the communities directly affected.

For example, it is striking that resources originally designed to support climate mitigation and adaptation actions have recently been directed to enterprises whose activities are being questioned by local communities due to potential territorial, socio-environmental, and health impacts. The allocation of substantial amounts to such initiatives raises concerns about the coherence between the objectives of climate policies and the concrete effects of certain investments on vulnerable populations.





The climate vulnerability of indigenous lands and traditional territories does not arise from the spectacularization of climate, media dramatization of the crisis, or inexplicable natural phenomena, but from the fragility in the implementation of already recognized rights and the inefficacy of state policies that either fail or abandon these lands. Demarcation, respect for Free, Prior, and Informed Consent (FPIC) as a legal and political instrument for defense and participation, as well as the usufruct of natural resources and their wealth guaranteed by the 1988 Constitution and the International Labour Organization (ILO) Convention 169, should lie at the heart of climate policies for these regions.

The cosmological aspect of this crossroads lies in the confrontation between the technical grammar of climate policy — “adaptation,” “resilience,” and “risk management” — and indigenous ontologies, which see the Earth not as an environment, but as a relative. Not as a place in which one adapts or mitigates losses and damages, but as a body whose sensitivity is not a biological variable, but a spiritual relationship. The exposure of this body’s vulnerability is not measured by the frequency of extreme winds, but by the disruption of connections between humans, rivers, spirits, and forests. And the capacity for adaptation cannot be limited to infrastructure and governance, but must include the maintenance of bonds of reciprocity and care that sustain a balance that is not merely ecological, but cosmic.

CHALLENGES AND OPPORTUNITIES FOR THE IMPLEMENTATION OF COMMUNITY ADAPTATION PROJECTS

Indigenous, Quilombola, and Traditional communities are on the frontlines of climate change impacts, despite being the least responsible for global emissions (IPCC, 2023). In their territories, they protect and care for a significant portion of the planet’s most biodiverse regions, guided by their worldviews and lifestyles, thereby playing a fundamental role in climate adaptation.

The crossroads discussed above are not only epistemological barriers but also systemic ones in the implementation of their community adaptation projects and in reorganizing their capacities to respond to climate events while continuing to care for their lands and territories of life. In this section of the publication, we discuss, within the field of public policy, some aspects of these crossroads and possible pathways to overcome them.

The crossroads presented here expose asymmetries, discrepancies, and challenges in climate policies that are cosmological, epistemological, and legal in nature, which produce the most severe symptom of climate injustice: the difficulty in securing adaptation financing. Resources are concentrated in large institutional centers, such as non-governmental organizations, universities, government agencies, and even mining and infrastructure companies. The territories addressed here — indigenous and traditional communities in the Brazilian Amazon, as well as the semi-arid region of the Vale do Jequitinhonha — are not only the most vulnerable but also home to the



greatest diversity of Indigenous Peoples, Quilombolas, and traditional communities in the country, who remain excluded from direct access to funding mechanisms.

Current financing models were designed for institutions with formal technical, legal, and accounting capacity. These models fail to reach the most impacted populations because they completely ignore traditional governance methods and community autonomy. As a result, the communities most exposed to climate impacts have had, and continue to have, limited access to the resources necessary to adapt, perpetuating the cycle of climate injustice.

Although funds managed by Indigenous peoples and the success of social and economic projects led by Quilombola and Traditional communities are changing the prejudiced narrative of “lack of local technical capacity” and the “requirements for legal registration and infrastructure, CNPJ⁴”, which previously excluded and diluted resources before reaching communities, there are still at least two major challenges highlighted here: territorial insecurity and community engagement.

When a community has the opportunity to access funds, money, and resources for a project, local leadership knows they are embarking on a journey that involves a great deal of bureaucratic, banking, time-consuming, and travel-related work. This journey requires a disproportionate effort to access information, complete grant applications, and engage with institutions that operate under different temporalities, worldviews, and epistemologies. This imposes a hidden burden of participation.

Many of the communities I work with have female leaders who, in addition to carrying this burden, must also care for their families, manage food, and handle daily life. Many men, in turn, must leave their productive activities and, together with their communities, pause rituals and ceremonies to comply with bureaucratic requirements.

On one occasion, a community leader had to travel for days to meet with her regional bank manager because the person in charge at the nearest branch did not know how to handle the paperwork presented, nor the exchange of foreign currency. This cost the leadership dearly. On another occasion, the bank did not accept the documents and required a visit to the community to “verify the capacity to manage the fund.”

4 National Register of Legal Entities (CNPJ)



Beyond this administrative burden, there are often meetings with donors, organizations, and government agencies conducted in ways that are culturally inappropriate. Commenting on this issue in another context, Lee and colleagues (2005) note that, when adequate engagement mechanisms are absent, what is observed in calls for proposals and among evaluators is the extraction of community knowledge, a lack of understanding of local history and culture, disregard for the community's needs, and tokenization⁵. There is a clear perception that efforts to involve communities fall short of expectations, due to who and what is considered valuable or prioritized (Lee et al., 2025).

This multi-level asymmetry creates an invisible community cost. To overcome this imbalance, it is necessary not only to expose the problem and incorporate this dimension into project demands but also to align funding mechanisms with the ecological, cultural, and spiritual cycles of the territories. In this way, epistemological and temporal flexibility, intercultural technical support, and fair compensation for community engagement can be ensured.

Territorial security and community engagement are key to addressing the challenges posed at these crossroads. More than that, seriously considering these three aspects invites us to integrate solutions in two ways:

a. Adopting a programmatic rather than project-based perspective

Projects are short-term activities, and funds are generally concentrated in large institutions. They are predefined and aim to deliver specific outputs, renewing the burden of community engagement with each new cycle. Furthermore, they offer limited capacity for territorial strengthening, as their timelines are constrained.

A community adaptation program, on the other hand, would involve a flexible, long-term fund managed by a community council (similar models include the Indigenous Council of Roraima – CIR – and the Federation of Indigenous Organizations of the Rio Negro – FOIRN). In this model, financing would be directed to the community's administrative core, and access to resources would be rotational, allowing the community to use them according to its priorities and needs.

In the case of a localized climate emergency, it would not be necessary to deal with the stress of seeking emergency support. This way, the platform would align resources with the ecological, cultural, and spiritual rhythms of the territory, granting autonomy more closely aligned with its worldviews. Additionally, such platforms can better address structural and systemic problems.

⁵ Tokenism emerged in the 1970s, introduced by Rosabeth Moss Kanter, as a concept describing how, in various contexts, minorities represent symbolic or apparent diversity rather than meaningful inclusion. In the case discussed in the text, one can speak of the tokenization of Indigenous, Quilombola, and Traditional Communities or organizations when they gain access to funds, without the funds necessarily having the flexibility to work collaboratively and with respect for that diversity.

b. Financing processes, not just products

Just as climate impacts have real costs, participating in funding mechanisms also carries costs. To avoid outsourcing and barriers in accessing funds, communities should allocate a significant portion of the budget to cover the invisible costs of participation.

We increasingly see receipts for honoraria for elders and community leaders, travel expenses, meals, meetings (including food, drinks, and rented furniture), and communication tools (satellite internet, projectors, speakers). Yet there is still little compensation for those who bear the bureaucratic burden.

By focusing on processes, the time and knowledge of the community are recognized as legitimate expertise, correcting the structural imbalance between technical-bureaucratic knowledge and ancestral knowledge, which are often complementary, such as in bilingual community work.

Adaptation should be seen as a creative, flexible, and evolving process—not as a finished product. Recognizing community work and dedication places the costs, time, and knowledge of communities at the center of local climate governance, transforming financing into a tool for territorial, epistemic, and ecological justice rather than a mere technical and bureaucratic instrument.

c. Weaving the Future from the Crossroads

Faced with the crossroads imposed upon them, Indigenous Peoples, Quilombola and traditional communities are not passive victims of colonialism but rather guardians and warriors of possible futures—or an ancestral future, as Ailton Krenak (2022) puts it. A future that is connected to the commitments of previous generations who resisted colonialism and to the heirs of our actions, achievements, and losses.

Indigenous advocacy on a global scale has been inspired by individual actions, such as those of the pioneer Deska Heh Levi Cayuga from Canada. On July 17, 1923, in Geneva, after having his speech rejected by the League of Nations when denouncing the disrespect, theft, and destruction of his territory, he conquered the city—and the world—through Indigenous activism. These models of struggle and engagement do not emerge solely from historical memory; they are renewed in contemporary forms of global advocacy.

At COP30 in Brazil, for example, Indigenous Peoples, in a historic participation, occupied both the formal negotiation spaces and the symbolic territories of the “green zone” and the exterior areas of the event headquarters, affirming that the climate transition is only legitimate if it recognizes territorial jurisdiction and self-determination. Indigenous leaders did not merely participate as observers; they acted as drafters of proposals on adaptation, direct financing, safeguards, and territorial protection, connecting local agendas—such as land demarcation, combatting predatory extractivism, and fire management—to global climate negotiations.



In a similar vein, the work and coordination of the Indigenous and Traditional Peoples Caucus at the COPs of the United Nations Framework Convention on Climate Change (UNFCCC), the processes within the UN Local Communities and Indigenous Peoples Platform (LCIPP), and the growing presence of Indigenous and Quilombola representatives in debates on critical minerals and the energy transition demonstrate that contemporary Indigenous and Black diplomacy is not merely reactive—it establishes principles, ethical protocols, and fairer alternatives at these crossroads of humanity. From this, we can learn—from yesterday in Geneva to today in Belém—that territorial and climate justice is not achieved solely in courts or at the United Nations; it emerges from the capacity of Indigenous Peoples, led by the energy of youth and the resilience of women and elders, to build trans-territorial and transnational alliances. It is not merely participation, but a continuous exercise of self-determination.

Indeed, these three actions are founded on self-determination, the non-negotiable cornerstone of climate justice. For the peoples of the Amazon, the Cerrado, and the Vale do Jequitinhonha, there can be neither resilience nor adaptation without full control and security of their territories. This requires the immediate demarcation of all Indigenous lands, the titling of Quilombola territories, and the effective removal of invaders and violators of ancestral lands.

Territorial security is the first of adaptation policies and technologies, and it is central to these peoples' agenda for the planet's future. It is linked to the safety of communities and their ability to respond to climate events with leadership and autonomy, without bearing the bureaucratic burden of actions that serve the planet. Moreover, it ensures that they care for their communities while sowing the seeds of peace. Territory situates the crossroads between cosmology and self-determination, as it constitutes not only a physical space but also the legal and ontological foundation from which communities generate truly sustainable climate solutions—solutions that do not come from outside, but are familiar to the land and its people.

The second course of action is the radical decolonization of climate finance. Resources can no longer remain trapped in bureaucracy that turns communities into mere implementers of external projects or showcases. Climate finance must strengthen autonomy, not dependency. It must follow territorial logic and learn from community life, not from the market or the political calendar.

Third, climate science must remove epistemological obstacles and, in turn, heal its ontological blindness in order to meet Indigenous Peoples and traditional communities at these crossroads, establishing dialogues of reciprocal knowledge in which understanding of forest cycles, river and wind behavior, and the signals of nature spirits are recognized as legitimate data and knowledge systems in their own right. The xapiri and the enchanted beings are the master teachers of climate and of Mother Earth's body.

When climate justice is realized at the cosmological crossroads, people will see that the Earth is a subject, not a backdrop. From this perspective, the planet is not

a set of resources but a living entity that speaks, feels, and reacts. This recognition entails an ontological shift, which translates into the creative imagination of the forest as *florestania*⁶: an alternative to the economy. Governance becomes coexistence, and technical mitigation becomes a spiritual and ecological relationship.

This is a call for international and environmental rights to become cosmopolitical rights, open to the plurality of worlds and to the non-human voices that sustain life.



6 Ailton Krenak uses the term *florestania* as a way to explain the possibilities of human existence in communion with the forest and the technologies that the forest provides. While citizenship relates to people living in cities, *florestania* refers to people who live in the forests.

References consulted



- ALEJO, C. et al. Are indigenous territories effective natural climate solutions? A neotropical analysis using matching methods and geographic discontinuity designs. PLoS ONE, v.16, n. 7, e0245110, jul. 2021. DOI: <https://doi.org/10.1371/journal.pone.0245110>.
- ALENCAR, A. et al. Amazônia em chamas: onde está o fogo. IPAM Amazônia, 2019. p. 1-10.
- BARCELLOS, M. Serviços Ambientais no Corredor Etnoambiental Tupi Mondé. São Paulo: Ikore, 2015.
- BACCINI, A. et al. Tropical forests are a net carbon source based on aboveground measurements of gain and loss. Science, v. 358, n. 6360, p. 230-234, 2017.
- BIRKMANN, J. et al. Understanding human vulnerability to climate change: A global perspective on index validation for adaptation planning. Science of The Total Environment, [Amsterdam], v. 803, 150065, jan. 2022. DOI: <https://doi.org/10.1016/j.scitotenv.2021.150065>.
- BRONDÍZIO, E. S. et al. Locally Based, Regionally Manifested, and Globally Relevant: Indigenous and Local Knowledge, Values, and Practices for Nature. Annual Review of Environment and Resources, v. 46, p. 481-509, out. 2021. DOI: <https://doi.org/10.1146/annurev-environ-012220-012127>
- CARVALHO, T.; CARVALHO, C.; MORAIS, R. Fisiografia da paisagem e aspectos biogeomorfológicos do lavrado, Roraima, Brasil. Revista Brasileira de Geomorfologia, São Paulo, v. 17, n. 1, 2016.
- COIAB. Mudanças Climáticas e Povos Indígenas, 2009. at: <https://ipam.org.br/wp-content/uploads/2010/08/mudancas-climaticas-povos-indigenas-2010.pdf>. Accessed on: [10 jan. 2026].
- COIAB. Mudanças Climáticas e Aquecimento Global na visão dos Povos Indígenas, 2011. Available at: <https://ipam.org.br/wp-content/uploads/2010/08/mudancas-climaticas-povos-indigenas-2010.pdf>. Accessed on: [10 jan. 2026].
- COUTINHO, L.; LIMA, R. Quem precisa de justiça climática no Brasil?, 2023. Available at: https://oc.eco.br/wp-content/uploads/2022/08/Quem_precisa_de_justica_climatica-DIGITAL.pdf. Accessed on: [10 jan. 2026].
- DOURADO, M. et al. A gestão ambiental e territorial de Terras Indígenas: uma questão climática Brasileira - Journal for Brazilian Studies, London, v. 5, n. 1, p. 230-254, 2016.
- EMMERT, L. et al. Winds with destructive potential across a topographic and seasonal gradient in a Central Amazon forest. EGUsphere, 2024. DOI: <https://doi.org/10.5194/egusphere-2024-3234>.
- FALLEIRO, R. et al. Histórico, Avaliação, Oportunidades e Desafios do Manejo Integrado do Fogo nas Terras Indígenas Brasileiras. Biodiversidade Brasileira-BioBrasil, Brasília, DF, v. 11, n. 2, p. 75-98, 2021. DOI: <https://doi.org/10.37002/biobrasil.v11i2.1742>.
- HART, M. The Evolution of the Atmosphere of the Earth. Icarus, v. 33, p. 23-39, 1978. DOI: [https://doi.org/10.1016/0019-1035\(78\)90021-0](https://doi.org/10.1016/0019-1035(78)90021-0).
- IPCC. Assessment Report 6 Climate Change 2021: The Physical Science Basis. Genebra: IPCC, 2021. Available at: <https://www.ipcc.ch/report/ar6/wg1/>. Accessed on: [10 jan.2026].
- IPCC. Summary for Policymakers. In: PÖRTNER, H.-O. et al. (ed.). Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Genebra:IPCC, 2023. p. 01-34. DOI: <https://doi.org/10.59327/IPCC/AR6-9789291691647.001>.

JACOBSON, L. et al. Acute effects of particulate matter and black carbon from seasonal fires on peak expiratory flow of schoolchildren in the Brazilian Amazon. PLoS ONE, v. 9, n. 8, e104177, ago. 2014. DOI: <https://doi.org/10.1371/journal.pone.0104177>.

KRENAK, Ailton. Futuro ancestral. São Paulo: Companhia das Letras, 2022.

KWEKU, D. et al. Greenhouse Effect: Greenhouse Gases and Their Impact on Global Warming. Journal of Scientific Research and Reports, v. 17, n. 6, p. 1-9, 2018. DOI: <https://doi.org/10.9734/jsrr/2017/39630>.

LAOUP, A. The Greek Myth of Pleiades in the Archaeology of Natural Disasters. Decoding, Dating and Environmental Interpretation. Mediterranean Archaeology and Archaeometry, Athens, v. 6, n. 2, p. 5-22, 2017. Available at: <https://www.maajournal.com/index.php/maa/article/download/106/78/147>. Accessed on: 10 jan. 2026.

LEE, J. et al. The Trouble With Community Engagement: From Power Sharing to Power Shifting Through the Community Bill of Rights. The Foundation Review, [Grand Rapids], v. 17, n. 2, 2025. DOI: <https://doi.org/10.9707/1944-5660.1732>

LEVIS, C. et al. Indigenizing conservation science for a sustainable Amazon. Science, Washington, DC, v. 386, n. 6727, p. 1229-1232, 2024. DOI: 10.1126/science.adn561

MARENGO, J. et al. Mudanças Climáticas e Eventos Extremos no Brasil. 2009. Available at: <https://globaltrends.thedialogue.org/publication/mudancas-climaticas-e-eventos-extremos-no-brasil/>. Accessed on: [10 jan. 2026].

MARTÍNEZ, R. et al. Síntesis del Clima de los Andes Tropicales. In: HERZOG, S. K. et al. (ed.). Cambio Climático y Biodiversidad en los Andes Tropicales. 1. ed., 2012. p. 117-130. Available at: https://www.iai.int/admin/site/sites/default/files/libro_completo.pdf. Accessed on: [10 jan. 2026].

MCPHILLIPS, L. et al. Defining Extreme Events: A Cross-Disciplinary Review. Earth's Future, v. 6, n. 3, p. 441-455, mar. 2018. DOI: <https://doi.org/10.1002/2017EF000686>.

NEVES, D. Influência da Vegetação na Precipitação Pluviométrica Sazonal do Estado do Amapá: um Estudo de Sensibilidade Climática. 2012. Tese (Doutorado em Biodiversidade Tropical) – Universidade Federal do Amapá, Macapá, 2012.

OLIVEIRA, A.; VALE, S. (org.). Amazonian Peoples: perceptions of indigenous communities on climate change - Serra da Lua/RR. Boa Vista: Conselho Indígena de Roraima, 2014.

ORLOVE, B. How people name seasons. In: STRAUSS, Sarah; ORLOVE, Benjamin S. (org.). Weather, Climate, Culture. Oxford: Bloomsbury Publishing, 2003. p. 326-347. ORLOVE, B. et al. Framing climate change in frontline communities: anthropological insights on how mountain dwellers in the USA, Peru, and Italy adapt to glacier retreat. Regional Environmental Change, v. 19, n. 5, p. 1295-1309, 2019.

PINHO, P. et al. Vulnerabilities and compound risks of escalating climate disasters in the Brazilian Amazon. Nature Communications 16, 11579, 2025. DOI: <https://doi.org/10.1038/s41467-025-66603-0>

ROBINSON, M.; PALMER, C. Climate Justice: Hope, Resilience, and the Fight for a Sustainable Future. 1. ed. London: Bloomsbury Publishing, 2018. SANTA-ROSA, A. et al. Resultados preliminares do manejo integrado do fogo nas terras indígenas Paresi. Journal of Biotechnology and Biodiversity, Gurupi, v. 7, n. 4, p. 469-480, nov. 2019. DOI: <https://doi.org/10.20873/jbb.uft.cemaf.v7n4.srosa>.

SCHIPPER, E.; REVI, A.; PRESTON, B. Climate Resilient Development Pathways. In: Climate Change 2022 – Impacts, Adaptation and Vulnerability. Cambridge: Cambridge University Press, 2022. DOI: <https://doi.org/10.1017/9781009325844.027>.

SCHMIDT, I. et al. Fogo e artesanato de Capim-dourado no Jalapão – Usos tradicionais e consequências ecológicas. Biodiversidade Brasileira, Brasília, DF, v. 1, n. 2, p. 67-85, 2011.

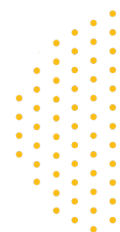
SIEGERT, M. et al. What ancient climates tell us about high carbon dioxide concentrations in Earth's atmosphere. London: Imperial College London, 2020. DOI: <https://doi.org/10.25561/79292>.

UNFCCC. Decision 5/CP.17: National Adaptation Plans. In: CONFERENCE OF THE PARTIES, 17., 2011, Durban. Report... Bonn: UNFCCC, 2012. Annex B. Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>. Accessed on: [10 jan. 2026].

VALE, S. Transformações do tempo e políticas climáticas dos povos indígenas. 1. ed. Brasília, DF: Mil Folhas; Instituto Internacional de Educação do Brasil (IEB), v2025.

MET OFFICE. Climate zones. Exeter: Met Office, 2025. Available at: <https://weather.metoffice.gov.uk/climate/climate-explained/climate-zones>. Accessed on: [10 jan. 2026].

WALKER, W. et al. Forest carbon in Amazonia: The unrecognized contribution of indigenous territories and protected natural areas. Carbon Management, v. 5, n. 5-6, p. 479-485, 2014. DOI: <https://doi.org/10.1080/17583004.2014.990680>.



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