ANNUAL REPORT 2022

Fundación para la Conservación del Bosque Chiquitano

FCBC

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Native bee management in the Chiquitania. Santa Rita – Concepción

MESSAGE FROM EXECUTIVE DIRECTION

2022 was a year marked by important challenges in institutional management and outstanding results achieved by diverse projects carried out. At the same time, we conducted a mid-term review of the Institutional Strategic Plan 2020-2024, which allowed us to visualize adjustments in priorities and deepen lines of action with greater emphasis and better approaches. The start of the project funded by CISU of Denmark, through Danish partner Aktion Amazonas, has provided an opportunity to strengthen the livelihoods of local communities located in the Bajo Paraguá protected area, which is a key transitional forest block between the Chiquitano and Amazonian in the provinces of Velasco and Ñuflo de Chávez. With this project and the one initiated in the San Rafael de Velasco Municipal protected area, they seek to build a connectivity mosaic between the Pantanal of the San Matías Integrated Management Natural Area and the Noel Kempff Mercado National Park, a relevant conservation goal for the northern Chiquitania.

Likewise, the project, financed by the Junta de Andalucía of Spain together with the Spanish partner CODESPA, has closed a first cycle aimed at improving the food security of Chiquitano communities, valuing their traditional crops, biodiversity resources, and the empowerment of indigenous women, opening up possibilities to continue expanding these experiences that contribute to increasing resilience in the face of climate change.

In terms of another institutional strategic line, knowledge management is central; that is why, with support from the Government of Canada through the Ministry of Natural Resources and the International Model Forest Network, the FCBC received a second funding to promote studies on the restoration of the Chiquitano Forest affected by fire, in collaboration with the Noel Kempff Mercado Museum of Natural History. With support from this same project, the Alta Vista Tropical Dry Forest Study Center continued its successful progress in establishing a sustainable production model with a regenerative approach, which is already having an impact on agricultural producers in the region, in addition to promoting studies aimed at understanding the relationship between the biodiversity of the Chiquitano Forest and productive activities.

Productive area landscape in the Chiquitania

Drought in AP Laguna Concepción

The FCBC also executed two studies commissioned by both the International Organization for Migration and the World Bank. The first was focused on evaluating and trying to understand the determinants of human migration in Chiquitania because of socio-economic and climate change. The second study identified the gaps in the Municipal Integral Development Plans of the Chiquitanian municipalities with respect to risk management and proposed tools for their incorporation into the planning and implementation processes.

These are some examples of the progress and results achieved in the 2022 management, but the most remarkable is the increasingly intense and constructive articulation with the private sector; which is an undeniable part of the changes in land use patterns in the Chiquitania region, but, in turn, is part of the solutions that should be promoted to reduce the impact on biodiversity. The FCBC is committed to this challenge and seeks to articulate, from multiple social and economic sectors, spaces for dialogue to achieve harmony between society and nature in the Chiquitano Forest.

Roberto Vides Almonacid,
Executive director

Granite domes. Área Protegida Bajo Paraguá

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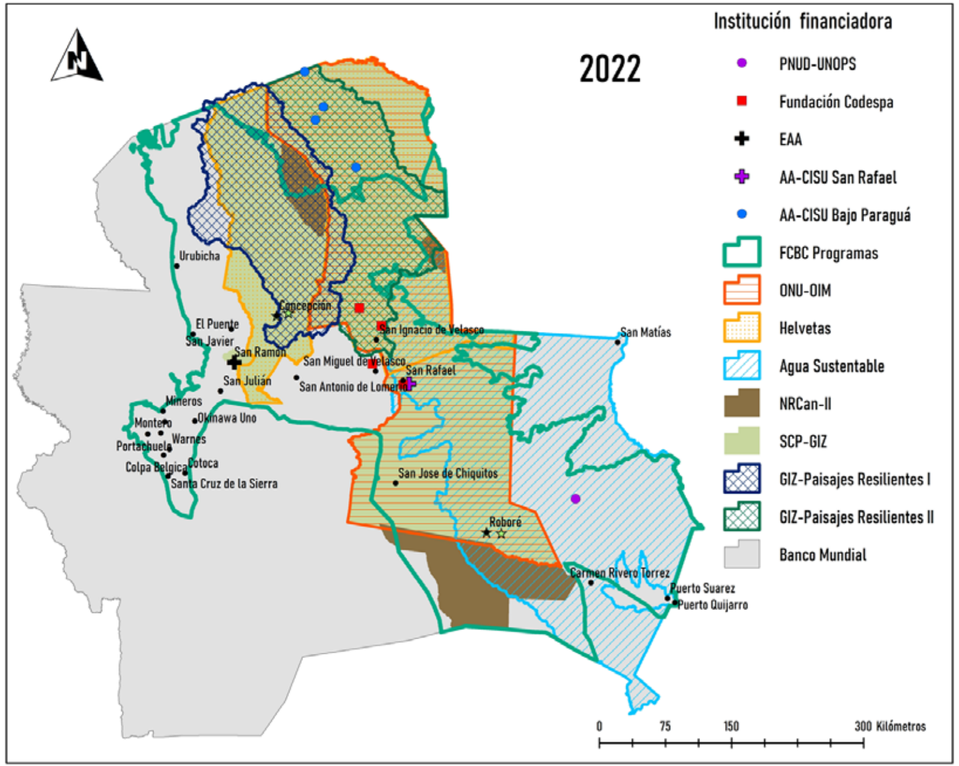
During 2022, the FCBC developed 19 institutional projects and programs that were supported by various funding institutions and its own funds. Through projects with external support, more than twenty priority sites, including communities and nature reserves, had activities carried out in the field; while, with institutional programs, monitoring and studies were enhanced throughout the Chiquitano Dry Forest ecoregion, which includes more than 20 municipalities located in the department of Santa Cruz.

Productive diversification, food security, corridors with local governance, connectivity between indigenous communities, causes and effects of migration, restoration, good agro-ecological practices, regenerative production, land-use planning tools, dialogue for conflict resolution, environmental education, and awareness, monitoring of threats and conservation status of the ecoregion, among others, were the themes in which the actions developed during the 2022 administration were distributed. All these activities were framed within the 3 institutional work lines: conservation, sustainability, and recovery.

PROGRAMS AND PROJECTS

MILESTONES IN 2022

FCBC Map of projects and programs



CONSERVATION

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EXPANSION OF SAN RAFAEL MUNICIPAL PROTECTED AREA

Support was given to the enactment of a law by the municipality of San Rafael to create a Natural Immobilization Reserve, which represents an additional 278,559 hectares (ha) to the San Rafael Municipal Protected Area (APM San Rafael), and which will consolidate the connectivity corridor with the San Matías Integrated Management Natural Area (ANMI San Matías), as a first phase for the expansion of the current protected area or the creation of a second municipal protected area. Regarding this same issue, the FCBC, PROMETA (Protección del Medio Ambiente Tarija) and FUNDESNAP (Fundación para el Desarrollo del Sistema Nacional de Áreas Protegidas) presented a proposal to the Andes Amazon Fund (AAF) for the expansion of the San Rafael APM, which was pre-approved in 2022 and is awaiting final approval.

Área Protegida Municipal San Rafael

STRENGTHENED MANAGEMENT COMMITTEES

Four Management Committees (Tucabaca, Laguna Marfil, San Rafael, and Bajo Paraguá) were strengthened in their analytical capacities regarding socio-environmental conflicts through 10 dialogue events. In addition, the Management Committee of the Laguna Marfil Municipal Integrated Management Natural Area (ANMIM Laguna Marfil) participated in the drafting and approval of its statutes, an achievement that allows for better internal organization and adequate representation before the municipal authorities; on the other hand, the participatory drafting of the regulations of the ANMIM Laguna Marfil municipal law was promoted and approved by the San Ignacio City Council, which allows for greater management, planning and budget allocation actions by the municipal government.

Workshop at AP-UCPN Tucabaca

Deforestation in San Rafael

ECODATOS

ENVIRONMENTAL PRESSURE MONITORING

The Chiquitania region is under high pressure due to threats from various environmental problems, so continuous monitoring is urgently needed. An alternative for this monitoring is based on the use of mobile applications designed under the concept of citizen science, in which local actors are part of the solution to address environmental issues and encourage the conservation of natural areas. An analysis of collaborative monitoring for the identification of environmental threats and pressures in the Chiquitania presented in 2022 at the V Bolivian Ecology Congress, summarized that between 2021 and 2022, the Chiquitano Dry Forest Observatory of the FCBC, conducted workshops and training courses regarding the Ecodatos tool, an open form with nine thematic axes, developed in the mobile application ArcGIS Survey123 from ESRI.

ECODATOS workshop in Roboré.

A total of 11 population centers with attendees from 98 communities in the municipalities of Concepción, San José de Chiquitos, San Rafael, San Ignacio de Velasco, Roboré, and San Matías were trained. A total of 329 people from different sectors participated in the training, including technicians from public and private institutions, park rangers, community representatives, and civil society. 70% of the participants were men and 30% were women. A total of 467 reports were obtained through Ecodatos about water resources (30%), fauna records (21%), deforestation (9%), forest fires (7%), road opening (5%), unplanned settlements (4%), mining (3%) and 22% in the category of other reports. The sampled data had a higher percentage (84%) of spatial coincidence.

Pollinator bat at ANMIM Laguna Marfil.

MONITORING OF BIOLOGICAL GROUPS

After the baseline survey and impact assessment carried out in the framework of the project “Knowledge Bases for Restoration” in its first phase (2021); in 2022, in the second phase of the project, the same sites of Copaibo, Marfil, Alta Vista and Ñembi Guasu were revisited for the monitoring of biological groups: mammals, birds, native bees and coprophagous beetles, the last of which are associated with cattle-raising environments and which, thanks to the project, are positioning themselves as one of the central elements for regenerative processes. The regeneration monitoring plots, installed in 2021, were also sent.

Taxonomic changes have been evidenced in cases such as birds and vegetation; in the case of mammals, the flying ones (bats) are intervening in the seed dispersal/pollination processes, carnivores modified

their activity schedule (functional response) and herbivores decreased their abundance after the fire (numerical response). Regarding bees, it has been found that, just as there are species that are highly sensitive to forest fire events, there are others that are highly opportunistic and adapt more easily to such impacts. Regarding vegetation, there are more solid elements in the fact that the more severe the fire, the more the regrowth strategy is stimulated in certain species as an adaptive response that can be an additional element of managing and handling natural regeneration.

In synthesis, the Chiquitano Dry Forest shows evidence that corroborates its resilience to forest fires and positions natural regeneration as a process to be guaranteed as a measure in the field of restoration, mainly on a large scale.

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Nembi Guasu burned forest area in recovery process

Wheater station in Puerto Almacén

METEOROLOGICAL STATIONS

In addition to the four stations installed in Copaibo, Marfil, Ñembi Guasu, and Alta Vista in 2021 with support from the Government of Canada under the “Knowledge Bases for Restoration” project; In 2022, with support from the same project in its second phase, four new sites associated with livestock activity were implemented in Nueva Esperanza, Santa Ana, San Rafael and Puerto Almacén, the basic reason is that on these sites , plots of regenerative livestock have been implemented or there are plans to implement something for the future, as in the case of San Rafael.

In general, meteorological records such as precipitation, temperature, ambient humidity, and soil moisture, among others, evidence and corroborate the importance of the forest as a component that favors the distribution and regulation of rainfall and temperature. Data from pasture areas, which were recorded in an annual cycle, as in the case of CEBST Alta Vista, indicate that compared to the forest they can be environments about 20% drier, although at the same time, the soil moisture sensors show a favoring of windbreaks in the distribution of soil moisture so that the maintenance of these strips of forest mitigates the impact of conversion to pastures or paddocks.

LAND USE PLANNING AND LAND TENURE IN SANTA CRUZ

During the 2022 administration, a technical study was carried out to identify land use planning and land tenure tools in the department of Santa Cruz, with funds of the Global Partnership for Sustainable and Resilient Landscapes (PROGREEN) administered by the World Bank.

The main objective of this study was to identify and evaluate existing tools for municipal and departmental territorial planning in the Chiquitania region and to propose and demonstrate ways to better reflect in these tools considerations related to environmental functions, forest fire prevention, prediction, and management.

Among the main results, it was found that: the planning process with a risk management and climate change adaptation approach has not yet been adequately

Laguna Sapocó. Municipio de Concepción

Wildfires in Roboré

implemented; more than half of the natural ecosystems in the Santa Cruz Department have a medium to very high level of environmental functions; Geographic Information System (GIS) tools for the prevention, prediction and monitoring of forest fires were identified, tested and validated for the municipalities of the Chiquitania region; In addition, 91.3% of the rural lands in Santa Cruz have advanced in land titling, of which 46.1% have been identified and classified as public lands, 45.2% have been titled under some category of proprietary rights and 6.5% are in the process of being titled.

JAGUAR AND PUMA PRESENCE IN FOREST AND COMMUNAL AREAS

A survey report on the presence of jaguars and pumas in forests and communal areas neighboring the Alta Vista Tropical Dry Forest Study Center (CEBST Alta Vista) was carried out. One of the most important conclusions of this work is that both species tend to concentrate their activities to a greater degree in forest areas and their incursions into productive areas with livestock represent isolated events. The work also emphasizes the importance of the natural corridors that still exist and through which both carnivores travel both within and between properties, as well as the access roads to move to other sectors where they can carry out hunting or resting activities. The water courses have also been important recording sites for both jaguars and pumas

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Jaguar at CEBST Alta Vista

Scan the Qr code
and see more!

Granite domes at AP Bajo Paraguá

GRANITE DOMES AS A STRATEGIC CONSERVATION ENVIRONMENTS

In 2022, the FCBC made a publication on granitic domes as strategic environments of the Chiquitano Dry Forest in the "Ecology in Bolivia" journal. This work is the first exercise and attempts to inventory these unique environments of the Chiquitano Dry Forest. The state of the art of these environments reported at the time even by D'Orbigny indicates that they contain elements that differ from the surrounding forest, so that the endemicity is part of its characteristics, as well as the presence of specialist biota, adding species with high global value for conservation. The publication reports a preliminary inventory of 3,282 sites totaling 11,425 ha, of which only 32% are within a protected area.

Phenological monitoring at CEBST Alta Vista

INFORMATION RECORD SYSTEM OF THE TROPICAL DRY FOREST STUDIES PROGRAM

The Information Record System (SRI) of the Tropical Dry Forest Studies Program has five monitoring components: climate, fauna, water, native bees, and phenology, which, in terms of instrumentation, is supported by networks of camera traps, limnimeters, phenological monitoring trees, native bee nests that are systematically cataloged, meteorological stations and a network of more than 60 kilometers of roads, perimeter gaps and trails within the forest.

In 2022, the yearbook SRI 2021 was published, which is a compilation and annual synthesis of the records obtained during the year, for the five components mentioned. The premise in this regard was to present general trends by component, of what the system has been showing and to motivate questions and encourage research that contributes to knowledge and decisions on Tropical Dry Forests. Monthly reports were generated for the SRI and are available on the CEBST Alta Vista website.

SUSTAINABILITY

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5 GENDER EQUALITY

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

Huertos comunales en el municipio de San Ignacio de Velasco

Laguna Marfil

IMPACTS OF FOREST FIRES IN THE CHIQUITANIA ON WATER RESOURCES

FCBC conducted a collaborative study to determine the impacts of forest fires in the Chiquitania region on water resources, within the framework of the Bolivia Watch project, developed by the Water and Environmental Management Support Center “Agua Sustentable”, the Stockholm Environment Institute (SEI) and FCBC. In this study, six activities were carried out to evaluate the impacts, with emphasis on the Curichi Grande and Tucabaca basins. These activities consisted of the collection of social and water quality data, with training in the use of mobile applications and the compilation of an integrated database of water wells; the mapping of land use and fires, with the classification of natural cover and deforestation, as well as field validation with the registration of drone images; the study of impacts on water resources and modeling; and a participatory workshop with local stakeholders and specialists from

different institutions; the purpose of the workshop was to develop a multi-criteria analysis methodology to identify the micro-watersheds that should be given more importance in the context of fires and climate change.

In the modeling, a qualification of three components with their respective factors and parameters was made: supply, demand, and impact. The supply component prioritizes the state of conservation of ecosystems and hydrological processes on which water depends, the water demand component prioritizes anthropic pressure on the natural base, and the impact component represents conflicts with the conservation of natural resources. Later on, the coordination process continued with (SEI) to replicate the prioritization analysis for all the basins in the department of Santa Cruz.

WATER RESERVOIRS AND PUMPING SYSTEMS

Within the framework of the “Resilient Landscapes” a GIZ project, and the “Promotion of food security and sovereignty in Chiquitano communities in Bolivia, through a model of food production and consumption resilient to climate change, based on ancestral knowledge and empowerment of women” project co-executed with CODESPA Foundation, 11 water reservoirs were built in different communities: 8 in the municipality Concepción (3 in San Juan de la Roca, 1 in Candelaria, 3 in Limoncito and 1 in Palmarito), 2 in San Ignacio (Santa Martha and San Francisco) and 1 in San Rafael (San Pablo). These water reservoirs allow the productive groups supported by the projects, which are horticulturists or livestock farmers, to have an assured water supply for irrigation or animal consumption during the dry season.

On the other hand, with the support of the same projects, 17 pumping systems were established and in operation in 9 communities: San Juan de la Roca, Limoncito, Palmarito, Monteverde in the municipality of Concepción; Campamento, Santa Martha, Santa Teresa Guarrió in the municipality of San Ignacio; Villa Cruz in the municipality of San Miguel; and San Pablo in the municipality of San Rafael. The purpose of these systems is to enable vegetable garden and livestock producers to conduct water from the dams to the elevated tanks, and from there distribute it to the vegetable gardens or to the watering troughs for livestock. Most of these systems operate with solar energy due to the absence or remoteness of a power grid; it also eliminates dependence on fuel or payments for electricity consumption. By 2023, it is planned to provide communities with solar systems with greater capacity.

LIVESTOCK INFORMATION RECORD SYSTEM

Within the framework of the “Knowledge Bases for Restoration” project in its second phase, the livestock information record system was strengthened with five major components: the pasture evaluation program, coprophagous beetles, soil humidity and temperature monitoring, climate, livestock production indicators (meat production kg/ha; production per head kg/head; live weight gain kg/head per year and stocking efficiency).

In the pasture evaluation program, pastures were evaluated according to their performance to be consumed by livestock under Voisin Rational Grazing (VRG) management, trying to achieve the optimum growth point before livestock occupation for one or two days. Regarding coprophagous beetles, the inventory in 8 Chiquitano farms resulted in an abundance of 39

species in CEBST Alta Vista against a maximum of 73 species in El Jaral, being this farm the one with the highest diversity because it had not applied ivermectin to the livestock for three years. On the other hand, rainfall was recorded for 913.6 mm during the entire year 2022, somewhat higher than the 812.6 mm of 2019, the driest of the last 6 years. However, in the period April-September 2022 (6 months), only 115.6 mm fell which meant a great drought in the area.

Alta Vista CEBST livestock production indexes were 441 kg/ha for meat production; 112 kg/head for production per head; 0.31 kg/head/day and 35.26% stocking efficiency.

Dung beetles in cattle ranches

EXPERIMENTAL PLOTS IN LIVESTOCK FARMS

As part of the regenerative livestock farming experiences, 31 experimental plots were installed in 8 livestock farms, marked with signs and planted with legumes, with the commitment of the owners to rigorous management with PRV. The most outstanding result was the decrease in bald areas as a result of regenerative rest after sowing legumes in degraded pastures. Although this decrease varied greatly among different paddocks and different properties, one of the most significant gains from regenerative rest was going from 27% of bald areas to 7% in one of the Alta Vista CEBST plots.

The experimental plots with an average of 5 ha submitted to a regenerative process of several months are intended to demonstrate the effectiveness of mixed crops for the regeneration of degraded soils. The most effective factors in this regeneration were the introduction of several leguminous species in the diversification, the maintenance of a green cover to protect the soil, and the prolonged breaks due to the implementation of the PRV in the paddocks.

COLLABORATIVE WORK AND RESEARCH

During 2022, the FCBC developed collaborative work with national and international academic institutions, in that sense, studies of soil moisture (Faculty of Agricultural Sciences of the UAGRM) presented at the V Congress of Ecology; hydric balance (University of Vriej, Brussels); estimation of hydric balance (Bolivian Catholic University); coprophagous beetles (Faculty of Agricultural Sciences - Museum of Natural History Noel Kempff Mercado); effect of ivermectin on coprophagous beetles in regenerative experimental plots (University of Alicante, Spain); and two investigations of native bees/pollinators, one from the Faculty of Agricultural Sciences (UAGRM) and the other from the Center for Tropical Agricultural Research and Education (CATIE).

Denis Padilla, CATIE researcher

Native bees collect

Erereú native bee,

FCBC ENVIRONMENTAL CENTER: CHIQUITANO NATURE AND CULTURE

In 2022, environmental education at the FCBC Environmental Center Chiquitano Nature and Culture, located in Santiago de Chiquitos, was promoted through various pieces of training and actions. Plant identification signs were implemented in the interpretive trail at the Environmental Center, painted and placed by children and youth (Yaika), encouraging them to learn about the importance of tree and shrub species of the Chiquitano Forest such as mururé, paquió, tajibo, tipa, ajunau, chichapí, pequí, sama, bi, ichisojo, motecillo, pototó, tinto, yera, conservilla and alcornoque. Also, at least 15 native and exotic species were prioritized for the collection of live plants in the Environmental Center by the traditional medicine ladies of Santiago: vira vira, poleo, caré, paja cedrón, mamuri, hortelón, chamolar

Environmental multipliers of Centro Ambiental FCBC

Environmental multipliers of Centro Ambiental FCBC

amarillo, zarzaparrilla morada, copaibo, balsamina, azucaró, quebrapedra, cola de caballo, soimahaca, masciaré, among others.

On the other hand, 50 children and young people (from 8 to 14 years old) from Santiago de Chiquitos (Roboré) and Concepción were trained in the elaboration and handling of puppets of Chiquitano fauna. This training led to four events with puppet presentations by the Yaika group on the themes of the earth, the school of the forest and forest fires.

An innovation during 2022, promoted through the Environmental Center, was the first story contest called “cuentos de un chiquitano (stories of a chiquitano)” aimed at children and young people in Santiago on environmental and traditional themes, whose winners in each environmental category were: “La cazadora y el forastero” (first place, 9 years old), “La niña y el cutuchi” (second place, 9 years old) and “Dueño del monte” (third place, 11 years old), and in folk category were: “Las mujeres apovioses” (first place, 11 years old), “El tío que asusta al duende” (second place, 10 years old) and “El duende” (third place, 10 years old). There was also an exhibition of photographs of the history of Santiago de Chiquitos during the ConservArte Festival.

SUSTAINABLE USE OF BIODIVERSITY BY ASSOCIATIONS AND FAMILIES

In the framework of the project co-executed with Fundación CODESPA and the project “Conserving connectivity and promoting sustainable forest management in the communities of the Bajo Paraguá TCO” co-executed with Aktion Amazonas, 60 families from communities have initiated the management of Tetragonisca angustula native bee colonies: 12 in the Santa Martha community, 23 in Candelaria de Noza, 14 in Villa Cruz and 10 in San Pablo; in addition to 15 colonies in production in Bajo Paraguá. The producers initiated with the project co-executed with CODESPA are stable with a small production for family consumption and medicine. The producers in Bajo Paraguá are raising their first hives.

With regard to associations, in 2022, with support from the FCBC, an association of women producers of shampoo and açaí soap in the Porvenir de Bajo Paraguá community was formed and is now active; support was also provided to the organization of associations of entrepreneurs in Candelaria de Noza for the production

Production and processing of plantains in Bajo Paraguá

Communal garden in Santa Martha

of cassava flour, and in San Pablo for the production of joco flour, and to two groups of bakers in Villa Cruz to benefit from the provision of wood-saving ovens.
Also, support was given to the participation of the Asociación de Medicina Natural Santiagueña (AMENAS) in 6 events: Posoka Gourmet Festival (San José de Chiquitos), ConservArte Festival (Santiago de Chiquitos), 1st Ecocultural Fair and 2nd Forestry Fair (Concepción), exchange of experiences between associations of traditional medicine producers of municipalities San Ignacio, San Matías, Concepción and Roboré (San Ignacio de Velasco) and productive and handicraft fair of communities of the Central Indigenous Chiquitana Amanecer Roboré (Roboré).

AMENAS also received logistical support for the process of obtaining the registration of traditional doctors (“herbolarias”) issued by the Ministry of Health, which certifies them as herbolarias and advisors in the use of traditional and ancestral medicine, for the production and sale of their products, such as copaibo, isiga and pesoé ointments, paquió syrups, sinini and others. And as projective actions towards 2023, an agenda of activities was organized to continue with the organizational strengthening, exchange of experiences and support in the formation of networks with other women’s associations that work with non-timber forest products.

Wildfires affected area in Ñembi Guasu.

RECOVERY

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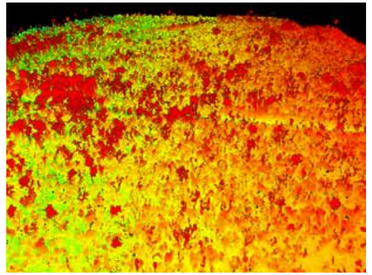
FIRST RESPONSE BRIGADES FOR FIRE PREVENTION AND MANAGEMENT

In coordination with the Sub-governance of the Velasco province and with the support of the project “Conserving connectivity and promoting sustainable forest management in the communities of the Bajo Paraguá TCO”, community first response brigades were trained and equipped in the communities (Florida, Porvenir, Piso Firme, Picaflor) of Bajo Paraguá, strengthening their firefighting capabilities. In this sense, 67 firefighters from 4 community fire departments were organized, trained and equipped for first response to prevent and manage fires.

Training in Porvenir, AP Bajo Paraguá

Wildfires affected area in Laguna Marfil



METHODOLOGICAL ASPECTS FOR THE EVALUATION OF POST-FIRE NATURAL REGENERATION IN THE CHIQUITANIA

Natural regeneration of fire-impacted ecosystems is a high priority in Bolivia and represents one of the country's greatest environmental challenges. With the abundance of spatial data and access to improved technologies, it is critical to provide an effective method of analysis to assess land use changes in the face of the global need to understand vegetation dynamics in regeneration processes. In this context, the FCBC Chiquitano Dry Forest Observatory evaluated the dynamics of natural regeneration through phenological patterns by measuring maximum and minimum spectral thresholds at four fire-affected sites in the Chiquitania in 2019 and 2020, and compared to unburned areas using harmonic adjusted Normalized Difference Vegetation Index (NDVI) and Normalized Burn Rate (NBR) values. A two-way ANOVA test was used to evaluate significant differences in NDVI and

NBR index profile values; severity was quantified in four study sites using dNBR (delta NBR), obtained from the difference between pre-and post-fire NBR. Additionally, 66 sampling sites were selected to apply the Composite Burn Index (CBI) methodology. The results indicate that the NBR is the most reliable index for inter-annual comparisons and to determine changes in the phenological pattern, which allows the detection of post-fire regeneration. Fire severity levels based on dNBR and CBI indices are reliable methodologies that allow determining the severity and dynamics of changes in post-fire regeneration levels in forested and non-forested areas.

Drone flights to monitor recovery

Zona afectada por el fuego en el municipio de San José

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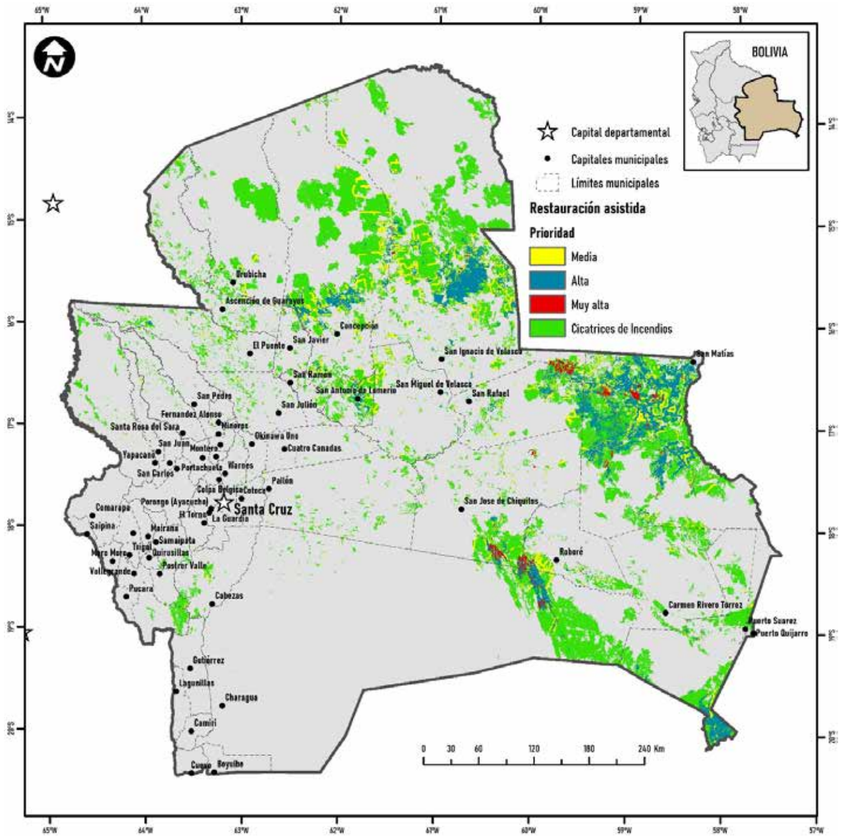
IDENTIFICATION OF POTENTIAL AREAS FOR ASSISTED RESTORATION

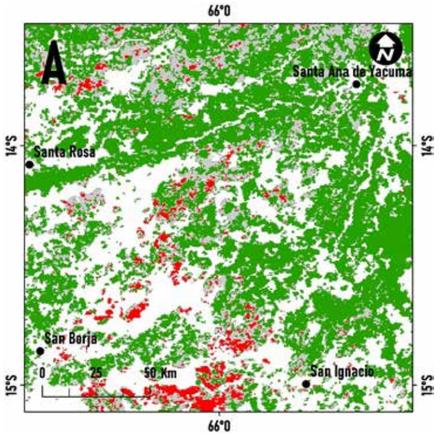
IN FORESTS AFFECTED BY WILDFIRES IN THE DEPARTMENT OF SANTA CRUZ

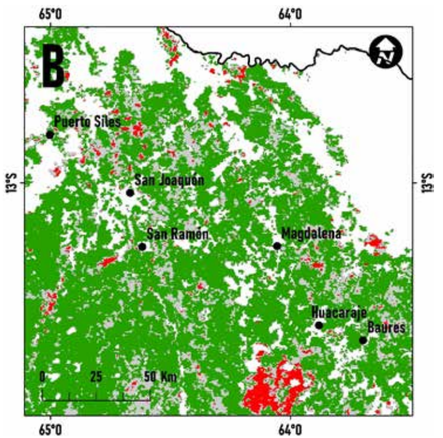
Ecological restoration is a set of actions aimed at reestablishing ecosystem functionality, contributing to human well-being, conserving biodiversity, and regulating the planet's climate. The restoration of degraded ecosystems in Bolivia is a fundamental part of the priorities to reverse the loss of biodiversity and carbon storage, especially in areas impacted by forest fires.

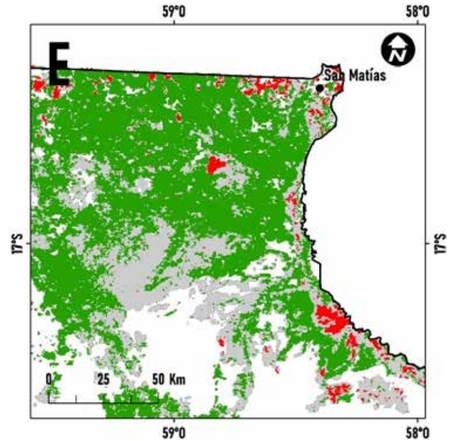
In 2022, the Chiquitano Dry Forest Observatory of the FCBC conducted and presented a study with the objective of establishing a methodology with a holistic

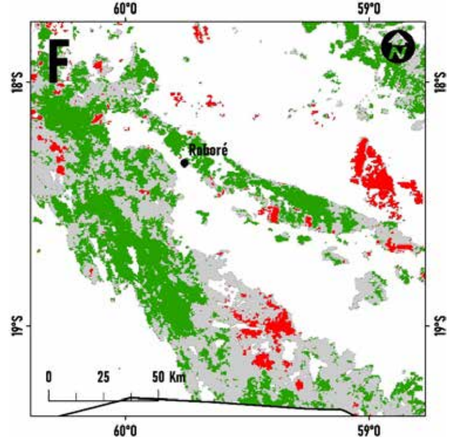
approach for the identification of potential areas for the application of actions in assisted restoration that were impacted by fires in the department of Santa Cruz between 2019 and 2021. The method was based on multi-criteria decision analysis in which geographic variables were categorized based on three criteria: impact, biophysical and socioeconomic. As a result, three priority categories were identified: Very High, High, and Medium, which were analyzed at the departmental, municipal, and protected area levels. The area categorized as very high priority covers an area of 86,459 ha, representing 0.3% of the department's forests. The municipalities with the highest priority are San Matías, San Ignacio de Velasco, San José de Chiquitos, San Rafael de Velasco, and Charagua; and in protected areas, San Matías and Ñembi Guasu have the largest potential areas for restoration. It is concluded that the applied model can serve as a support for decision-making in any restoration program and it is recommended to include very high-priority sites in the departmental restoration plan.











Rio Paraguá. Área Protegida Bajo Paraguá

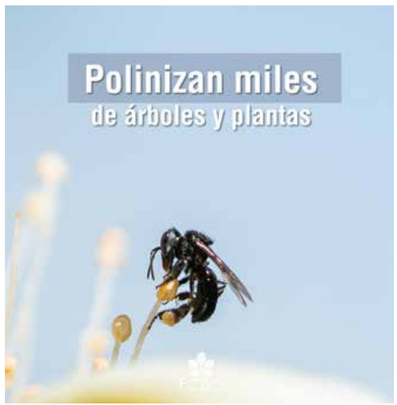
Abejas nativas en el bosque chiquitano

DISSEMINATION AND COMMUNICATION

In the area of digital communication and media management, more than 300 thousand people were reached with Facebook publications, 27 thousand visits were received on the institutional website, 10 thousand video views were obtained on the YouTube channel, 4 thousand interactions were achieved with the content of the institutional Instagram account, and 63 mentions and/or interviews were achieved in mass and alternative media and magazines on environmental issues.

PUBLICATION WITH THE WIDEST REACH: World bee Day

When we think of bees, we think of Apis mellifera, bees brought by Europeans during the colony, but we rely mainly on native bees. Of all sizes, colors, and shapes, living in logs, holes, soil, branches, and even cracks in walls, native bees know how-to live-in ecosystems. In Bolivia, it is estimated that there are more than 1000 species of bees in general, between 150 and 200 of which are stingless. The Chiquitano Dry Forest is home to more than 35 species of native bees. Their existence is threatened by deforestation and habitat destruction, and fire changes the way they distribute and feed, affecting their natural balance. Native bees are the pollinators that allow the existence of the forest, the balance of ecosystems, and the regeneration of the same, therefore, simply, without native bees there is no life.



MOST VIEWED VIDEO: Copaibo value chain

“The copaiba is a traditional medicine of our grandparents, thanks to them, we were able to know the benefits that copaiba gives.”
Apolonia Supepí Guasase – Asociación de Mujeres Emprendedoras Las Pioneras

Scan the QR code with your phone and see more!

MOST READ QR:
Motacú

The “Motacú” is a palm tree that can grow in the humid forests as well as in the streams and lowlands of the Chiquitano Dry Forest. Its fruit is consumed in its natural state, the pulp is rich in vitamin A and is cooked for consumption. Oil can be extracted from the seeds for medicinal and cosmetic use to strengthen the hair.”

Distribución de materiales en ferias

PRODUCTION OF SENSIBILIZATION MATERIALS

In addition to digital communication, institutional communication processes in the ecoregion are enhanced and accompanied by the production of printed, audiovisual and radio materials to raise environmental sensitivity among different target audiences, especially civil society, actors with whom direct impact is needed to achieve real long-term changes. During the 2022 fiscal year, in support of institutional programs and within the framework of ongoing projects, informative and educational materials were developed and distributed at numerous workshops and events with institutional representation. Some of the most outstanding communication and dissemination materials of the management were:

Recetario "Rescatando sabores chiquitanos":

Guía nutricional para comunidades

Cartilla de fauna del Bosque Chiquitano

Cartilla de incendios forestales

Cartilla de deforestación

Observatorio del Bosque Seco Chiquitano

Cuña radial para prevención de incendios

Cuña radial acerca de la deforestación

Cuña radial acerca de regeneración natural

Reunión interinstitucional de la Alianza por los bosques tropicales de Sudamérica

INSTITUTIONAL MANAGEMENT

17 PARTNERSHIPS FOR THE GOALS

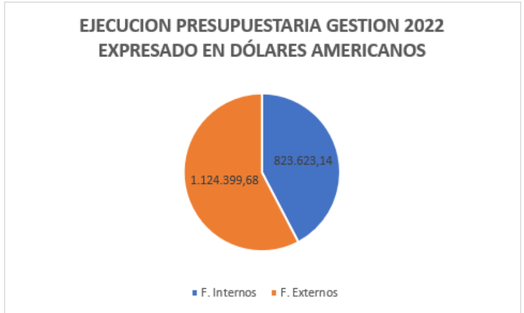
STRATEGIC ALLIANCES

The value of strengthening existing strategic alliances and guiding actions to seek formalization of new alliances that allow synergy or inter-institutional programmatic complementarity was one of the strategic objectives achieved through 26 agreements with partners and allies such as the Municipal Governments of San Ignacio and San Rafael de Velasco, the Autonomous Departmental Government of Santa Cruz, Sub-Government of Velasco, Risaralda University (Colombia), NUR University, Gabriel René Moreno Autonomous University (UAGRM), Faculty of Veterinary Medicine (UAGRM), Texas University, FUNDESNAP-CAINCO, CESO- Catalyste+ Canada, CODESPA Foundation, Civil Service for Peace - GIZ, SEI-Aguas Sustentables, Aktion Amazonas, GIZ ProCuenca, NRCan, CEPAC, CEPAD, SIC-GADSCZ, UNDP-UNOPS, World Bank, among others.

In terms of projects, 18 proposals were processed in 2022, of which 6 were approved, 2 were pre-approved and 5 were in the design stage. The 8 approved and pre-approved proposals totaled USD 1,396,440.00, either in the form of grants or contracts, from different sources such as the World Bank, SEI-Sustainable Water, CESO, NRCan, CISU, EU, Land Innovation Fund.

Reunión de directorio de la Red Latinoamericana de Bosques Modelos

Vivero agroforestal en Porvenir, AP Bajo Paraguá



FINANCIAL MANAGEMENT

The budget execution during the 2022 fiscal year was USD 1,948,022.82. FCBC's direct contribution through its trust fund was USD 823,623.14 and the counterparts received from external financing, in cash, was USD 1,124,399.68, from different sources. Adding the income generated by CEBST Alta Vista's productive activities, a ratio of 1:1.36 of own funds to external funds was achieved, reflecting the institution's successful financial

Valle de Tucabaca

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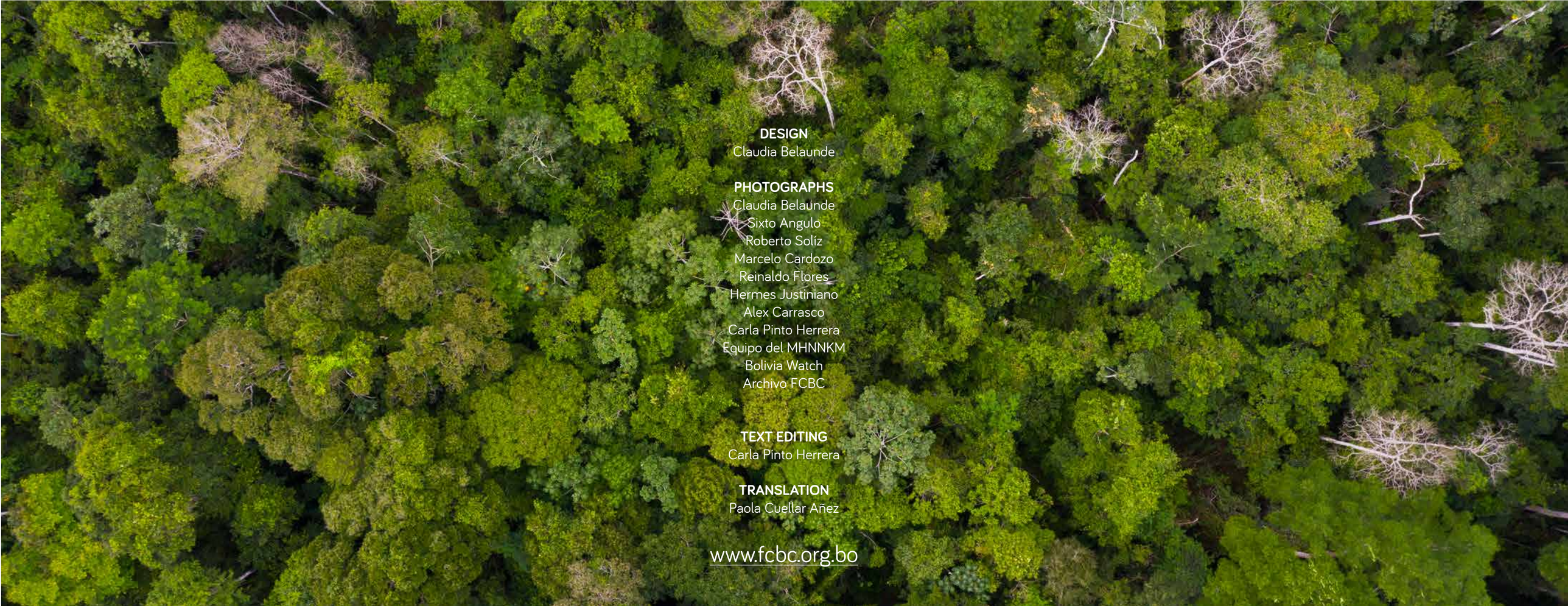
Danza de los abuelos. Santiago de Chiquitos



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