



INDIGENOUS TERRITORIAL MANAGEMENT



TACANA INDIGENOUS PEOPLE

INDIGENOUS TERRITORIAL MANAGEMENT AND THE CONSERVATION OF WATER SOURCES IN THE TACANA TERRITORY



Mileniusz Spanowicz/WCS

Water sources in the Tacana territory and community access to water

The Tacana territory overlaps with 20 different watersheds, 15 of which originate in the Tigre, Cuñaca, Hurehuapo, Mamuque, and El Bala hills, whose headwaters mark the limits of Madidi National Park. Stemming from these headwaters, rivers such as the Emero, Tequeje, Enapurera, and Tarene flow into the Beni River. The study on indigenous territorial management and protection of water sources in the Tacana indigenous territory identified 83 rivers and streams that belong to these basins, 75% of which originate in hills within the Tacana indigenous territory.

The Tacana indigenous territory protects extensive intact forests that collect water that drains from the hills, supplying water downstream. The Emero, Tequeje, and Undumo watersheds originate directly on the lowland alluvial plain. They are not connected to mountain streams and instead are fed by natural underground water stores. Groundwater hydrodynamics in the area are not well-understood, but aquifers are known to exist at different depths. Communities use this water resource with wells.

The study area has two main urban centers, Ixiamas and San Buenaventura; a semi-urban center, Tumupasa; and 85 rural communities located both inside and outside the Tacana indigenous territory. Access to water differs between urban centers and rural communities. In urban areas, most households (89%) obtain water through water pipes or public pools channeled from streams or watersheds in the hills, which are very important for local people's water supply. Just 2.4% of households are supplied directly from rain and rivers, watersheds, lakes, lagoons, or swamps.

In indigenous communities, 41% of indigenous households within the Tacana indigenous territory and 40% of indigenous and intercultural communities outside of the Tacana Indigenous Territory obtain water directly from rain, rivers, springs, and irrigation channels. Thus, 1,100 intercultural and indigenous households outside the Tacana indigenous territory, as well as 475 households within the indigenous territory, consume water originating from the Tacana indigenous territory and Madidi National Park.

Conservation and management of water sources in the Tacana indigenous territory

The study emphasizes the importance of the conservation management of ground and subterranean water sources originating in the hills of the western area of the Tacana indigenous territory and the Amazonian plateau. This indigenous territory protects the sources of a large number of water bodies each contributing, on average, 0.83 m³ of water per second to the Beni River. This river, in turn, discharges up to 2,050 m³ of water per second, at the height of the Bala strait, to the Beni basin. It is important to mention that this Basin deposits the highest amount of water and sediments in the Madeira River, the largest basin of the Amazon.

The Tacana Indigenous Council (CIPTA) and its 20 communities have identified actions to protect their water bodies. In their territorial demand, the importance of conserving forests and watersheds is highlighted. Similarly, zoning of their territory establishes ecological easements in order to maintain water bodies, wetlands, and healthy populations of wildlife. In the application of territorial management, control and monitoring activities have contributed to safeguarding water bodies with successful results. In 2004, CIPTA filed a complaint for water contamination in the Tequeje River, resulting in the eviction of mining companies that were extracting gold.

Different natural pressures and human activities threaten these watersheds. Climate change vulnerability analysis within watersheds shows the level of exposure, sensitivity, and adaptability of different ecosystems. The results show a medium vulnerability in 63% of the area of all the basins – particularly in Emero, Undumo, and Enapurera, located within the Tacana Indigenous Territory and on the border of Madidi National Park. Eighteen percent of the basins have high vulnerability and another nineteen percent, including the Turiapo River exhibit extreme vulnerability. These basins, near the town of San Buenaventura, occupy smaller areas and are crossed by the San Buenaventura-Ixiamas road.

Other key threats are timber extraction and deforestation, which occur in the areas close to communities along the San Buenaventura-Ixiamas, especially closer to the hills. These activities can also affect watercourses by opening paths across streams and increasing



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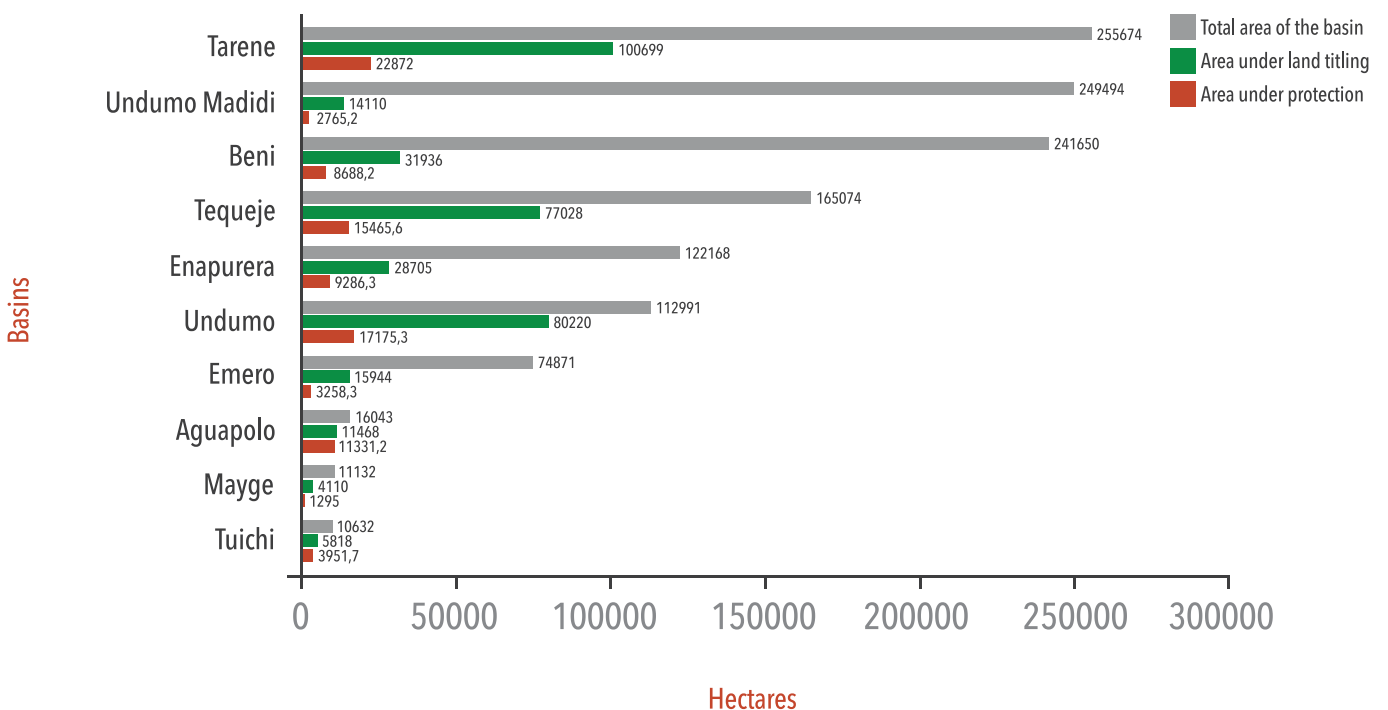
the erosive capacity of the waters and the frequency of floods. A study carried out on the loss of vegetation cover in the area within a radius of 5 km on each side of the San Buenaventura-Ixiamas road corroborates that the Tacana territorial management has been effective in the reduction of deforestation. We saw a loss of 0.5% between 2005 and 2010, as compared to 2.3% in the stretches of road where private landowners or agricultural producers of migrant origin do not carry out territorial management.

The risk of erosion in the mountainous areas where many of the rivers originate is high, largely due to very steep slopes. As a consequence, river sediment is deposited in the flood zones, altering wetland ecosystems. Impacts include changes in the morphology of the riverbed; increased turbidity and temperature of the water; and a reduction in light penetration oxygen levels, which limits or prevents algae and aquatic plant growth.

Actions to mitigate environmental impacts and conserve water sources and ecosystems in this region will be of great importance, particularly in the face of potential gold extraction on the Tequeje River, near the Macahua and Carmen Pecha communities; road improvements between San Buenaventura and Ixiamas crossing the Beni, Buenbani, Caijene, Enapurera, Jiruma, Mayge, Tarene, Tuacuare and Turiapo watershed headwaters; and the San Buenaventura sugarcane mill on the Mayge, Jiruma, Turiapo rivers and part of the Beni River. In the future, the exploitation of hydrocarbons and potential dam constructions are threats to these hydrological, biological, and geochemical processes.

The Tacana indigenous territory, due to its location and territorial management process, presents an important opportunity for the protection of watersheds and to ensure the provision of water for both the Tacana communities and the rest of the region.

Variation of basin areas and their proportion under protection

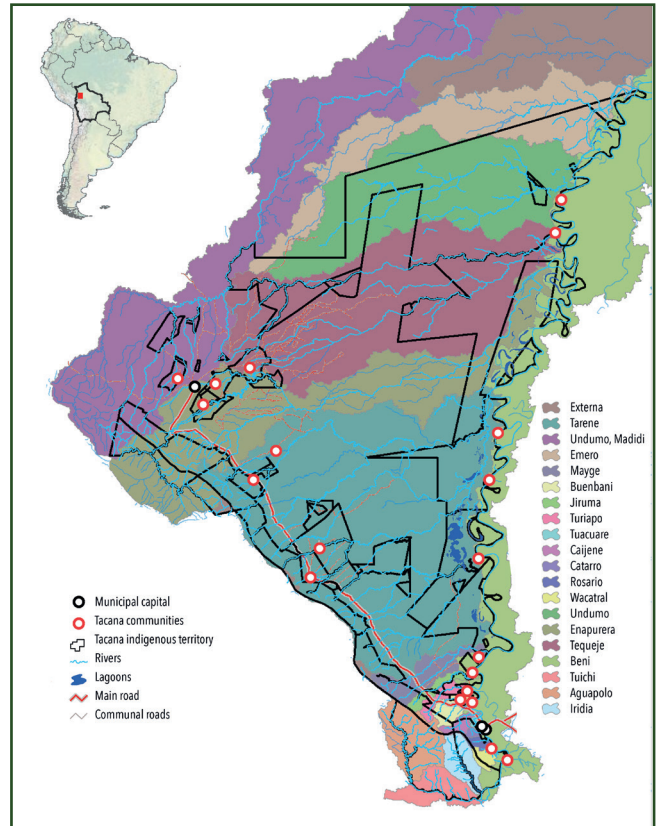


WATER SOURCES

THE CONSERVATION OF THE BASINS OF THE TACANA INDIGENOUS TERRITORY BENEFITS URBAN AND RURAL POPULATIONS

The Tacana indigenous territory and the Madidi National Park and Natural Area of Integrated Management play a fundamental role in the protection and conservation of watershed headwaters. These watersheds give rise to surface runoff and groundwater systems that represent a vital source of freshwater for people in the region.

Hydrographic map of the Tacana indigenous territory



The importance of water sources for indigenous territories

- The Tacana territory contains important watersheds for the region.
- The indigenous territorial management process contributes to maintaining and conserving these watersheds.
- The Tacana Indigenous Territory watersheds provide potable water to the Tacana communities and also nearby towns and other communities in the region.
- The protection of these water resources is enabled by indigenous territorial rights and the zoning instrument implemented through the indigenous territorial management plan.

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