



HARMONIZE



Amazon in dialogue: Building bridges in search of solutions to the challenges of climate change

TECHNOLOGY TO FACE THE CHALLENGES OF CLIMATE CHANGE IN BAIXO TOCANTINS, PARÁ

Extreme weather events, environmental degradation and socioeconomic inequalities intensify the risks of epidemics. These impacts are felt differently in different local communities, requiring a collective response to identify and address problems within a social and institutional context.

This document is the result of the Workshop "Mocajuba with Health in Times of Climate Change", held in November 2023 at the Isaura Baía School, in Mocajuba, Pará. It brought together representatives from different sectors to debate and seek solutions to the challenges that climate change and impacts to the health of the local population. Community engagement promotes the sharing of knowledge and perceptions, recognizing individuals as agents capable of evaluating their own situations.

From this dialogue of situation emerged an understanding of the current social problems and the needs of the community in areas such as health, education, sanitation, transport and housing in Mocajuba, Pará. These aspects of life are particularly vulnerable to climate change, demanding coordinated action.

HARMONIZE is creating an accessible digital to gather and organize climate, environmental, socioeconomic and health data, as well as collect new landscape data using low-cost drones and sensors in partnership with local leaders. The goal is to calibrate and adapt products and disease transmission models to local scales.

Participants:

Participation in the workshop was diverse, with representatives from the urban areas of Mocajuba and Cametá, as well as rural locations such as Vizânia (Mocajuba) and Tambaí-Açu (Baião). There was broad representation among the participants, including various municipalities in the Baião region.



Health professionals, community leaders, residents of the region and researchers met in discussion groups to discuss emerging issues in the region.

Image courtesy of Harmonize Brazil

MOCAJUBA AND CAMETÁ

UNITING EFFORTS FOR HEALTH AND SUSTAINABILITY

The workshop aimed to promote dialogue between different sectors of society to identify challenges and propose collaborative and sustainable solutions. State and municipal health and environmental managers, local NGOs, university professors, community leaders, health agents and residents participated.

The discussions addressed the quality of health services, access gaps, strategies to face epidemic and endemic diseases, as well as evaluating local environmental impacts on the health of the population, proposing measures to preserve and recover degraded areas.



“— The cassava plants that were supposed to start producing in December are all dry because there was no rain.

Mocajuba and Cametá are located in the Baixo Tocantins region, in the State of Pará. Mocajuba covers an area of 871,171 km², with a population of 31,917 inhabitants, well known for its agriculture, mainly in the production of açaí, cocoa, cassava and corn. Cametá, in turn, occupies an area of 3,081,367 km², with a population of 140,814 inhabitants, characterized by its islands and alluvial forests, predominantly açaí and buritizeiros. Both regions have undergone significant transformations due to the construction of the Tucuruí Hydroelectric Plant four decades ago, resulting in forced population displacement, loss of biodiversity and changes in the traditional way of life, especially in fishing and agriculture. The advancement of the discussion on the Araguaia-Tocantins waterway, with the construction of a port in Mocajuba, also generates similar concerns, intensifying occupation activities such as livestock farming and soybean monoculture, with negative impacts on the region.

Observations in the ecological calendar reveal changes:

An ecological calendar marks the seasons of natural events and human activities as perceived by the community. Through observations in the ecological calendar, we identified the challenges associated with different seasons. The region is divided into three distinct areas: urban, rural dry land (roads), and rural riverside (floodplains-islands). Each of these areas has particularities in its organization and territorial structure, which suggests that climate change may affect them differently. The ecological calendar serves as a key engagement tool, helping to monitor these seasonal challenges across different regions by observing changes in climate patterns. When does winter start? Some disagree whether it is in November or December, citing the lack of rain in November as an indicator. We concluded that winter usually begins between November and December, but in recent years, this period has varied, affecting the amount and intensity of rainfall.



What are the distinctions between winter and summer? “Mud and dust,” they respond. Although the city has asphalt, the smoke from the burning of fields before the rains is evident. July, August, and September are marked by intense heat and increasing drought. These observations highlight the region's unique responses to climate change and underscore the value of the ecological calendar in tracking and understanding these shifts.

Proposals and directions for immediate action

This report presents a variety of proposals and solutions, highlighting some immediate actions and directions, such as:

Access to health in riverine communities

The great distance from riverine communities to emergency health units and the dangers related to the route along the rivers were the main points discussed by the participants. According to a workshop participant: "Health assistance should go to riverine and quilombola communities, not the other way around!" As a step forward, the implementation of river health posts was proposed, which could offer basic services and emergency care closer to the inhabitants. The integration of efficient communication systems, such as radios or satellite phones, would facilitate the request for help and the coordination of rescues in critical situations, in addition to decentralized assistance, and greater safety when crossing the Tocantins River.



Riverside communities face challenges in access to healthcare

Accessibility in riverine areas

In winter, mobility is greatly impaired in riverine areas, due to the "large" water. Wooden walkways linking/connecting houses are simple public infrastructure that have a great impact on the quality of life in communities.



Example of pedestrian walkway: Jorocazinho community from above (photo: 11/14/2023)

Awareness regarding the use of fire

Air quality has worsened with the indiscriminate use of fire both in deforestation and farming. There is also the perception that fire is widely used to burn garbage, due to the lack of public policies and inadequate refuse collection infrastructure.

As a step forward, it was proposed to increase the population's awareness regarding the harmful effects of fire on health. Furthermore, it is urgent to create adequate waste collection and disposal services that meet the specific needs of rural, urban and riverside areas. The use of mechanized agricultural technologies without the use of fire was also proposed.

Deforestation increases health risks

The increase in deforestation in the region has caused significant changes in the dynamics between natural habitats and urbanized areas, resulting in the displacement of wild animal species to areas closer to urban areas. This movement has been particularly notable in the Tambaí-Açu region, citing the appearance of jaguars, a predator at the top of the food chain whose natural habitat has been compromised by deforestation and burning activities. Furthermore, deforestation is forcing communities into urban areas, without adequate reception. Given this scenario, the workshop highlighted the importance of adopting urgent measures to contain the advances in deforestation and, consequently, mitigate the impacts on local fauna and the health of the population. The need to strengthen supervision to reduce deforestation was also highlighted.

"The smoke doesn't come from those who farm, but from the big guys from the center-south who are coming here to open the land..."

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Strengthen the fight against vector-borne diseases

Deforestation, the existence of absence of septic tanks and other stagnant water reservoirs, and the lack of sanitation, lead to an increase in infestation by insects that can transmit infectious diseases, as well as insects that can transmit diseases passively, such as cockroaches and flies. In addition to adequate public policies for water supply and waste management, it is important to strengthen entomological and epidemiological surveillance in the region through the training and maintenance of professionals, access to data collection and analysis technologies, as well as investment in education in health for the population.

Control of zoonoses

Reinforcing zoonosis control structures involves building adequate facilities for the observation and treatment of animals potentially carrying communicable diseases. As a guide, strengthening surveillance and control of zoonoses, monitoring and controlling vectors and education on the care of domestic and wild animals could help prevent outbreaks of zoonoses in the community.

Access to drinking water

The use of shallow pits and the accumulation of garbage during the rainy season, along with the flooding of communities, lead to the spread of contaminants in rivers, the main source of water for most of the riverside population. The use of water of rivers and streams for daily activities and consumption without prior treatment results in an increased incidence of gastrointestinal diseases, especially in children. This problem also affects cities areas, which often resort to irregularity opening wells. As a step forward, proposals were made to implement water capture and treatment systems for the riverside population, with construction of reservoirs for population use. Furthermore, the construction of wells that meet sanitary needs criteria for the local population and expansion of access points to safe drinking water.

Secretary of the Environment

Mocajuba does not have an Environment Secretariat and this is essential for monitoring irregularities, such as deforestation and fires, both in the countryside and in the city. The creation of a Secretariat would not only centralize environmental inspection and management efforts, but would also allow the implementation of specific public policies for the conservation of local biodiversity and the sustainable use of natural resources. This Secretariat could coordinate reforestation actions, water quality monitoring, strategies control and environmental education, involving the community in conservation initiatives.

Basic sanitation plan

The lack of a sanitation plan in the municipality of Mocajuba and the situation in Cametá, which is in the process of preparing its plan, reflect the precariousness of the basic sanitation infrastructure in the localities. The implementation of these plans is essential to minimize public health problems, improving quality of life and environmental sustainability. Among the requirements of these plans, first and foremost, access to drinking water, sewage collection and treatment and solid waste management must be considered. Incorrect waste disposal causes the entire region to have large volumes of waste, favoring the contamination of soil and rivers.

“The riverside communities don't even have (potable) water to drink. “The water used to be clear, I could see the bottom of the river.”

“Agribusiness will impact smallholder production and also water resources. “Our streams and springs will dry up and become contaminated because the crops will be sprayed.”

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