Urban Resilience Action Plan (URAP) for Charagua, Bolivia

Planning for climate, urban and biodiversity action

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Urban Resilience Action Plan (URAP) for Charagua, Bolivia

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Cover photo: Aerial view of Charagua, Bolivia
Autonomous Indigenous Government of Charagua Iyambae

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Abbreviations

AECID	Spanish Agency for International Development Cooperation
CBDRT	Community-Based Disaster Response Teams
CPE	Political Constitution of the State
DRR	Disaster Risk Reduction
EIA	Environmental Impact Assessment
GAIOC	Autonomous Indigenous Originary Peasant Government Charagua Iyambae
GCF	The Green Climate Fund
LDC	Least Developed Countries
MCA	Multi-Criteria Analysis
MMAyA	Ministry of Environment and Water of Bolivia
NDC	Nationally Determined Contributions
NGO	Non Governmental Organization
PDDES	Departmental Plan for Economic and Social Development
PDES	The Economic and Social Development Plan of Bolivia
RISE-UP	Resilient Settlements for the Urban Poor (UN-Habitat)
SDGs	Sustainable Development Goals
SIDS	Small Island Developing States
UN	United Nations
UN-Habitat	United Nations Human Settlements Programme
URAP	Urban Reslient Action Plan

Acknowledgements

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To all of you, our sincerest thanks for your commitment and dedication in building a more resilient and sustainable future.

Government House Charagua
Autonomous Indigenous Government of Charagua Iyambae

Glossary

Districts

The first level administrative division within a municipality, often defined by distinct physical, social, or functional characteristics. Districts are key units for planning and service delivery in many cities.

Neighborhood

A smaller area within a district or town, typically centered around residential life and local community dynamics. Neighborhoods are often informal subdivisions of districts and reflect everyday social interactions and local identity.

Municipality

A politically and administratively organized territorial unit, typically aligned with the jurisdiction and population of a Provincial Section. In Bolivia, it forms the basic unit of territorial organization within the unitary and democratic state.

Indigenous autonomy

A form of self-government based on the right to self-determination of native Indigenous and peasant nations and peoples. It is characterized by shared territory, culture, history, language, and the operation of distinct legal, political, social and economic institutions.

Multilayered Vulnerability Assessment (MVA)

An analytical tool developed under the RISE UP programme to assess vulnerabilities at the intersection of climate risks, urbanization, spatial development, biodiversity loss, and land degradation. It identifies critical vulnerability hotspots by mapping overlapping risks and pressures in order to guide evedicence-based decision making.

May 1st Neighborhood
Autonomous Indigenous Government of Charagua Iyambae

Executive summary

In a rapidly urbanizing world facing increasing challenges from the climate emergency, UN-Habitat's Resilient Settlements for the Urban Poor (RISE UP) program mobilizes significant investments in climate resilience to build a sustainable and equitable urban future. Supported by organizations such as the Adaptation Fund, the Green Climate Fund (GCF), AECID, and SIDA, RISE UP has channeled over 150 million USD toward global climate action, helping the most vulnerable cities adapt to a changing climate. Since 2019, the program has implemented projects in 28 countries, including developing countries, Least Developed Countries (LDCs), and Small Island Developing States (SIDS), reinforcing its commitment to urban resilience amid climate and biodiversity challenges.

Within this framework, the development of a URAP aims to transform the findings from the Multidimensional Vulnerability Assessment (MVA) and the priorities of key stakeholders into financially viable projects that enhance urban resilience to climate, urbanization, and biodiversity-related shocks and stresses.

Building on the MVA Report and Vulnerability Profile, the URAP outlines a set of technically and financially feasible actions designed to address identified vulnerabilities and reduce risks in prioritized areas. The central objective is to develop, disseminate, and implement an effective action plan that minimizes vulnerabilities linked to climate change, urbanization, and biodiversity loss in critical global hotspots.

The proposed actions, aligned with resiliency to climate change hazards and sustainable development of Barrio 1ro de Mayo.

- Establish Community-Based Disaster Response Teams to make Barrio 1ro de Mayo more resilient towards natural hazards.
- Establish a working group between GAIOC and the association of neighbors to create a climate resilience strategy and monitor activities of all actions related to make Barrio 1ro de Mayo more resilient to climate change hazards.
- Construction of a pedestrian bridge that would connect Barrio 1ro de Mayo to Charagua Pueblo.
- Ban the practice of fires for cleaning land for agriculture and develop enforcement system.
- Organize campaigns around risk management.
- Establish a climate shelter in the Barrio 1ro de Mayo for vulnerable people during hazard events.

These actions are the short list and are result of debates and consensus between different stakeholders at the steering committee meetings held in several months of collective construction. The long list included 28 actions and were shortlisted, selecting the most relevant and feasible 6 actions in order to target the most important actions that would make Barrio 1ro de mayo as a more secure and resilient neighbourhood towards climate change hazards, protecting above all human life and well being.

01

Introduction: Purpose of URAP

View towards the Charagua Cathedral
Autonomous Indigenous Government of Charagua Iyambae

The URAP emerges as a key tool to address the growing climate, social, and environmental vulnerabilities affecting communities in the municipality of Charagua Pueblo, particularly those located at Barrio 1ro de Mayo. These areas, characterized by high exposure to risks such as flooding and environmental degradation, have experienced conditions of vulnerability that negatively impact the quality of life of their inhabitants. Within this context, the Plan aims to design and implement concrete actions that strengthen the adaptive and coping capacities and improve living conditions in these communities.

Based on the previously developed Multidimensional Vulnerability Assessment (MVA), the Plan proposes a series of actions to address the interconnected vulnerabilities in these critical areas. These actions align with the identified priorities and seek to integrate the communities to ensure that their needs, experiences, and local knowledge are part of the implemented solutions.
The central objective is to promote urban and environmental resilience, reduce the impacts of climate change, and improve the socio-economic opportunities of the most vulnerable populations.

By implementing this URAP, the aim is not only to mitigate current and future climate risks but also to pave the way toward a safer, more equitable, and sustainable future for the communities within the influence area of Barrio 1ro de Mayo, in Charagua Pueblo.

Strategic alignment of URAP

The Urban Resilience Action Plan (URAP) integrates into a strategic framework that connects global, national, and local objectives, strengthening the response to climate, urban, and biodiversity challenges. At the international level, the Plan contributes to Bolivia's commitments under the Conferences of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, aimed at reducing greenhouse gas emissions and enhancing climate resilience. Additionally, it supports the implementation of the 2030 Agenda and contributes to the Sustainable Development Goals (SDGs), with a particular focus on SDG 11 (Sustainable Cities and Communities), SDG 13 (Climate Action), and SDG 15 (Life on Land).

At the national level, the Plan aligns with the main objective of the PDES 2021–2025 is to rebuild the economy to live well, advancing towards industrialization with import substitution. This implies resuming macroeconomic and social stability, and deepening the productive community social economic model. Specifically with the 7th strategic axis: Comprehensive development with sovereignty and respect for Mother Earth.

At the regional level, the Plan aligns with the Departmental Plan for Economic and Social Development of Santa Cruz to 2025 (PDDES 2025) is the strategic roadmap of the Autonomous Departmental Government of Santa Cruz. This plan projects the department as an autonomous, productive, sustainable and inclusive territory, with a clear vision of its role in Bolivia, South America and the world.

At the local level, the URAP is closely aligned with the Charagua Iyambae Development Plan is articulated through the Community Territorial Management Plan (PGTC) 2021–2025, called Yaiko Kavi Pave ("Living Well" in Guaraní). This plan reflects the vision of comprehensive development of the first Indigenous Government Autonomy of Bolivia, officially established in 2017. Specifically with the strategic axis: Environmental protection: Conservation of natural resources and biodiversity, including the management of protected areas such as Nembi Guasu

In this way, the URAP contributes to the integration of global, national, and local objectives, promoting sustainable, equitable, and resilient development for Charagua Pueblo and its most vulnerable communities in the face of climate change, urbanization, and biodiversity loss.

Charagua Cathedral
Autonomous Indigenous Government of Charagua Iyambae

02

How the URAP Was Developed: A Participatory and Evidence-Based Process

Wooden houses in the May 1st neighborhood
Alan Vera

02

How the URAP Was Developed: A Participatory and Evidence-Based Process

The process carried out in Charagua Pueblo to develop the URAP was based on the guidelines established by the Multilayered Vulnerability Assessment (MVA) Manual: Resilience Planning for Urban, Biodiversity, and Climate Action, and it was adapted to the unique planning and inter-institutional and community coordination achieved in the municipality. This methodology included the following key components:

1. Definition of Vision and Objectives
In coordination with project stakeholders, in line with objetives of development, a long-term vision and a set of strategic objectives were established. These objectives align with the municipality's territorial planning criteria and the vulnerabilities identified in the MVA analysis.

2. Establishment of a Long List of Potential Resilience Actions
A comprehensive list of potential resilience actions was created through collaboration with various stakeholders and steering committees. This list was informed by the priorities identified by key partners involved in the RISE UP initiative and focused on Barrio 1ro de Mayo.

3. Prioritization and Selection of Resilience Actions
Each potential action was assessed and ranked using evaluation criteria, considering the following elements:

- Alignment with strategic objectives
- esilience benefits
- Gender and social inclusion
- Technical feasibility
- Financial feasibility

This process was complemented by participatory workshops with local communities, which facilitated the co-design of the resilience actions. These workshops ensured that the selected actions were context-appropriate and aligned with community needs and priorities.

4. Preparation of Action Sheets

The selected actions were consolidated into Action Sheets, which harmonized the various proposals. These sheets support the alignment of local efforts in prioritized areas and include the following components:

- Title of the Action: Provides a concise title summarizing the action's main focus and purpose.
- Justification of the Action (Vulnerabilities Addressed per MVA): Explains the specific vulnerabilities the action aims to address, based on spatial analysis and community needs.
- Brief Description: Summarizes the objectives, expected results, and impact of the action, offering a clear overview of its purpose and scope.
- Alignment with Strategic Objectives: Specifies how the action fits within the overall vision and goals of the plan.
- Alignment with Policies, Plans, and Frameworks: Lists relevant local, national, and international policies and frameworks that the action supports, with emphasis on PDES.
- Co-benefits: Describes the potential co-benefits of the action, categorized as: Environmental; Economic; and Social.
- Responsible Entity: Identifies the team, department, or organization responsible for leading the action.
- Implementation Steps: Summarizes up to 10 key steps required to implement the action.
- Implementation Timeline: Provides an estimated schedule for completing each step.
- Risk Analysis: Identifies potential risks categorized as: Financial Risks; Political Risks; Technical Risks; Social Risks; and Environmental Risks.

This structured process aims to ensure that the actions selected are not only viable but also capable of delivering tangible benefits that enhance the climate resilience of Charagua's most vulnerable community.

Perspective of the May 1st neighborhood
Autonomous Indigenous Government of Charagua Iyambae

03

Charagua Iyambae, Bolivia: Territorial Context and Local Profile

Main square of Charagua
Autonomous Indigenous Government of Charagua Iyambae

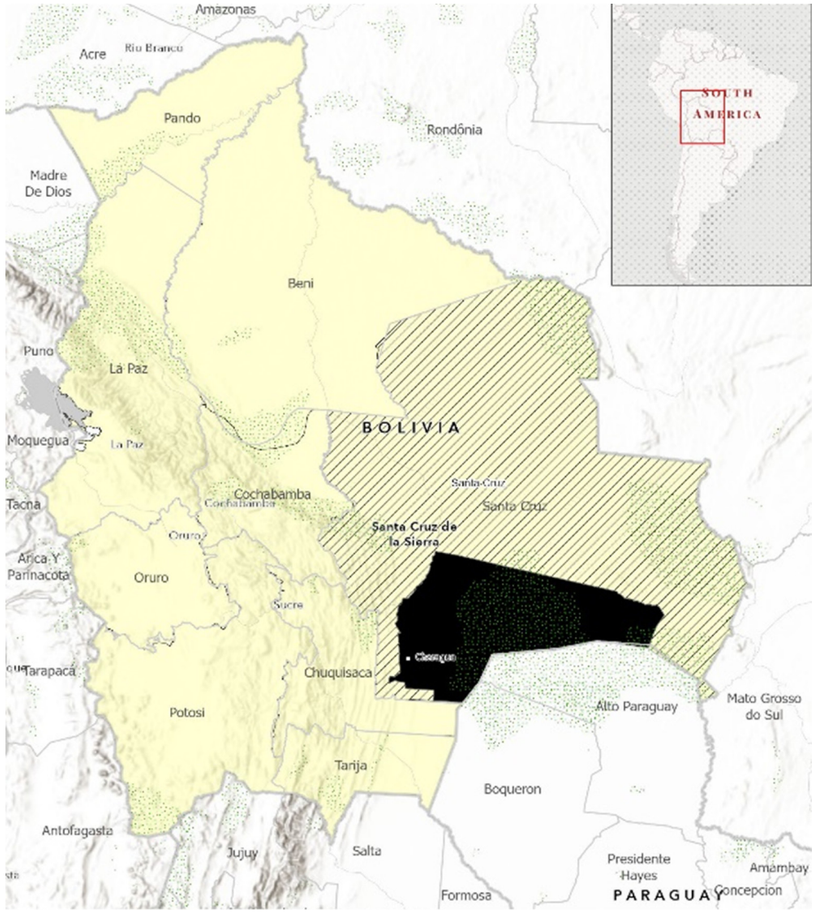

Figure 1: Location of Charagua in the Department of Santa Cruz, Bolivia

Source: UN-Habitat, 2024.

Charagua is located on the South American continent, in the southern hemisphere, between 18° 56′ 07″ and 20° 30′ 17″ south latitude and between 58° 45′ and 63° 20′ west longitude. It has an average elevation of 735 meters above mean sea level (AMSL). It is a municipality in the country of Bolivia, located in the Cordillera Province of the Santa Cruz Department, in the Chaco region. Charagua is the largest municipality in Bolivia, with an area of 74,424 km², covering approximately 23% of the department of Santa Cruz and 6.53% of Bolivian territory.

The municipality of Charagua encompasses three major physiographic groups: the Sub-Andean Belt, the Transition Area, and the Chaco Plain. To the west lie the initial foothills of the Andes Mountain range, while the Chaco plain extends to the east. To the southeast, Charagua borders Paraguay. The municipality features diverse topography, including narrow valleys with alluvial terraces, mountain ranges, slopes, plateaus, and the extensive plains in the far east.

Figure 2: Map of urban área in Charagua Pueblo

Source: UN-Habitat, 2024.

The Guarani Charagua Iyambae Autonomic Government organizes its territory into “zones”, consisting of four rural areas included in community or collective lands, and the remaining areas are considered urban. The Charagua Pueblo zone comprises the city of Benemérita de Charagua and the growing urban area of Charagua Estación. The administrative centre is Charagua Pueblo, located in the transition area at an approximate altitude of 800 to 900 meters above sea level, characterized by a smooth, gently undulating landscape. It has an urbanized land area of 140.1ha.

The municipality of Charagua is predominantly rural, with urban development primarily concentrated in Charagua Pueblo, encompassing the city of Benemérita de Charagua and Charagua Estación. Charagua Pueblo serves as the political and administrative center, housing essential services including financial, health, and educational facilities, and consists of ten neighborhoods. Charagua Estación is the second most significant urban center, formed around a historical railway station and growing steadily.

Multitemporal satellite imagery reveals a trend of urban growth: by 1995, Charagua Pueblo's growth extended towards the main square; by 2005, expansion occurred towards the southwest and east; and by 2021, growth was noted in the north, east, south, and southwest. The total consolidated area now measures 140.0577 hectares, with an urban land occupancy coefficient of 40.22% for public use and 59.78% for private use.

The Charagua municipality has a population of 32,186, according to the National Population and Housing Census conducted in 2012. The population is composed of 48.1% males and 51.9% females, with a significant majority of 89% living in rural areas. The total population of Charagua Pueblo is 3,496, with a gender distribution closely mirroring that of the greater area: 48.03% female (1,679 individuals) and 51.97% male (1,817 individuals). The most populated neighborhood is Barri 1ro de Mayo, which has urged as an informal settlements and nowadays has over 300 families living there. This part of Charagua Pueblo is the study are of the RISE-UP project.

Perspective of the Charagua River
Autonomous Indigenous Government of Charagua Iyambae

04

Key Findings from the Multilayered Vulnerability Profile (MVP)

Charagua Cathedral
Autonomous Indigenous Government of Charagua Iyambae

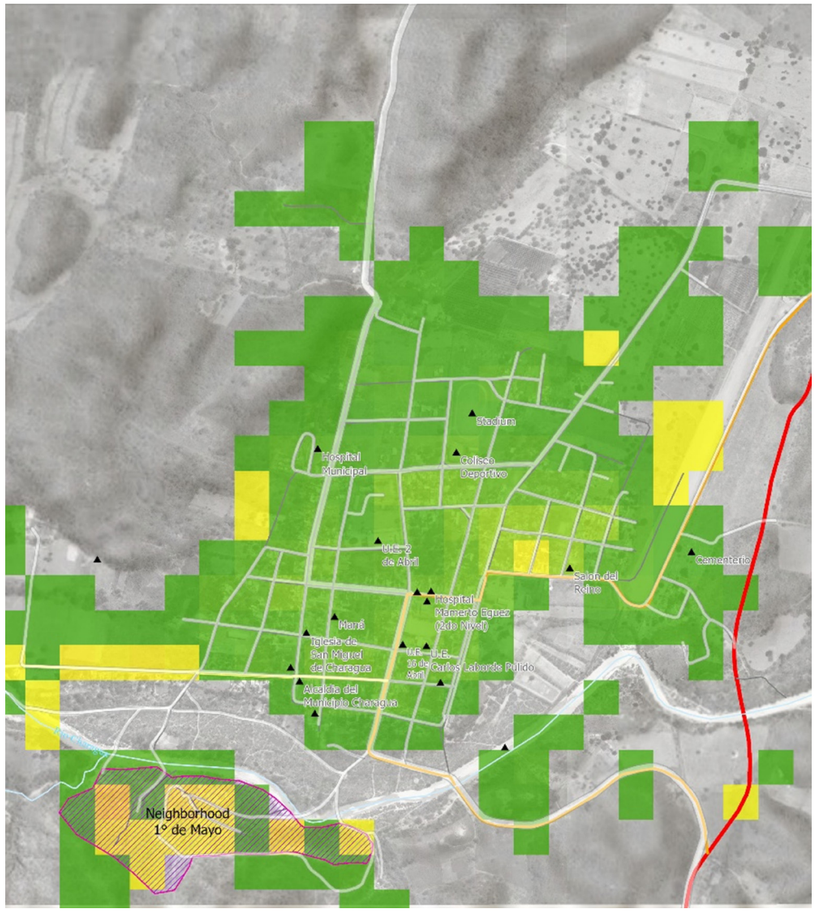

Figure 3 Urban dimension map

Source: UN-Habitat, 2024.

Urban dimension

Charagua Pueblo is a town with low density across its districts, including the study area, located in its southern part next to the Charagua River. Barrio 1ro de Mayo is Charagua Pueblo's newest neighbourhood, where land use is mainly residential. It has only one health centre and no other infrastructure or markets. The sole urban planning instrument in Charagua Pueblo is the "Community territorial management plan to live well from the autonomous indigenous government, originally from Charagua Iyambae, 2021 – 2025".

In terms of population distribution, only 10.9% of residents in Charagua are considered urban. Around 60.3% of the population lives across 82 rural communities, with 22.6% in Mennonite colonies, 16.3% in Charagua Estación and Charagua Pueblo, with the remainder residing in private properties or agricultural farms. Charagua Pueblo, therefore, is not classified as a city but a town.

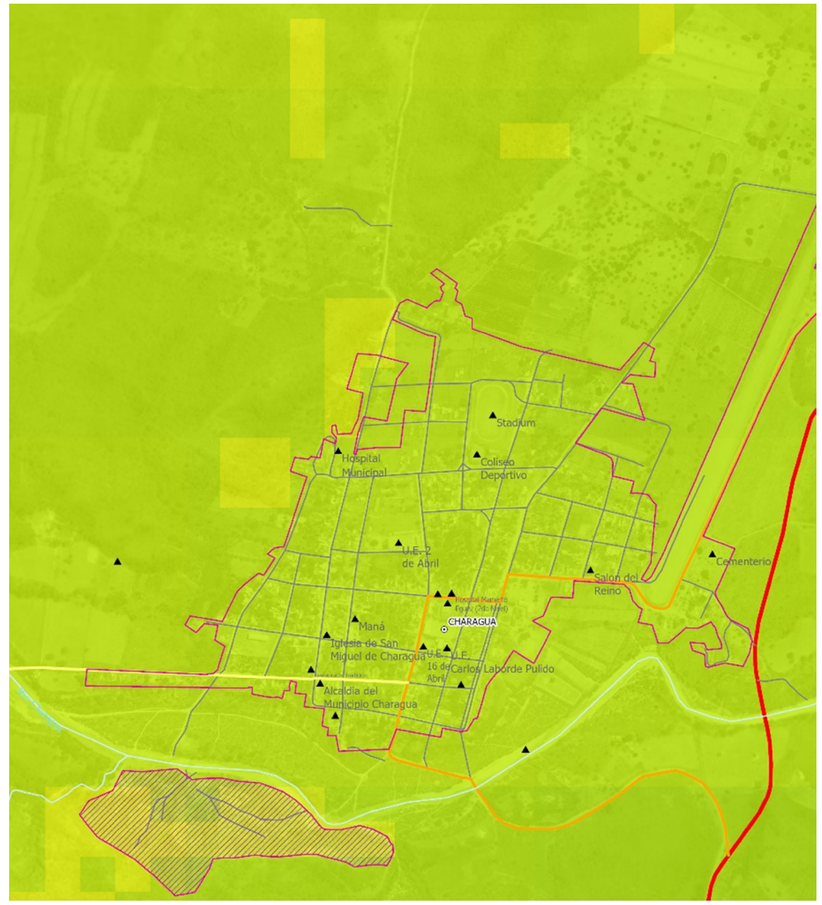

Figure 4 Climate dimension map

Source: UN-Habitat, 2024.

Climate dimension

Climate change poses a substantial threat to Charagua Pueblo, and particularly to Barrio 1ro de Mayo, heightening the risks of drought, landslides, and rising temperatures. Currently, the municipality lacks both a risk management plan and climate change adaptation strategies, meaning disaster response relies on regional government support. Preventive measures are urgently needed, but limited human, economic, and financial resources are barriers. Projections indicate a temperature increase of 2.77% and an 8% rise in precipitation, which may reduce drought vulnerability but increase landslide risks in parts of Barrio 1ro de Mayo.

Climate change disproportionately affects vulnerable groups, including the elderly, people with disabilities, and children. Observations and site visits revealed that some households in Barrio 1ro de Mayo are inhabited by older people living alone under precarious conditions.

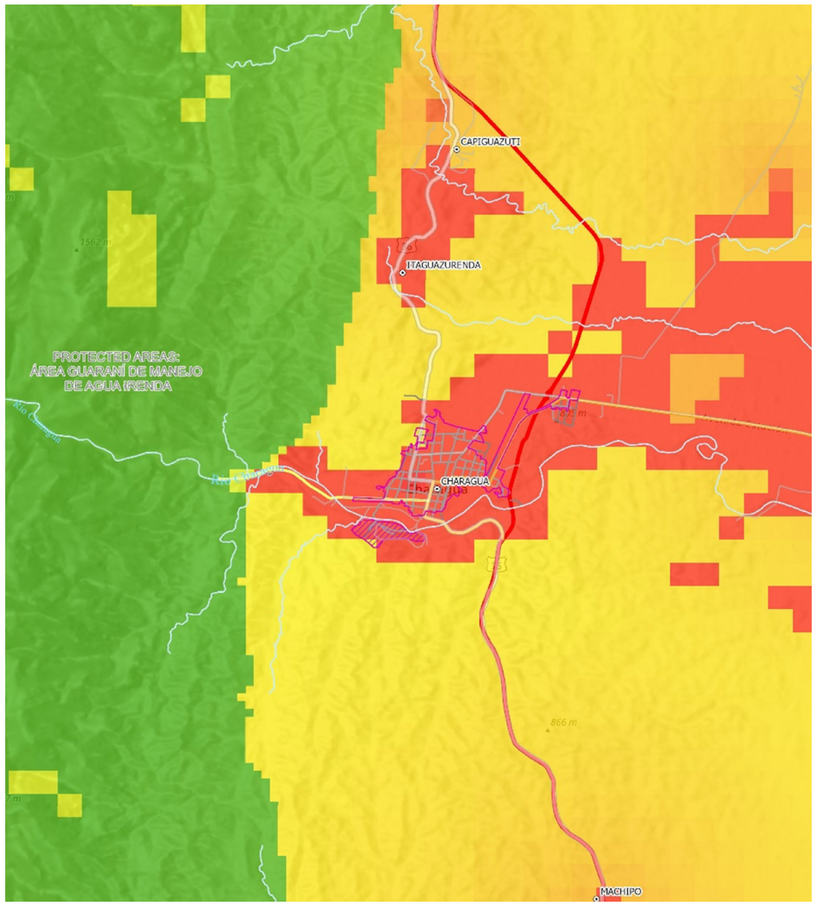

Figure 5 Biodiversity dimension map

Source: UN-Habitat, 2024.

Biodiversity dimension

Charagua's biodiversity is threatened by unplanned urban expansion, exemplified by Barrio 1ro de Mayo. This growth has compromised the ecological integrity of the area, raising risks of habitat loss. Proximity to national parks means wildlife, especially bird species, are commonly observed in the town. However, some human-wildlife conflicts have arisen, including bird poisoning. Additionally, tree removal is ongoing as wood is commonly used for construction, further impacting the local ecosystem.

Vulnerability hotspots

The three dimensions explored in this study – urban, climate change, and biodiversity, and there interconnectedness – highlight that Charagua, particularly Barrio 1ro de Mayo, is situated in an area highly vulnerable to climate change. As demonstrated, the overlap of these dimensions converges in "hot spots," where conflicts are most pronounced. These areas indicate where interventions must be prioritized to enhance community safety and resilience to climate change, while also preserving the biodiversity of the surrounding natural environment.

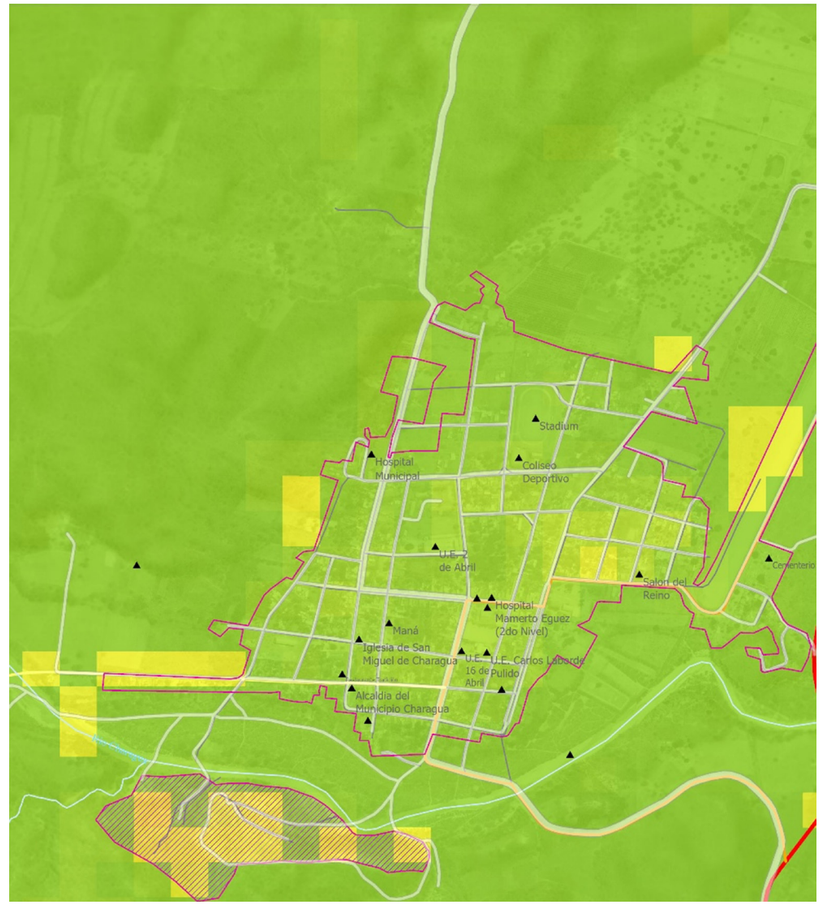

Figure 6 Urban and Climate Change dimensions hotspots

Source: UN-Habitat, 2024.

The ecosystem is the fulcrum that simultaneously connects biodiversity, climate impacts and urbanization. If we refer to the three contributions of vulnerability: exposure, sensitivity, and adaptive capacity, we have:

• The 1ro de Mayo neighborhood is highly exposed to climatic threats such as droughts and landslides (see the urban and climate change hotspots in the image below), due to several factors including its precarious urbanization, limited accessibility, and spontaneous development on land with complex topography and poor soil capacity.

As a result, residents of this area face greater vulnerability compared to other parts of Charagua. The neighborhood has experienced a range of issues, from droughts to landslides, which have negatively impacted its habitability. This situation is further compounded by institutional weaknesses and the lack of financial resources, which hinder the establishment of a comprehensive disaster risk prevention framework within the GAIOC.

• In terms of sensitivity, the informal homes in the 1ro de Mayo neighbourhood are predominantly precarious constructions,

with only basic water and electricity services. They lack sewage systems, storm drainage, and garbage collection, contributing to significant pollution. The only available service is a health post, which is located in the most vulnerable hotspot and is difficult to access. The neighbourhood is also isolated from Charagua town, as it is connected by a dirt road that crosses the Charagua River. This road becomes impassable during landslides or flooding, further isolating 1ro de Mayo in the event of disasters. As the poorest neighbourhood in Charagua Pueblo, the area faces significant socio-economic and infrastructural challenges.

• In terms of adaptive capacity, the residents of 1ro de Mayo, having faced previous disasters, have developed a pragmatic response strategy. They recognize that securing access to drinking water is paramount during emergencies, and as such, this becomes their primary focus. While online classes provide continuity in education, residents also take measures to protect their belongings by relocating furniture and valuables to the higher parts of their homes, demonstrating a practical approach to safeguarding property.
The neighborhood has established an organizational structure, with a community president serving as the liaison to the GAIOC, coordinating disaster response efforts with municipal authorities and volunteers. However, despite these adaptive practices, the community's capacity remains reactive rather than proactive. Responses are predominantly initiated post-disaster, and there is a notable absence of preemptive measures or long-term preventive planning, indicating a gap in forward-thinking adaptation strategies that could mitigate future risks.

The vulnerabilities identified across social, economic, physical, and environmental dimensions in the Municipality of Charagua, and in Charagua Puebla and the 1ro de Mayo neighborhood, are deeply interconnected, amplifying one another in a vicious cycle of harmful practices that increase the community's vulnerability over time. These compounded challenges present an urgent need for Charagua Pueblo to better manage its territory. While Charagua is not a city, but rather a small town, strategic land use planning remains essential. A well-defined vision for the town's growth is crucial in determining priorities and identifying the necessary infrastructure for sustainable development. Development policies must be holistic, addressing key areas such as employment generation, social cohesion, environmental preservation, housing access, and the efficient provision of services, all while prioritizing resilience to climate change. This should not leave aside the planning of a Charagua resilient to the threats of climate change.

Governance remains a significant challenge in Charagua, aggravated by its indigenous autonomy. The municipality often faces issues of duplication and overlapping functions and differing views among local actors on governance approaches. Institutional weaknesses and a lack of resources further hinder the local government's ability to effectively meet its obligations.

Despite these critical challenges, they also present opportunities for transformation. Within the context of this analysis, priority areas for action have been identified.
The 1ro de Mayo neighborhood, given its vulnerabilities, should be seen as a key focus for intervention. Targeted actions in this neighborhood could yield valuable, replicable outcomes that could extend to other areas of the municipality. Improving the availability of quality services and infrastructure that are resilient to climate change would significantly enhance the living conditions of the community, foster environmental stewardship, and reduce the pollution currently plaguing the area.

In light of these challenges, the critical issue lies in addressing the overlapping vulnerabilities in a holistic manner. A focused, integrated approach that bridges social, economic, physical, and environmental considerations will be essential for creating a resilient Charagua. Prioritizing neighborhoods like 1ro de Mayo offers a unique opportunity to implement pilot projects that can serve as models for broader municipal development. However, without a shift towards proactive, forward-thinking policies and a commitment to strengthening governance and institutional capacity, these vulnerabilities will continue to exacerbate. Therefore, fostering collaboration between local authorities, communities, and external stakeholders will be key to ensuring that Charagua not only survives but thrives in the face of climate challenges, setting a precedent for sustainable, climate-resilient development in the region

In conclusion, the multilayered vulnerabilities identified and assessed in the MVA – ranging from environmental risks to socio-economic and infrastructural challenges – demand urgent attention. The intersection of these vulnerabilities in hotspot areas requires strategic interventions that not only address immediate needs but also build long-term resilience. Moving forward, it is imperative to adopt an integrated approach that considers the complexities of urbanization, climate risks, and biodiversity preservation, ensuring that future development in Charagua is both sustainable and resilient.

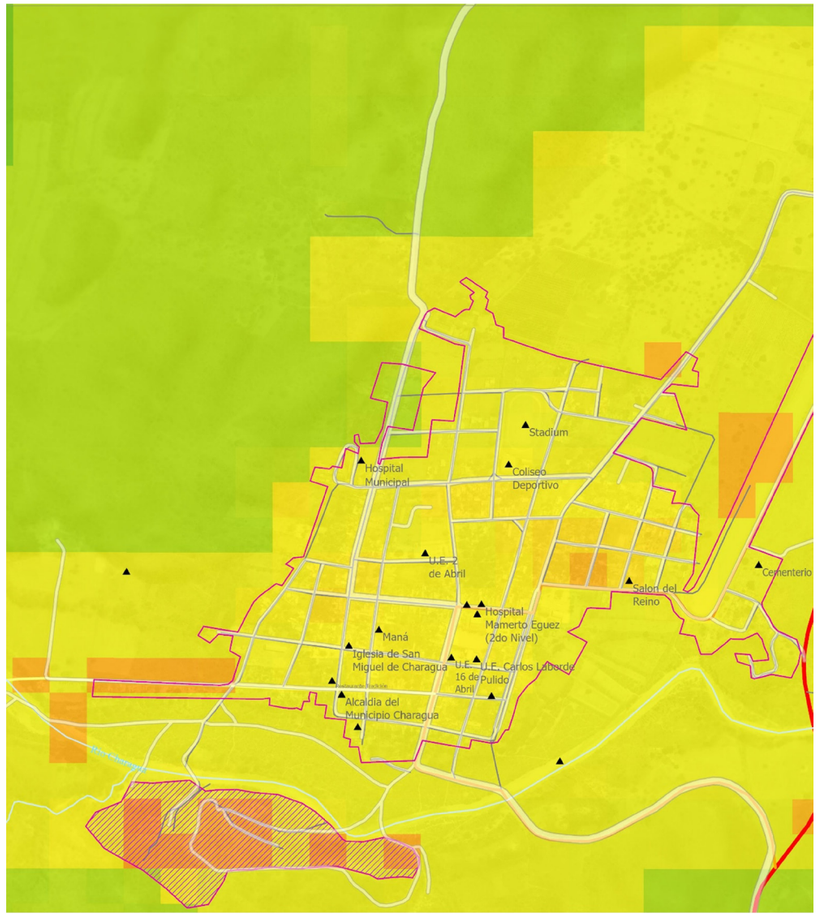

Figure 7: Vulnerability Hotspot Map
Source: UN-Habitat, 2024.

1 https://unhabitat.org/multilayered-vulnerability-profile-charagua-bolivia-resilient-settlements-for-the-urban-poor-rise

05

Shared Vision and Strategic Objectives for Climate Resilience

View towards the Charagua Cathedral
Autonomous Indigenous Government of Charagua Iyambae

05

Shared Vision and Strategic Objectives for Climate Resilience

Vision

Preservation and promotion of Guaraní cultural identity, sustainable economic development, and environmental conservation. Harmonizing cultural preservation with sustainable development, fostering a thriving community that honours its ancestral roots while progressing towards a prosperous future with resiliency towards climate change.

Strategic objectives

1. Enhance the well-being of the population in alignment with the national policy of Living Well.

2. Foster sustainable development that honors and protects the rights of Mother Earth.

3. Strengthen social security and cohesion by safeguarding indigenous cultures, knowledge systems, and traditions as key pillars of inclusive resilience.

4. Build adaptive capacity and resilience to climate change risks.

5. Ensure equitable access to basic services including health, sanitation and education for all.

Charagua Pueblo Perspective
Autonomous Indigenous Government of Charagua Iyambae

06

Priority Actions to Strengthen Climate, Territorial, and Biodiversity Resilience

Dirt and gravel roads
Autonomous Departmental Government of Santa Cruz

06

Priority Actions to Strengthen Climate, Territorial, and Biodiversity Resilience

The following are the shortlist of projects for Charagua:

Action tittle	Type	Owner	Cost (USD)	Timeline
Establish Community-Based Disaster Response Teams to make Barrio 1ro de Mayo more resilient towards natural hazards	Capacity building	GAIOC	105.000	14 months
Establish a working group between GAIOC and the association of neighbours to create a climate resilience strategy and monitor activities of all actions related to make Barrio 1ro de Mayo more resilient to climate change hazards	Capacity building and institutional structures	GAIOC and Community	115.000	10 months
Construction of a pedestrian bridge that would connect Barrio 1ro de Mayo to Charagua Pueblo	Capital Investment	GAIOC and Community	150.000	14 months
Ban the practice of fires for cleaning land for agriculture and develop enforcement system	Soft (Policy/ instutiional Organisational/ Behavioural)	GAIOC and Community	45.000	11 months
Organize campaigns around risk management	Awareness Raising	GAIOC and Community	150.000	10 months
Establish a climate shelter in the Barrio 1ro de Mayo for vulnerable people during hazard events	Hard (Infrastructure Investment)	GAIOC and Community	95.000	14 months

Table 1 Short list Actions
Source: Own elaboration

Charagua Pueblo Perspective
Autonomous Indigenous Government of Charagua Iyambae

Action overview

Based on the definition of the Vision and the prioritized objectives, well as the joint agreement with the Municipal officers, prioritization and validation exercises were carried out using a Multi-Criteria Analysis (MCA), summarized in Table 1. With the support and participation of the residents of Barrio 1ro de Mayo, the prioritization of these actions was consolidated through community-based activities conducted on January 30, 2025 (Figure 4). These activities ensured that the selected actions aligned with the needs and realities of the vulnerable communities in the area, incorporating their perspectives to enhance the effectiveness and feasibility of the proposed interventions.

ACTION CHARACTERISTICS								ACTION SCORING / SHORTLISTING SUMMARY					ACTION IMPACT												ACTION FEASIBILITY						
													Category																		
													Sub-category	Aligns with Strategic Goals					Resilience Benefit			Gender and Social Inclusion				Technical Feasibility			Financial Feasibility			
														100%					100%			100%				100%			100%			
													Weighting	20%	20%	20%	20%	20%	33%	33%	33%	25%	25%	25%	25%	33%	33%	33%	25%	25%	25%	25%
No.	Action Title	Action Type	Action Classification	Action Source	Action Status	Potential Action Owner	Implementation Timeframe	RANK BASED ON TOTAL SCORE	TOTAL SCORE	ACTION SCORE IMPACT	ACTION FEASIBILITY SCORE	PROPOSED FOR SHORTLISTING?	Criteria	Welfare of the population in line with the policy of "living well"	Sustainable development in repect with "mother earth"	Social security and social cohesion with respect to indigenous culture and traditions	Resiliency to climate change menaces	Fair access to basic services (health, sanitation and education) for all	Directly addresses a vulnerability hotspot	Improves ecosystem health	Good longevity	Reduces Gender Inequality	Targets people living in informal settlements	Community ownership	Promotes social cohesion	Aligns with desire and/or existing policy/regulatory framework or existing strategies in the sector	Aligns with technical and administrative capabilities of the city	Possible to begin implementation within 5-10 yr urban resilience action plan timeframe	Affordable to implement within city's financial capacity context	Funding/financing source(s) is known	Opportunity for private sector involvement in financing / funding	Opportunity for revenue earning / cost saving from action
	(Use 'verb-noun-location-purpose' formulation as far as possible)	*(Select from dropdown)*	*(Select from dropdown)*	*(E.g. Country Office, HQ Team, Stakeholder Workshop, City Department, Existing Plan/Strategy. Name the department or existing plan/strategy if relevant)*	*(Select from dropdown e.g. an action included in another strategy/plan but has not yet started implementation is 'Planned')*	*(Try to be as specific as possible e.g. City Public Health Department)*	*(Select from dropdown based on how long an action of this nature might take to implement)*					*(Based on the scoring for the action, shortlist no more than 8-10 actions (Discuss with HQ Focal Points if you wish to include more actions)*																			
13	Establish community rain gardens in Barrio 1ro de Mayo neighbourhood	Hard (Infrastructure Investment)	Capital Investment	SC Meeting	New	Community	Short (< 5 years)	12	5,58	3,29	2,29			4	3	3	3	3	4	3	4	2	2	4	4	2	2	3	1	1	3	4
14	Pilot a programme to install green walls and roofs for cooling of houses and buildings in the Barrio 1ro de Mayo	Hard (Infrastructure Investment)	Capital Investment	SC Meeting	New	Community	Medium (5-10 years)	8	6,77	3,90	2,87			5	4	4	5	3	5	3	4	3	4	4	3	3	2	4	1	3	2	5
15	Establish a climate shelter in the Barrio 1ro de Mayo for vulnerable people during hazard events	Hard (Infrastructure Investment)	Capital Investment	SC Meeting	New	GAIOC, Community	Short (< 5 years)	3	7,80	4,26	3,54	yes		4	3	4	5	5	5	3	5	4	4	5	4	4	4	5	1	3	2	5
16	Designate 60% of the surrounding environment of Charagua as protected areas	Soft (Policy/Organisation-al/Behavioural)	Standards, guidelines, and regulations	SC Meeting	New	GAIOC	Short (< 5 years)	4	7,79	3,46	4,33	yes		3	5	4	5	2	3	5	5	1	3	3	2	3	3	5	5	5	5	5
17	Develop ecotourism initiatives to promote biodiversity conservation while generating income for local communities.	Soft (Policy/Organisation-al/Behavioural)	Other Investment	SC Meeting	New	GAIOC	Medium (5-10 years)	11	5,90	3,07	2,83			3	4	3	3	3	2	4	3	2	3	4	3	3	2	3	3	3	2	4
18	Devise a capacity building programme for GAIOC staff on using GIS tools for monitoring vulnerabilities and planning interventions.	Soft (Policy/Organisation-al/Behavioural)	Awareness, demonstration, training, and capacity building	SC Meeting	Ongoing	GAIOC	Short (< 5 years)	10	5,99	2,82	3,17			2	3	2	5	2	3	3	5	3	2	2	1	3	2	5	3	3	2	4
19	Retrofit existing wooden homes with flood-resistant materials and elevate homes in flood-prone areas.	Hard (Infrastructure Investment)	Capital Investment	SC Meeting	New	Community	Medium (5-10 years)	6	7,11	3,98	3,12			5	3	5	4	4	4	3	5	3	4	5	3	4	4	4	1	2	2	4
20	Establish an early warning system using geotechnical sensors and community monitoring.	Hard (Infrastructure Investment)	Other Investment	SC Meeting	New	GAIOC	Short (< 5 years)	9	6,51	3,26	3,25			3	3	3	4	3	3	3	4	3	4	3	3	4	3	5	2	2	2	4
21	Develop a registry of homes with resistant foundations.	Soft (Policy/Organisation-al/Behavioural)	Investment-related feasibility study	SC Meeting	New	GAIOC	Short (< 5 years)	5	7,15	3,32	3,83			4	3	5	5	4	4	2	3	2	4	3	2	1	5	5	5	5	1	5
22	Establish a working group between GAIOC and the association of neighbours on climate resilience.	Soft (Policy/Organisation-al/Behavioural)	Awareness, demonstration, training,	SC Meeting	New	GAIOC, Community	Short (< 5 years)	1	8,38	3,97	4,42	yes		2	5	5	5	5	4	4	4	3	4	4	3	4	4	5	5	5	3	5
23	Ban the practice of fires for clearning land for agriculture and develop enforcement system	Soft (Policy/Organisation-al/Behavioural)	Standards, guidelines, and regulations	SC Meeting	Planned	GAIOC	Short (< 5 years)	2	8,31	4,02	4,29	yes		4	5	5	5	3	4	5	5	2	4	4	2	4	4	5	5	5	2	5
24	Designate a network of biodiversity Corridors in connecting ANMI Kaa Iya National Park to ensure wildlife movement and genetic diversity.	Hard (Infrastructure Investment)	Capital Investment	SC Meeting	New	GAIOC	Medium (5-10 years)	7	6,88	3,22	3,67			3	5	2	4	3	2	5	5	2	2	3	2	4	4	5	2	3	2	5

ACTION CHARACTERISTICS								ACTION SCORING / SHORTLISTING SUMMARY					ACTION IMPACT												ACTION FEASIBILITY						
													Category																		
													Sub-category	Aligns with Strategic Goals					Resilience Benefit			Gender and Social Inclusion				Technical Feasibility			Financial Feasibility			
														100%					100%			100%				100%			100%			
													Weighting	20%	20%	20%	20%	20%	33%	33%	33%	25%	25%	25%	25%	33%	33%	33%	25%	25%	25%	25%
No.	Action Title	Action Type	Action Classification	Action Source	Action Status	Potential Action Owner	Implementation Timeframe	RANK BASED ON TOTAL SCORE	TOTAL SCORE	ACTION SCORE IMPACT	ACTION FEASIBILITY SCORE	PROPOSED FOR SHORTLISTING?	Criteria	Welfare of the population in line with the policy of "living well"	Sustainable development in repect with "mother earth"	Social security and social cohesion with respect to indigenous culture and traditions	Resiliency to climate change menaces	Fair access to basic services (health, sanitation and education) for all	Directly addresses a vulnerability hotspot	Improves ecosystem health	Good longevity	Reduces Gender Inequality	Targets people living in informal settlements	Community ownership	Promotes social cohesion	Aligns with desire and/or existing policy/regulatory framework or existing strategies in the sector	Aligns with technical and administrative capabilities of the city	Possible to begin implementation within 5-10 yr urban resilience action plan timeframe	Affordable to implement within city's financial capacity context	Funding/financing source(s) is known	Opportunity for private sector involvement in financing / funding	Opportunity for revenue earning / cost saving from action
	(Use 'verb-noun-location-purpose' formulation as far as possible)	*(Select from dropdown)*	*(Select from dropdown)*	*(E.g. Country Office, HQ Team, Stakeholder Workshop, City Department, Existing Plan/Strategy. Name the department or existing plan/strategy if relevant)*	*(Select from dropdown e.g. an action included in another strategy/plan but has not yet started implementation is 'Planned')*	*(Try to be as specific as possible e.g. City Public Health Department)*	*(Select from dropdown based on how long an action of this nature might take to implement)*					*(Based on the scoring for the action, shortlist no more than 8-10 actions (Discuss with HQ Focal Points if you wish to include more actions)*																			
25	Develop community-managed urban biodiversity gardens in Barrio 1ro de Mayo to preserve	Hard (Infrastructure Investment)	Other Investment	SC Meeting	New	GAIOC	Short (< 5 years)	3	6,66	3,49	3,17			5	5	2	3	2	5	5	3	2	2	4	3	3	3	4	3	3	3	3
26	Launch a Community-Based Wildlife Monitoring Programme	Soft (Policy/Organisation-al/Behavi	Strategies, plans, and programmes	SC Meeting	New	GAIOC	Short (< 5 years)	2	6,92	3,59	3,33			3	4	2	3	1	5	5	4	3	4	5	2	3	3	5	3	3	3	3
27	Train Community-Based Disaster Response Teams	Soft (Policy/Organisation-al/Behavi	Awareness, demonstration, training, and capacity building	SC Meeting	New	GAIOC	Short (< 5 years)	1	8,47	4,22	4,25	yes		3	4	4	5	4	5	4	5	4	3	5	4	4	3	5	5	5	3	5

Table 2: Multi-Criteria Analysis (MCA) of the Long List of Actions (1-28)
Source: UN-Habitat, 2025

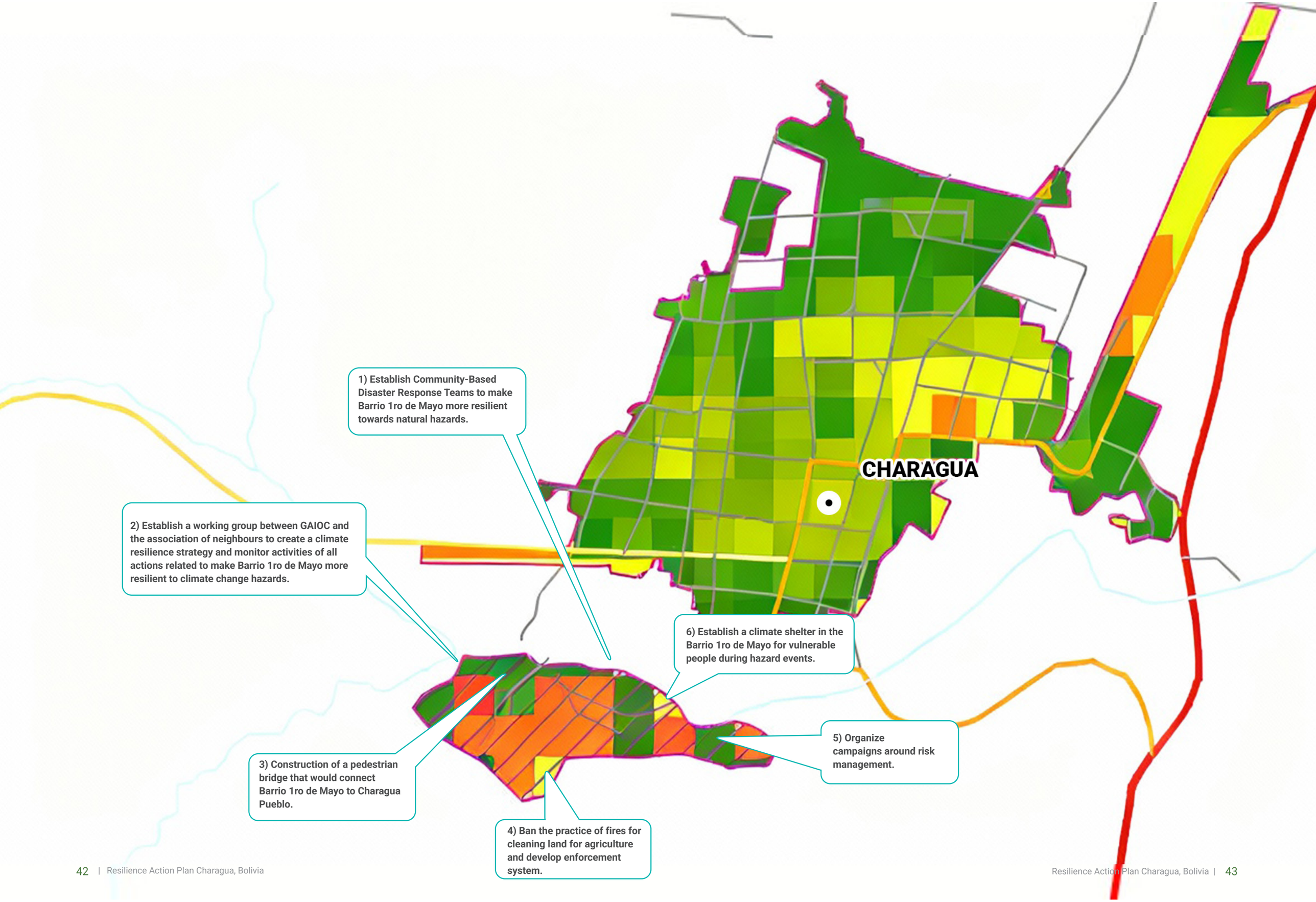
1) Establish Community-Based Disaster Response Teams to make Barrio 1ro de Mayo more resilient towards natural hazards.
2) Establish a working group between GAIOC and the association of neighbours to create a climate resilience strategy and monitor activities of all actions related to make Barrio 1ro de Mayo more resilient to climate change hazards.
CHARAGUA
6) Establish a climate shelter in the Barrio 1ro de Mayo for vulnerable people during hazard events.
5) Organize campaigns around risk management.
3) Construction of a pedestrian bridge that would connect Barrio 1ro de Mayo to Charagua Pueblo.
4) Ban the practice of fires for cleaning land for agriculture and develop enforcement system.

Figure 8: Photographs and Attendance Lists from the Community Workshop Held for the Definition of the List of Actions under the RISE UP Project.

Source: UN-Habitat, 2025.

Shortlisted Actions:

Action 1

Action 1: Establish Community-Based Disaster Response Teams to make Barrio 1ro de Mayo more resilient towards natural hazards

Description and rationale

Barrio 1ro de Mayo, like other communities in Charagua Pueblo, is increasingly exposed to natural hazards such as floods, droughts, and storms due to the intensifying effects of climate change. These events pose a serious threat to lives, infrastructure, and livelihoods—especially in areas where institutional emergency response capacities are limited or distant.

Establishing Community-Based Disaster Response Teams (CBDRTs) is a critical step in building local resilience. This approach empowers residents to prepare for, respond to, and recover from disasters using locally available knowledge and resources. By organizing and training community volunteers, CBDRTs act as first responders during emergencies—bridging the crucial gap between the onset of a hazard and the arrival of external aid.

CBDRTs will:

- Strengthen early warning and communication networks within the neighborhood
- Facilitate evacuation and emergency response in a timely, coordinated manner
- Enhance local knowledge on risk reduction and disaster preparedness through training and drills
- Promote collective ownership of disaster risk management, fostering trust and cooperation between residents and local authorities

This action is grounded in the principles of participatory resilience-building, recognizing that communities themselves are best positioned to lead local disaster response efforts when they are equipped, organized, and supported. By investing in community-led structures, Barrio 1ro de Mayo can significantly reduce vulnerability, protect lives and assets, and create a culture of preparedness that endures beyond any single event.

Status

New

Action Owner

GAIOC and Community

Type

Capacity building

Location

Barrio 1ro de Mayo and Charagua Pueblo

Vulnerabilities Addressed

- Lack of Early Warning and Rapid Communication
- Limited Access to Immediate Emergency Response
- Weak Household and Community Preparedness
- Low Risk Awareness and Hazard Knowledge
- High Vulnerability of Specific Groups
- Limited Community Organization and Leadership During Disasters
- Inadequate Access to Emergency Supplies.
- Lack of Integration with Broader Disaster Management Systems

Related Actions

- Organize campaigns around risk management
- Organize campaigns around environmental conservation
- Gender participation at policy making related to climate change hazards adaptation
- Establish a working group between GAIOC and the association of neighbors to create a climate resilience strategy and monitor activities of all actions related to make Barrio 1ro de Mayo more resilientto climate change hazards
- Launch a Community-Based Wildlife Monitoring Programme

Strategic Alignment

Political Constitution of the State (CPE) – 2009

- Article 373 & 374: The State recognizes the importance of risk prevention and environmental protection. It promotes active community participation in risk management and environmental monitoring.
- Article 272–281: Empowers autonomous territorial entities and indigenous communities to define and implement their own risk and emergency response mechanisms.

The CBDRTs directly implement the constitutional mandate for community-based participation in the prevention and management of environmental and disaster risks.

Law No. 602 – Risk Management Law (2014)

- Establishes a national system for risk management with a strong emphasis on decentralization and community-level preparedness.
- Article 6: Recognizes civil society and communities as actors in disaster risk management.
- Article 25 & 26: Calls for the creation and training of local risk management units and community brigades.

CBDRTs fulfill the legal mandate to create community-level response capacities and integrate local knowledge in managing risks and disasters.

Law No. 300 – Framework Law of Mother Earth and Comprehensive Development to Live Well (2012)

- Promotes sustainable, inclusive development and environmental stewardship.
- Article 19: Highlights the need to enhance community resilience and adaptive capacity to climate change impacts, particularly in vulnerable territories.

The action strengthens local adaptive capacity and resilience—central goals of this law.

Plurinational Climate Change Policy (2022–2030)

- Prioritizes community-based adaptation, local emergency preparedness, and early response capacity.
- Encourages the formation of local adaptation strategies and disaster preparedness brigades.

CBDRTs are a key tool for operationalizing this national policy at the neighborhood level, especially in informal urban and peri-urban areas.

Law of Autonomies and Decentralization "Andrés Ibáñez" (Ley N° 031)

- Provides a legal basis for local governments and autonomous Indigenous communities (GAIOCs) to implement their own disaster preparedness and risk reduction strategies.
- Encourages coordination between local actors and grassroots organizations.

The creation of CBDRTs under the leadership of the GAIOC and neighborhood associations reflects the decentralized and participatory principles of this law.

Contribution to National and Global Commitments

- Supports Bolivia's National Adaptation Plan and Nationally Determined Contributions (NDCs) under the Paris Agreement.
- Promotes the implementation of the Sendai Framework for Disaster Risk Reduction at the local level.
- Advances the goals of "Vivir Bien" by ensuring the safety, dignity, and agency of communities exposed to climate-related hazards.

Alignment with local development objectives:

- Welfare of the population in line with the policy of "living well"
- Sustainable development with respect to "mother earth"

- Social security and social cohesion with respect to indigenous culture and traditions
- Resiliency to climate change menaces

Fair access to basic services (health, sanitation and education) for all

Co-benefits

Environmental

Improved Disaster Risk Reduction and Environmental Protection
Co-benefit: Reduction of Environmental Degradation During Disaster

Environmental Impact:

- Reduced environmental damage during disaster response (e.g., soil erosion, forest degradation, or water contamination).
- Better management of post-disaster debris and waste, which can be recycled or disposed of in environmentally responsible ways.
- Sustainable rebuilding of infrastructure that minimizes the environmental footprint.

Social

Strengthened Community Cohesion and Solidarity
Co-benefit: Enhanced Social Bonds and Unity

Social Impact:

- Increased sense of community belonging and responsibility.
- Strengthened social networks, fostering support and cooperation during times of crisis.
- Reduced social fragmentation by involving diverse groups in disaster management efforts.

Economic

Reduced Disaster Recovery Costs
Co-benefit: Lower Economic Losses During Disasters

Economic Impact:

- Lower costs of disaster recovery and repair.
- Reduced interruption to local businesses and industries, allowing them to recover more quickly.
- Preservation of local assets and resources, reducing the need for external aid.

Implementation Steps

Month	Step
1-2	**STEP 1: Needs Assessment & Community Engagement** **Activities:** ▪ Conduct community surveys to understand local vulnerabilities (e.g., flood-prone areas, fire hazards, etc.). ▪ Holding community meetings to gather input, raise awareness, and ensure that the initiative aligns with community priorities. ▪ Involvement of local leaders, NGOs, and emergency services in the planning process to create a collaborative approach. ▪ Assessment of available local resources (e.g., volunteers, equipment, communication networks).
3	**STEP 2: Coordination with Local Authorities** The aim is establishing strong coordination between the CBDRT and local emergency response agencies. **Activities:** ▪ Developing of clear communication channels with local government agencies, fire departments, and police to ensure seamless coordination during an emergency. ▪ Ensure that CBDRT members are recognized as official first responders within the local disaster response plan. ▪ Participation in joint response exercises with government and non-governmental emergency services.
3-4	**STEP 3: Curriculum Development & Training Program Design** ▪ **The aim is to develop a comprehensive training curriculum covering all aspects of disaster preparedness and response.**
4-5	**STEP 4: Strategy plan and establish procedures** **Activities:** ▪ Align goals with the most critical risks identified in the assessment (e.g., floods, landslides, wildfires). ▪ Establish short-, medium-, and long-term response goals. ▪ Prioritize vulnerable groups (children, elderly, persons with disabilities) in planning. ▪ Define clear roles and responsibilities (e.g., Team Leader, Communications Officer, First Aid Officer, Logistics Coordinator, Search & Rescue team). ▪ Organize teams based on local geography and community size. ▪ Identify local volunteers, existing civil society groups, or neighborhood associations to join or lead teams.

6

STEP 5: Selection of Team Members
The aim is to form teams consisting of motivated and capable community members.

Activities:

- Advertising the opportunity to join the CBDRT through community centers, local media, and word of mouth.
- Selection of diverse members from various local groups (youth, elders, women, etc.) to ensure broad community representation.

Training team leaders to coordinate response efforts and ensure communication between community members and emergency services.

7-8

STEP 6: Training Delivery
The aim is providing the necessary training to the members of the CBDRT.

Activities:

- Schedule training sessions: Hold regular workshops and field exercises (e.g., first aid training, mock evacuation drills).
- Bring in specialized trainers (e.g., fire fighters, paramedics, disaster management professionals) for specific areas of expertise.
- Use local contexts in the training (e.g., floods if the community is flood-prone) to make the training more relevant.
- Include communication protocols for emergency situations, ensuring that the teams can work with local authorities and emergency services.

9-10

STEP 7: Procurement of Equipment and Resources
The aim is providing the CBDRT with the necessary equipment and resources for effective disaster response.

Activities:

- Equip each team with basic emergency supplies (e.g., first aid kits, flashlights, walkie-talkies, stretchers, emergency food and water).
- Set up emergency shelters and safe zones that can be quickly accessed during a disaster.
- Ensure that each team has access to maps, contact lists, and evacuation routes specific to their community.
- Create storage spaces (e.g., a local disaster relief center) to store and maintain equipment.

11

STEP 8: Simulation Drills & Exercises
The aim is testing the readiness and effectiveness of the teams and ensure they can respond promptly to hazard events.

Activities:

- Conduct regular disaster drills involving the entire community to practice emergency evacuation, rescue operations, and the use of emergency equipment.
- Simulate different hazard scenarios (e.g., flooding, fire, earthquake) to ensure the teams are well-prepared for a variety of emergencies.
- Assess team performance during these drills and provide feedback to improve their effectiveness.

12-13

STEP 9: Community Awareness and Education
The aim is to raise awareness within the broader community on disaster preparedness and response.

Activities:

- Organize public information campaigns (e.g., posters, social media, town meetings) to inform the public about the CBDRT's role and the importance of disaster preparedness.
- Distribute disaster preparedness guides and evacuation plans to community members, especially vulnerable groups (e.g., elderly, children, people with disabilities).
- Offer community workshops on first aid, emergency preparedness, and risk reduction strategies.

14

STEP 10: Monitoring, Evaluation, and Feedback
The aim is making is to Assess of effectiveness of the CBDRTs and continually improve the program.

Activities:

- Monitor the progress of the teams' training and the implementation of disaster response plans.
- Conduct evaluations after each disaster response or simulation to identify successes and areas for improvement.
- Collect feedback from community members to assess the impact of the training and response efforts on overall safety.
- Update the training program and resources based on lessons learned from real-life incidents or drills.

Financing

Indicative Cost

USD105.000

Potential Financing Instruments

- National Government investment

Revenue Opportunities: N/A

- Partnerships between local and regional governments
- External funding: IADB. WB, CAF, AECID, European Bank for Reconstruction and Development, Fund for Cities Development

Risks and Mitigation Options

Economic Risk

The project may face difficulty securing sufficient funds, especially if resources are limited or if external funding sources are unreliable.

Mitigation Measure

- Development of a diversified funding strategy that includes government funding, international aid, private sector donations, and local fundraising initiatives.
- Creattion of a sustainability plan to ensure ongoing financial support after the initial training phase (e.g., through partnerships with NGOs, local businesses, or grants).
- Seeking for in-kind donations of materials or services to reduce costs.

Technical Risk

The infrastructure available for training (e.g., facilities, training materials, trainers) may be inadequate or unsuitable for the needs of the community or the scale of the project.

Mitigation Measure

- Assessment of Infrastructure Needs: Conducting a thorough assessment of available training facilities and ensure they meet the necessary standards (e.g., space for drills, access to equipment, safety standards).
- Making Partnerships with Local Organizations: Collaboration with local community centers, schools, or NGOs that may offer suitable spaces and infrastructure for training.

Social Risk

The community may resist the formation of CBDRTs due to a lack of understanding of the project's benefits, cultural differences, or a perceived disruption to existing social structures.

Mitigation Measure

- Engagement of Stakeholders Early: It is important to begin the project with community consultations, involving local leaders, influencers, and organizations to ensure that the project aligns with community values and needs.
- Education and Raising of Awareness: The projects needs to organize awareness campaigns that clearly communicate the importance and benefits of disaster preparedness, focusing on personal and community safety and resilience.
- Highlight Community Ownership: Emphasize the role of the community in shaping the program, allowing local input into the design and execution of the CBDRTs to ensure that they feel a sense of ownership.
- Leverage Local Leaders: Inclusing respected community figures to promote the project and build trust within the community. Local leadership can help overcome skepticism and encourage participation.

Perspective of the May 1st neighborhood
Autonomous Indigenous Government of Charagua Iyambae

Action 2

Action 2: Establish a working group between GAIOC and the association of neighbors to create a climate resilience strategy and monitor activities of all actions related to make Barrio 1ro de Mayo more resilient to climate change hazards

Description and rationale

The aim of this project is to establish a collaborative working group between the GAIOC and the Association of Neighbors to work on climate resilience initiatives in local communities. As the MVA has stated, there are differnces between barrio 1ro de Mayo, that is formed by 3 sectors. Thus, Barrio 1ro de Mayo Bajo is closer to river Charagua and is mor vulnerable to flloding.

The group will focus on increasing community awareness, developing adaptation strategies, and implementing sustainable practices that help mitigate the effects of climate change. The stakeholders involved are:

- GAIOC: Will provide technical support, funding, and expertise in climate adaptation practices.
- Association of Neighbors: Local community-based organization that represents the residents and has first-hand knowledge of local challenges and resources. They will be essential in disseminating information and driving grassroots engagement.
- Local governments, NGOs, and community leaders: They can offer additional support and ensure the sustainability of initiatives.
- Climate experts and consultants: For advice on scientifically-backed climate resilience strategies.

Status

New

Action Owner

GAIOC and Community

Type

• Inversión de capital
• Fortalecimiento de capacidades
• Estudios, estrategias y planes
• Sensibilización

Location

Barrio 1ro de Mayo and Charagua Pueblo

Vulnerabilities Addressed

- Fragmented Governance and Lack of Coordination
- Weak Institutional Capacity to Plan and Monitor Resilience Activities
- Low Community Participation in Climate Decision-Making
- Lack of a Shared, Long-Term Vision for Climate Resilience
- Limited Knowledge Sharing and Learning
- Disconnection Between Climate Risks and Local Planning
- Lack of Localized Data for Informed Decision-Making
- Duplication or Misalignment of External Projects

Related Actions

- Organize campaigns around risk management
- Organize campaigns around environmental conservation
- Gender participation at policy making related to climate change hazards adaptation
- Launch a Community-Based Wildlife Monitoring Programme
- Establish Community-Based Disaster Response Teams to make Barrio 1ro de Mayo more resilient towards natural hazards

Strategic Alignment

Political Constitution of the State (CPE) – 2009

- Article 342 & 343 affirm the right of the population to a healthy environment and the duty of the State and society to protect it.
- Article 385 promotes the sustainable management of natural resources, recognizing the role of autonomous governments.
- The establishment of a working group involving the GAIOC and civil society directly supports participatory environmental governance.

Law No. 071 – Law on the Rights of Mother Earth (2010)

- Recognizes the rights of Mother Earth and establishes duties of the State and civil society to protect her.
- The community-led climate resilience strategy strengthens the principles of harmony with nature, ecological balance, and preservation of life systems.

Law No. 300 – Framework Law of Mother Earth and Comprehensive Development to Live Well (2012)

- Promotes integrated development with respect to ecological limits.
- Emphasizes participatory planning, territorial resilience, and adaptive capacity-building—directly supported by the proposed working group initiative.
- The action reinforces objectives in Articles 14 and 19, which include climate risk management and citizen participation.

Plurinational Climate Change Policy (2022–2030)

- Encourages coordinated, multi-level governance for climate adaptation.

- Supports local-level resilience initiatives led by Indigenous and peasant communities.
- The proposed working group reflects the cross-sectoral collaboration and community empowerment emphasized by this policy.

Law of Autonomies and Decentralization "Andrés Ibáñez" (Ley N° 031)

- Respects the autonomy and competencies of GAIOCs.
- Encourages inter-institutional coordination between autonomous levels of government and civil society.
- Your initiative aligns with the law's vision for participatory planning and co-management of local development processes.

Contribution to National Goals

- Strengthens the decentralized governance of climate risk and adaptation.
- Contributes to Bolivia's Nationally Determined Contributions (NDCs) under the Paris Agreement through local adaptation efforts.
- Reinforces the principle of "Vivir Bien" (Living Well) by fostering inclusive and sustainable development.

Alignment with local development objectives:

- Welfare of the population in line with the policy of "living well"
- Sustainable development with respect to "mother earth"
- Social security and social cohesion with respect to indigenous culture and traditions
- Resiliency to climate change menaces
- Fair access to basic services (health, sanitation and education) for all

Co-benefits

Environmental	**Improved Local Environmental Stewardship** Co-benefit: Enhanced Environmental Protection and Resource Management ▪ **Description:** By working together, the local government (GAIOC) and the neighborhood association can develop joint strategies for environmental conservation and resource management, such as managing natural resources, protecting green spaces, and preserving local biodiversity. ▪ **Impact:** These actions contribute to maintaining local ecosystems, ensuring that natural habitats are protected from harmful human activities (e.g., urban sprawl, deforestation), and promoting sustainable use of natural resources like water and land.
Social	**Enhanced Community Participation and Empowerment** Co-benefit: Increased Civic Engagement and Community Leadership ▪ **Description:** The working group facilitates greater community participation in decision-making processes related to climate resilience. By involving residents in planning and action, the project helps empower local people to take ownership of their community's future, especially concerning climate-related challenges. ▪ **Impact:** Empowered communities are more likely to be proactive in adopting climate resilience measures, contributing to local decision-making processes, and taking collective action to address climate risks. This fosters a culture of civic engagement and leadership within the community.
Economic	**Increased Local Resilience and Reduced Losses** ▪ **Flood risk reduction:** A well-formed working group can help communities understand and prepare for climate change impacts, especially flooding. This leads to fewer economic losses from natural hazards, such as property damage, loss of agricultural output, and disruption to local businesses. ▪ **Lower disaster recovery costs:** Investing in climate resilience and preparedness helps avoid the high costs associated with disaster recovery, such as rebuilding infrastructure and providing emergency relief.

Implementation Steps

Month	Step
1	**Step 1: Initial Meeting & Consensus Building** The aim is to set up the first meeting between GAIOC, the Association of Neighbors, and other key stakeholders. Activities: Agenda ▪ Introduce members and define roles. ▪ Discuss the climate resilience challenges faced by the community. ▪ Establish mutual goals, expectations, and responsibilities. ▪ Identify resources available for the project.
1-2	**Step 2: Procurement of external expertise** Activities: ▪ Identification of required expertise: Based on the working group's goals and needs, it is key to determine the specific areas where external support is needed. ▪ Develop terms of reference ▪ Procurement process: Based in local procedures in Charagua. ▪ Integration into the working groups
2-3	**Step 3: Conduct a Climate Change Risk Assessment** The aim is to conduct a joint assessment to identify the specific climate risks that the community faces (e.g., flooding, droughts, temperature extremes).

Activities:

- Data gathering (historical weather patterns, environmental impacts, etc.).
- Use of participatory techniques like focus groups and surveys to engage community members.
- Based in the previous step, it is key to work with climate experts to analyze findings and project future risks.

3

Step 4: Co-Design Climate Resilience Strategies
The aim is to developing a tailored climate resilience plan that aligns with the community's needs and capacities.

Activities:

- Organize workshops with both GAIOC and community members to brainstorm and design strategies.
- Address issues like sustainable agriculture, disaster preparedness, water conservation, infrastructure strengthening, and education.
- Focus on solutions that can be implemented locally and with available resources.

4

Step 5: Develop a Finance Strategy and Mobilise Funding
The aim is to identify and mobilize funding for climate resilience projects.

Activities:

- Creation of a well-thought strategy that would be interesting enough in order to get funding from different sources.
- GAIOC can help access international funds or donor organizations.
- Looking for collaboration opportunities with private sector stakeholders, NGOs, or government programs.
- Developing of project proposals outlining the costs, benefits, and expected outcomes.

5-6

Step 6: Implementation of Pilot Projects
The aim is rolling out pilot projects to test the feasibility and effectiveness of proposed strategies.

Activities:

- Select small-scale projects that can be scaled up if successful (e.g., community-based water management or reforestation efforts).
- Monitor progress and document outcomes for future improvements.
- Encourage community members to participate in hands-on roles for ownership and empowerment.

7-9

Step 7: Monitoring, Evaluation, and Learning
The aim is Continuously monitor the outcomes of climate resilience efforts and adapt strategies as necessary.

Activities:

- Establishing a monitoring system to track environmental changes, project impact, and community feedback.
- Determination of regular evaluation meetings with GAIOC, the Association of Neighbors, and other stakeholders.
- Adjusting of strategies based on findings and emerging climate data.

10

Step 8: Scaling Up & Sustaining Efforts
The aim is insuring the long-term sustainability of climate resilience efforts.

Activities:

- Working on expanding successful initiatives to other areas.
- Securing long-term funding sources for ongoing projects.
- Continuing to build local coping capacity through training programs, workshops, and knowledge exchange.

Financing

Indicative Cost

USD115.000

Potential Financing Instruments

Revenue Opportunities: N/A

- National Government investment
- Partnerships between local and regional governments
- External funding: IADB. WB, CAF, AECID, European Bank for Reconstruction and Development, Fund for Cities Development

Risks and Mitigation Options

Economic Risk

Cost overruns during project execution due to unforeseen circumstances, or planning failures.
Lack of funding or delays in the allocation of resources to complete the function of the group.

Mitigation Measure
Conducting a feasibility analysis for detailed budgeting, including cost analysis with contingency margins.

Diversifiying funding sources with support from public, private, and international organizations, ensuring a solid financial plan for the group´s functioning.

Technical Risk

Inadequate Data and Information. Reliable and up-to-date data on climate impacts, vulnerabilities, and resilience indicators are essential for informed decision-making. If data is incomplete, outdated, or inaccurate, it could undermine the effectiveness of the working group's efforts.

Mitigation Measure

- Ensure comprehensive data collection from multiple sources (e.g., climate monitoring, satellite imagery, local surveys).
- Regularly update and maintain databases and information-sharing platforms to ensure accurate, real-time data is available for decision-making.
- Making partnerships with technical experts (e.g., meteorologists, hydrologists) and universities to improve data accuracy and analysis.

Social Risk

If the resilience activities of the group disrupt local communities it could lead to social unrest and Community opposition

Mitigation Measure

- Implementation of a participatory process with project outreach, listen to concerns, and offer viable solutions.
- Prioritization of community engagement throughout the project. Ensure that the local populations are involved in decision-making.

Environmental Risk

Potential impacts on the environment because of activities related to the functioning of the group

Mitigation Measure

Implementation of environmental management plans that assure that activities of the group would not affect environment of the activities carried out by the group.

Charagua Steering Committee Meeting
Alan Vera

Action 3

Action 3: Construction of a pedestrian bridge (with the capacity to let motorcycles to cross) that would connect Barrio 1ro de Mayo to Charagua Pueblo

Description and rationale

Description:
The action is a key infrastructure project aimed at improving mobility and accessibility between these two areas.

Key Features of the Project:

1. Bridge Design

- The bridge will be designed to accommodate pedestrians, ensuring safe passage for individuals on foot, while also supporting the weight and movement of motorcycles.
- The structure will likely feature robust materials capable of handling the regular traffic, ensuring longevity and minimal maintenance.

2. Connecting Two Communities

- Barrio 1ro de Mayo and Charagua Pueblo are linked by the bridge, facilitating easier access for residents, particularly those who need to cross the river, small ravines, and another obstacle that currently limits mobility.
- The bridge is expected to promote better social integration, enabling locals to access vital services, markets, schools, and healthcare facilities in Charagua Pueblo.

3. Enhanced Transit

- Motorcycles, which are commonly used for local transport, will benefit from the bridge's capacity, helping reduce travel time and providing a safer crossing compared to alternative routes.
- This improved transport link could stimulate economic activities, as it makes commuting more efficient for businesses, farmers, and service providers.

4. Community Impact

- The bridge will likely increase safety, particularly in rainy or difficult weather conditions, where other routes may be impassable.
- The local community from Barrio 1ro de Mayo will experience improved access to resources and opportunities, fostering greater social and economic development.

This project would ultimately aim to strengthen local infrastructure and improve daily life for the residents of both Barrio 1ro de Mayo and Charagua Pueblo.

Rationale:

The construction of a pedestrian bridge, designed to also allow motorcycles, between Barrio 1ro de Mayo and Charagua Pueblo is a strategic and high-impact action to strengthen the community's resilience to climate-related hazards, reduce vulnerability, and promote inclusive development.

Currently, residents of Barrio 1ro de Mayo face recurrent isolation during the rainy season due to flooding of the natural drainage channels and roads that connect them to Charagua Pueblo. Compounded by landslides, this isolation prevents timely access to essential services such as healthcare, education, emergency assistance, markets, and government institutions. The problem is particularly acute for vulnerable groups, including the elderly, children, women, and people with disabilities, who are disproportionately affected by mobility constraints during hazard events.

This action directly contributes to climate adaptation by ensuring safe and continuous connectivity during periods of intense rain or climate stress. The proposed bridge will provide an all-weather route for pedestrians and motorcycles, which are the most common and affordable means of transport for many residents. It will also improve access to evacuation routes and emergency services in case of floods, storms, or other climate-related hazards.

Beyond immediate disaster risk reduction, the bridge enhances economic resilience by allowing consistent movement of people, agricultural products, and goods to local markets and service centers. It strengthens social cohesion and governance by enabling more active participation of Barrio 1ro de Mayo in municipal planning and community development processes based in Charagua Pueblo.

Moreover, according to the MVA, unavailability of a pedestrian bridge has caused more than 10 deaths of dwellers of vulnerable groups trying to cross the river. This death risk is being exhacerbated by climate change, making people in Barrio 1ro de Mayo everytime more vulnerable and in danger. The bridge will directly improve loss and damage outcomes for the region.

In short, the construction of this bridge addresses both structural and systemic vulnerabilities and represents a practical, visible, and highly valued investment in the safety, dignity, and long-term resilience of the population of Barrio 1ro de Mayo.

Status

Planned

Action Owner

GAIOC and Community.

Type

Capital Investment.

Location

Barrio 1ro de Mayo.

Vulnerabilities Addressed

- Physical Isolation During Floods and Storms
- Limited Access to Emergency Services and Disaster Response
- Disruption of Economic Activities and Livelihoods
- Inconsistent Access to Education and Social Services
- Increased Exposure During Evacuations

- Vulnerability of At-Risk Populations
- Disrupted Access to Clean Water, Food, and Health Supplies
- Disconnected Disaster Preparedness and Response Planning

Related Actions

3. Protection of the river bank.

4. Implementation of garbage collection service.

5. Contruction of roads to improve overall accessibility.

15. Establish a climate shelter in the Barrio 1ro de Mayo for vulnerable people during hazard events.

Strategic Alignment

Political Constitution of the State (CPE) – 2009

- **Article 20 & 30:** Guarantees the right to basic services, accessibility, and development for Indigenous Originary Campesino communities.
- **Article 342 & 343:** Promotes sustainable infrastructure development that protects human life and the environment.
- **Article 385:** Supports territorial integration and development through infrastructure that respects cultural identity and the environment.

The bridge enhances access to essential services, strengthens community cohesion, and enables safer mobility during climate-related events (e.g., floods), upholding constitutional principles of equality, inclusion, and resilience.

Law of Autonomies and Decentralization "Andrés Ibáñez" (Ley N° 031)

- Empowers GAIOC to plan and implement infrastructure that supports local development.
- Encourages investment in physical connectivity between rural and urban communities.

This project aligns with GAIOC competencies and supports inter-community mobility and cooperation between Barrio 1ro de Mayo and Charagua Pueblo.

Law No. 602 – Risk Management Law (2014)

- Promotes infrastructure that reduces vulnerability to disasters and ensures safe evacuation and access during emergencies.
- Encourages the construction of resilient infrastructure that can withstand climate and hydrological hazards.

The bridge provides a safe passage over areas that may be seasonally flooded, facilitating emergency response and reducing risk.

Law No. 300 – Framework Law of Mother Earth and Comprehensive Development to Live Well (2012)

- Emphasizes the development of infrastructure that respects ecological balance and supports local livelihoods.
- Supports sustainable access to territories and services in the face of climate change impacts.

The project fosters equitable access to markets, services, and governance institutions, while being designed to be low-impact and climate-resilient.

National Climate Change Policy (Política Plurinacional de Cambio Climático 2022–2030)

- Encourages infrastructure that improves climate adaptation and reduces exposure to extreme weather events.
- Supports community-led solutions that enable mobility and territorial integration under changing climate conditions.

This action supports the policy's goals by enabling year-round mobility and resilience in the face of flooding or isolation risks.

Contribution to National and Local Development Objectives

- Contributes to Bolivia's Nationally Determined Contributions (NDCs) by enhancing infrastructure resilience and access.
- Advances the principle

Alignment with local development objectives:

- Welfare of the population in line with the policy of "living well"
- Sustainable development with respect to "mother earth"
- Social security and social cohesion with respect to indigenous culture and traditions
- Resiliency to climate change menaces
- Fair access to basic services (health, sanitation and education) for all

Co-benefits

Environmental

Reduced Carbon Footprint and Air Pollution
Co-benefit: Lower Emissions from Reduced Vehicle Traffic

- **Description:** By providing a dedicated pedestrian bridge, the project encourages walking over the use of vehicles for short-distance travel between the two areas.
- **Impact:** Reduced reliance on motorized transportation (e.g., cars, motorcycles, and buses) will lead to a decrease in greenhouse gas emissions (GHGs), air pollution, and traffic congestion. Fewer vehicles on the road result in lower levels of CO2, particulate matter, and other pollutants.

Social

Promotion of social inclusion
Co-benefit: Improved Access for Vulnerable Groups

- **Description:** A pedestrian bridge can be designed with accessibility in mind, providing safe passage for all, including children, the elderly, and those with mobility challenges. In addition, it can foster greater social inclusion by offering more equitable access to both urban and rural areas.

	▪ **Impact:** By providing safer, more reliable access for marginalized or vulnerable groups, the project helps bridge social gaps and ensures that everyone, regardless of age, gender, or physical ability, can benefit from community development.
 Economic	**Co-benefit: Boost to Local Economy** ▪ **Description:** The construction and operation of the pedestrian bridge may create temporary and permanent jobs, from construction work to the operation of maintenance services. Local businesses in both neighborhoods may also benefit from improved access to each other's markets. ▪ **Impact:** The bridge could promote local economic growth by providing easier access to work opportunities, expanding markets for local products, and facilitating the movement of goods and services. It also fosters a sense of opportunity by improving the economic integration of both neighborhoos.

Implementation Steps

Month	Step
1-2	**STEP 1: Develop Project Plan & Conduct Feasibility Study** The aim is to determine the viability of the project and gather essential information. Activities: ▪ Site Survey & Evaluation. ▪ Feasibility Study ▪ Consultation with Stakeholders.
2-4	**STEP 2: Design Phase of a Climate resilient structure** The aim is to develop a design that ensures safety, accessibility, and durability and above all that the bridge is resilient to climate change hazards. Activities: ▪ **Selection of Bridge Type:** Depending on factors like the river size, terrain, and usage, choose an appropriate bridge design (e.g., suspension bridge, beam bridge, arch bridge). Integration of climate change resilient approach of "building better" not considering current conditions but future ones. ▪ **Engagement of Engineers:** Working with structural engineers to design the bridge, ensuring it meets safety standards and is designed to withstand local weather conditions (e.g., heavy rainfall, wind). considering future conditions based on the MVA. ▪ **Environmental Impact Assessment (EIA):** Evaluation of the potential effects on the environment (e.g., wildlife, water quality, vegetation). Propose mitigation measures
	to address any negative impacts, considering scenarios in the future 50 to 100 years. ▪ **Accessibility Considerations:** Ensuring the bridge design accommodates people with disabilities, including ramps or smooth walking surfaces. ▪ **Material Selection:** Choosing durable materials such as steel, concrete, or treated wood based on the environment and expected traffic (pedestrians, and eventually light-weight motorcycles), considering to build a climate change resilient bridge.
5	**STEP 3: Permitting & Approvals** The aim is to obtain all the necessary legal permits and approvals before construction begins. Activities: ▪ **Environmental and Local Authority Approvals:** Submition of the Environmental Impact Assessment (EIA) to local and environmental authorities for approval. ▪ **Construction Permits:** Application for the necessary construction permits from local municipalities, ensuring compliance with safety and zoning regulations. ▪ **Community Support:** Ensuring continuous engagement with the community for feedback, approvals, and ensuring minimal disruption during construction.
6-7	**STEP 4: Budgeting and Fundraising** The aim is to secure the necessary funds to complete the project. Activities: ▪ **Land Clearing and Site Setup:** Clearing the area where the bridge will be built. Ensure the site is safe and ready for construction work, including establishing worker camps if necessary. ▪ **Access Roads:** If needed, it would be good to build temporary access roads to transport construction materials and equipment to the site. ▪ **Costs:** Determining the total cost of the project, including design, materials, labor, and unexpected expenses. ▪ **Identification of Funding Sources:** Exploring funding options, which could include local government funding, international donors, grants, or private investors. ▪ **Allocation of Resources:** Ensuring resources are allocated efficiently and are available as needed throughout the construction process.
8-12	**STEP 6: Construction Phase** The aim is to build the pedestrian bridge according to the design specifications. Activities: ▪ Foundation Work: Begin with foundation construction, which might involve digging,

pouring concrete footings, or placing pilings, depending on the bridge's design.

- Structure Assembly: Assemble the bridge's structural components, such as beams, cables, or decking.
- Safety Measures: Ensure proper safety protocols are in place for workers and the surrounding community, including protective barriers, signage, and safety gear.
- Decking and Surface Work: Install the pedestrian walking surface, ensuring that it is level, secure, and slip-resistant. Include any additional features such as handrails or lighting.

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STEP 7: Inspection & Testing
The aim is to ensure that the bridge is safe and functional for public use.

Activities:

- **Engineering Inspections:** Performing a series of tests to ensure the bridge meets all design, safety, and engineering standards.
- **Load Testing:** Conduction of tests to ensure the bridge can safely carry the expected foot traffic and any additional loads (e.g., emergency vehicles if necessary).
- **Quality Assurance:** Inspection of the materials, workmanship, and overall quality of the bridge to ensure it is built to last.

14

STEP 9: Ongoing Maintenance and Monitoring
The aim is to ensure the long-term sustainability of the bridge.

Activities:

- **Routine Inspections:** Seting up a regular inspection schedule to monitor the condition of the bridge and identify any necessary repairs or maintenance.
- **Community Involvement:** Encouraging local communities to report any issues with the bridge to authorities.
- **Repairs and Upgrades:** Performing necessary repairs, replace damaged materials, and upgrade features to keep the bridge functional and safe for users.

Financing

Indicative Cost

220.000 USD

Potential Financing Instruments

- National Government investment
- Partnerships between local and regional governments
- External funding: IADB. WB, CAF, AECID, Fund for Cities Development

Revenue Opportunities : Social Impact

Risks and Mitigation Options

Economic Risk

Unexpected construction costs, such as rising material prices, unforeseen site conditions, or errors in cost estimation, can lead to budget overruns, potentially causing delays and requiring additional funding.

Mitigation Measure

- **Thorough cost estimation:** Conduct a detailed and realistic cost estimation, including contingency funds for unexpected expenses (usually 10-20% of the total budget).
- **Cost monitoring and management:** Implement a robust financial management system to track expenses throughout the project and identify any budget deviations early on.
- **Competitive bidding process:** Use a competitive bidding process to secure contractors and suppliers who offer the best value for money, reducing the likelihood of inflated costs.
- **Regular financial audits:** Conduct regular audits and reviews to monitor project expenditures, ensuring that the budget is being followed.

Technical Risk

Site Conditions and Geotechnical Challenges. The soil or ground conditions at the construction site may present challenges, such as unstable soil, high water tables, or the presence of rock formations that make foundation work difficult or more expensive.

Mitigation Measure

- Conduction of a detailed geotechnical surveys and soil tests before starting construction to assess the stability of the ground and identify any potential hazards.
- Based on the findings, is relevant to design appropriate foundation solutions (e.g., deep foundations like piles or caissons) that can handle the soil conditions.
- If necessary, modification of design or construction approach to accommodate the findings from the geotechnical survey.

Social Risk

Displacement and Relocation of Residents. Construction activities may require the temporary or permanent displacement of individuals or families, especially if the project site is near existing homes, businesses, or important social spaces.

Mitigation Measure

- Conduction of a social impact assessment to identify affected individuals or communities and understand the extent of potential displacement.
- If relocation is necessary, offering fair compensation and alternative housing options in line with local regulations and best practices.

- Provide affected individuals with adequate support during the transition, including relocation assistance, legal advice, and housing options.

EnvironmentalRisk

Construction activities, particularly near water bodies or slopes, can cause soil erosion and sedimentation, which can degrade water quality, affect aquatic ecosystems, and lead to long-term environmental degradation.
Disruption of local wildlife and aquatic ecosystems due to changes in the stream flow.

Mitigation Measure

- Implementation of environmental management plans with measures such as sediment control, revegetation of disturbed areas, and proper waste treatment.
- Conduction of a site assessment to identify vulnerable areas prone to erosion. Design structures that respect the natural watercourse, include ecological passages for affected species, and monitor water quality during and after construction.

View of the Charagua River, perspective from the 1st of May neighborhood
Autonomous Indigenous Government of Charagua Iyambae

Action 4

Action 4: Ban the practice of fires for clearing land for agriculture and develop enforcement system

Description and rationale

Description:
This project seeks to implement a comprehensive ban on the use of fire for land clearing in the municipality of Charagua, Bolivia—home to one of the largest autonomous Indigenous territories in the country. In parallel, the initiative will establish a culturally appropriate, community-led enforcement and monitoring system to ensure compliance. The project will include public education campaigns, alternative land preparation training, legal reform assistance, and capacity building for local governance and environmental institutions.

Objectives:

- Legally prohibit the use of fire for agricultural land clearing within Charagua's jurisdiction.
- Reduce greenhouse gas emissions and the risk of wildfires threatening forested and Indigenous lands.
- Promote sustainable land-use alternatives that are aligned with Indigenous agricultural practices and food security goals.
- Strengthen local institutions and community networks to enforce the ban effectively and equitably.

Rationale:

The practice of slash-and-burn agriculture has long been used in the region, but increasing climate volatility, population pressures, and the expansion of mechanized agriculture have led to larger, more destructive fires. These fires threaten biodiversity in the Gran Chaco ecosystem, contribute to deforestation, release stored carbon into the local atmosphere, disrupt carbon sequestration, spread wilfdires, and pose a direct risk to human health, livelihoods, and property.

In 2019 and subsequent years, Bolivia experienced devastating forest fires, many sparked by uncontrolled agricultural burns. Charagua, with its strong Indigenous governance structures and commitment to environmental stewardship, is well-positioned to pilot a fire-free land management model rooted in both modern environmental science and traditional ecological knowledge.

By implementing a ban alongside support mechanisms—including training in agroecological methods, incentives for compliance, and participatory monitoring—this project will foster a transition to sustainable agriculture while protecting vital ecosystems and upholding Indigenous rights.

Status

Planned

Action Owner

GAIOC and Community.

Type

Soft (Policy/ instutiional Organisational/ Behavioural)

Location

Barrio 1ro de Mayo and Charagua Pueblo

Vulnerabilities Addressed

- Increased Risk of Uncontrolled Wildfires
- Air Pollution and Respiratory Health Problems
- Soil Degradation and Water Cycle Disruption
- Greenhouse Gas Emissions and Climate Change Contribution
- Weak Local Environmental Governance and Rule Enforcement
- Limited Firefighting and Emergency Response Capacity
- Lack of Community Awareness on Risks of Agricultural Burning
- Threats to Indigenous Ecological Knowledge and Land Stewardship

Related Actions

7. Organize campaigns around environmental conservation.

10. Reforestation of Barrio 1ro de Mayo.

16. Designate 60% of the surrounding environment of Charagua as protected areas.

17. Develop ecotourism initiatives to promote biodiversity conservation while generating income for local communities.

24. Designate a network of biodiversity Corridors in connecting ANMI Kaa Iya National Park to ensure wildlife movement and genetic diversity.

Strategic Alignment

Political Constitution of the State (CPE) – 2009

- **Article 33 & 342:** Recognizes the right to a healthy, balanced environment and the duty of the State and society to protect it.
- **Article 385 & 386:** Emphasizes the protection of natural ecosystems and forests as part of the State's obligation to manage land sustainably.
- **Article 30 & 289–304:** Grants GAIOC the authority to regulate land use and protect natural resources within their territories.

The action respects constitutional rights to environmental protection and supports Indigenous self-governance in natural resource management.

Law No. 071 – Law on the Rights of Mother Earth (2010)

- Declares Mother Earth a collective subject of rights.
- **Article 7:** Prohibits activities that degrade ecosystems and explicitly supports actions that prevent contamination and destruction of life systems.
- Encourages community and institutional co-responsibility in protecting nature.

Banning uncontrolled burning aligns with the law's principles of ecological integrity, harmony with nature, and protection of living systems.

Law No. 1333 – Environmental Law (1992)

- Establishes regulations for environmental protection and pollution control.
- Prohibits practices that cause air pollution or harm biodiversity, including uncontrolled agricultural fires.
- Provides a legal framework for enforcement and sanctions through competent municipal and regional authorities.

The enforcement system complements the legal mechanisms for environmental protection and control of harmful agricultural practices.

Law No. 300 – Framework Law of Mother Earth and Comprehensive Development to Live Well (2012)

- Promotes sustainable land use and ecological restoration.
- **Article 19:** Encourages territorial management plans that reduce deforestation and land degradation.
- Provides a framework for integrated and community-led action to reduce emissions from land-use change.

This initiative advances the goals of the law by reducing emissions, preventing land degradation, and promoting integral development based on "Vivir Bien."

Law No. 1171 – Burning Prevention and Control Law (2019)

- Regulates the use of fire in land management and sets conditions under which agricultural burning may be permitted.
- Penalizes unauthorized or poorly managed burning and mandates municipalities and autonomous governments to develop local control and monitoring systems.

This action directly operationalizes the law at the local level by prohibiting harmful burning practices and establishing enforcement mechanisms.

Plurinational Climate Change Policy (2022–2030)

- Highlights the urgent need to reduce greenhouse gas emissions from deforestation and land-use change.
- Prioritizes the protection of forests, fire prevention, and local capacity-building for environmental stewardship.
- Encourages Indigenous Autonomies to lead in implementing climate-smart land use policies.

The proposed ban and enforcement system directly supports Bolivia's climate policy and its contributions to the Paris Agreement.

Contribution to National and International Commitments

- Supports Bolivia's Nationally Determined Contributions (NDCs) by reducing emissions from land-use practices.
- Advances the implementation of the Sendai Framework for Disaster Risk Reduction by minimizing fire-related hazards.
- Reinforces Indigenous territorial governance and sustainable land use, in line with national development plans and the "Vivir Bien" paradigm.

Alignment with local development objectives:

- Welfare of the population in line with the policy of "living well"
- Sustainable development with respect to "mother earth"
- Resiliency to climate change menaces

Co-benefits

Environmental

Reduced Greenhouse Gas Emissions
Banning fire-based land clearing prevents the release of significant amounts of carbon dioxide (CO^2), methane (CH^2), and nitrous oxide (N^2O) into the atmosphere. This helps mitigate climate change by lowering Charagua's carbon footprint.

Protection of Forests and Biodiversity
The project would reduce the risk of uncontrolled wildfires that destroy forested areas in the Gran Chaco biome—one of the most important dry forest ecosystems in the world. This protects habitats for numerous endemic and threatened species, including jaguars, giant armadillos, and Chacoan peccaries.

Improved Soil Health
Fire-based clearing often degrades soil structure, reduces organic matter, and leads to erosion. Eliminating fire use and promoting sustainable alternatives helps retain soil nutrients, enhance moisture retention, and improve long-term agricultural productivity.

Enhanced Ecosystem Resilience
Reducing fire disturbances allows natural ecological processes to remain intact, making the landscape more resilient to climate shocks such as droughts, floods, or temperature extremes. This resilience is crucial for both environmental health and local livelihoods.

Social

Improved Public Health
Reducing air pollution from smoke and particulate matter lowers the incidence of respiratory and cardiovascular illnesses, especially among vulnerable populations such as children, the elderly, and those with preexisting conditions.

Increased Food Security
Sustainable land manment practices preserve soil fertility and improve long-term crop yields, reducing dependence on short-term, high-impact methods. This enhances local food production and resilience to climate change impacts on agriculture.

Strengthening of Indigenous Governance
The project empowers Charagua's autonomous Indigenous government to enforce environmental regulations rooted in their own legal and cultural frameworks, reinforcing **sovereignty and self-determination.**

Enhanced Community Awareness and Education
Through outreach and training, the project will promote environmental awareness, climate literacy, and practical skills in sustainable agriculture. This builds a more informed and engaged population capable of managing its natural resources responsibly.

Economic

Increased Agricultural Productivity in the Long Term
Fire-free farming methods preserve soil structure and fertility, leading to more sustainable yields over time. This enhances food production and income stability for local farmers.

Reduced Costs from Fire Damage
By preventing uncontrolled burns, the project reduces economic losses related to wildfires—such as damage to crops, homes, infrastructure, and natural resources. It also reduces emergency response and recovery expenditures.

Attraction of Investment and Funding
Demonstrating leadership in environmental protection can attract support from climate finance institutions, international donors, and NGOs. It positions Charagua as a model for green development and Indigenous-led climate action.

Enhanced Ecosystem Services that Support the Local Economy
Healthy ecosystems contribute essential services like pollination, water regulation, and carbon storage—functions that directly and indirectly support agriculture, tourism, and other sectors.

Implementation Steps

Month	Step
1	**Step 1: Conduct a Baseline Assessment** ▪ Map current land use, fire frequency, and environmental impacts. ▪ Identify communities, stakeholders, and traditional land practices.Assess institutional capacity and existing legal frameworks.
1-2	**Step 2: Community Consultation and Engagement** ▪ Organize participatory workshops with Indigenous authorities, local farmers, elders, and youth. ▪ Understand cultural dimensions of fire use and identify locally acceptable alternatives. ▪ Co-design the enforcement framework with community input and consensus.

2-3

Step 3: Develop Legal and Policy Framework

- Draft and pass a local ordinance or regulation banning agricultural fires.
- Integrate the ban into Charagua's autonomous governance structures.
- Define penalties, responsibilities, and processes for enforcement and appeal.

5

Step 4: Train Local Monitors and Authorities

- Build capacity of local governance bodies and community leaders in monitoring, enforcement, and mediation.
- Train environmental stewards (e.g. "guardians of the land") to track compliance.

4

Step 4: Train Local Monitors and Authorities

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- Train environmental stewards (e.g. "guardians of the land") to track compliance.

5-6

Step 6: Strengthen Institutional Support and Coordination

- Establish or empower a dedicated local task force for enforcement and education.
- Coordinate with relevant national agencies (e.g., forestry, environment, agriculture).

7-8

Step 7: Public Education and Awareness Campaign

- Launch information campaigns using local languages and culturally relevant media.
- Share success stories and promote the environmental and health benefits of the ban.

9

Step 8: Implement Monitoring and Enforcement System

- Deploy community-based monitoring teams to detect and report violations.
- Use GPS, drones, or mobile apps if appropriate, along with traditional knowledge.
- Apply enforcement consistently, with conflict resolution mechanisms in place.

9-10

Step 9: Provide Incentives and Support

- Offer material or technical support to farmers who transition to fire-free practices.
- Explore microfinance, subsidies, or market access for sustainable producers.

11-.

Step 10: Monitoring, Evaluation and Learning

- Conduct periodic impact assessments on land health, emissions, and community well-being.
- Adjust strategies based on feedback and evolving needs.

11-.

Step 11: Scale and Replicate

- Document lessons learned and share the model with other Indigenous territories.
- Seek long-term funding and partnerships to scale up fire-free agriculture.

Financing

Indicative Cost

45.000 USD

Potential Financing Instruments

Revenue Opportunities : N/A

- National Government investment
- Partnerships between local and regional governments
- External funding: IADB. WB, CAF, AECID, Fund for Cities Development

Risks and Mitigation Options

Economic Risk

1.- Short-Term Decline in Agricultural Productivity
Risk: Farmers accustomed to burning may experience reduced yields initially due to unfamiliarity with alternative land-clearing methods.

2.- Resistance from Producers Dependent on Fire
Risk: Farmers with limited land or resources may view fire as essential and oppose the ban.

Mitigation Measure

- Provide hands-on training and demonstration plots for no-burn techniques (e.g., cover cropping, mulching, agroforestry).
- Offer transitional subsidies or input support (tools, compost, seedlings) to offset initial productivity dips.
- Involve producers in the design of the policy to build ownership and legitimacy.
- Provide targeted economic incentives for early adopters (e.g., priority in accessing markets, training, or equipment).

Technical Risk

1.- Limited Knowledge of Fire-Free Agricultural Practices
Risk: Farmers and land users may lack technical knowledge or experience with sustainable, fire-free land management methods.

2.- Poor Access to Alternatives and Equipment
Risk: Farmers may not have access to tools, seeds, or inputs necessary for fire-free land preparation (e.g., machetes, hoes, organic matter).

Mitigation Measure

- Conduct hands-on training, workshops, and farmer-to-farmer exchange visits on agroecological techniques.
- Establish demonstration plots and technical extension services rooted in local language and traditional knowledge.
- Establish community tool banks and input-sharing systems through cooperatives or producer groups. That may include the incorporation of a small grant fund into this action to provide grants to support the farmers transition to new techniques.
- Facilitate partnerships with agroecological suppliers or donors for startup kits.

Social Risk

1.- Resistance from Local Communities
Risk: Some community members may view the fire ban as a threat to tradition, autonomy, or livelihood.

2.- Undermining of Traditional Practices and Cultural Identity
Risk: Banning fire without cultural sensitivity may marginalize ancestral practices that hold symbolic and practical value.

Mitigation Measure

- Conduct early, inclusive, and respectful consultations with Indigenous authorities and community members.
- Integrate traditional ecological knowledge into fire-free land management approaches.
- Ensure co-design and shared decision-making to build trust and ownership.
- Recognize and document traditional fire use in ceremonial or ecological contexts.
- Distinguish between destructive agricultural fires and culturally appropriate uses.
- Collaborate with elders and knowledge keepers to adapt traditional practices to modern sustainability goals.

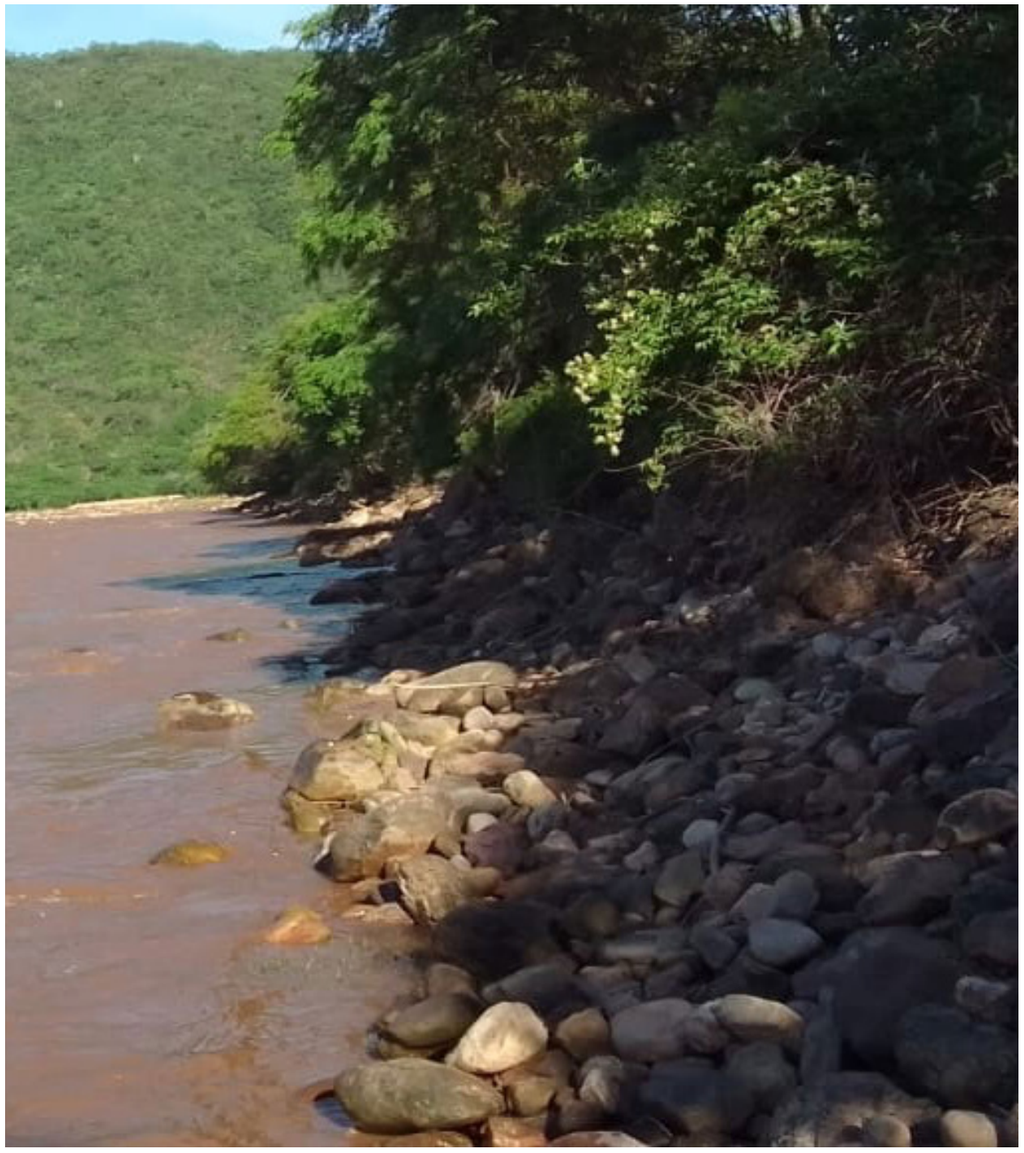
Environmental Risk

1.- Risk of Land Abandonment and Degradation
Risk: If farmers are unable to clear land using fire and lack access to viable alternatives, land may be left fallow or degraded due to invasive species or erosion.

2.- Increased Use of Chemical Inputs
Risk: Some producers may compensate for no-burning by increasing herbicide or pesticide use, causing soil and water contamination.

Mitigation Measure

- Promote sustainable land-clearing alternatives (e.g., manual clearing, agroforestry, cover crops).
- Provide tools, organic inputs, and technical support for soil restoration and land management.
- Train farmers in agroecological practices such as natural pest control, composting, and mulching.
- Encourage organic and low-input methods through education and incentives.



View of the Charagua River
Autonomous Indigenous Government of Charagua Iyambae

Action 5

Action 5: Launch Risk Management Campaigns in Charagua Pueblo

Description and rationale

Description:

The project aims to organize community-driven campaigns focused on risk management in Charagua Pueblo, Bolivia. These campaigns will engage local residents, municipal authorities, Indigenous leaders, and various stakeholders to raise awareness and build resilience against natural and anthropogenic risks, including climate change hazards such as fires and floods, and public health threats. The goal is to create a more informed, prepared, and proactive community that can effectively manage, reduce, and respond to risks while enhancing social cohesion and sustainable development.

Rationale:

Charagua Pueblo, located in the Gran Chaco region, is vulnerable to various environmental and social risks, including: Climate Change; Wildfires; Health Risks; Deforestation and Biodiversity Loss; and Economic Vulnerability, as found through the Multilayered Vulnerability Analysis.

To address these interconnected risks, the project will focus on organizing awareness campaigns, providing knowledge and understanding about risk management strategies, and empowering the community with the know-how, skills and resources to take collective action. The campaigns will provide practical tools, information on early warning systems, and guidance on sustainable land use and disaster preparedness.

Status

New

Action Owner

GAIOC and Community.

Type

Awareness Raising

Location

Barrio 1ro de Mayo and Charagua Pueblo

Vulnerabilities Addressed

- Low Public Awareness of Climate and Disaster Risks
- Unsafe Behaviors and Practices
- Lack of Community Engagement in Disaster Preparedness
- Marginalization of Vulnerable Groups
- Limited Knowledge of Emergency Protocols
- Weak Communication and Early Warning Culture
- Limited Capacity for Household and Community-Level Risk Reduction.
- Normalization of Risk

Related Actions

6. Organize campaigns around risk management.

7. Organize campaigns around environmental conservation.

8. Solid waste management awareness campaigns.

9. Gender participation at policy making related to climate change hazards adaptation.

21. Develop a registry of homes with resistant foundations.

22. Establish a working group between GAIOC and the association of neighbors to create a climate resilience strategy and monitor activities of all actions related to make Barrio 1ro de Mayo more resilient to climate change hazards.

26. Launch a Community-Based Wildlife Monitoring Programme.

27. Establish Community-Based Disaster Response Teams to make Barrio 1ro de Mayo more resilient towards natural hazards.

Strategic Alignment

Political Constitution of the State (CPE) – 2009

- **Article 342 & 343:** Establish the duty of the State and society to participate in the protection of the environment and risk prevention.
- **Article 30, 289–304:** Recognize Indigenous Autonomies and their right to manage risk and promote public awareness based on their knowledge and institutions.

Risk awareness campaigns directly support constitutional principles by empowering the local population to protect their lives, territory, and ecosystems through collective action.

Law No. 602 – Risk Management Law (2014)

- Provides the legal foundation for risk management at all government levels, emphasizing prevention, education, and citizen participation.
- **Article 8:** Defines communication and education for risk awareness as a key pillar of the National System for Risk Management (SINAGER).
- **Article 12 & 25:** Assigns municipal and autonomous governments the responsibility to implement risk education and public campaigns.

The campaign fulfills legal obligations to inform, educate, and mobilize communities as part of decentralized risk governance.

Law No. 300 – Framework Law of Mother Earth and Comprehensive Development to Live Well (2012)

- Promotes integrated development with respect for ecological limits and territorial resilience.
- **Article 19:** Encourages community awareness and participation in the face of climate risks.
- Emphasizes "climate education" as a tool to empower citizens to manage their environment sustainably.

The campaigns build local adaptive capacity and climate literacy, key priorities of this framework.

Law of Autonomies and Decentralization "Andrés Ibáñez" (Ley N° 031)

- Recognizes the authority of Indigenous and local governments to plan and execute development and risk management programs.
- Encourages inter-institutional coordination and citizen participation in local governance.

Risk campaigns led by the GAIOC and municipal governments reflect the participatory, decentralized approach promoted by this law.

Plurinational Climate Change Policy (2022–2030)

- Highlights the importance of public education and communication to strengthen local responses to climate-related risks.
- Calls for inclusive awareness efforts led by local actors, especially in vulnerable communities.

Public awareness campaigns help operationalize Bolivia's climate adaptation goals by equipping citizens with knowledge and response strategies.

Contribution to National and Global Commitments

- Supports Bolivia's Nationally Determined Contributions (NDCs) by fostering risk-informed communities.
- Advances the implementation of the Sendai Framework for Disaster Risk Reduction (Priority 1: Understanding disaster risk).
- Promotes the principle of Vivir Bien by enhancing safety, informed decision-making, and social cohesion in the face of environmental risks.

Alignment with local development objectives:

- Welfare of the population in line with the policy of "living well"
- Sustainable development with respect to "mother earth"
- Social security and social cohesion with respect to indigenous culture and traditions
- Resiliency to climate change menaces

Co-benefits

Environmental	**Improved Ecosystem Awareness and Stewardship** Community campaigns raise environmental consciousness, encouraging residents to better understand, value, and protect local ecosystems, including forests, rivers, and biodiversity-rich areas.
	Reduction in Environmentally Harmful Practices By educating communities on the risks of slash-and-burn agriculture, improper waste disposal, and deforestation, the campaigns can lead to the adoption of more sustainable practices that protect soil, air, and water. **Protection of Biodiversity** Risk management messaging can emphasize the importance of protecting native species and their habitats from fires, land degradation, and human encroachment—promoting conservation of the unique Gran Chaco ecosystem. **Reduced Incidence of Uncontrolled Fires** Educating the community on the risks of agricultural burns and fire prevention methods lowers the likelihood of wildfires that cause deforestation, habitat loss, and air pollution. **Enhanced Disaster Preparedness for Environmental Hazards** Campaigns can empower communities to respond more effectively to floods, droughts, and storms, reducing environmental damage caused by uncoordinated or reactive actions during crises.
Social	**Increased Community Awareness and Preparedness** Campaigns improve public understanding of local risks (e.g., fires, floods, health emergencies), helping individuals and families take proactive steps to protect themselves, their homes, and their livelihoods. **Empowerment of Indigenous and Local Knowledge** The project can validate and elevate traditional risk management practices, strengthening cultural identity and promoting the intergenerational transfer of Indigenous ecological knowledge. **Enhanced Public Health** Campaigns that promote water safety, vector control, fire prevention, and hygiene practices can reduce the incidence of diseases and improve overall health outcomes in the community. **Reduction in Displacement and Loss of Property** By improving disaster awareness and preparedness, the community is better equipped to avoid or mitigate the impacts of extreme events, reducing the risk of loss of homes, infrastructure, and cultural assets.
Economic	**Reduced Economic Losses from Disasters** Improved community awareness and preparedness help minimize the damage caused by fires, floods, and other hazards—protecting homes, crops, livestock, and infrastructure, and reducing the financial burden on families and local authorities. **Increased Productivity through Resilient Practices** Campaigns that promote climate-smart agriculture and sustainable land management lead to more stable and resilient food production systems, improving yields and reducing the risk of income loss due to environmental shocks. **Creation of Local Jobs and Training Opportunities** Campaign planning and delivery can create short-term employment for local educators,

	communicators, and youth mobilizers, while also building skills in public communication, disaster management, and environmental education. **Protection of Natural Assets that Support Livelihoods** Campaigns help preserve ecosystems that provide food, water, medicine, and raw materials—essential for subsistence and small-scale economic activities such as farming, fishing, and forest product collection.

Implementation Steps

Month	Step
1	**Step 1: Identify Stakeholders and Build Partnerships** ▪ Engage Indigenous authorities, youth associations, local leaders, municipal agencies, schools, health centers, and NGOs. ▪ Form a multi-stakeholder committee to guide campaign design and ensure inclusion and coordination.
2	**Step 2: Define Campaign Objectives and Key Messages** ▪ Develop specific goals (e.g., reduce fire incidents, promote flood preparedness, improve water sanitation practices). ▪ Tailor messages to local culture, language, and communication styles.
2-3	**Step 3: Develop Communication Materials and Tools** ▪ Create culturally appropriate outreach materials (e.g., posters, flyers, radio spots, community theater scripts, videos, social media posts). ▪ Include content in local languages such as Guaraní and Spanish.
4	**Step 4: Train Community Facilitators and Peer Educators** ▪ Build the capacity of local leaders, youth, health workers, and educators to lead campaign activities. ▪ Provide training on facilitation, communication, disaster risk reduction (DRR), and public health topics.
5	**Step 5: Design an Implementation Plan** ▪ Set a campaign calendar with clear timelines, locations, target audiences, and delivery methods. ▪ Allocate resources (e.g., materials, transportation, facilitator stipends).
6	**Step 6: Launch Public Awareness Campaigns** ▪ Roll out community-based events such as workshops, school talks, town hall meetings, and public fairs. ▪ Use local media (radio, community loudspeakers, social media) to reinforce messages.
6	**Step 7: Engage in Participatory Activities** ▪ Organize hands-on learning sessions such as fire prevention drills, water purification demonstrations, or flood evacuation simulations. ▪ Encourage feedback through surveys, open forums, or suggestion boxes.
7	**Step 8: Promote Behavioral Change and Community Action** ▪ Encourage actions like the creation of firebreaks, community emergency plans, reforestation, or waste cleanup. ▪ Facilitate the formation of neighborhood risk committees or volunteer emergency response groups.
8-9	**Step 9: Monitor Campaign Activities and Outreach** ▪ Track number of events held, materials distributed, people reached, and community participation levels. ▪ Use community feedback to assess clarity, cultural relevance, and impact of campaign messages.
10	**Step 10: Evaluate Results and Adjust Strategies** ▪ Conduct post-campaign surveys or focus groups to measure changes in knowledge, attitudes, and practices. ▪ Identify successful approaches and areas for improvement.
10	**Step 11: Document and Share Lessons Learned** ▪ Produce a report or presentation summarizing outcomes, challenges, and recommendations. ▪ Share results with the community, local authorities, and potential partners for future collaboration.

Financing

Indicative Cost

150.000 USD

Potential Financing Instruments

Revenue Opportunities : N/A

- National Government investment
- Partnerships between local and regional governments
- External funding: IADB. WB, CAF, AECID, Fund for Cities Development

Risks and Mitigation Options

Economic Risk

1. Insufficient or Unstable Funding
Risk: Limited financial resources may delay or restrict the scope of the campaign activities, including outreach, training, and materials.

2. Limited Economic Incentives for Community Participation
Risk: Community members may prioritize income-generating activities over participation in campaign events, leading to low engagement.

Mitigation Measure

- Develop a clear, cost-effective budget and explore multiple funding sources (e.g., municipal budgets, NGOs, donor grants, in-kind contributions).
- Design scalable activities that can be expanded or reduced based on available resources.
- Integrate the campaign into existing public programs (health, education, disaster preparedness) to share costs.
- Align campaign events with existing community gatherings (e.g., market days, festivals) to reduce time conflicts.
- Offer non-monetary incentives like meals, recognition, training certificates, or access to tools and resources.
- Highlight the long-term economic benefits of risk reduction (e.g., fewer losses from disasters, improved health, more stable harvests).

Technical Risk

1. Limited Technical Knowledge on Risk Management Topics
Risk: Campaign facilitators and community members may lack in-depth understanding of disaster risk reduction, climate change, health hazards, or fire prevention.

2. Lack of Access to Communication Technologies
Risk: Limited radio coverage, internet connectivity, or mobile phone access may hinder campaign outreach.

Mitigation Measure

- Provide pre-campaign training for facilitators on key topics (e.g., DRR, public health, agroecology).
- Partner with technical experts (e.g., NGOs, universities, civil defense, health services) to deliver accurate and relevant content.
- Use simple, localized, and visual materials to support understanding.
- Use low-tech and traditional communication methods like community loudspeakers, murals, local assemblies, and printed materials.
- Broadcast messages through widely accessible channels like local FM radio in local languages.
- Work with schools, health centers, and churches as information hubs.

Social Risk

1.- Resistance or Mistrust from Community Members
Risk: Some community members may view the campaigns as externally imposed or fear that traditional practices are being undermined.

2.- Campaign Fatigue or Disengagement
Risk: Repetitive or poorly timed campaigns may lead to reduced participation or community disinterest.

Mitigation Measure

- Engage Indigenous authorities and community leaders from the outset to co-design the campaign.
- Respect and incorporate traditional knowledge and local customs into campaign messages.
- Use trusted local facilitators and culturally relevant communication formats (e.g., storytelling, radio in Guaraní).
- Space out activities and vary communication methods (radio, workshops, theater, games, etc.).
- Integrate campaigns into existing events and cultural festivities to increase engagement.
- Regularly refresh content with new topics and community success stories.

Environmental Risk

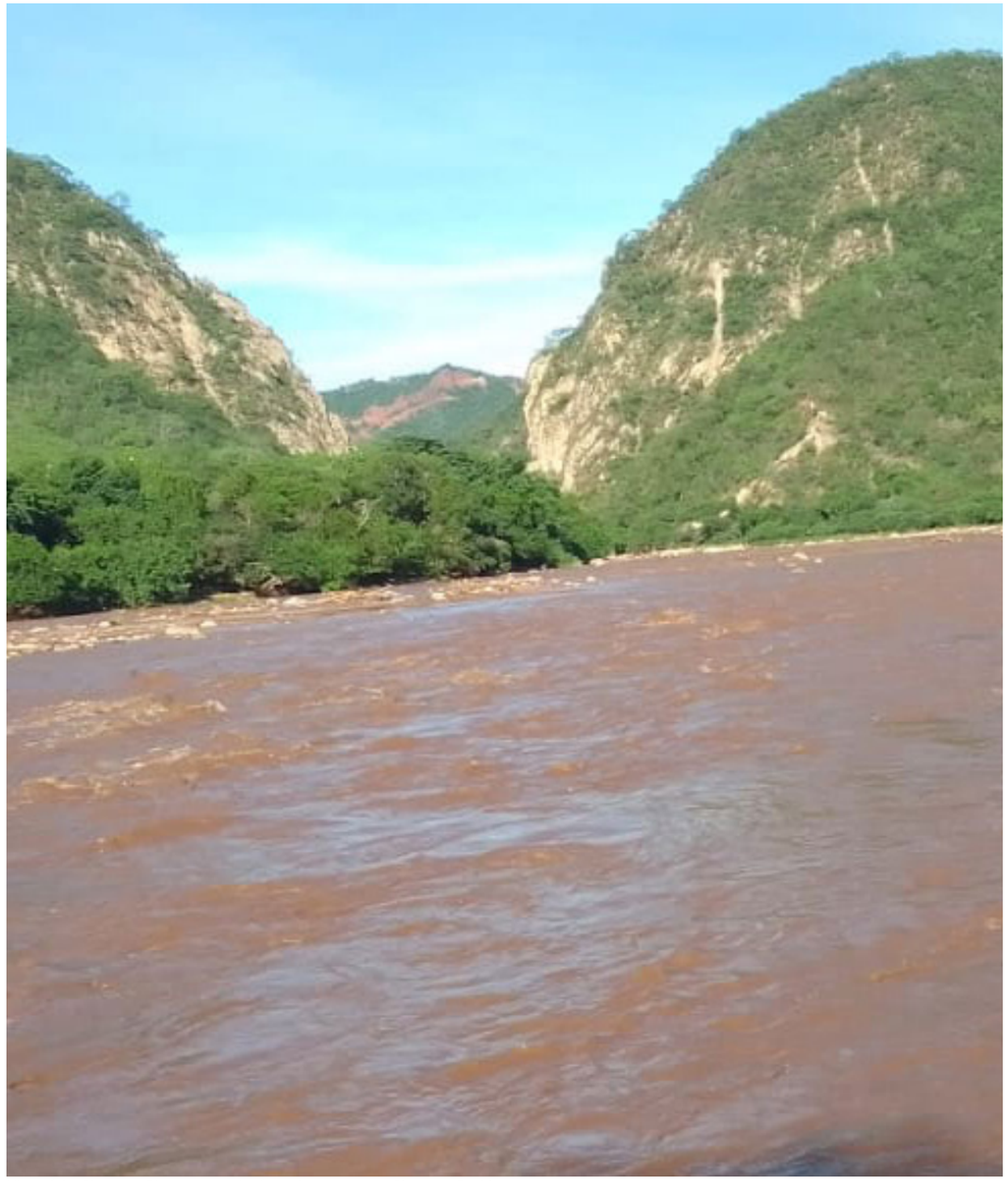
1.- Superficial Integration of Environmental Messages
Risk: If campaigns only briefly address environmental topics, they may fail to create real awareness or behavioral change.

Misrepresentation or Oversimplification of Ecological Issues
Risk: Poorly communicated or overly simplified messages may spread misinformation (e.g. “all fire is bad” or “planting trees alone solves climate change”).

Mitigation Measure

- Prioritize environmental themes such as forest conservation, fire prevention, and water protection in campaign content.
- Partner with environmental educators and local ecologists to develop informative, practical messages.

- Incorporate hands-on environmental activities (e.g. tree planting, clean-up events) into the campaign.
- Ensure scientific accuracy while maintaining accessibility.
- Use real examples from the Gran Chaco region to contextualize information.
- Involve local experts and traditional knowledge holders to balance modern science with ancestral wisdom.



View of the Charagua River, perspective from the entrance to Charagua Pueblo
Autonomous Indigenous Government of Charagua Iyambae

Action 6

Action 6: Establish a climate shelter in the Barrio 1ro de Mayo for vulnerable people during hazard events

Description and rationale

Description:
The project seeks to design, construct, and operationalize a climate-resilient shelter in Barrio 1ro de Mayo, Charagua, to serve as a safe and accessible refuge for vulnerable populations during climate-related hazard events such as heatwaves, floods, storms, and wildfires. The shelter will be built using locally appropriate, sustainable materials and will incorporate renewable energy, water harvesting systems, and passive cooling to ensure functionality during power outages or infrastructure failures.

The shelter will serve multiple purposes:

- As an emergency refuge for the elderly, children, persons with disabilities, and others with limited mobility or resources.

- As a community hub for climate education, training, and risk preparedness during non-emergency periods.

- As a model for community-based climate adaptation infrastructure that respects the cultural identity and governance structures of the Guaraní people.

Rationale:

1. Vulnerability of the Population
Barrio 1ro de Mayo is home to families and individuals who are highly exposed to the impacts of climate change and have limited access to formal housing, emergency services, and healthcare. Vulnerable groups such as elders, single-parent households, people with chronic illnesses, and those living in informal dwellings are at heightened risk during hazard events.

2. Increasing Frequency and Intensity of Climate Hazards
The Gran Chaco region has experienced more frequent and intense climate-related hazards, including:

- Prolonged heatwaves that endanger the health of the elderly and infants.

- Flash floods that damage homes and cut off access to basic services.

- Wildfires exacerbated by agricultural burning and prolonged dry periods. The lack of safe and accessible infrastructure leaves communities without protection during these emergencies.

3. Lack of Existing Safe Spaces
Currently, there are no designated, equipped climate shelters in Charagua Pueblo. Existing public buildings (e.g., schools, churches) may be structurally inadequate, lack emergency supplies, or be inaccessible during extreme events. This gap places lives at risk, particularly during nighttime or rapid-onset emergencies.

4. Empowering Local Resilience
By establishing a climate shelter managed in coordination with local authorities and Indigenous

organizations, the project empowers the community to take ownership of risk management. It promotes a shift from reactive to preventive disaster response while creating a space for education and mobilization.

Status

New

Action Owner

GAIOC and Community.

Type

Hard (Infrastructure Investment)

Location

Barrio 1ro de Mayo

Vulnerabilities Addressed

- Exposure to Direct Climate Hazards (Floods, Storms, Heatwaves)
- Vulnerability of At-Risk Populations
- Lack of Safe Evacuation Options
- Inadequate Emergency Response Infrastructure
- Prolonged Displacement or Homelessness After Disasters
- Disruption of Health and Sanitation Services
- Weak Community Preparedness and Risk Perception
- Lack of Storage and Distribution Points for Emergency Supplies

Related Actions

1. Construction of a pedestrian bridge (with the capacity to let motorcycles to cross) that would connect Barrio 1ro de Mayo to Charagua Pueblo.

2. Construction of a sewerage system so that neighbours can have this services in Barrio 1ro de Mayo.

4. Implementation of garbage collection service.

5. Contruction of roads to improve overall accessibility.

6. Organize campaigns around risk management.

13. Establish community rain gardens in Barrio 1ro de Mayo neighbourhood.

14. Pilot a programme to install green walls and roofs for cooling of houses and buildings in the Barrio 1ro de Mayo.

19. Retrofit existing wooden homes with flood-resistant materials and elevate homes in flood-prone areas.

21. Develop a registry of homes with resistant foundations.

27. Establish Community-Based Disaster Response Teams to make Barrio 1ro de Mayo more resilient towards natural hazards.

Strategic Alignment

Political Constitution of the State (CPE) – 2009

- **Article 15:** Recognizes the right to life, physical integrity, and health.
- **Article 373–374:** Obligates the State and society to protect the environment and prevent environmental and climate-related risks.
- **Articles 30 & 289–304: Empower GAIOC to manage risk and develop infrastructure for community resilience.**

Establishing a climate shelter protects the right to life and health and reflects the constitutional responsibilities of autonomous governments in disaster preparedness and response.

Law No. 602 – Risk Management Law (2014)

- Establishes a legal framework for risk prevention, preparedness, and response.
- **Article 6:** Identifies infrastructure such as shelters as essential for risk management.
- **Article 25:** Mandates subnational and autonomous governments to ensure the safety of populations through local emergency preparedness measures, including temporary shelters for evacuation.

The shelter fulfills a core responsibility under the law by providing a safe space for vulnerable populations during hazard events and emergencies.

Law No. 300 – Framework Law of Mother Earth and Comprehensive Development to Live Well (2012)

- Promotes integrated, climate-resilient development and protection of communities from environmental threats.
- **Article 19:** Calls for adaptive infrastructure and services to protect populations exposed to climate risks.
- Prioritizes vulnerable communities in disaster planning and adaptation investment.

The climate shelter directly supports these objectives by reducing exposure and enhancing the adaptive capacity of at-risk groups in Barrio 1ro de Mayo.

Law of Autonomies and Decentralization "Andrés Ibáñez" (Ley N° 031)

- Assigns powers to local and Indigenous governments to develop infrastructure for health, safety, and risk reduction.
- Encourages participatory planning and community-led development strategies.

The shelter project is an example of locally planned, autonomous action aligned with legal decentralization principles and Indigenous self-governance.

Plurinational Climate Change Policy (2022–2030)

- Promotes the development of climate-resilient infrastructure and early action systems for vulnerable populations.

- Supports local adaptation strategies, especially in territories most exposed to climate impacts.

The climate shelter contributes directly to national adaptation objectives and the strengthening of community-level climate resilience infrastructure.

Contribution to National and International Commitments

- Advances Bolivia's Nationally Determined Contributions (NDCs) under the Paris Agreement by building local resilience infrastructure.
- Supports the Sendai Framework for Disaster Risk Reduction (Priority 4: Enhancing disaster preparedness for effective response).
- Promotes the vision of Vivir Bien by ensuring dignity, protection, and wellbeing during environmental emergencies.

Alignment with local development objectives:

- Welfare of the population in line with the policy of "living well"
- Sustainable development with respect to "mother earth"
- Social security and social cohesion with respect to indigenous culture and traditions
- Resiliency to climate change menaces
- Fair access to basic services (health, sanitation and education) for all.

Co-benefits

Environmental

Promotion of Climate-Resilient Infrastructure
By using sustainable building materials and climate-adaptive design (e.g., natural ventilation, elevated floors, shaded areas), the shelter sets a precedent for eco-friendly construction practices in the region.

Reduced Environmental Pressure During Emergencies
By centralizing emergency response and hosting vulnerable individuals in a single, well-equipped facility, the shelter minimizes the need for temporary or ad hoc shelters that may harm surrounding ecosystems (e.g., forest clearing, river pollution).

Incorporation of Renewable Energy and Water Conservation and Management
The use of solar panels to power lighting, fans, and basic appliances reduces reliance on fossil fuels and lowers carbon emissions—contributing to climate change mitigation efforts at the community level. Rainwater harvesting systems installed at the shelter reduce dependency on overexploited groundwater and contribute to sustainable water use, especially important in the semi-arid Gran Chaco region.

Support for Nature-Based Solutions
The shelter's landscaping could include native trees and that provide shade, enhance biodiversity, and reduce heat island effects—contributing to both comfort and ecological resilience.

Social

Protection of Vulnerable Populations
The shelter will provide a safe and dignified refuge during climate-related emergencies for those most at risk—such as children, the elderly, people with disabilities, pregnant women, and low-income families—reducing injury, loss of life, and trauma.

Strengthening of Community Solidarity
By creating a communal space for safety and support, the shelter encourages collaboration, mutual aid, and collective responsibility during emergencies, which in turn strengthens the social fabric of the neighborhood.

Reduction in Displacement and Social Disruption
By providing a local place of refuge, the shelter reduces the need for evacuation to distant towns or shelters, helping families stay close to their homes, maintain social ties, and recover faster.

Inclusion and Accessibility
With features designed to accommodate people with limited mobility, the shelter promotes inclusive development and recognizes the rights of persons with disabilities and the elderly to safety and dignity.

Creation of Local Volunteer and Youth Networks
Community involvement in managing the shelter will foster youth leadership and civic participation, while building a pool of trained local volunteers for emergency response.

Economic

Reduced Economic Losses from Climate Hazards
By providing timely protection during floods, heatwaves, or wildfires, the shelter helps prevent damage to personal property, reduce health-related expenses, and lower the economic burden on affected families.

Lower Public Spending on Emergency Response
With a dedicated shelter in place, local and regional governments can respond to climate events more efficiently, reducing the cost of evacuations, temporary accommodations, and emergency medical services.

Job Creation and Local Economic Stimulation
The construction, outfitting, and operation of the shelter will create short- and medium-term jobs in building, carpentry, plumbing, maintenance, and management—boosting the local economy and potentially supporting small businesses.

Asset Protection for Low-Income Households
Families without secure housing are often the most economically vulnerable. The shelter protects their limited belongings and livelihoods, reducing the risk of falling deeper into poverty due to climate-related shocks.

Long-Term Cost Savings Through Peventive Action
Investing in a climate shelter is more cost-effective than repeated spending on reactive measures, such as rebuilding homes, treating injuries, or replacing destroyed infrastructure after each climate event.

Implementation Steps

Month	Step
1	**Step 1: Form a Local Project Committee** ▪ Establish a multi-stakeholder committee including municipal officials, Indigenous leaders (Ñemboatiguasu), technical experts, and community representatives. ▪ Define roles and responsibilities for decision-making, oversight, and coordination.
2-3	**Step 2: Develop a Shelter Design Plan** ▪ Engage architects and engineers to design a culturally appropriate, climate-resilient shelter using sustainable materials. ▪ Ensure universal accessibility and include features such as solar panels, rainwater harvesting, passive cooling, emergency storage, and sanitation. ▪ Validate design with the community and incorporate feedback.
3-5	**Step 3: Secure Funding and Materials** ▪ Prepare a detailed project budget and funding proposal. ▪ Seek financial support from municipal funds, international donors, NGOs, or climate adaptation programs. ▪ Identify local suppliers and eco-friendly construction materials.
5-6	**Step 4: Obtain Legal and Technical Approvals** ▪ Secure land tenure or usage rights for shelter construction. ▪ Obtain necessary permits and approvals from municipal and Indigenous authorities. ▪ Ensure compliance with national and local building and environmental regulations.
6-8	**Step 5: Hire Local Labor and Begin Construction** ▪ Recruit local construction workers, artisans, and youth to promote local employment. ▪ Supervise construction using transparent quality control measures. ▪ Install key systems: solar energy, water collection/filtration, latrines, storage rooms, accessibility features.
8-10	**Step 6: Equip the Shelter for Emergency Use** ▪ Furnish the shelter with beds, first aid kits, emergency food and water supplies, fans, flashlights, radios, blankets, and sanitation materials. ▪ Install signage and communication tools in Spanish and Guaraní.
9-10	**Step 7: Develop an Operations and Management Plan** ▪ Create guidelines for shelter activation, use, maintenance, and security. ▪ Define leadership structure for emergencies, involving neighborhood councils and Indigenous authorities. ▪ Train local volunteers as shelter coordinators and first responders.
11	**Step 8: Conduct Community Awareness and Preparedness Campaigns** ▪ Hold workshops and simulation exercises to familiarize residents with shelter access and emergency protocols. ▪ Use schools, radio, and assemblies to share information widely. ▪ Promote community ownership and pride in the shelter.
11-13	**Step 9: Monitoring, Evaluation and Learning** ▪ Assess how well the shelter functions during emergencies (e.g. safety, accessibility, capacity). ▪ Gather feedback through surveys and community forums. ▪ Document best practices and recommendations for replication in other areas.
14-.	**Step 10: Ensure Long-Term Maintenance and Integration** ▪ Allocate local funds or community contributions for repairs and replenishment. ▪ Integrate the shelter into municipal risk management and climate adaptation plans. ▪ Use the shelter regularly for educational, cultural, and health activities to ensure upkeep and relevance.

Financing

Indicative Cost

115.000 USD

Potential Financing Instruments | **Revenue Opportunities : N/A**

- National Government investment
- Partnerships between local and regional governments
- External funding: IADB. WB, CAF, AECID, Fund for Cities Development

Risks and Mitigation Options

Economic Risk

1. Cost Overruns During Construction
Risk: Inflation, material shortages, or mismanagement may cause costs to exceed the planned budget.

2. Unsustainable Maintenance Costs
Risk: The community may lack resources to maintain and operate the shelter over the long term.

Mitigation Measure

- Include a contingency buffer (10–15%) in the budget.
- Use local materials and labor to reduce transportation and outsourcing costs.
- Monitor construction closely with clear procurement and reporting procedures.
- Design a simple, low-maintenance structure with passive systems (e.g., solar energy, rainwater harvesting).
- Establish a community or municipal maintenance fund.
- Train local residents in basic repairs and shelter management.

Technical Risk

1. Inadequate Shelter Design for Local Hazards
Risk: The shelter design may not fully account for local climate threats such as flooding, heatwaves, or high winds.

2. Poor Quality of Construction
Risk: If construction is rushed or poorly supervised, the shelter may be unsafe or deteriorate quickly.

Mitigation Measure

- Conduct a detailed risk and climate vulnerability assessment before design finalization.
- Use climate-resilient design standards (elevated floors, cross-ventilation, reinforced roofs).
- Consult local builders and engineers familiar with Gran Chaco conditions.
- Hire experienced contractors and provide oversight by a qualified engineer or architect.
- Include regular quality inspections at key construction stages.
- Use durable, locally sourced materials to ensure sustainability and reduce transport-related risks.

Social Risk

1.- Lack of Community Ownership or Buy-in
Risk: Residents may not fully support or use the shelter if they are not involved in its planning or do not understand its purpose.

2.- Conflict Over Shelter Use or Management
Risk: Disputes may arise over who manages the shelter, who has access, or how it is used during non-emergency periods.

Mitigation Measure

- Involve the community, Indigenous authorities, and local leaders from the design stage through participatory planning.
- Conduct awareness campaigns and consultations to build support and incorporate community values and knowledge.
- Create a transparent governance structure involving both municipal and Indigenous authorities.
- Develop clear rules of use and conflict-resolution mechanisms agreed upon by the community.
- Rotate responsibilities and ensure accountability through regular community meetings.

Environmental Risk

1.- Water Overuse or Contamination
Risk: Shelter users may strain local water sources, especially during emergencies, or generate wastewater that pollutes nearby ecosystems.

2.- Waste Generation
Risk: Accumulated solid waste during shelter occupancy (e.g., food packaging, medical waste) may be poorly managed, leading to pollution.

Mitigation Measure

- Install water-saving fixtures and rainwater harvesting systems.
- Incorporate greywater recycling and environmentally friendly sanitation options (e.g., composting toilets or eco-latrines).
- Educate shelter users on responsible water use.
- Implement a waste management plan with waste separation, recycling, and composting.
- Provide clearly labeled bins and train staff or volunteers in sustainable waste disposal.

View of the Charagua River
Autonomous Indigenous Government of Charagua Iyambae

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