



# Urban Resilience Action Plan (URAP) for Cobija, Bolivia

Planning for climate, urban and biodiversity action





## UN-HABITAT

Urban Resilience Action Plan (URAP) for Cobija, Bolivia

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Cover photo: Mapajo neighborhood, Autonomous Municipal Government of Cobija



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# Table of Contents

ACKNOWLEDGEMENTS .....	5
EXECUTIVE SUMMARY .....	9
INTRODUCTION .....	10
HOW THE URAP WAS DEVELOPED: A PARTICIPATORY AND EVIDENCE-BASED PROCESS .....	12
STRATEGIC ALIGNMENT OF URAP .....	12
COBIJA, BOLIVIA: URBAN CONTEXT AND CITY PROFILE .....	16
COBIJA, BOLIVIA .....	18
KEY FINDINGS FROM THE MULTILAYERED VULNERABILITY PROFILE (MVP) .....	22
URBAN DIMENSION .....	22
CLIMATE DIMENSION .....	22
BIODIVERSITY DIMENSION .....	23
VULNERABILITY HOTSPOTS .....	23
VISION AND STRATEGIC OBJECTIVES .....	28
A SHARED VISION AND STRATEGIC OBJECTIVES FOR URBAN CLIMATE RESILIENCE .....	30
STRATEGIC OBJECTIVES .....	30
PRIORITY ACTIONS TO ADVANCE CLIMATE, URBAN, AND BIODIVERSITY RESILIENCE .....	32
ACTION OVERVIEW .....	36
SHORTLISTED ACTIONS: .....	42
ACTION 1 .....	42
ACTION 2 .....	54
ACTION 3 .....	62
ACTION 4 .....	71
ACTION 5 .....	80
ACTION 6 .....	89
ACTION 7 .....	96
REFERENCES .....	107

## List of figures

Figure 1: Location of Cobija in the Department of Pando, Bolivia .....	20
Figure 2: Map of urban growth in Cobija.....	21
Figure 3: Vulnerability Hotspot Map.....	27
Figure 4: Photographs and Attendance Lists from the Community Workshop Held for the Definition of the List of Actions under the RISE UP Project at GAMC.....	38
Figure 5: Photographs and Attendance Lists from the Community Workshop Held for the Definition of the List of Actions under the RISE UP Project at GAMC.....	39

## List of Tables

Table 1 Short list Actions.....	34
Table 2: Multi-Criteria Analysis (MCA) of the Long List of Actions (1-24) .....	36

## Abbreviations

<b>AECID:</b>	Spanish Agency for International Development Cooperation.
<b>GAMC:</b>	Autonomous Municipal Government of Cobija
<b>MMAyA:</b>	Ministry of Environment and Water
<b>MVA:</b>	Multidimensional Vulnerability Assessment, corresponding to the analysis conducted in Stage Two of the Multilayered Vulnerability Assessment Manual: Resilience Planning for Urban, Biodiversity, and Climate Action, which serves as the methodological basis for the RISE UP project.
<b>SDGs:</b>	Sustainable Development Goals or Global Goals, also known as the 2030 Agenda.
<b>UN:</b>	United Nations.
<b>UN-Habitat:</b>	United Nations.
<b>PDES:</b>	The Economic and Social Development Plan

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



Floods 2024  
Autonomous Municipal Government of Cobija

## Glossary

### Central and Business District

A central business district (CBD) is the commercial and business center of a city, in this case, Cobija,

### Districts

Refers to the municipality first division or an area of a city, especially one regarded as a distinct unit because of a particular characteristic.

### Multidimensional Vulnerability Assessment (MVA)

A tool developed within the framework of the RISE UP project that addresses the interconnection between climate change risks and hazards, urbanization, spatial trends, biodiversity loss, and land degradation. It aims to identify critical points of vulnerability resulting from spatial overlaps and conflicts.

### Municipality

Is the territorial unit, politically and administratively organized, in the jurisdiction and with the inhabitants of the Provincial Section, the basis of the territorial organization of the unitary and democratic Bolivian State.

### Neighborhood

Area of a town that surrounds someone's home, or the people who live in this area. In relation to districts, these are frequently sub divided by neighborhoods.



Friendship Bridge  
Autonomous Municipal Government of Cobija

## 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 Spanish Agency for International Development Cooperation (AECID), the Adaptation Fund, the Green Climate Fund (GCF), and the Swedish International Development Cooperation Agency (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 programme 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 an Urban Resilience Action Plan (URAP) aims to transform the findings from the Multilayered Vulnerability Assessment (MVA) and the priorities of key local stakeholders into financially viable projects that enhance urban resilience to multidimensional and interrelated climate, urbanization, and biodiversity-related shocks and stresses.

Building on Cobija's Climate, Urban, and Biodiversity Multilayered Vulnerability Profile, the Urban Resilience Action Plan outlines a set of technically and financially feasible actions designed to respond to and address identified vulnerabilities and reduce risks for people, infrastructure and ecosystems in prioritized areas within the city. The primary goal is to design, promote, and execute a robust action plan aimed at reducing vulnerabilities associated with climate change, rapid urbanization, and biodiversity loss in key high-risk areas.

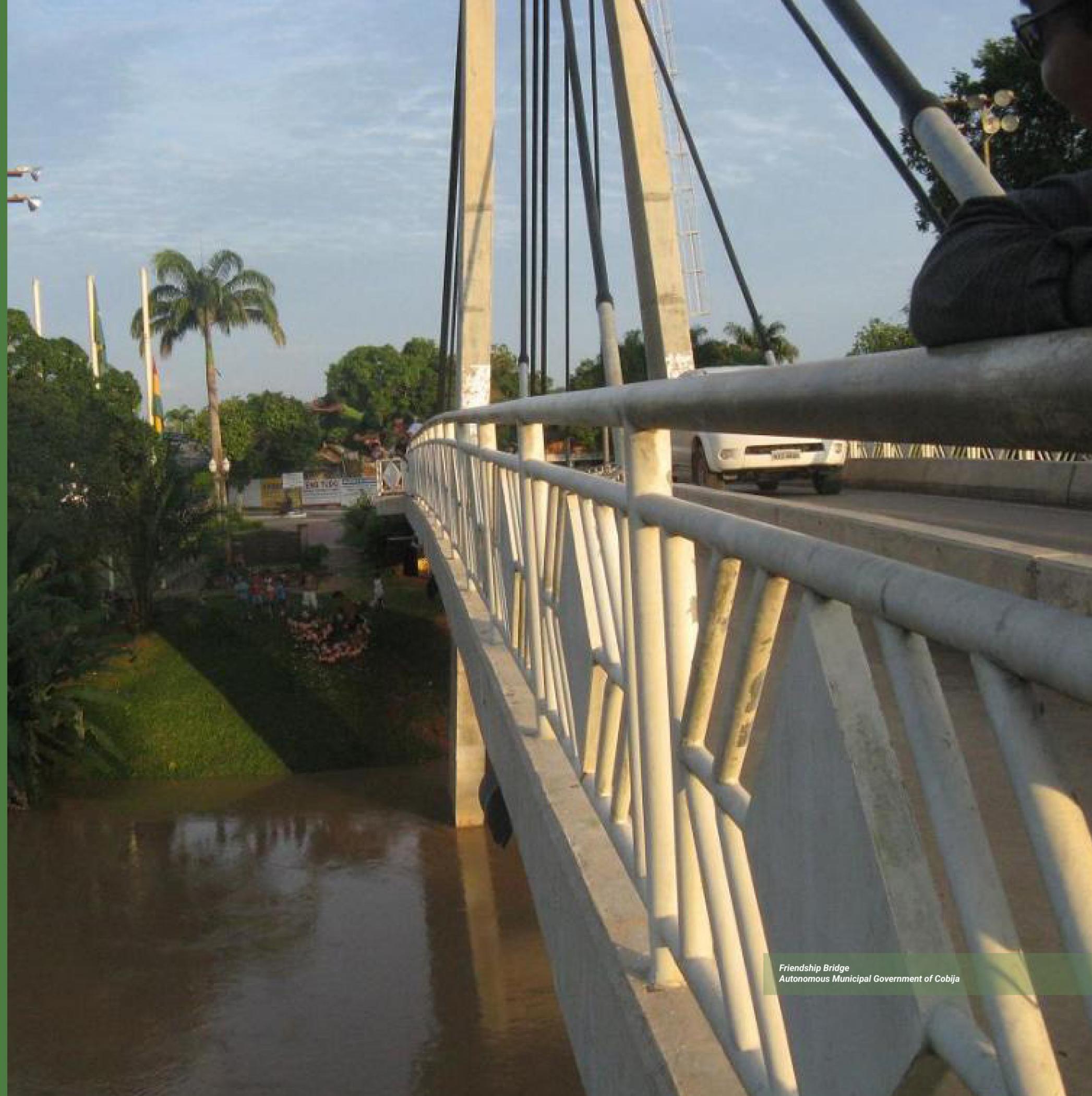
The proposed actions, aligned with building resilience to climate change hazards and sustainable development of the two study areas:

- Solid waste management awareness campaigns.
- Strengthen and expand community early warning system.
- Risk Management communication strategy plan integrating the indigenous knowledge
- Reforestation of Acre river and Arroyo Bahia.
- Land use regulatory plan for Cobija.
- Construction of retaining wall in Puerto Alto and other near neighborhoods.
- Development of Ecotourism Businesses Strategy, Action Plan and Pilots

These actions constitute the short list of prioritized actions identified through a participatory, multilevel and multi-stakeholder consultation process, shaped by debates and consensus between different local stakeholders and actors during several months of collective work and steering committee. The initial long list included 24 actions, which were evaluated through a robust multi-criteria analysis (MCA), to select the 6 most responsive, relevant and feasible actions and interventions. These high-priority, high-impact actions target the most vulnerable and at-risk neighborhoods, aiming to strengthen their security and climate resilience, with a focus on protecting human life and well-being.

01

**Introduction:  
Purpose of URAP**



*Friendship Bridge  
Autonomous Municipal Government of Cobija*

The Urban Resilience Action Plan (URAP) for Cobija emerges as a key tool to address the growing climate, social, and environmental vulnerabilities affecting communities in the municipality of Cobija, particularly those located at Mapajo, Junín, Villamontes, Puerto Alto and Cataratas. These areas – characterized by high exposure to climate risks such as flooding and environmental degradation, increased sensitivity to adverse climate impacts, and limited adaptive capacities to withstand cascading shocks and stresses – have experienced conditions of vulnerability that negatively impact the quality of life of their inhabitants. Within this context, the URAP outlines strategic pathways that the city can explore to strengthen the systemic resilience of communities, infrastructure and ecosystems. Tailored, holistic, demand-driven resilience actions are proposed to improve living conditions in the most affected and marginalized communities.

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

By implementing this URAP, the Municipality of Cobija will not only 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 two study areas in Cobija.

### Strategic alignment of resilience action plan

The URAP integrates a strategic framework that connects global, national, and local

objectives, strengthening the response to increasing, more intense, and compounding 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 Bolivia's Economic and Social Development Plan (PDES) 2021–2025, which is to rebuild the nation's economy to improve quality of life, and advance sustainable industrialization with import substitution. This implies resuming macroeconomic and social stability, and deepening the Productive Community Social Economic Model. Specifically, it aligns with the 7th strategic axis: Comprehensive development with sovereignty and respect for Mother Earth.

At the regional level, the department of Pando, in Bolivia, has outlined an ambitious comprehensive development plan with a vision towards the year 2040, focused on environmental sustainability, the responsible use of its natural resources and the strengthening of its local economy. The Department of Pando has updated its Land Use Plan (PLUS) in 2024, after 28 years without modifications. This plan has a vision of sustainable Amazonian development until 2040, classifying the territory into seven categories of land use, adapted to the characteristics of the terrain and its possibilities of use. In parallel, conservation and sustainable development projects have been implemented, such as the creation of the El Gran Manupare Integrated Management Natural Area, which covers 452,639 hectares and represents almost 8% of Pando's forests.

At the local level, the Urban Resilience Action Plan is closely aligned with Cobija's plans for Risk Management and adaptation to climate change, the Local Urban Agenda and the Territorial Comprehensive Development Plan. The Action Plan reflects the vision of these other planning instruments in a holistic

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



Friendship Bridge sign  
Autonomous Municipal Government of Cobija

02

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



*Cobija Cathedral  
Autonomous Municipal Government of Cobija*

# 02

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

The process carried out in Cobija to develop the Climate Resilience Action Plan was based on the guidelines established by the Multilayered Vulnerability Assessment (MVA) Handbook: Resilience Planning for Urban, Biodiversity, and Climate Action, and it was adapted, localized and innovated to reflect the unique planning, governance, and inter-institutional context of Cobija. Strong community coordination and meaningful participation in decision-making, as well as local ownership, enabled UN-Habitat and Municipality to prepare a Plan that is developed by for and by local residents and communities. This methodology included the following key components:

### 1. Definition of vision and objectives

In coordination with project stakeholders, and in line with development objectives, a long-term, ambitious vision and set of strategic objectives were established. These objectives firmly align with the municipality's territorial planning criteria and address 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, including those residing in the most at-risk localities. This list was informed

by the priorities identified by key partners involved in the RISE UP initiative and focused in Cobija's most vulnerable neighborhoods. The selection has been made by municipal staff, local experts and representatives from knowledge and practical networks, academia and research institutions, NGOs, community-based organisations, youth and women groups, and communities.

### 3. Prioritization and selection of resilience actions

Each potential action was assessed and ranked through a multi-criteria analysis, considering the following elements:

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

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

This is a newly established Área Natural de Manejo Integrado (ANMI) created by the Municipality of Sena in Pando, Bolivia, through Municipal Law No. 009/2023 on December 19, 2023, and officially enacted in January 2024. The area is home to numerous endangered and vulnerable species such as: a) Endangered: giant otter (*Pteronura brasiliensis*), big-leaf mahogany (*Swietenia macrophylla*); and b) Vulnerable: jaguar (*Panthera onca*), white-lipped peccary, lowland tapir, giant armadillo, blue-headed macaw.

El Gran Manupare is not just another protected area—it's a landscape-scale conservation achievement that: i) Safeguards large swaths of high-value Amazonian forest; ii) Protects vulnerable wildlife and vital carbon stocks; iii) Strengthens an interconnected network of conservation areas; iv) Advances climate stability on both regional and global scales; and v) Demonstrates a successful model of community-based, sustainable conservation.

### 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 through the 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 Cobija's most vulnerable community.

# 03

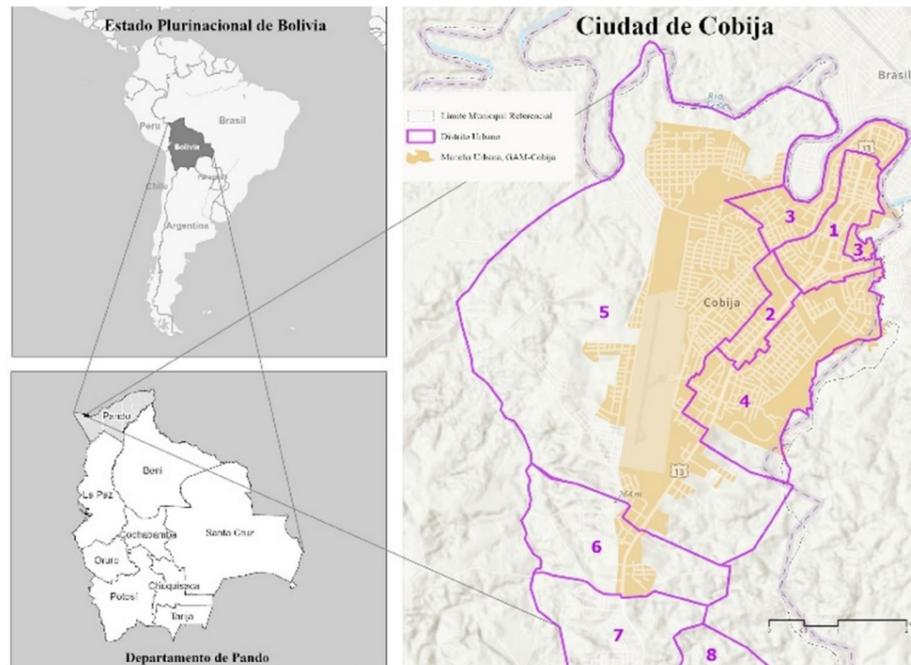
## Cobija, Bolivia: Urban Context and City Profile



*Friendship Bridge at night*  
Autonomous Municipal Government of Cobija

# 03

## Cobija, Bolivia: Urban Context and City Profile

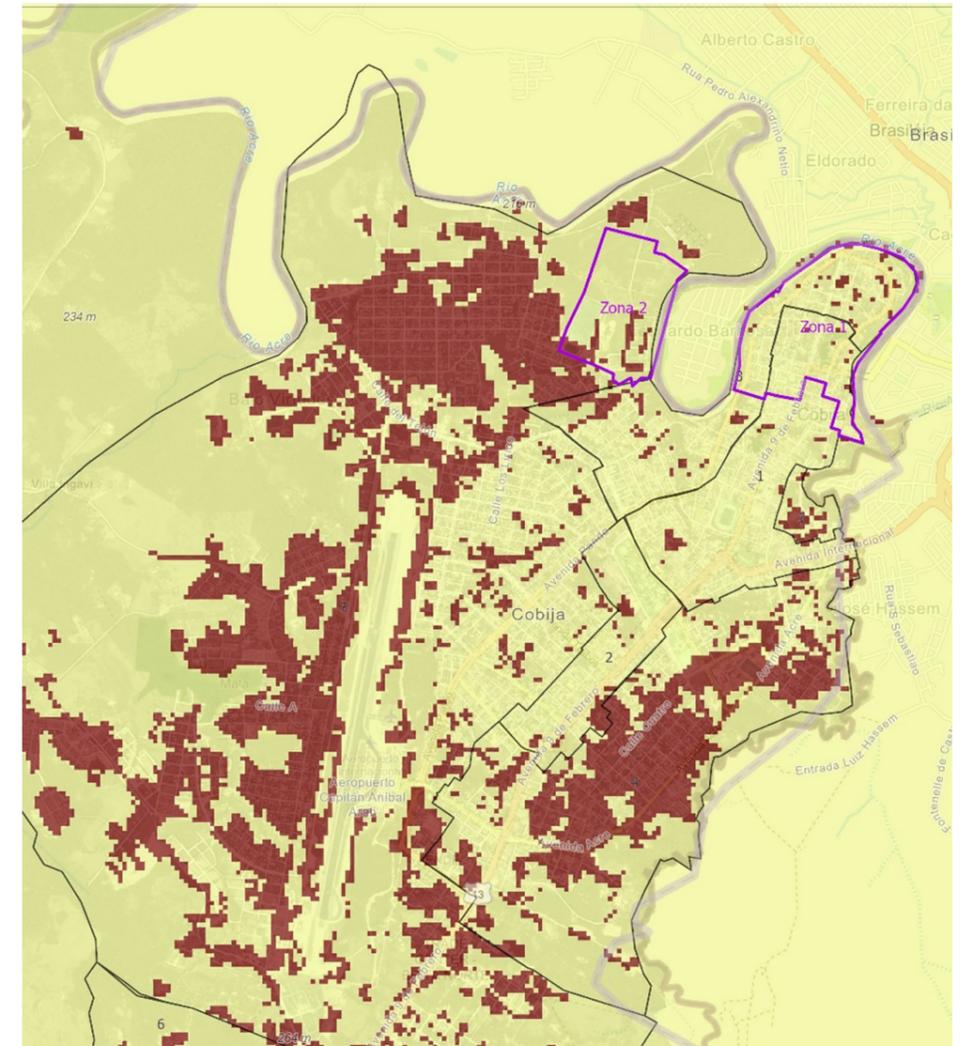


**Figure 1: Location of Cobija in the Department of Pando, Bolivia**  
Source: UN-Habitat, 2024.

Cobija is in South America's Amazon rainforest. The city lies on Bolivia's northern border with Brazil and is located between the meridians 11°8' and 10°58' S and 68°44'05' W. The municipality has an area of 449.14 km<sup>2</sup> and is located at 280 meters above sea level.

Cobija is a border city and is the department capital. It is classified as an agglomerate-type settlement. It is located adjacent to the

urban areas of Brasileia and Epiaciolândia, in neighboring Brazil, with which it shares close socioeconomic, physical, and environmental ties. This connection with the Brazilian cities presents an opportunity for joint development, fostering shared development strategies. Additionally, both regions share responsibilities for addressing common territorial challenges, such as the management of the Acre River's water resources.



**Figure 2: Map of urban growth in Cobija**  
Source: UN-Habitat, 2024.

Cobija is the capital of the Department of Pando, Bolivia. The Municipality of Cobija is made up of the capital city of Cobija and 18 dispersed rural communities. Cobija is administratively divided into 6 Urban Districts and 66 Neighborhoods.

Since 2009, migration has been an important factor for urban expansion and demographic growth. According to the National Census of Population and Housing in 2012, there was an urban population of 46,297 and 13,290

homes. It is estimated that by 2024 there will be more than 90,000 inhabitants. That is, Cobija's population has double in just a decade.

The most vulnerable neighborhoods towards floods are the study areas. That is the reason what they were selected as part of the RISE-UP project.

# 04

## Key Findings from the Multilayered Vulnerability Profile (MVP)



# 04

## Key Findings from the Multilayered Vulnerability Profile (MVP)

### Urban dimension

Cobija is a city with low density within each of its districts, including the two study areas located next to the River Acre border, and are among the oldest neighbourhoods of the city. Here, land use consists of residential, commercial, administrative and social services. There is one private university, local and regional government dependencies and important markets.

According to Cobija's Local Urban Agenda the city will grow in direction to the city's southern zone, to more secure sites away of the river border. A list of projects has thus been identified, based on new infrastructure projects and services. It is expected that new neighbourhoods would emerge in the southeastern and southwestern parts of Cobija. Within the study areas, water, electricity and sewage are present. However, garbage collection is not consistent, especially at the Cataratas' neighbourhood.

Cobija is considered a young city since people under 20 years of age represent 45% of the total urban population. Homes are built with wood (48.4% of homes), bricks (30.1%) and mixed materials (21.5%). 78% of households have roofs made of calamine. A new, adaptive development in home construction in the area has been the use of stilts which directly counteracts the impacts of flooding. At the two study areas, 24% of the households have 4 people; 22% have 5 people; 15% 6 people living there.

Cobija has an employment rate of 59.3%, which is equivalent to two thirds of its working-age population, well below the

optimal level. On the other hand, 58.5% of employment in Cobija is informal, which implies a high proportion of workers without long-term security, health insurance or the right to retirement.

### Climate dimension

Climate change poses a substantial threat to Cobija, heightening the risks of disasters such as flooding, landslides and temperature rise, especially in vulnerable areas near the river Acre border. The municipality has developed the Plan of Risk management and adaptation to Climate change 2022-2030 and has been working with entities such as the Red Cross to develop reactive activities towards disasters. However, preventive measures are the current challenges that need to be overcome despite a lack of human, economic and financial resources. Projections indicate significant increases in temperature from the current 38°C maximum by 3.7%. In terms of precipitation, the increment is up to 26% from the current 1,774 mm to 2,218 mm per year. Those changes would affect human welfare, food security and services provision.

Climate change hazards make vulnerable groups of society even more vulnerable. The elderly, people with disabilities and children are among the populations most at risk. For instance, 85% of the elderly are dependants and unemployed. 48% of the people of Cobija are female, who have, based on past disasters, developed early warning systems. For example, neighbours use WhatsApp groups to alert citizens of rising water levels after heavy precipitation. This basic solution could be understood to be a

palliative solution to the more robust and comprehensive warning systems that are needed.

### Biodiversity dimension

Cobija's biodiversity is under threat from unplanned urbanization, which disrupts habitats and ecosystems. The lack of a cohesive ecological structure hinders conservation efforts and increases vulnerability to habitat loss. Arroyo Bahia is the most important natural reserve near the city. While laws exist to protect the reserve, enforcement is lacking. Another hazard that is affecting biodiversity in the Cobija jurisdiction are human-caused fires used to extend the agricultural frontier for farmers. This issue is reflected around the country. This year, 10 million hectares have been lost due to this activity, causing harmful smoke that affect population directly.

The Amazon is the richest ecosystem on the planet, and it includes a massive presence of animal species and trees that, due to the expansion of agricultural and urban frontiers, places additional strain on key ecosystems. In Cobija, there is an increasing number of local, national and international NGOs and multilateral organizations that are starting to work in the field of biodiversity preservation.

### Vulnerability hotspots

The three dimensions studied in this assessment (urban, climate change, and biodiversity) indicate that Cobija, particularly the five neighborhoods examined, is situated in a territory vulnerable to climate change hazards. The overlapping nature of

these dimensions has created hotspots of conflict that should be prioritized to enhance community safety and resilience to climate change. The most vulnerable hotspots are located in study area 1, which includes the oldest neighborhoods of the city, closest to the riverfront.

The ecosystem is central to the interconnection of biodiversity, climate impacts, and urbanization. Cobija's natural wealth is a strategic asset for urban and climate risk management, making its preservation urgent. In terms of the three contributions to vulnerability—exposure, sensitivity, and adaptive capacity—we can make the following observations:

- Study areas 1 and 2 show greater exposure to climatic threats (flooding and landslides) due to various factors related to urbanization and planning. Study area 1 comprises four traditional neighborhoods located along the banks of the River Acre, making them particularly susceptible to flooding and subsequent landslides. Similarly, study area 2 (Cataratas neighborhood) is a newer neighborhood with a lower population but a larger area, where the eastern part is more vulnerable to flooding. Currently, institutional weaknesses hinder the city's ability to address these challenges. Moreover, a lack of financial resources and effective urban planning prevents Cobija from being resilient to climate change and ready to implement a comprehensive disaster risk prevention strategy.

- In terms of sensitivity, many households are precarious structures, particularly in Cataratas, while study area 1 has better

building materials. Both areas have access to essential services, but the storm drainage systems need updating. Educational and health services in these areas often experience disruptions due to flooding. Although there are paved roads, flooding directly affects this infrastructure. Key variables contributing to vulnerability include demographics (gender and the proportion of children and the elderly), welfare (poverty rates), and production (land use).

- Regarding adaptive capacity, residents of Cobija, having experienced disasters, are increasingly prepared for such events. Some neighborhoods have knowledge of early warning strategies, and some residents own properties elsewhere in the city for potential relocation. Schools in other parts of Cobija receive students from flood-affected schools. In terms of household design, many homes in Pto. Alto and Cataratas are built on stilts to withstand rising river levels. After disasters, volunteer groups, including university students, Red Cross staff, and civil servants from GAMC and the Regional Government, assist affected individuals. Sports facilities are often used to shelter those who have lost their homes. Unfortunately, these responses typically occur after disasters, with few preventive actions taken in advance.

In summary, the city has acquired experiential knowledge of its climatic threats and has basic response strategies. However, its adaptive capacity is insufficient to reduce the vulnerability of its populations. The implementation of climate-resilient and biodiversity-focused urban management is hindered by various factors, including economic, political, and governance issues.

The vulnerabilities described across different areas (social, economic, physical, environmental) exacerbate one another, creating a vicious cycle of poor practices that

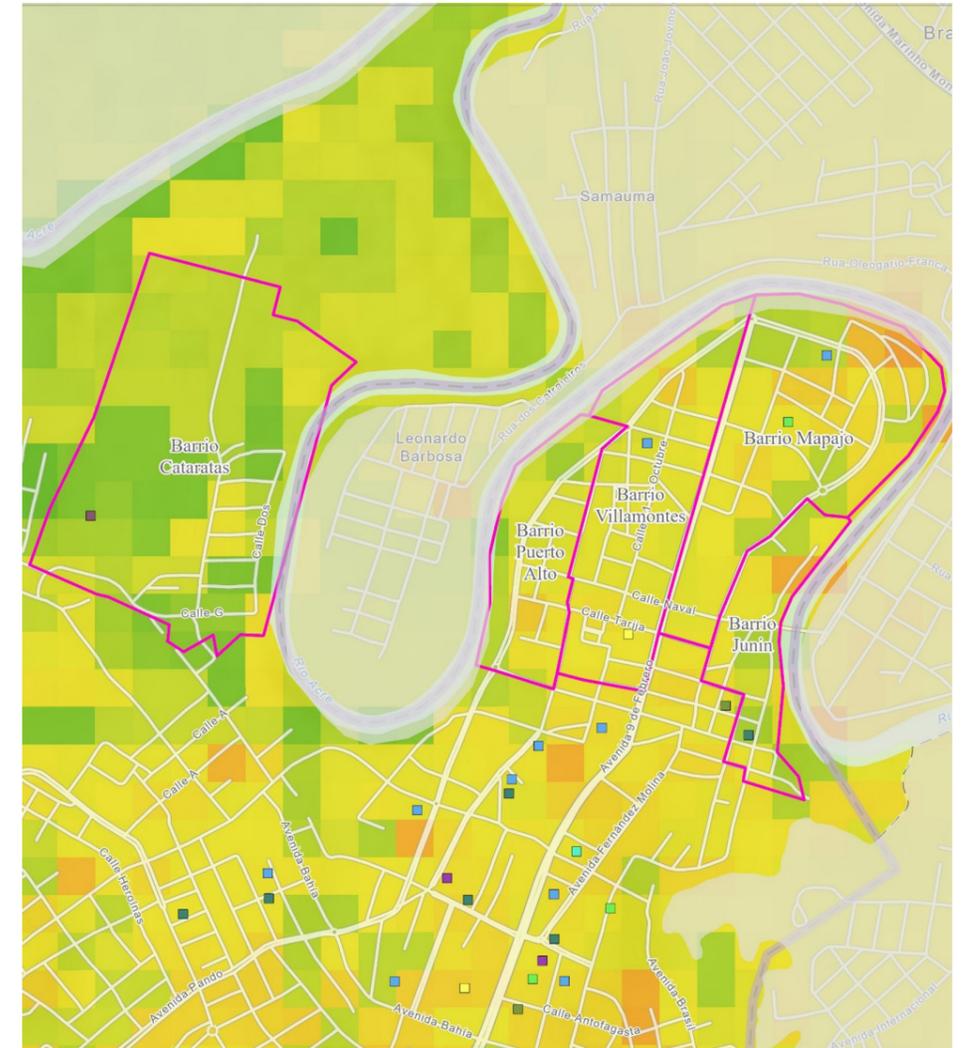
increase the vulnerability of communities in the studied neighborhoods.

Cobija faces many challenges in managing its territory effectively. Although it is not a large city, improved planning can still enhance land use if a clear vision is defined. This will help establish priorities and necessary infrastructure for sustainable development. However, implementation has historically been an issue in Bolivian cities, particularly in the Amazon. Therefore, Cobija's efforts should focus on feasible strategies that can be practically implemented in the short and medium term.

Development policies must address employment generation, social cohesion, respect for the Amazonian environment, access to housing, and efficient service provision. This planning should also incorporate resilience to climate change threats. Consequently, GAMC is advocating in both national and international contexts to raise awareness of Amazonian cities.

The challenges outlined above should also be viewed as opportunities, leading to the identification of priority areas for action. Thus, the Cataratas neighborhood, along with Mapajo and Junín, should be prioritized for comprehensive pilot projects that can later be replicated in other neighborhoods of Cobija.

These comprehensive solutions must aim to reduce climate vulnerability to flooding, landslides, and rising temperatures while also strengthening the sustainable management of biodiversity by strategically utilizing the Amazon's natural wealth.



**Figure 3: Vulnerability Hotspot Map**

Source: UN-Habitat, 2024.

05

A Shared Vision and  
Strategic Objectives  
for Urban Climate  
Resilience



Puerto Alto neighborhood  
Autonomous Municipal Government of Cobija

# 05

## A Shared Vision and Strategic Objectives for Urban Climate Resilience

### Vision

In response to the dynamic socioeconomic and environmental challenges confronting Cobija, it is imperative to establish a comprehensive urban resilience vision that guides the city's sustainable growth and development. The vision – co-developed by the community and adopted by the Municipality – aims to strengthen Cobija's role as regional strategic hub, fostering urban-rural integration while ensuring the sustainable management of its institutional, economic, environmental, and social systems. By prioritizing infrastructure development, climate resilience, and inclusive governance, the city aims to enhance quality of life, stimulate investment and entrepreneurship, and promote active citizen participation in decision-making processes.

“To consolidate Cobija as the economic centre of the northern Bolivian Amazon, closely linked to neighboring countries, to become a sustainable municipality that adequately manages its institutional, economic, environmental and social conditions. Cobija is intended to be an attractive municipality, with adequate urban and rural infrastructure, conducive to migration, entrepreneurship and investment, creating productive and life opportunities that promote the development and well-being of its population and resiliency towards climate change. In addition, citizen participation is emphasized, guaranteeing that all inhabitants can propose and participate in decision-making, access quality basic services, education and health, and improve their standard of living through an effective relationship with institutions.”

### Strategic objectives

The strategic objectives are designed to operationalize Cobija's urban resilience vision by addressing its key development priorities and challenges in an integrated manner. Each objective contributes to realizing a sustainable, inclusive, climate-resilient and nature-positive municipality that fosters economic growth, social equity, and effective governance.

The strategic objectives of Cobija's URAP are:

**1. Promote Economic recovery and employment creation.** This objective supports Cobija's aspiration to become the economic centre of the northern Bolivian Amazon by stimulating entrepreneurship, attracting investment, and generating productive, demand-driven, green job opportunities. By promoting and advancing sustainable economic activities – such as climate-smart agriculture, eco-tourism, renewable energy development, and sustainable forest management – that are resilient and adaptable to climate-related risks, this objective will improve livelihoods, enhance economic stability, and build a robust local economy capable of withstanding environmental challenges.

**2. Develop Urban and Cultural transformation benefitting all.** Fostering inclusive urban and cultural development, this objective prioritizes the design and implementation of climate-resilient infrastructure and community spaces that not only accommodate growth but also proactively reduce vulnerability to climate hazards. By promoting environmentally

sustainable connectivity between urban and rural areas – ensuring that transportation, communication, and services linkages minimize environmental impact, protect natural habitats and biodiversity, and support efficient resource use – the municipality advances its vision of enhancing quality of life, strengthening social cohesion, and creating a climate-adaptive environment that attracts migration, investment, and entrepreneurship

**3. Promote Social transformation with equity and gender perspective.** This objective prioritizes social inclusion and equity by empowering all inhabitants, particularly vulnerable and marginalized groups, to actively participate in decision-making and access essential services that are designed to be climate-resilient. By integrating climate adaptation measures into social policies – such as community-based disaster risk reduction, climate-resilient housing programs, and equitable access to early warning systems – this objective ensures that vulnerable populations are better protected from climate hazards and can sustainably improve their living standards and overall well-being

**4. Develop Territorial Governance with resilience to climate change hazards.** Strengthening institutional frameworks and governance mechanisms to effectively anticipate, manage, and respond to climate change hazards is essential. Building adaptive capacity through climate-informed land-use planning, integrated water resource management, and cross-sectoral coordination at municipal, regional, and national levels enables Cobija to sustainably

manage its territory and natural resources. Building the resilience of housing, critical infrastructure, and systems, including within informal settlements, through measures such as improved construction practices, building and infrastructure enhancements, and community-led adaptation initiatives, contributes to this comprehensive approach. Together, these efforts strengthen institutional and environmental sustainability, safeguarding the municipality against current and future climate risks.

**5. Allow Access to basic services with focus on health.** Ensuring equitable access to quality basic services, particularly health care, clean water and sanitation, energy, and emergency response, is fundamental to building a resilient and healthy population. This objective emphasizes integrating climate-sensitive, nature-positive planning and infrastructure design to strengthen the capacity of service delivery systems to withstand and adapt to climate-related impacts such as floods, droughts, heatwaves, and vector-borne diseases. By enhancing the resilience of health facilities, water supply networks, renewable energy access, and early warning systems, Cobija can safeguard public health, reduce climate vulnerability, and promote the overall well-being and adaptive capacity of its communities.

06

**Priority Actions to  
Advance Climate,  
Urban, and Biodiversity  
Resilience**



Cobija Main Square  
Autonomous Municipal Government of Cobija

# 06

## Priority Actions to Advance Climate, Urban, and Biodiversity Resilience

The following are the shortlist of projects for Cobija:

Action title	Type	Owner	Cost (USD)	Timeline
Solid waste management awareness campaigns.	Awareness Raising	Autonomous Municipal Government of Cobija and the Community	50.000	14 months
Strengthen and expand community early warning system.	Capital Investment/ Awareness Raising	Autonomous Municipal Government of Cobija and the Community	50.000	18 months
Risk Management communication strategy plan integrating the indigenous knowledge	Strategy	Autonomous Municipal Government of Cobija and the Community	50.000	18 months
Reforestation of Acre river and Arroyo Bahia.	Hard (Infrastructure investment)	Autonomous Municipal Government of Cobija and the Community	50.000	15 months
Land use regulatory plan for Cobija.	Soft (Policy/Organisational/ Behavioural) Plan / Strategy	Autonomous Municipal Government of Cobija	215.000	27 months
Construction of retaining wall in Puerto Alto and other near neighborhoods.	Capital Investment	Autonomous Municipal Government of Cobija and the Community	2.500.000	23 months

**Table 1 Short list Actions**  
Source: Own elaboration



Acre River  
Autonomous Municipal Government of Cobija

## Action overview

Based on the definition of the Vision and the Strategic objectives, as 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 GAMC civil servants and representants of NGO's and other institutions in the Steering committee, the long list of actions was reduced to the short list of actions at the meeting held in 2024, on December 12th, as shown at the

figure 4. Then at a meeting held at Puerto Alto neighbourhood, the selection of projects was held in February 13th in 2025 (see figure 5). 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					Category	ACTION IMPACT										ACTION FEASIBILITY								
No.	Action Title <small>(Use verb-noun function purpose/ formulation as far as possible)</small>	Action Type <small>(Select from dropdown)</small>	Action Classification <small>(Select from dropdown)</small>	Action Name or <small>(e.g. County Office, M2 Team, Sustainable Workshop, City Department, Existing Plan/Strategy, Name the department or existing plan/strategy if relevant)</small>	Action Status <small>(Select from dropdown e.g. an action included in another strategy/plan but has not yet started implementation is Planned)</small>	Principal Action Owner <small>(Try to be as specific as possible e.g. City Public Works Department)</small>	Implementation Timeline <small>(Select from dropdown based on how long an action of this nature might take to implement)</small>	RANK BASED ON TOTAL SCORE	TOTAL SCORE	ACTION IMPACT SCORE	ACTION FEASIBILITY SCORE	PROPOSED FOR SHORTLISTING? <small>(Based on the scoring for the action, should no more than a 10 actions (those with the lowest scores) if you wish to include more actions)</small>	Sub-category	ACTION IMPACT										ACTION FEASIBILITY							
														Aligns with Strategic Goals					Resilience Benefit			Gender and Social Inclusion		Technical Feasibility			Financial Feasibility				
													100%					100%					100%			100%					
													70%	70%	70%	70%	70%	33%	33%	33%	25%	25%	25%	25%	33%	33%	33%	25%	25%	25%	25%
													Economic recovery and employment creation	Urban and Cultural transformation	Social transformation	Territorial Governance with resilience to climate change hazards	Access to basic services with focus on health	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 existing policy/regulatory framework or existing strategies in the sector	Aligns with technical and administrative capabilities of the city	Possible to begin implementation within 10-15 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
1	Construction of Dams in Mapayo and Juan	Hard (Infrastructure Investment)	Capital Investment	SC Meeting	New	Autonomous Municipal Government of Cobija	Medium (5-10 years)	9	6,11	3,28	2,83		5	1	1	5	3	5	4	4	1	2	5	2	4	3	4	1	1	1	5
2	Construction of retaining wall in Puerto Alto and other near neighborhoods	Hard (Infrastructure Investment)	Capital Investment	SC Meeting	New	Autonomous Municipal Government of Cobija	Medium (5-10 years)	6	7,40	4,11	3,29		5	3	2	5	5	4	4	3	5	4	4	5	4	4	4	1	1	2	5
3	Erosion control of the intersection of Pizamo and Tril Come!	Hard (Infrastructure Investment)	Capital Investment	SC Meeting	New	Autonomous Municipal Government of Cobija	Medium (5-10 years)	10	6,10	2,81	3,29		4	2	1	5	3	4	3	4	1	2	3	1	3	5	5	2	2	1	4
4	Recovery of territory through the reconstruction of the houses of the neighborhood slope	Hard (Infrastructure Investment)	Capital Investment	SC Meeting	New	Autonomous Municipal Government of Cobija	Medium (5-10 years)	8	6,44	3,02	3,42		4	3	2	4	4	4	3	4	2	1	4	1	5	4	4	2	2	2	4
5	Protection of the river bank slope	Hard (Infrastructure Investment)	Capital Investment	SC Meeting	New	Autonomous Municipal Government of Cobija	Medium (5-10 years)	11	6,04	3,33	2,71		4	3	2	4	4	3	5	5	2	1	4	2	4	3	4	1	1	1	4
6	Creation of regulations prohibiting housing in flood zones	Policy/Organizational/Behavioral	Standards, guidelines, and regulations	SC Meeting	New	Autonomous Municipal Government of Cobija	Short (<5 years)	5	7,65	3,90	3,75	yes	3	5	5	5	3	5	3	5	2	2	3	2	5	2	5	3	3	3	5
7	Land use regulatory plan for Cobija	Policy/Organizational/Behavioral	Soft Strategies, plans, and programmes	SC Meeting	Planned	Autonomous Municipal Government of Cobija	Short (<5 years)	4	7,87	3,96	3,92	yes	3	5	5	4	4	5	4	5	3	3	3	5	3	5	3	3	3	3	5
8	Risk Management communication strategy plan	Policy/Organizational/Behavioral	Soft Strategies, plans, and programmes	SC Meeting	New	Autonomous Municipal Government of Cobija	Short (<5 years)	2	8,08	4,17	3,92	yes	2	5	4	5	4	5	5	5	4	4	3	3	5	3	5	4	3	2	5
9	Social housing construction credit	Policy/Organizational/Behavioral	Other Investment	SC Meeting	New	Ministry of Public Works, Housing and Services and	Medium (5-10 years)	7	6,59	3,88	2,71		3	4	3	5	4	4	4	5	3	3	5	3	3	2	3	2	2	3	4
10	Solid waste management awareness campaigns	Policy/Organizational/Behavioral	Soft Awareness, demonstration, training, and capacity building	SC Meeting	New	Autonomous Municipal Government of Cobija	Short (<5 years)	1	8,39	4,27	4,12	yes	3	3	4	4	5	5	5	5	4	4	4	4	5	5	5	3	3	3	4
11	Reforestation of Acea river and Arroyo Bahía	Hard (Infrastructure Investment)	Capital Investment	SC Meeting	New	Autonomous Municipal Government of Cobija	Medium (5-10 years)	3	7,95	3,92	4,12	yes	5	3	3	5	3	4	5	5	3	3	3	5	5	5	5	4	3	2	4
12	Early warning system for river flooding	Hard (Infrastructure Investment)	Capital Investment	SC Meeting	New	Autonomous Municipal Government of Cobija	Short (<5 years)	12	0,00	0,00	0,00																				

Table 2: Multi-Criteria Analysis (MCA) of the Long List of Actions (1-24)  
Source: UN-Habitat, 2025



**Figure 4: Photographs and Attendance Lists from the Community Workshop Held for the Definition of the List of Actions under the RISE UP Project at GAMC**  
 Source: UN-Habitat, 2025.



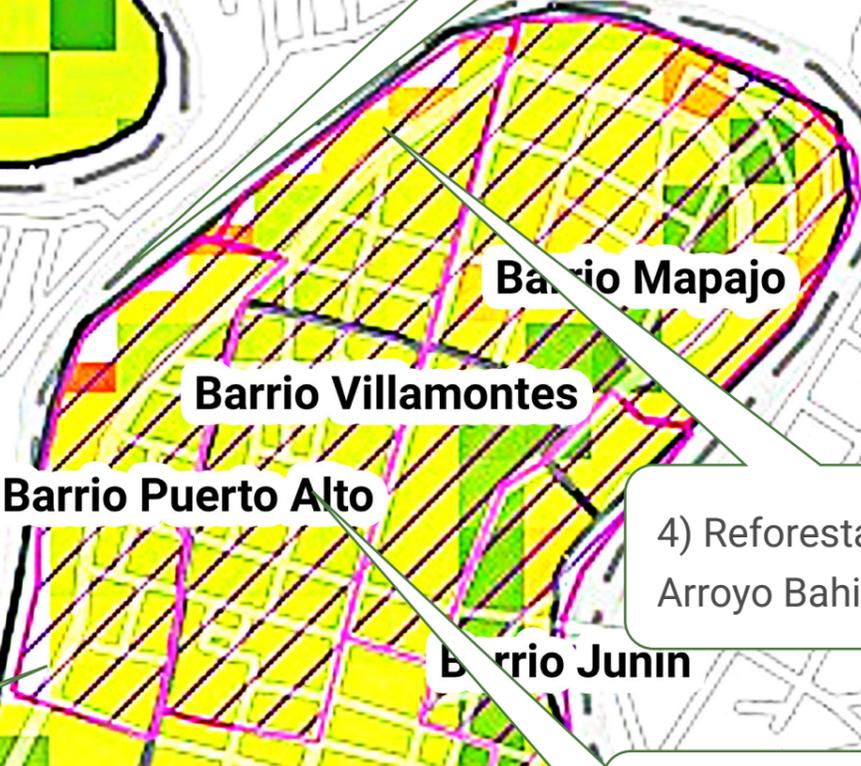
**Figure 5: Photographs and Attendance Lists from the Community Workshop Held for the Definition of the List of Actions under the RISE UP Project at GAMC**  
 Source: UN-Habitat, 2025.

# Brasiléia

1) Solid waste management awareness campaigns.

6) Construction of retaining wall in Puerto Alto and other near neighborhoods.

2) Strengthen and expand community early warning system.



4) Reforestation of Acre river and Arroyo Bahia.

3) Risk Management communication strategy plan integrating the indigenous knowledge

5) Land use regulatory plan for Cobija.

7) Development of Ecotourism Businesses Strategy, Action Plan and Pilots

## Shortlisted Actions:

### Action 1

#### Action 1: Solid waste management awareness campaign for Cobija

##### Description and rationale

###### Description:

The Solid Waste Management Awareness Campaign for Cobija aims to educate and empower the local community to adopt improved waste management practices that support environmental sustainability, public health, and climate resilience. Recognizing Cobija's unique challenges – such as rapid population growth, limited waste collection infrastructure, and the vulnerability of Amazonian ecosystems – the campaign will improve knowledge, promote civic responsibility, and enable positive and lasting behavior change aligned with the municipality's strategic objectives.

By encouraging recycling, composting, and reduction of waste generation, the campaign supports economic recovery through green job creation, enhances social equity by involving all community groups, and contributes to urban transformation with cleaner, healthier public spaces. Additionally, it integrates climate-sensitive approaches to reduce pollution and greenhouse gas emissions, while fostering stronger territorial governance through partnerships with local institutions and inclusive community participation.

Ultimately, this campaign is designed to strengthen Cobija's resilience to climate hazards, protect its natural environment, and improve quality of life for all residents.

###### Project objectives:

###### Expected Outcomes:

- **Cleaner Environment:** With the increased awareness and understanding and active participation of the community, Cobija could experience cleaner streets and improved environmental health. This will also contribute to reducing pollution-related climate vulnerabilities and protect local biodiversity in the Amazon region.

- **Reduction in Waste Sent to Landfills:** Effective segregation, reduction, and recycling efforts should lead to less waste being sent to landfills. This reduction will significantly decrease methane and other greenhouse gas emissions generated from waste decomposition in landfills, and improve air quality.
- **Stronger Community Involvement:** The local population would become more engaged and conscious of their environmental footprint, leading to long-lasting behavior changes. Inclusive participation will empower marginalized groups, reinforcing social equity, local ownership, and collective responsibility for sustainable urban development.

###### The project would have a long-term sustainability:

- **Incentivize Recycling Programs:** Establish incentive-based programs like deposit return schemes for bottles or containers, offering small, tangible rewards like cash refunds, vouchers redeemable at local markets, or discount cards for public services to encourage active community participation in recycling and waste reduction efforts. These initiatives will stimulate new, green economic opportunities and foster entrepreneurship within the city and target communities.
- **Community Involvement:** Ensure local residents take ownership of waste management by involving them in decision-making processes, including the planning and implementation of future waste management policies and programs. This community-led, demand-driven approach ensures governance is responsive and adaptive to climate and environmental challenges.
- **Integration with Municipal Waste Collection:** Collaborate closely with the city government to embed the awareness campaign within existing municipal waste collection systems, including scheduling, route planning, and service expansion. This integration promotes efficient use of resources, improves waste segregation at the source, and strengthens the municipality's ability to maintain consistent waste services during climate-related events such as floods or storms, thereby enhancing overall service resilience and sustainability.

###### Message Focus:

- **Reduce:** Encourage people to buy fewer single-use plastic items and choose products with less packaging.
- **Reuse:** Promote the practice of reusing materials like bags, containers, and clothing.
- **Recycle:** Educate the community about separating recyclables (paper, glass, plastic) and bringing them to designated collection points.

###### Expanded R's (5 to 7 R's Model):

- **Recover** – Extract energy or materials from waste that cannot be recycled.  
Example: Waste-to-energy incineration or composting for biogas.
- **Refuse** – Avoid products that generate unnecessary waste or cannot be reused/recycled.  
Example: Say no to plastic straws or overpackaged goods.
- **Repair** – Fix broken items instead of discarding them.  
Example: Repairing electronics or clothing.
- **Rethink** – Change consumption habits and redesign systems for sustainability.  
Example: Choose products with a lower environmental footprint.

###### The Campaign Goals are:

- Raise awareness about the importance of proper waste disposal and recycling.
- Educate residents on the environmental impact of improper waste management, especially in a sensitive region like Cobija.

- Promote behavior change to reduce, reuse, and recycle solid waste.
- Encourage the community to engage in waste segregation and proper disposal methods.

**Target audience:**

- Residents of Cobija, including urban and rural populations, particularly engaging low-income, low-employment groups, those living in informal settlements, and indigenous groups or nature custodians.
- Local businesses and industries contributing to waste generation.
- Community leaders and organizations, including civil society, who are engaged in environmental protection, can act as champions for change in communities while mobilizing members, beneficiaries and wider groups.
- Waste pickers and waste picker organizations (WPOs), engaged as recognised partners strengthens climate-resilient community waste systems, while promoting social inclusion and improving working conditions.
- School children, youth and students from higher education institutions as ambassadors for a Clean Cobija, driving long-term behavioral change.
- Government and local authorities to encourage policy development and resource allocation for solid waste management.

**Rationale:**

Cobija faces increasing challenges related to inadequate solid waste disposal, particularly in densely populated urban and river-adjacent areas. Improper waste management contributes to blocked drainage systems, increased flood risk during heavy rains, and contamination of the Acre River, affecting public health and local ecosystems.

A targeted solid waste management awareness campaign aims to address these issues by educating residents on proper waste segregation, disposal practices, and the environmental and health impacts of littering. It also promotes community participation in recycling and cleanup initiatives, helping to reduce illegal dumping and improve neighborhood sanitation.

By fostering behavioral change and encouraging shared responsibility, the campaign supports broader environmental protection efforts, enhances urban resilience to climate-related hazards, and complements municipal waste management services. It also lays the foundation for longer-term sustainability by involving schools, local organizations, and households in shaping a cleaner, healthier Cobija.

**Status**

New

**Action Owner**

Autonomous Municipal Government of Cobija and the Community

**Type**

Awareness Raising

**Location**

Cobija

**Vulnerabilities Addressed**

- Environmental Pollution
- Public Health Risks
- Urban Flooding
- Lack of Public Awareness and Participation
- Limited Institutional Capacity
- Climate and Disaster Vulnerability

**Related Actions**

- 8. Risk Management communication strategy plan
- 14. Acre River Cleanup
- 17. Post-flood system plan, solid waste collection.

**Strategic Alignment**

**Law No. 755 – Law of Integrated Waste Management (2015)**

- This is the foundational framework law specifically tailored for solid waste management across Bolivia. It embeds the principles of waste prevention, reduction, reuse, recycling, and sustainability. State Policies under Article 9 include:
  - Inter-institutional and inter-sectoral coordination,
  - Promoting shifts in production and consumption patterns,
  - Strengthening recycling markets and waste valorization,
  - Closure of open dumps and establishment of sanitary landfills,
  - Institutional capacity building,
  - Public education, awareness, and community participation.

**Supreme Decree No. 2954 – Regulations for Law 755 (2016)**

This decree repealed older regulations and mandates:

- Creation and implementation of the Integrated Waste Management Information System (SIGIR) within two years.
- Swift rollout of educational messaging campaigns, within 90 working days, highlighting the state’s obligation to inform and engage the public.

**Constitutional Mandates & Environmental Principles**

- Political Constitution of the State (2009) guarantees citizens’ right to a healthy, balanced, and protected environment, positioning environmental protection as a fundamental human right.

- Law 1333 – Environment Law (1992): Establishes responsibilities across national and municipal levels for environmental stewardship, including solid waste governance.

#### Law 300 – Framework Law of Mother Earth and Integral Development for Living Well (2012)

- Strengthens Bolivia’s environmental ethos, embedding sustainability, ancestral knowledge, and climate resilience across national frameworks. For waste management, it endorses environmental responsibility and circular approaches.

#### National Climate Change Policy

Enhances urban climate resilience through improved solid waste practices that reduce flood risk, prevent disease outbreaks, and engage citizens in local climate adaptation.

#### Alignment with 3 of the strategic objectives of Cobija:

- Social transformation
- Territorial Governance with resilience to climate change hazards
- Access to basic services with focus on health

#### Co-benefits



Environmental

**Air Quality Improvement:** By reducing the amount of organic waste sent to landfills and encouraging composting, the campaign helps lower methane emissions and decreases open burning of waste, which contributes to local air pollution and respiratory issue.

**Reduced water pollution:** Improved waste segregation and disposal prevent hazardous materials, such as oils, chemicals, and plastics, from entering stormwater drains and waterways like the Acre River. This reduces contamination risks to aquatic ecosystems, drinking water supplies, and communities relying on river-based livelihoods..

**Reduced soil pollution:** By limiting the disposal of non-biodegradable waste in open areas, especially plastics and electronic waste, the campaign helps prevent long-term soil contamination that degrades fertility, affects agricultural productivity, and harms biodiversity

**Ecosystem Protection in the Amazon Context:** As part of the broader Amazon biome, Cobija benefits from reduced solid waste leakage into forests and rivers, helping protect native flora and fauna from ingestion and entanglement hazards caused by plastic and other debris.

**Climate Mitigation and Adaptation Co-Benefits:** Better waste practices contribute to climate change mitigation (through reduced emissions) and adaptation (by decreasing flood risks linked to blocked drainage systems and improving the resilience of urban ecosystems).

**Protection of Biodiversity:** Proper waste management reduces the presence of harmful pollutants and plastics in natural habitats, helping to safeguard local

wildlife from ingestion, entanglement, and habitat degradation. This is critical in the Amazon region, which is rich in endemic and threatened species.

**Enhanced Ecosystem Services:** By maintaining cleaner soils and waterways, the campaign supports vital ecosystem services such as water purification, soil fertility, and pollination, which are essential for food security and community livelihoods.



Social

**Environmental education:** As the campaign raises awareness within the community, it fosters greater consciousness about the environmental impacts of waste and promotes a culture of respect for the environment.

**Strengthening urban resilience:** With proper waste management, the community can better face extreme weather events, such as heavy rainfall, by reducing the clogging of the sewage system.



Economic

**Generation of green jobs:** The implementation of the campaign can generate new employment opportunities related to waste management, such as the collection, sorting, and transportation of recyclable and organic materials.

**Reduction of waste management costs:** Proper waste segregation and disposal streamline waste treatment processes, lowering operational costs for municipal services. Additionally, by preventing clogged drainage systems, the campaign reduces flood risks and the associated economic losses from flood damage and costly emergency cleanups, thereby enhancing the city’s climate resilience.

#### Implementation Steps

Month	Step
1-3	<p><b>STEP 1: Project Planning and Objectives</b></p> <ul style="list-style-type: none"> <li>▪ Definition of the overall goal of the campaign (e.g., promote responsible waste disposal and reduce environmental pollution).</li> <li>▪ Identification of specific, measurable objectives (e.g., increase community knowledge, boost recycling participation).</li> <li>▪ Mapping of key target groups (residents, youth, businesses, schools, informal waste workers).</li> <li>▪ Assessment of current solid waste issues and public knowledge gaps in Cobija.</li> <li>▪ Identification of stakeholders and potential partners (municipality, NGOs, media, schools).</li> <li>▪ Developing of a timeline and implementation plan aligned with local events and seasons.</li> <li>▪ Allocation of resources (budget, materials, personnel).</li> <li>▪ Establishment of monitoring indicators for evaluating campaign effectiveness.</li> </ul>

## 4-6

### STEP 2: Community engagement

- Organization of meetings and dialogues with neighborhood leaders and community groups.
- Identification and training of local volunteers or “waste ambassadors” to support outreach.
- Conduction of participatory workshops to gather input and adapt messages to local needs.
- Promoting inclusive engagement, ensuring participation from women, youth, and marginalized groups.
- Collaboration with schools, churches, and local associations to expand reach.

## 4-6

### STEP 3: Partnerships and Stakeholder Engagement

#### Local Government and Authorities:

- Collaborate with the municipal government of Cobija to ensure the campaign aligns with local waste management plans.
- Work with local authorities to establish or improve waste collection routes and infrastructure.

#### Private Sector:

- Partner with local businesses that generate substantial waste (e.g., markets, shops) to promote waste reduction and recycling.
- Work with waste management companies to ensure proper waste collection and recycling practices.

#### Non-Governmental Organizations (NGOs):

- Engage environmental NGOs that work on waste management or sustainable living projects to share knowledge and resources.

## 5-8

### STEP 4: Campaign Design and Content

#### Educational Materials:

- Posters and Flyers: Simple, visually appealing designs with key messages about waste segregation, recycling, and disposal methods.
- Social Media Content: Leverage platforms that are widely used, like Facebook, Instagram, and WhatsApp to engage a wider audience, especially younger generations.
- Radio Broadcasts: Considering Cobija’s local media landscape and the existing use of radio for broadcasting the municipality key initiatives, radio advertisements and discussions can reach a broad audience, communicating the campaign messaging

in an accessible and locally interesting manner. Collaborate with local stations to broadcast educational segments, including to promote waste upcoming community workshops and training sessions, as well community engagement activities.

#### Workshops and Training:

#### Objectives:

- Build local capacity in sustainable solid waste management.
- Engage community stakeholders in co-designing campaign messages and tools.
- Develop communication strategies tailored to different target audiences.
- Facilitate the creation of culturally and linguistically appropriate educational materials.
- Encourage local ownership of the campaign to ensure sustainability and behavioral change.

#### Key Target Groups:

- Municipal officials and sanitation workers
- Teachers and school administrators
- Youth and student leaders
- Market vendors and small business owners
- Community and Indigenous leaders
- Media representatives
- Environmental NGOs and volunteers

Each module will be structured over several interactive sessions using visual aids, group exercises, and local examples.

**Module 1:** Understanding Solid Waste Management.

**Module 2:** Principles of Effective Awareness Campaigns

**Module 3:** Co-Creation of Campaign Messages and Materials

**Module 4:** Tools and Channels of Communication

**Module 5:** Community Mobilization and Event Planning

**Module 6:** Monitoring and Feedback Tools

## 9-12

### STEP 5: Launch Community Engagement Activities

#### School Programs:

- Engage schools with tailored educational programs and interactive activities such as art competitions, theater plays, or storytelling on the importance of improved waste management.

- Develop a curriculum for schools that includes practical knowledge on waste management.

**Community Events:**

- Cleanup Drives: Organize neighborhood clean-up events to bring people together and engage them directly in improving their environment.
- Waste Reduction Campaigns: Initiate “Waste-Free Days” where residents are encouraged to minimize waste and use reusable materials.

**Public Incentives:**

Introduce rewards for active participation, such as recognition for the cleanest neighborhood or rewards for individuals/businesses that reduce waste effectively.

## 13

### STEP 6: Launch Media and Communication Strategy

#### Multi-Platform Awareness:

- Use television and radio to spread key messages about waste management.
- Create an online presence (social media, website) for digital engagement, particularly among the younger demographic.
- Produce public service announcements (PSAs) for broadcast on local TV and radio stations.

## 14-

### STEP 7: Monitoring and Evaluation

#### Track Participation:

- Monitor participation rates in clean-up drives, workshops, and community events to evaluate engagement.
- Conduct surveys before and after the campaign to assess changes in attitudes and behaviors regarding waste management.

#### Feedback Mechanisms:

- Provide feedback channels for the community (via phone, online surveys, or town meetings) to share their opinions and suggestions.
- Measure Impact:
- Quantify reductions in waste going to landfills or increases in recycled materials.

#### Measure the increase in public participation in proper waste disposal practices.

- Quantify reductions in waste going to landfills or increases in recycled materials.
- Measure the increase in public participation in proper waste disposal practices.

## Financing

### Indicative Cost

USD 350.000

### Potential Financing Instruments

- 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

**Revenue Opportunities: No**

## Risks and Mitigation Options

### Economic Risk

Insufficient Funding or Budget Shortfall. The awareness campaign might not secure sufficient funding, resulting in a lack of resources for key components like materials, advertising, or personnel, which could affect the overall impact and reach of the campaign.

#### Mitigation Measure

- Diversified funding sources: Seek multiple funding sources, including government grants, international donors, private sector contributions, and local business sponsorships.
- Phased funding approach: Break the campaign into phases, ensuring that each phase is adequately funded before moving to the next.
- Partnerships with NGOs or private sector: Partner with environmental NGOs or businesses to share costs and responsibilities, ensuring financial sustainability.
- In-kind contributions: Encourage in-kind contributions from local businesses or community members, such as providing venues for events or donating printing materials.

### Technical Risk

Ineffective Communication Tools and Channels. The tools and channels used to communicate the campaign’s message may not be effective in reaching the intended audience, or they may not be appropriate for the target demographics. For example, relying too heavily on print materials when a significant portion of the population uses mobile phones or social media could reduce the campaign’s effectiveness.

#### Mitigation Measure

- Targeted media mix: Conduct a community assessment to understand the preferred communication channels (e.g., radio, social media, posters, community events) and tailor the message delivery through these channels.
- Leverage digital tools: Use social media platforms and mobile applications to spread awareness, especially

if they are widely used in Cobija. Digital content like videos, infographics, and interactive social media posts can help reach a broader and more engaged audience.

- Multilingual content: Ensure that materials are available in multiple languages (e.g., Spanish, indigenous languages) to ensure broader understanding and inclusivity.

#### • Social Risk

Lack of Public Awareness or Interest. The community may not recognize the importance of solid waste management, leading to low interest or engagement in the campaign. Many people may not see waste management as an immediate concern or may not fully understand its long-term impact on health, the environment, and quality of life.

##### Mitigation Measure

- Educational outreach: Focus on educating the community about the immediate benefits of improved waste management (e.g., cleaner streets, reduced health risks, and better living conditions).
- Relatable messaging: Use local examples, stories, and real-life consequences of poor waste management to help people connect with the issue on a personal level.
- Targeted campaigns: Tailor messages to different community segments (e.g., children, parents, local business owners) to emphasize how waste management practices benefit them directly.

#### • Environmental Risk

Increased Waste Generation During the Campaign. The campaign may lead to an increase in waste generation, particularly from campaign materials like flyers, posters, and promotional items. This could add to the existing waste burden in Cobija, which might exacerbate environmental pollution if not managed properly.

##### Mitigation Measure

- Sustainable materials: Use eco-friendly, recyclable, and biodegradable materials for all campaign materials (e.g., paper, cardboard, compostable items).
- Digital outreach: Prioritize digital media over printed materials, such as social media, websites, and apps, to reduce the production of physical waste.
- Waste reduction messaging: Incorporate waste reduction strategies in the campaign's messaging, encouraging the community to minimize waste during the campaign and beyond.
- Recycling bins and collection points: Ensure that public spaces where campaign materials are distributed have recycling bins to collect waste materials like paper and plastics for proper disposal.



Cobija Cathedral  
Autonomous Municipal Government of Cobija

## Action 2

### Action 2: Strengthen and expand community early warning system in Cobija's neighborhoods close to Acre River.

#### Description and rationale

##### Description:

This action focuses on enhancing and broadening the community-based early warning systems (EWS) in neighborhoods adjacent to the Acre River to improve local capacity for anticipating, preparing for, and effectively responding to climate-related hazards such as floods, storms, heatwaves, droughts, and extreme weather events. By upgrading existing infrastructure, expanding coverage to the most vulnerable and underserved areas, and fostering strong collaboration among stakeholders, the action aims to reduce disaster risk, minimize loss, and build climate resilience at the community level.

Key Aspects of This Action:

#### 1. Strengthening Existing Early Warning Systems (EWS)

- Enhancing the reliability, accuracy, and geographic coverage of current transboundary and local early warning infrastructure and systems.
- Improving communication channels to ensure timely and clear dissemination of alerts for all community members, including those living in vulnerability hotspots.
- Provide targeted training for local responders and residents to enhance their ability to understand, interpret and act upon warnings timely and effectively.

#### 2. Expanding the System

- Extending the EWS to underserved and high-risk areas along the Acre River and in other vulnerability hotspots within Cobija.
- Integrate advanced technologies such as additional weather monitoring stations, real-time flood sensors, and mobile alert platforms to improve forecasting and communication, while simultaneously empowering community-based networks through local observers, participatory flood mapping, and volunteer response teams.
- Complement adopted EWS technologies and tools with accessible communication channels including community radio, loudspeaker announcements, and SMS or WhatsApp groups to ensure timely, inclusive, and culturally appropriate dissemination of early warnings across all neighborhoods, especially those with limited internet access.
- Increasing community participation in disaster preparedness programs, promoting local ownership, rollout and sustainability of the EWS and related initiatives.

#### 3. Collaboration and Capacity Building

- Partnering with local authorities, NGOs, and meteorological agencies.
- Conducting regular drills and awareness campaigns.
- Ensuring that warning messages are clear, accessible, and in local languages.

#### Rationale:

The neighborhoods near the Acre River in Cobija are highly vulnerable to seasonal flooding, posing a significant risk to lives, livelihoods, and infrastructure. Strengthening and expanding the community-based early warning system (EWS) is critical to enhancing resilience and ensuring timely response to flood threats. A robust EWS empowers local communities with the tools, knowledge, and communication networks needed to anticipate, prepare for, and act upon rising river levels.

By reinforcing monitoring infrastructure (e.g., river gauges and rainfall sensors), improving data analysis and dissemination mechanisms, and expanding community outreach and training, the action ensures that alerts reach vulnerable populations promptly and clearly. This enables early evacuation, reduces property loss, and protects human life—especially among the most at-risk groups such as children, the elderly, and low-income families.

Furthermore, community participation in the EWS fosters local ownership and sustainability of the system, ensuring its functionality even under strained emergency conditions. As climate change increases the frequency and intensity of extreme weather events in the Amazon Basin, including the Acre River watershed, enhancing early warning capabilities becomes even more urgent and indispensable.

#### Status

New

#### Action Owner

Autonomous Municipal Government of Cobija and the Community

#### Type

- Capital Investment
- Awareness Raising

#### Location

Mapajo, Junín, Pto. Alto Villamontes and Cataratas

#### Vulnerabilities Addressed

- Flood Risk Exposure
- Lack of Timely and Accessible Information
- Limited Community Preparedness and Capacity related to flood risks or proper evacuation procedures.
- Communication Gaps and weak coordination between municipal authorities, emergency services, and local populations reduces the effectiveness of alerts and response
- Social and Economic Vulnerability
- Climate Change and Increasing Weather Extremes

● **Related Actions**

1. Construction of Dams in Mapajo and Junin.
2. Construction of retaining wall in Puerto Alto and other near neighborhoods.
8. Risk Management communication strategy plan.
12. Early warning system for river flooding.
16. Online monitoring system.

● **Strategic Alignment**

**Framework Law of Mother Earth and Integral Development for Living Well (Law No. 300, 2012)**

- Core Significance: Enshrines Bolivia's environmental governance, emphasizing holistic and indigenous-centered approaches to environmental protection.
- Relevance to EWS: Promotes the safeguarding of communities and ecosystems, supporting systems like early warnings as part of resilience and adaptation strategies.

**Supreme Decree 5264 (2024)**

- Role: Establishes guidelines for climate finance management in Bolivia.
- Relevance to EWS: Community-based early warning systems count as climate adaptation initiatives, making them eligible for funding and included in the National Registry of Programs and Projects (RENAPP).

**Water and Sanitation Services Law No. 2066 (2000, revised from Law 2029 of 1999)**

- Focus: Regulates water supply, sanitation services, and promotes the participation of communities in decision-making.
- Relevance to EWS: Since floods threaten water and sanitation, this law supports inclusive planning that elevates community needs in disaster contexts.

**Law Declaring Knowledge and Life Forms Related to Water as Cultural Heritage (Law No. 1255, 2019)**

- Purpose: Recognizes Indigenous and rural knowledge of water and associated ways of life as intangible cultural heritage.
- Relevance to EWS: Emboldens the integration of local and traditional knowledge in designing and implementing early warning systems, respecting cultural approaches to environmental governance.

**National Strategy on Water Resources Management ("Agua para Todos")**

- Overview: A strategic framework (encompassing National Strategy, River Basin Plans, and Water Sector Information Program) aimed at sustainable and participatory management of water resources.
- Relevance to EWS: Early warning systems are essential instruments in river-basin risk planning and participatory governance—components central to this strategy.

**Allignment with 3 of the strategic objectives of Cobija:**

- Social transformation
- Territorial Governance with resilience to climate change hazards
- Access to basic services with focus on health

● **Co-benefits**



Environmental

**Preservation of wetlands and floodplains:** Floods often damage sensitive wetlands and floodplain ecosystems, which provide essential ecological services, such as water filtration, habitat for wildlife, and carbon sequestration. Early warnings can enable the community to protect these areas before they are inundated.

**Sustainable water management:** With better early warnings about rising water levels and potential flooding, local authorities and residents can implement more sustainable water management practices, such as reducing water extraction from the river during high flood risks and preventing contamination from stormwater runoff.

**Preserving aquatic ecosystems:** The Acre River and its surrounding ecosystems are home to many aquatic species. Early warnings help reduce the risk of destructive floods that could damage aquatic habitats, ensuring that fish, amphibians, and other river-dwelling species are not displaced or killed.



Social

**Early evacuation and preparedness:** A reliable EWS ensures that residents are alerted in advance of potential floods, giving them time to evacuate safely and prepare their homes. This reduces the number of casualties and injuries during flood events.

**Enhanced security:** Timely warnings help ensure the safety of vulnerable populations, including children, elderly people, and those with disabilities, by allowing them to seek shelter or assistance ahead of time. There is also a gender and inclusion perspective.



Economic

**Minimizing damage to property and infrastructure:** A robust EWS allows for timely evacuations and mitigation efforts, which can significantly reduce the financial losses associated with flooding, such as damage to homes, businesses, and infrastructure.

**Protection of businesses and livelihoods:** Local businesses, especially small enterprises, are more vulnerable to disruptions caused by floods. An effective EWS helps prevent business closures and loss of income due to disasters.

**Preserving agricultural output:** Early warnings enable farmers to take preventive actions, such as securing crops and equipment, which helps maintain agricultural productivity and reduce the economic impacts of flooding on the farming sector.

● **Implementation Steps**

Month	Step
1	<p><b>STEP 1: Establish Governance Structure</b></p> <p>Setting up a governance space where key stakeholders such as NGO's and local authorities participate. These stakeholders will jointly define the objectives, goals, technologies to be used, the location of monitoring stations, and the strategies for the implementation and management of the system. This collaborative approach ensures that the project is aligned with local needs and the current regulatory framework and capacities of the local Government.</p>

2-6

**STEP 2: Needs Assessment & Planning**

- Identify flood-prone areas and critical locations for monitoring.
- Engage stakeholders (government agencies, local communities, hydrologists, meteorologists, etc.).
- Define the objectives of the system (e.g., real-time monitoring, predictive analytics).
- Develop an automated alert system to notify authorities and communities via SMS, sirens, apps, social media, etc.
- Coordinate with emergency response teams for rapid action.

7-9

**STEP 3: Pilot project**

Implement a small-scale pilot in selected high-risk neighborhoods near the Acre River to test and refine the upgraded early warning system. This includes installing basic monitoring equipment, training local volunteers, and establishing communication channels for alerts. The pilot will evaluate technical functionality, community responsiveness, and coordination mechanisms, providing key insights to guide broader system expansion.

10-11

**STEP 4: Sensor Selection, Procurement and Installation**

- Select appropriate sensors (e.g., radar, pressure, ultrasonic, or float-based water level sensors). Ensure sensors have remote communication capabilities (e.g., IoT, satellite, GSM, or radio).
- Procure essential equipment
- Install gauging stations at strategic points along the river.

12-13

**STEP 5: Data Collection & Transmission**

- Set up a data collection system that continuously records river levels.
- Use cloud-based platforms, servers, or data loggers to store and manage data.
- Implement real-time data transmission to monitoring centers.

14-15

**STEP 6: Data Processing & Analysis**

- Apply hydrological models to predict flooding based on real-time data.
- Integrate with weather forecasts to enhance predictive accuracy.
- Set thresholds and triggers for different flood warning levels.

16-17

**STEP 7: Community Engagement & Training**

- Conduct awareness campaigns on flood risks and early warning signals.

18-

**STEP 8: Testing, Maintenance & Upgrades**

- Regularly test the system with mock flood scenarios.
- Maintain and calibrate sensors to ensure accuracy.
- Upgrade software and hardware as technology evolves.

**Financing**

**Indicative Cost**

USD 350.000

**Potential Financing Instruments**

**Revenue Opportunities: N/A**

- National, Departmental and Municipal Government investment, including from funds dedicated to climate resilience and disaster risk reduction
- Partnerships between local and regional governments
- External funding: From climate funds and multilateral and bilateral donors, including GCF, Adaptation Fund, IADB, WB, CAF, GIZ, AECID, Fund for Cities Development, UK FCDO
- Grant-based funding from UN Agencies and International NGOs, such as UNDRR, UNCDF, and Red Cross / Red Crescent Climate Centre and Global Disaster Preparedness Center

**Risks and Mitigation Options**

**Economic Risk**

The maintenance and operation costs of the monitoring system may not be secured in the long term, which could jeopardize the continuity of the project.

**Mitigation Measure**

Explore additional funding sources, such as government grants, international cooperation, or public-private partnerships.

Create a fund dedicated to maintenance and operation, managed through partnerships with relevant stakeholders.

**Technical Risk**

Lack of skilled staff to operate the system.

Difficulty in scalability and integration with other data sources could affect interoperability and the use of data for decision-making.

#### Mitigation Measure

- Frequent training and refresher courses to maintain staff with knowledge to operate the systems.
- Ensure that the monitoring system is designed to be modular, allowing the addition of new stations or technologies without major adjustments to the existing infrastructure.
- Collaborative construction from the beginning of the action to include local institutions and stakeholders from the design phase.

#### ● Social Risk

- Lack of understanding among community of corresponding action from EWS.
- Some individuals are excluded from the system.

#### Mitigation Measure

- Conducting regular community education and simulation exercises to raise awareness of the early warning system and the specific actions to take at each alert level. Distribute simple, multilingual materials (e.g., posters, flyers, radio messages) that clearly explain the warning signals and response steps. Engage local leaders and volunteers to reinforce messaging and support vulnerable groups during emergencies.

#### ● Environmental Risk

Installing infrastructure for the EWS, such as communication towers, sensor networks, or weather monitoring stations, could disrupt local habitats and biodiversity, particularly in areas near the Acre River where sensitive ecosystems may exist.

#### Mitigation Measure

- Environmental Site Assessment (ESA): Conduct an environmental site assessment before installing any infrastructure to identify and avoid ecologically sensitive areas, ensuring that the construction does not disrupt critical habitats.
- Minimize Disturbance: Use construction techniques that minimize land disturbance and avoid extensive clearing of vegetation. Ensure that the project site is clearly marked to avoid accidental damage to surrounding natural areas.
- Reforestation and Landscaping: In case of vegetation removal, implement reforestation or landscaping programs to restore the natural environment.



Cobija Main Square view towards the post office  
Autonomous Municipal Government of Cobija

### Action 3

## Action 3: Develop a Risk Management Communication Strategy Plan for Cobija integrating the indigenous knowledge

#### Description and rationale

The Risk Management Communication Strategy Plan for Cobija, Bolivia, is designed to enhance community resilience and ensure effective communication during emergencies. This plan is particularly vital for Cobija, a border city in the Amazon region, which faces unique, multidimensional and cascading urban challenges due to its geographical location and high vulnerability to climate-induced hazards.

#### Description:

The strategy focuses on integrating traditional local and Indigenous knowledge with modern risk management practices. Indigenous communities in the region, such as the Tacana and Aymara peoples, possess valuable insights into environmental changes and disaster preparedness. These communities utilize bioindicators – natural signs from plants, animals, and celestial movements – to predict and respond to climate-related events. Recognizing and incorporating this knowledge into formal risk management frameworks is a key component of the strategy. This integration not only enriches the accuracy and cultural relevance of early warning systems (EWS) but also will promote community ownership, facilitates the adoption of climate resilience actions, and strengthens overall resilience by bridging scientific and Indigenous worldviews

#### Rationale:

Cobija's proximity to Brazil and Peru, along with its location in the Amazon basin, makes it susceptible and highly sensitive to various natural hazards, including floods, landslides, epidemics, and forest fires. The National Disaster Risk Management System (SNGRD) and the Vice Ministry of Civil Defense (VIDECI) have established frameworks to address these challenges. The SNGRD collaborates with technical and scientific institutions to produce risk alert bulletins, which are disseminated to the public to inform and prepare communities.

Additionally, the Ministry of Health has created a unit for Environmental Health, Emergencies, and Disaster Risk Management. This unit is responsible for coordinating responses to health emergencies and disasters, ensuring that health risks are effectively managed and communicated to the public.

Despite the actors that belong to the national government, the main actor of the project is the Autonomous Municipal Government of Cobija (GAMC). However, GAMC faces significant constraints, including limited budget allocations, insufficient workforce capacity, inadequate data availability, and other challenges that hinder its ability to comprehensively and effectively enhance the EWS and risk management communication in a timely and responsive manner to all residents.

By integrating Indigenous knowledge and understanding, local practices and solutions, and modern innovations, with these formal, scientific systems, the communication strategy aims to create a more inclusive and effective approach to disaster risk management in Cobija. This collaboration ensures that all community members, regardless of their background, have access to timely and relevant information, thereby enhancing the city's overall resilience to climate change and disasters.

Ultimately, this synergy strengthens Cobija's overall resilience to climate-related hazards while preserving and valuing Indigenous heritage and practices.

#### Status

New New

#### Action Owner

Autonomous Municipal Government of Cobija and the Community.

#### Type

Strategy.

#### Location

Cobija.

#### Vulnerabilities Addressed

- Lack of Public Awareness of Risks.
- Ineffective Risk Communication Channels.
- Low Community Preparedness and Response Capacity.
- Fragmented Messaging from Institutions.
- Social and Language Barriers.
- Misinformation and Rumors During Emergencies.

#### Related Actions

10. Solid waste management awareness campaigns.
11. Reforestation of Acre river and Arroyo Bahia.
12. Early warning system for river flooding.
18. Awareness, rescue and rescue of wild animals.
20. Stngthen and expand community early warning system.
22. Launch capacity development programme on climate risk for departments.

#### Strategic Alignment

##### Political Constitution of the State (2009)

Key Provisions:

- Article 2 affirms the rights to autonomy, cultural integrity, and self-government for Indigenous Original Peasant Nations and Peoples.
- Article 30 protects their rights to preserve sacred sites, manage their lands, and ensures their free, prior, and informed consent (FPIC) in matters affecting them.

- Article 31 offers special protections for Indigenous communities at risk of extinction or in voluntary isolation.

These constitutional protections create a strong legal foundation for integrating Indigenous knowledge into risk communication strategies and ensuring their participation in planning.

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

Overview:

- Recognizes Mother Earth as a collective subject of public interest with inherent rights—such as to life, diversity, water, clean air, equilibrium, restoration, and living free of contamination.
- Embraces interculturality, explicitly valuing the cosmovisions of Indigenous and Afro Bolivian communities within environmental governance processes.

This law provides a powerful, culturally grounded framework for embedding Indigenous worldviews within risk communication mechanisms.

#### Framework Law of Mother Earth and Integral Development for Living Well (Law 300, 2012)

Highlights:

- Expands upon Law 071 by institutionalizing environmental protection via the Plurinational Mother Earth Authority (APMT).
- Establishes mechanisms to guide climate change policies, including adaptation through inclusive, participatory approaches.

This law empowers the integration of ancestral knowledge within official environmental governance and risk management frameworks.

#### Law No. 341 – Participation and Social Control (2013)

Purpose:

- Establishes mechanisms for social participation and oversight across all public entities, particularly emphasizing the inclusion of neighborhoods, Indigenous nations, and intercultural communities.
- Ensures transparency, accountability, and community engagement in public decision-making—critical when designing risk communication plans grounded in Indigenous contexts.

#### Policy Movement: Integrating Indigenous Knowledge into Risk Systems

In **2024**, a co creation workshop in Warisata brought together Aymara and Tacana Indigenous leaders, government agencies, and NGOs to explore early warning systems based on **bio-indicators**—rooted in ancestral ecological knowledge.

This pioneering effort emphasized:

- Using natural indicators (such as plant or animal behaviors) for climate risk prediction.
- Formalizing these indicators via tools like the “**Pachagrama**” to translate local observations into actionable climate data.
- Advocating for public policies that formally recognize Indigenous knowledge as a valid component of risk management systems.

#### Aligned with 3 of the strategic objectives of Cobija:

- Social transformation
- Territorial Governance with resilience to climate change hazards
- Access to basic services with focus on health

#### Co-benefits



##### Conservation of Indigenous Ecological Knowledge

By integrating Indigenous bioindicators and traditional ecological knowledge into risk communication strategies, the plan promotes the preservation of biodiversity and sustainable land management practices. This helps maintain natural ecosystems and encourages a harmonious human-nature relationship.

##### Prevention of Environmental Degradation

Improved risk communication helps communities prepare for and respond to disasters like wildfires and deforestation-related events. Early warnings and community-led actions reduce the likelihood of environmental damage.

##### Strengthened Ecosystem-Based Resilience

The plan encourages ecosystem-based adaptation (EbA), such as reforestation or wetland protection, as part of local risk reduction strategies. This not only protects biodiversity but also builds natural buffers against future hazards.



##### Strengthening Social Cohesion and Trust

By fostering inclusive and participatory communication – especially through collaboration with Indigenous and rural communities – the strategy builds trust between citizens and institutions. When people feel heard and involved in planning processes, they are more likely to collaborate and support collective action during crises.

##### Promoting Linguistic and Cultural Inclusion

A key element of the strategy is translating essential risk management information into Indigenous languages such as Tacana or Aymara. This helps break down language barriers and ensures all community members – especially elders, women, and children – have equal access to life-saving information.

##### Enhancing Education and Awareness

The strategy involves training workshops, educational campaigns, and capacity building around climate change, disaster preparedness, and environmental stewardship. This leads to: a) Better decision-making during emergencies; b) Increased awareness of local risks; and c) Knowledge transfer across generations.

##### Empowerment of Vulnerable Groups

By prioritizing gender-sensitive and inclusive communication channels, the plan elevates the voices and roles of traditionally marginalized groups – including women, youth, and Indigenous leaders – in local risk governance.

**Improving Access to Services and Technology**  
Through partnerships with organizations, the strategy enhances community access to mobile alerts, early warning systems, and health or emergency services. This reduces information gaps and helps bridge urban–rural divides.

**Mental Health and Psychological Resilience**  
Clear and timely communication reduces uncertainty and fear during disasters. When people know what to do, where to go, and who to trust, stress levels are lowered – which improves mental health outcomes in both the short and long term.



**Economic**

**Reduced Economic Losses from Disasters**  
Clear and timely communication enables early action, which minimizes damage to homes, infrastructure, businesses, and agricultural land.

- Floods, forest fires, and other hazards are managed more proactively.
- Lower recovery and reconstruction costs for both government and families.

**Protection and Stability of Livelihoods**  
Agriculture and forestry are key economic activities in Cobija and the Pando department. A reliable risk communication system helps: a) Protect harvests and production cycles; b) Maintain income flow and food security; and c) Reduce forced migration due to lost income. This is especially beneficial for Indigenous and rural producers who depend on the land.

**Long-Term Cost Savings Through Prevention**  
Investing in risk communication is far less expensive than dealing with the aftermath of disasters. By reducing the frequency and severity of crisis situations, the plan leads to: a) Lower public spending on emergency aid; b) Less disruption to education, trade, and mobility; and c) Preservation of local infrastructure and transport networks.

**Implementation Steps**

Month	Step
1	<b>STEP 1. Stakeholder Mapping and Engagement</b> <ul style="list-style-type: none"> <li>▪ Identify key actors: local government, Indigenous leaders and representatives, NGOs, health agencies, educators, and civil protection teams.</li> <li>▪ Create inclusive forums or committees for consultation and decision-making.</li> <li>▪ Ensure active participation of women, youth, and marginalized groups.</li> </ul>
1-2	<b>STEP 2. Risk Communication Needs Assessment</b> <ul style="list-style-type: none"> <li>▪ Conduct community-level surveys and focus groups in urban and rural areas.</li> <li>▪ Assess language barriers, preferred communication channels (radio, SMS, community meetings).</li> <li>▪ Document local knowledge and Indigenous bioindicators used to anticipate risk.</li> </ul>

**2-6**

**STEP 2. Design of the Communication strategy**

- Elaborate the vision of the communication strategy
- Action plan for implementation
- Determine media that would be used to disseminate the strategy

**6-7**

**STEP 3. Development Pof Multilingual Communication Materials**

- Translate key risk messages (flood warnings, health alerts, evacuation routes, etc.) into local languages (e.g., Tacana, Aymara, Quechua).
- Develop visual and oral materials suitable for low-literacy populations.
- Design content using culturally relevant symbols, storytelling, and voice-based tools.

**8-9**

**STEP 4. Capacity Building and Training**

- Deliver workshops for local authorities, Indigenous leaders, women’s groups, and schoolteachers.
- Topics include disaster preparedness, risk communication, climate change adaptation, and psychosocial support.
- Use a “train-the-trainer” model for sustainability and replication.

**10**

**STEP 6. Simulation Exercises and Community Drills**

- Organize mock disaster events (e.g., flood drills) to test communication pathways and community response.
- Evaluate effectiveness of message dissemination and feedback mechanisms.
- Revise protocols based on community feedback.

**11-18**

**STEP 7. Lanch and maintenance of the communication strategy**

- Official launch event with local authorities, media, and community leaders.
- Press conference to present the strategy’s objectives, key messages, and target audiences.
- Public exhibition or fair showcasing risk reduction tools, maps, and early warning materials.
- Distribution of printed materials (flyers, posters, brochures) in public spaces and institutions.
- Live radio and social media broadcasts to raise public awareness.
- Community theater or cultural performance conveying risk preparedness messages.

- Interactive Q&A sessions with disaster risk specialists and local responders.
- School-based awareness activities and contests related to disaster preparedness.

18-

#### STEP 8. Monitoring, Evaluation, and Adaptation

- Establish indicators for reach, understanding, and community response.
- Monitor message delivery, participation rates, and disaster outcomes.
- Regularly update the communication plan based on lessons learned and new risks (e.g., pandemics or fires).

## Financing

### Indicative Cost

450.000 USD

### Potential Financing Instruments

- National Government investment
- Partnerships between local and regional governments
- External funding: From climate funds a dfn multilateral and bilateral donors, including GCF, Adaptation Fund, IADB, WB, CAF, GIZ, AECID, Fund for Cities Development, UK FCDO
- Grant-based funding from UN Agencies and International NGOs, such as UNDRR, UNCDF, and Red Cross / Red Crescent Climate Centre and Global Disaster Preparedness Center

Revenue Opportunities : No

## Risks and Mitigation Options

### Economic Risk

#### 1.- Limited Funding or Budget Cuts

Inadequate financial resources may delay or reduce the scope of implementation, especially for multilingual content and technology upgrades.

#### 2.- Human Resource Constraints

Lack of trained personnel, particularly in risk communication and translation, may affect quality and continuity.

#### Mitigation Measure

- 1.- Develop partnerships with NGOs, regional donors, and international climate funds (e.g., GCF). Advocate for integration into national disaster budgets. Explore co-financing or in-kind contributions from local organizations.

- 2.- Use a train-the-trainer model to build local capacity. Partner with universities and vocational institutions. Provide retention incentives for local communicators and coordinators.

### Technical Risk

#### 1.- System Failure or Breakdown

Early warning systems, communication platforms, or radio equipment may malfunction due to power outages, hardware failure, or climate-related disruptions (e.g., floods).

#### 2.- Limited Connectivity in Remote Areas

Many rural and Indigenous communities in Cobija lack stable internet, mobile coverage, or electricity, limiting access to real-time alerts.

#### Mitigation Measure

#### 1.- Use redundant systems (e.g., SMS + radio + in-person alerts).

Establish preventive maintenance plans. Train local technicians for rapid repair and troubleshooting.

#### 2.- Use low-tech solutions (e.g., community loudspeakers, flag signals, handheld radios).

Establish offline-capable apps or manual alert protocols. Collaborate with telecom providers to improve network access.

### Social Risk

#### 1.- Gender Inequality in Participation

Women, especially in rural areas, may be excluded from decision-making processes or training sessions.

#### 2.- Exclusion of Vulnerable Groups

Youth, elderly, persons with disabilities, and migrants may not have equal access to risk information or participation in drills.

#### Mitigation Measure

#### 1.- Organize gender-inclusive workshops.

Schedule sessions at times suitable for caregivers. Ensure female facilitators and community leaders are involved.

#### 2.- Use multiple communication channels (visual, audio, interpersonal).

Partner with schools, health posts, and social services. Design inclusive exercises and adapt spaces for accessibility.

### Environmental Risk

#### 1.- Waste Generation from Printed Materials

Excessive printing of posters, flyers, or banners may contribute to solid waste and plastic pollution, especially in remote areas with poor waste disposal.

#### 2.- Disturbance to Wildlife

Noise from alarm systems, drones, or community drills could disrupt wildlife patterns, especially in forested communities.

### Mitigation Measure

- 1.- Use durable, reusable materials (e.g., weatherproof signs).  
Favor digital or audio-based communication when possible.  
Establish local recycling or material recovery partnerships.
- 2.- Schedule activities to avoid breeding seasons or peak wildlife movement times.  
Limit use of loudspeakers or sirens near conservation zones.  
Consult with environmental specialists during planning



Pando Departmental Autonomous Government Building  
Autonomous Departmental Government of Pando

### Action 4

#### Action 4: Reforestation of River Acre and Arroyo Bahía

##### Description and rationale

###### Description:

The reforestation initiative along the River Acre and Arroyo Bahía aims to restore degraded riparian ecosystems within the municipality of Cobija, located in the Bolivian Amazon. This effort involves the strategic planting of native tree species along the riverbanks and adjacent floodplains to:

- Establish riparian buffer zones
- Stabilize soil and prevent erosion, landslides and land degradation
- Restore degraded ecosystems and fragmented biodiversity and habitat corridors
- Improve water quality and hydrological regulation
- Reduce the risk and adverse impacts of urban and rural flooding to protect low-lying and riverside communities and infrastructure
- Foster community engagement and environmental stewardship through participatory planting and conservation activities

The project is envisioned as a nature-based solution that supports climate resilience, complements urban development, and enhances ecological connectivity between rural and urban landscapes.

###### The expected impacts are:

- The planted trees effectively reduce erosion caused by river currents and rainfall.
- Soil loss into the river is minimized, leading to improved river sediment quality and reduced siltation.
- The frequency and severity of riverbank collapse and landslides are significantly decreased, protecting infrastructure and agricultural lands.
- Biodiversity is enhanced through the creation of habitats and improved ecological connectivity.
- Water quality is improved by natural filtration of pollutants and reduced runoff into the river system.
- Carbon sequestration is increased, contributing to the mitigation of climate change.

The resilience of ecosystems and riverside communities to climate-related hazards, such as floods and droughts, is strengthened.

###### Rationale:

The River Acre and Arroyo Bahía frequently overflow during the rainy season, threatening homes, infrastructure, and public health. The action will focus in upstream river related to the study areas of the MVA.

Reforesting the riverbanks will:

- Strengthen natural barriers against floodwaters
- Reduce sedimentation caused by erosion
- Help manage stormwater runoff in urban areas

This is particularly urgent given increasing rainfall variability linked to climate change.

#### ● Status

New

#### ● Action Owner

Autonomous Municipal Government of Cobija and the Community

#### ● Type

Hard (Infrastructure investment)

#### ● Location

Cobija

#### ● Vulnerabilities Addressed

- Riverbank Erosion and Land Degradation
- Increased Flood Risk
- Loss of Biodiversity and Ecosystem Services
- Water Contamination
- Climate Vulnerability
- Weakened Community Livelihoods

#### ● Related Actions

3. Erosion control of the intersection of Pizarro and Tcnl. Cornel
5. Protection of the river bank slope
6. Creation of regulations prohibiting housing in flood points
7. Land use regulatory plan for Cobija
14. Acre River Cleanup
15. Restoration of the Forest surrounding Cobija
18. Awareness, rescue and rescue of wild animals

23. Develop ecotourism businesses in Cobija

24. Enforce protections in Arroyo Bahia

#### ● Strategic Alignment

##### Forest Law No. 1700 (1996)

- This law establishes the legal foundation for sustainable forest management in Bolivia, aiming to harmonize social, economic, and ecological interests for long-term resource use. It expanded the State's authority over forest governance, introduced a Forestry Superintendent, and created a National Forest Development Fund.
- The law also recognizes and strengthens indigenous community rights in managing and exploiting forests—central to any reforestation initiative involving local populations.

##### Supreme Decree 2912 – National Afforestation and Reforestation Program (PNFR) (2016)

- This decree formally designates the National Afforestation and Reforestation Program (PNFR) as a national strategic priority as part of Bolivia's Economic and Social Development Plan.
- It includes a mandatory 2016–2030 implementation strategy, applicable across all levels of government—central and subnational—for afforestation/reforestation activities.

##### (Earlier) Supreme Decree No. 443 – Creation of the National Afforestation and Reforestation Program

- An earlier legal instrument that established the same National Program focused on biodiversity conservation, ecosystem restoration, and mitigation of climate change impacts.
- It sets the institutional framework for implementation and coordination.

##### Law No. 337 – Support for Food Production and Forest Restoration (2013)

- While primarily focused on legalizing previously unauthorized land clearances made between 1996 and 2011, this law mandates the restitution of forests in affected areas as part of its framework.
- It links food security initiatives with ecological restoration efforts.

##### Political Constitution of the State (2009)

- Article 388 grants indigenous and campesino communities exclusive rights to manage forests in their territories, as long as they comply with the law.
- Articles 390–391 recognize the Bolivian Amazonia—including regions like Cobija—as a strategic area, demanding special protection and sustainable development.

##### Law No. 4 – Rights of Mother Earth (Law 071, 2010) & Law 300 (2012)

- Law 071 grants legal personhood to Mother Earth, asserting inherent rights such as regeneration, biodiversity, and ecosystem balance.
- Law 300 builds on this with a broader institutional structure—establishing the Plurinational Mother Earth Authority (APMT)—and empowers climate- and environment-related actions aligned with the “Living Well” (Vivir Bien) philosophy.

##### Climate Change Law – Law No. 144 (2016)

- This framework law mandates the integration of climate change adaptation and mitigation strategies into national planning, including reforestation and sustainable agriculture as key components of climate **action**.

### National Planning Instruments & Strategies

- Comprehensive State Planning System (Law No. 777) (2016): Embeds climate change and environmental considerations into national and subnational development plans.
- Patriotic Agenda 2025 (2016): Includes environmental and reforestation goals such as combating resource depletion and strengthening climate resilience.
- Plurinational Climate Change Policy (2016, updated 2023): Prioritizes sustainable forest management as part of adaptation and resilience planning.

### Alignment with 2 of the strategic objectives of Cobija:

- Social transformation
- Territorial Governance with resilience to climate change hazards

### Co-benefits



#### Environmental

**Biodiversity Restoration and Habitat Creation:** By planting native tree species along the riverbanks, this reforestation initiative helps restore critical wildlife habitats that have been lost due to deforestation, pollution, and urban encroachment.

**Soil Stabilization and Erosion Control:** Reforestation stabilizes the riverbanks and floodplain soils through the deep roots of native trees.

**Water Quality Improvement:** Forested riparian zones act as natural buffers, filtering out pollutants and controlling the runoff of sediment, chemicals, and nutrients from urban and agricultural areas.

**Climate Change Mitigation and Carbon Sequestration:** Trees play an important role in absorbing and storing carbon dioxide (CO<sub>2</sub>), a key greenhouse gas responsible for climate change.

**Reduced Vulnerability to Natural Hazards:** The reforestation of riverbanks reduces vulnerability to extreme weather events such as floods and landslides.

**Increased Resilience of Ecosystems:** Restoring forest ecosystems along the riverbanks helps build ecological resilience by ensuring the survival of a variety of species and maintaining ecological functions.



#### Social

**Community Engagement and Empowerment:** Reforestation creates opportunities for local communities, including Indigenous groups, to actively participate in the project.

**Improved Public Health and Well-being:** The reforestation project improves the local environment, which in turn benefits public health.

**Educational Opportunities and Capacity Building:** The reforestation project can serve as an educational tool for schools, universities, and local environmental groups.



#### Economic

**Promoting Gender Equality and Inclusion:** Reforestation initiatives that engage women and marginalized groups can help promote gender equality and social inclusion.

#### Green Job Creation:

- Tree planting and nursery operations
- Forest maintenance and monitoring
- Environmental education and awareness programs
- These jobs are particularly inclusive, benefiting youth, women, and Indigenous communities.

**Sustainable Agriculture and Agroforestry:** Reforestation can be combined with agroforestry, enabling the cultivation of food crops, medicinal plants, nuts, fruits, and timber species. Local farmers benefit from improved soil fertility and water retention, enhancing productivity and resilience.

**Reduced Costs of Flood and Erosion Damage:** By stabilizing riverbanks and regulating water flow, reforested areas reduce the frequency and severity of flooding. This leads to fewer damages to roads, bridges, homes, and agricultural lands.

**Eco-Tourism Development:** Reforested areas with rich biodiversity and restored landscapes attract eco-tourists and researchers. Opportunities arise for guided tours, birdwatching, handicrafts, cultural events, and hospitality services.

### Implementation Steps

Month	Step
1	<b>STEP 1. Environmental Assessment and Baseline Study</b> <ul style="list-style-type: none"> <li>▪ Identify degraded riparian zones and areas vulnerable to erosion or flooding.</li> <li>▪ Assess soil health, water quality, and existing vegetation.</li> <li>▪ Map land use and potential ecological corridors.</li> <li>▪ Involve local stakeholders and communities in identifying priorities.</li> </ul>
1-2	<b>STEP 2. Project Design and Planning</b> <ul style="list-style-type: none"> <li>▪ Select appropriate native tree and plant species adapted to the Amazonian floodplain ecosystem.</li> <li>▪ Define reforestation zones (buffer strips, flood zones, urban green belts).</li> <li>▪ Establish reforestation targets, planting density, and land tenure clarity.</li> <li>▪ Plan for agroforestry areas or multipurpose zones if applicable.</li> </ul>

2-3	<p><b>STEP 3. Site Preparation</b></p> <ul style="list-style-type: none"> <li>Remove invasive species or debris from riverbanks.</li> <li>Stabilize eroded banks using bioengineering techniques where needed.</li> <li>Prepare the soil by digging holes or using minimal tillage practices.</li> <li>Install irrigation or water retention systems if required.</li> </ul>
4	<p><b>STEP 4. Procurement of Seedlings</b></p> <ul style="list-style-type: none"> <li>Produce or acquire high-quality native seedlings from local nurseries.</li> <li>Include species with ecological, cultural, and economic value (e.g., hardwoods, fruit trees, medicinal plants).</li> <li>Prioritize plants grown with local knowledge and traditional techniques.</li> </ul>
5-6	<p><b>STEP 5. Launch Tree Planting Activities</b></p> <ul style="list-style-type: none"> <li>Coordinate community planting events (e.g., “Green Days” or school campaigns).</li> <li>Use mixed planting patterns to enhance ecosystem function and biodiversity.</li> <li>Tag or georeference plantings for future monitoring.</li> <li>Ensure equitable participation from women, youth, and Indigenous groups.</li> </ul>
7-10	<p><b>STEP 6. Maintenance and Monitoring</b></p> <ul style="list-style-type: none"> <li>Regularly water, weed, and mulch young plants (especially in dry periods).</li> <li>Replace dead or unhealthy seedlings (replanting).</li> <li>Monitor growth rates, survival, and ecosystem recovery indicators (e.g., fauna return, canopy closure).</li> </ul>
10-11	<p><b>STEP 7. Community Engagement and Capacity Building</b></p> <ul style="list-style-type: none"> <li>Conduct workshops on ecosystem services, sustainable land use, and climate change.</li> <li>Train residents in key areas.</li> </ul>
10-11	<p><b>STEP 8. Impact Evaluation and Reporting</b></p> <p>Measure environmental, social, and economic impacts:</p> <ul style="list-style-type: none"> <li>Biodiversity recovery</li> <li>Carbon sequestration</li> </ul>

	<ul style="list-style-type: none"> <li>Flood risk reduction</li> <li>Income generation from forest-based activities</li> </ul> <p>Publish progress reports and share results with government, donors, and communities.</p>
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## Financing

### Indicative Cost

USD 550.000

### Potential Financing Instruments

- 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

Revenue Opportunities : N/A

## Risks and Mitigation Options

### Economic Risk

#### 1.- High Maintenance Costs

Reforestation requires long-term investment in watering, monitoring, replacing dead trees, and maintaining community engagement.

#### 2.- Lack of Economic Incentives for Local Participation

If local communities see no direct economic benefit, they may not participate or may revert to unsustainable land uses (e.g. logging or agriculture in riparian zones).

#### Mitigation Measure

1.- Use cost-effective, low-maintenance native species.  
Train community brigades to maintain forests using low-tech methods.  
Promote volunteer programs and integrate schools or NGOs to reduce labor costs.

2.- Integrate agroforestry or silvopastoral systems that generate food, medicinal plants, or timber.  
Promote green jobs and eco-enterprises (nurseries, ecotourism, handicrafts).  
Offer payments for ecosystem services (PES) or access to microcredit for participants.

### Technical Risk

#### 1.- Inadequate Site Selection

Poorly chosen planting areas (e.g., highly flood-prone or erosion-prone zones) can result in low tree survival and wasted resources.

## 2.- Poor Seedling Quality or Species Mismatch

Using unhealthy seedlings or inappropriate species for local conditions leads to low survival rates and slow ecosystem recovery.

### Mitigation Measure

1.- Conduct detailed site assessments (soil, hydrology, slope, vegetation).  
Use GIS mapping and flood risk models to identify priority zones.  
Engage local ecological experts and communities in site selection.

2.- Source seedlings from certified local nurseries that use native and climate-resilient species.  
Conduct quality control inspections before planting.  
Tailor species selection to soil type, moisture level, and exposure.

## • Social Risk

### 1.- Limited Environmental Awareness or Education

Communities may lack knowledge about the importance of riparian reforestation or its long-term benefits.

### 2.- Land Tenure Conflicts or Unclear Ownership

Reforestation may occur on land with disputed ownership or overlapping claims, leading to legal or social tension.

### Mitigation Measure

1.- Conduct environmental education campaigns in schools and public spaces.  
Organize community tree-planting days, fairs, and training sessions.  
Use local media and culturally appropriate materials in Spanish and Indigenous languages.

2.- Conduct land tenure assessments before implementation.  
Engage traditional authorities, Indigenous leaders, and landowners in decision-making.  
Seek legal recognition or co-management agreements where possible.

## • Environmental Risk

### 1.- Introduction of Invasive or Non-native Species

Use of fast-growing or exotic species may outcompete native vegetation, disrupt local ecosystems, or alter soil and water conditions.

### 2.- Water Stress or Altered Hydrological Cycles

Poor species selection or high planting density may lead to excessive water use, affecting water availability downstream.

### Mitigation Measure

1.- Prioritize native and locally adapted species.  
Conduct an ecological impact assessment before planting.  
Involve local botanists and ecologists in species selection.

2.- Select drought- and flood-tolerant native species suited to local hydrology.  
Avoid species with high evapotranspiration rates.  
Design planting to enhance water retention and infiltration (e.g., swales, vegetated buffers)-



Cobija Cathedral  
Autonomous Departmental Government of Pando

## Action 5

### Action 5: Land Use Regulatory Plan for Cobija

#### Description and rationale

##### Description:

The Land Use Regulatory Plan for Cobija is a strategic and legal framework that would guide the allocation, development, conservation, and management of land resources within the municipality. It aims to regulate urban growth, protect ecologically sensitive areas (like the River Acre and Arroyo Bahía), mitigate environmental risks – particularly flooding and landslides – and promote inclusive and sustainable development. By incorporating climate change projections and risk assessments, the plan seeks to enhance the municipality's resilience to future environmental challenges. The current land use regulatory plan is not up to date and has the lack of including risk planning as a key input for urban planning and land use in the city.

This plan defines zoning categories, land-use permissions, and spatial development strategies to harmonize human activities with ecological capacity and socio-economic needs. It integrates environmental planning, climate adaptation, urban design, and infrastructure coordination to ensure orderly and resilient territorial development. Additionally, the plan encourages the preservation of green spaces and riparian buffers to safeguard biodiversity and maintain ecosystem services critical for flood regulation and water quality. Through these measures, the Land Use Regulatory Plan supports Cobija's vision of balanced growth that fosters economic opportunity while protecting natural assets and vulnerable populations.

##### Rationale:

Cobija, as the capital of the Pando Department and a key urban center in Bolivia, has several challenges:

- Lack of coordinated infrastructure development
- Social inequality and inadequate access to services
- Climate change vulnerabilities (e.g., extreme rain and heat)

To address these issues holistically, a Land Use Regulatory Plan offers the following benefits:

- Urban and Environmental Risk Management
- Sustainable Urban Growth
- Legal Certainty and Conflict Reduction
- Economic Development and Investment Planning
- Climate Change Adaptation and Resilience
- Social Inclusion and Housing Access
- Alignment with National and Regional Policies

This action refers to the development of this plan and associated implementation arrangements.

#### Status

Planned

#### Action Owner

Autonomous Municipal Government of Cobija.

#### Type

- Soft (Policy/Organisational/ Behavioural)
- Plan / Strategy

#### Location

Cobija

#### Vulnerabilities Addressed

- Unplanned Urban Expansion
- Flood and Climate Risk Exposure
- Environmental Degradation
- Infrastructure Inefficiency and Overload
- Social and Economic Inequality
- Limited Disaster Risk Reduction Integration

#### Related Actions

6. Creation of regulations prohibiting housing in flood points
15. Restoration of the Forest surrounding Cobija
19. Roll-out a grant programme to upgrade old housing and enhance resilience
22. Launch capacity development programme on climate risk for departments
23. Develop ecotourism businesses in Cobija
24. Enforce protections in Arroyo Bahia

#### Strategic Alignment

##### Constitutional Mandate for Municipal Land Use Planning

- Article 302(6) of the 2009 Political Constitution of the State explicitly grants municipal governments the authority to “elaborate Plans of Territorial Ordering and Land Use”, in coordination with national, departmental, and Indigenous-level planning frameworks.
- This empowers Cobija's municipal government to lead the development of its own land use regulatory plan, consistent with higher-level coordination.

##### Law No. 777 – Comprehensive State Planning System (SPIE)

- Law 777 (2016) establishes the SPIE, which institutionalizes integrated planning across Bolivia, grounded in the philosophy of Vivir Bien (Living Well).

- SPIE mandates that planning tools—such as the National Land Use Plan and Territorial Development Plans—must incorporate land use planning, alongside risk management, climate change, and life systems management.
- Cobija's Land Use Regulatory Plan would thus be an essential component within SPIE's multi-scale planning structure.

#### Supreme Decree No. 26732 (2002) – Technical and Institutional Framework

- This decree establishes Offices of Technical Land Use Planning (OT PLUS) at the departmental level and mandates coordination between departmental and municipal governments in the development of land use plans.
- Municipalities must develop their own land use plans guided by departmental frameworks and appropriately coordinate through these technical offices.

#### Supreme Decree No. 24368 (1996) – Pando Department Example

- This decree officially approved the Land Use Plan for Pando Department (PLUS Pando), which served as a reference for local-level planning.
- It sets a precedent for Cobija to align its municipal land use planning within the zoning and ecological categories defined at the departmental level.

#### Municipal Plan For de Territorial Planning (PMOT)

- The PMOT is a legally mandated, normative, technical, and political instrument for municipal territorial planning, with a typical validity of 10 years.
- It contains two core components:
  1. Land Use Plan—defining land-use categories, rules of intervention and use, and management recommendations to ensure sustainable resource utilization.
  2. Territory Occupation Plan—focusing on structuring the territory, optimizing infrastructure, services distribution, and settlement hierarchies.

#### Law No. 482 – Municipal Autonomy and Planning Responsibilities

- Law 482 (2014) outlines the competencies of municipal governments, including the authority to propose municipal development and territorial planning instruments—such as municipal land use plans—for approval by municipal councils.
- It reinforces local autonomy to design and regulate land use within the municipality, subject to proper legal procedures.

#### Alignment with 2 of the strategic objectives of Cobija:

- Territorial Governance with resilience to climate change hazards
- Urban and Cultural transformation

#### Co-benefits



#### Environmental

**Protection and Restoration of Riparian Ecosystems:** Improves water quality, reduces erosion, and enhances biodiversity along riverbanks.

**Improved Flood Management through Green Infrastructure:** Decreases the frequency and severity of urban flooding caused by heavy rainfall.

**Urban Greening and Carbon Sequestration:** Reduces urban heat island effect and contributes to climate mitigation efforts.

**Air Quality and Climate Regulation:** Improves public health and supports a low-emission urban model.

**Biodiversity Conservation and Habitat Connectivity:** Protects Amazonian flora and fauna, enabling species movement and ecosystem services.

**Forest Fire Risk Reduction:** Lowers the risk of uncontrolled fires in urban-rural interfaces and nearby forests.

**Water Resource Protection:** Ensures long-term water availability and ecosystem health.



#### Social

**Improved Access to Basic Services:** Better living conditions for residents, especially in marginalized neighborhoods.

**Inclusion of Vulnerable and Marginalized Groups:** Reduces social inequality and promotes more just access to land and opportunities.

**Safer and Healthier Living Environments:** Improves public health, lowers disease incidence, and enhances physical and mental well-being.

**Strengthened Community Identity and Cultural Preservation:** Preserves cultural diversity and strengthens local identities and social cohesion.

**Equitable Mobility and Public Space:** Enhances mobility for people of all ages and abilities, especially children, seniors, and people with disabilities.

**Social and Economic Stability through Legal Land Tenure:** Legal certainty improves housing security and supports household economic development.

**Environmental Education and Civic Engagement:** Builds a culture of environmental awareness and active citizenship, particularly among youth.



#### Economic

**Enhanced Investment Climate and Economic Certainty:** Attracts both public and private investment in housing, infrastructure, commerce, and industry.

**Strategic Allocation of Productive Land:** Boosts local employment and productivity through targeted land-based economic activities.

**Strengthened Urban-Rural Economic Linkages:** Increases food security and generates rural income while supporting ecological resilience.

- Increased Property Values and Tax Revenue:** Generates additional public revenue for reinvestment in public services and infrastructure.
- Reduced Costs of Urban Infrastructure and Services:** Increases efficiency of public spending and improves service delivery coverage.
- Improved Connectivity and Transport Efficiency:** Strengthens economic integration and competitiveness across Cobija and surrounding areas.
- Disaster Risk Reduction = Economic Loss Prevention:** Protects infrastructure and livelihoods, saving money on emergency response and recovery.

### Implementation Steps

Month	Step
1-5	<b>STEP 1. Institutional and Legal Preparation</b> <ul style="list-style-type: none"> <li>Identify the leading institution (e.g., Municipality of Cobija’s Urban Planning Department).</li> <li>Review Bolivia’s national legal frameworks (e.g., Ley de Autonomías, Ley 777 del Sistema de Planificación Integral del Estado – SPIE, and municipal laws).</li> <li>Secure political commitment and assign a multidisciplinary planning team.</li> </ul>
6-7	<b>STEP 2. Stakeholder Mapping and Community Engagement Strategy</b> <ul style="list-style-type: none"> <li>Identify key stakeholders: Indigenous groups, neighborhood associations, landowners, business sectors, environmental NGOs, universities, and government entities.</li> <li>Develop a participatory plan with consultation methods (e.g., workshops, public hearings, community mapping).</li> <li>Ensure inclusion of women, youth, and vulnerable populations.</li> </ul>
8-10	<b>STEP 3. Diagnostic and Territorial Analysis</b> <ul style="list-style-type: none"> <li>Conduct a comprehensive assessment of Cobija’s current land use, infrastructure, services, ecological systems, housing patterns, and risks (e.g., flooding, deforestation).</li> <li>Use GIS and remote sensing to map land cover, zoning conflicts, urban expansion, and ecological corridors.</li> <li>Collect socio-economic and demographic data.</li> </ul>
11-12	<b>STEP 4. Vision and Strategic Objectives</b> <ul style="list-style-type: none"> <li>Facilitate participatory visioning sessions with stakeholders.</li> <li>Define strategic land use goals (e.g., urban containment, risk reduction, ecological protection, economic development).</li> </ul>

- Align with national development strategies (PDES), regional climate goals, and SDGs.

13-14

### STEP 5. Zoning and Regulatory Design

- Propose zoning categories (e.g., residential, mixed-use, agroforestry, industrial, conservation).
- Define permitted and restricted uses in each zone.
- Establish risk and buffer zones (e.g., around rivers, wetlands, and floodplains).
- Integrate legal land tenure, urban growth boundaries, and environmental easements.

15-18

### STEP 6. Drafting the Land Use Regulatory Plan

- Compile spatial strategies, zoning proposals, legal frameworks, and participatory findings into a formal document.
- Include implementation mechanisms, conflict resolution pathways, and institutional responsibilities.
- Prepare a financial and operational plan (costs, timelines, partnerships).

19-20

### STEP 7. Public Consultation and Revision

- Share the draft plan with communities, institutions, and sectors.
- Collect feedback through workshops, forums, and online platforms.
- Revise the plan based on inputs and ensure compliance with Indigenous consultation standards.

21-24

### STEP 8. Municipal Approval and Legal Adoption

- Submit the final plan to the Municipal Council (Concejo Municipal) for approval via ordinance or resolution.
- Publish the plan in the municipal gazette (Gaceta Municipal).
- Register it with relevant national planning authorities and institutions (e.g., FPS, INRA if applicable).

25-26

### STEP 9. Implementation and Capacity Building

- Establish a technical unit or interdepartmental committee for plan enforcement.
- Train municipal staff and local organizations on monitoring, zoning enforcement, and citizen support.
- Secure funding and partnerships for implementation phases.

**STEP 10. Monitoring, Evaluation, and Updates**

- Develop indicators to track land use compliance, environmental impact, and socio-economic changes.
- Conduct periodic reviews (e.g., every 5 years) and make adaptive revisions as needed.

**Financing****Indicative Cost**

USD 215.000

**Potential Financing Instruments**

- National Government investment
- Partnerships between local and regional governments
- External funding: IADB, WB, CAF, AECID, GIZ, FCDO, AFD

**Revenue Opportunities : N/A****Risks and Mitigation Options****Economic Risk****1.- Insufficient budget or delayed funding**

Risk of plan development being stalled or under-resourced.

**2.- Land value speculation or elite capture**

Zoning changes could benefit elites and trigger land speculation.

**Mitigation Measure**

1.- • Secure multi-source funding (municipal, national, donors)

Phase the planning process.

Use cost-effective tools and leverage partnerships.

2.- Establish transparent zoning and land reclassification processes.

Monitor land markets and regulate land subdivision.

Promote equitable land distribution and public land use.

**Technical Risk****1.- Inadequate technical capacity**

Limited access to trained professionals, GIS tools, or planning methodologies.

**2.- Poor data availability or quality**

Incomplete or outdated land use, demographic, or ecological data.

**Mitigation Measure}**

1.- Partner with universities, NGOs, and national institutions (e.g. UDAPE, FAM Bolivia).  
Provide targeted training for municipal staff.  
Use open-source mapping and planning tools.

2.- Use satellite imagery and participatory mapping.  
Update cadastral records.  
Involve local communities in data validation.

**Social Risk****1.- Resistance from informal settlers or affected communities**

People living in high-risk or unregulated areas may fear displacement.

**2.- Exclusion of vulnerable groups**

Women, Indigenous peoples, youth, and persons with disabilities may be left out of decision-making.

**Mitigation Measure**

1.- Ensure early, meaningful community engagement.  
Offer relocation support or in-situ upgrading options.  
Prioritize regularization and tenure security in the plan.

2.- Implement a gender and social inclusion strategy.  
Use culturally appropriate and multilingual communication.  
Hold separate focus groups for marginalized groups.

**Environmental Risk****1.- Ignoring environmental sensitivity or climate risks**

Risk of zoning areas that are prone to floods or critical for biodiversity.

**2.- Non-alignment with environmental laws or national plans**

Conflicts with national protected areas, water laws, or climate targets.

**Mitigation Measure**

1.- Conduct Environmental and Climate Risk Assessments.  
Integrate reforestation, conservation, and buffer zones in the plan.  
Align with Cobija's disaster risk management and climate adaptation strategies.

2.- Cross-check plan components with national policies (e.g., PNCC, PGTI guidelines).  
Involve Ministry of Environment and relevant national agencies.



Junín neighborhood  
Autonomous Municipal Government of Cobija

## Action 6

### Action 6: Construction of retaining wall in Puerto Alto and other near neighborhoods

#### Description and rationale

The construction of a retaining wall in Puerto Alto and surrounding neighborhoods constitutes a critical infrastructure intervention designed to mitigate soil erosion, regulate water flow, and safeguard vital infrastructure including housing, roads, drainage systems, water supply networks, and public facilities.

Given the area's vulnerability, characterized by steep terrain, proximity to riverbanks, and susceptibility to flooding and landslides, this engineering measure is essential to enhance community safety and resilience against climate-induced hazards.

#### The project benefits are:

- **Flood Mitigation:** The retaining wall will effectively manage rising river levels and stormwater runoff, reducing the risk of flooding to critical infrastructure and residential areas in flood-prone zones such as Puerto Alto.
- **Landslide Risk Reduction:** By stabilizing slopes and anchoring vulnerable soil layers, the structure will diminish the likelihood of landslides triggered by intense rainfall events, protecting both lives and property.
- **Urban Safeguarding:** The wall serves as a vital protective barrier for urban settlements situated near riverbanks and hillsides, preventing erosion-related damage and enhancing the safety of local communities.
- **Climate Resilience:** This intervention supports the municipality's broader climate adaptation goals by increasing the resilience of vulnerable neighborhoods to extreme weather events and environmental degradation.
- **Improved Ecosystem Stability:** By controlling erosion and stabilizing riverbanks, the retaining wall helps preserve riparian vegetation and aquatic habitats, contributing to overall ecosystem health.
- **Enhanced Infrastructure Longevity:** Protecting roads, bridges, and utilities from flood and erosion damage reduces maintenance costs and extends the lifespan of municipal infrastructure.

Ultimately, the project aims to secure the safety, well-being and livelihoods of residents in Puerto Alto and nearby areas by reducing disaster risks and contributing to sustainable urban resilience.

#### Status

Planned

#### Action Owner

Autonomous Municipal Government of Cobija and the Community

#### Type

Capital Investment

● **Location**

Pto Alto, Mapajo, Junín, Villamontes

● **Vulnerabilities Addressed**

- Flooding and seasonal isolation
- Landslides and soil erosion
- Exposure of critical infrastructure and marginalized communities to climate hazards
- Increased risk of displacement and livelihood loss for low-income, peri-urban, and informal settlement residents
- Erosion of social cohesion and community networks due to physical disconnection between neighborhoods
- Limited adaptive capacity of local governments to manage urban growth and climate risks simultaneously

● **Related Actions**

1. Construction of Dams in Mapajo and Junin.
5. Protection of the river bank slope.
6. Creation of regulations prohibiting housing in flood points.

● **Strategic Alignment**

**Municipal Public Works Authority & Planning**

**As outlined in the Constitution (Art. 301–302):**

- Municipal governments in Bolivia are responsible for providing infrastructure and public works—including urban sanitation, drainage, roads, and land-use regulations—within their jurisdiction.
- Article 302(1)(2) specifically empowers municipal autonomy in planning and promoting human development in their territories, which includes infrastructure projects like retaining walls.

**Law No. 482 – Law of Municipal Autonomous Governments (2014)**

- This law reinforces municipal authority by enabling local governments to design, propose, and execute public infrastructure projects—including approvals via the municipal council.
- It allows municipalities to manage physical development projects, such as retaining walls, especially within the public domain of the municipality.

**Law No. 777 – Comprehensive State Planning System (SPIE, 2016)**

- Introduces an integrated planning structure (SPIE), mandating coherence between local development initiatives and national planning policies.
- When constructing a retaining wall, alignment with SPIE enhances institutional legitimacy and strengthens prospects for technical or financial support.

**Environmental Safeguards: Law 1333 (Environment Law, 1992)**

- This law sets standards to prevent environmental degradation and ensures environmental considerations are embedded in infrastructure.
- For construction adjacent to rivers such as Puerto Alto, compliance with environmental impact assessments and pollution control measures is mandatory.

**Law 300 – Framework Law of Mother Earth (2012) & Law 071 (2010)**

- These laws formalize Bolivia’s environmental-ethical framework—recognizing the rights of ecosystems and promoting development “for Living Well” (Vivir Bien).
- Infrastructure along riverbanks must respect ecological balance, the integrity of water systems, and sustainable land use. A retaining wall should align with the principles of environmental restoration and harmonious development.

**Alignment with all 5 strategic objectives of Cobija:**

- 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**

 <p><b>Environmental</b></p>	<ul style="list-style-type: none"> <li>▪ Reduction of flood risks.</li> <li>▪ Improvement of neighbourhoods’ security towards climate change menaces.</li> <li>▪ Reduction in the frequency and severity of floods.</li> <li>▪ Protection of aquatic ecosystems and biodiversity.</li> <li>▪ Land use planning and recovery of public space.</li> </ul>
 <p><b>Social</b></p>	<ul style="list-style-type: none"> <li>▪ Land use planning and recovery of public space.</li> <li>▪ Reduction of risks to the life and safety of residents.</li> <li>▪ Improvement in public health conditions.</li> <li>▪ Protection of community assets and urban infrastructure.</li> <li>▪ Improvement in quality of life.</li> </ul>
 <p><b>Economic</b></p>	<ul style="list-style-type: none"> <li>▪ Strengthening of the local economy.</li> <li>▪ Job creation and capacity building.</li> <li>▪ Reduction of economic losses due to flooding.</li> <li>▪ Protection and strengthening of local commerce.</li> <li>▪ Decrease in maintenance and repair costs.</li> <li>▪ Attraction of investment and sustainable urban development.</li> </ul>

## Implementation Steps

Month	Step
1-6	<p><b>STEP 1: Project Planning and Design</b></p> <p><b>Site Analysis:</b> A thorough survey of the landscape is conducted, including soil testing, topographic mapping, and hydrological studies.</p> <p><b>Design Phase:</b> Structural engineers would design the retaining wall based on the site's specific needs—whether it's to hold back earth, manage floodwaters, or protect roads and infrastructure.</p> <ul style="list-style-type: none"> <li>The materials used for the wall (e.g., concrete, stone, timber, gabion baskets) would depend on factors like soil type, height of the wall, and local environmental considerations.</li> <li>Design considerations include drainage systems, reinforcement, and safety factors to ensure stability.</li> </ul>
6-7	<p><b>STEP 2: Permitting and Approvals</b></p> <ul style="list-style-type: none"> <li><b>Government Approvals:</b> The local municipality or government would need to approve the design, particularly if the project affects public infrastructure, such as roads or utilities.</li> <li><b>Environmental Impact Assessment (EIA):</b> This could be required to assess the potential environmental impact, including effects on water flow, local ecosystems, and nearby communities.</li> </ul>
8	<p><b>STEP 3: Site Preparation</b></p> <ul style="list-style-type: none"> <li><b>Clearing and Excavation:</b> The area where the wall will be constructed is cleared of vegetation and other obstacles. Excavation might be needed to level the foundation for the retaining wall.</li> <li><b>Drainage Planning:</b> Effective drainage systems need to be incorporated to reduce the pressure on the wall, often using weep holes, drains, or perforated pipes.</li> </ul>
9-20	<p><b>STEP 4: Construction Phase</b></p> <ul style="list-style-type: none"> <li><b>Foundation Work:</b> A solid foundation is key to the wall's stability. Engineers would typically dig down to a stable layer of soil or rock to lay the foundation for the retaining wall.</li> <li><b>Wall Construction:</b> Depending on the design, materials like stone, concrete blocks, or steel reinforcements are used to build the wall, layer by layer. Each layer is carefully leveled to ensure the wall is structurally sound.</li> <li><b>Reinforcement:</b> Retaining walls often require additional reinforcement with steel bars or mesh, especially for taller structures or those subjected to high loads.</li> </ul>

21-22

### STEP 5: Post-Construction

- Backfilling and Landscaping:** After the wall is built, the space behind it is typically backfilled with soil, and landscaping or vegetation may be added to stabilize the soil further and improve aesthetics.
- Final Inspections:** The project undergoes inspection to ensure compliance with safety standards, structural integrity, and proper drainage functionality.

23-

### STEP 6: Maintenance

- Regular maintenance of the retaining wall is necessary to ensure its continued effectiveness. This involves checking for cracks, erosion, or drainage issues, and repairing any damage to maintain the wall's strength and stability over time.

## Financing

### Indicative Cost

USD 2.500.000

### Potential Financing Instruments

- National Government investment
- Partnerships between local and regional governments
- External funding: GCF, Adaptation, GEF, IADB, WB, CAF, AECID, FCDO, IKI
- Public-Private Partnerships (PPP): Collaborations between government and private sector investors could help mobilize additional resources or technical expertise

### Revenue Opportunities : Social impact

## Risks and Mitigation Options

### Economic Risk

Risk of Delays Impacting Project Timeline. Delays during construction (due to weather, supply chain disruptions, or technical challenges) could push back the project's completion date, leading to increased labor costs, equipment rental, and possible penalties or lost opportunities.

#### Mitigation Measure

**Realistic scheduling:** Develop a detailed project timeline with buffer periods for potential delays, accounting for possible weather disruptions and other external factors.

**Efficient project management:** Ensure strong project management and coordination to minimize delays. Use project management software to track progress and anticipate issues.

**Procurement planning:** Plan for timely procurement of materials and services to avoid supply chain issues that may cause delays.

### ● Technical Risk

Risk of Structural Failure. The retaining wall may fail if the design or construction is not adequate to withstand environmental factors such as soil pressure, water flow, or seismic activity. Structural failure can lead to property damage, injury, or even loss of life.

#### Mitigation Measure

**Engineering design review:** Engage qualified structural engineers to conduct a thorough review of the design, ensuring that it accounts for factors like soil type, water flow, seismic conditions, and long-term environmental changes.

**Use of high-quality materials:** Ensure that materials used in the construction, such as concrete, steel, and reinforcing materials, meet industry standards for strength and durability.

**Regular quality control:** Implement rigorous quality control and inspection processes during construction to ensure adherence to design specifications and standards.

**Safety margins:** Include adequate safety margins in the design to account for unforeseen events or future environmental changes that could put stress on the retaining wall.

### ● Social Risk

Risk of Displacement or Loss of Livelihood. If the retaining wall is being constructed along residential areas or close to commercial spaces, there is a risk that some residents or businesses could be displaced, either temporarily or permanently. The construction could also disrupt livelihoods, particularly in areas where people rely on agriculture or local businesses along the riverbanks or slopes.

#### Mitigation Measure

**Stakeholder engagement:** Conduct consultations with the affected community members before and during the project. Provide clear information about potential disruptions and the planned measures to mitigate them.

**Alternative relocation plans:** If displacement is unavoidable, offer fair compensation and provide relocation assistance, including identifying suitable alternative housing or business locations.

**Support for affected businesses:** Provide support to local businesses in terms of temporary relocation or compensation for lost income during construction. This support could include financial assistance or temporary operational space.

**Job creation:** Where possible, prioritize local hiring for the construction project, providing job opportunities to community members and reducing the negative impact on their livelihoods.

### ● Environmental Risk

Risk of Habitat Disruption and Loss of Biodiversity. The construction of a retaining wall could lead to the destruction or disruption of local habitats, especially in areas where sensitive or endemic species live. This could affect the flora and fauna along the slopes or riverbanks and potentially reduce biodiversity in the region.

#### Mitigation Measure

**Environmental Impact Assessment (EIA):** Conduct a detailed EIA to identify sensitive habitats, protected species, or ecological corridors in the project area before construction begins.

**Minimize construction footprint:** Limit the area of disturbance to only what is necessary for the retaining wall's construction and avoid disturbing critical habitats.

**Wildlife corridors:** Incorporate wildlife corridors or buffer zones to allow species to move freely and prevent habitat fragmentation.

**Restoration of disturbed areas:** After construction, implement habitat restoration activities, such as planting native vegetation to restore disrupted ecosystems.



Junin neighborhood  
Autonomous Municipal Government of Cobija

## Action 7

### Action 7: Development of Ecotourism Businesses Strategy, Action Plan and Pilots

#### Description:

This action promotes the establishment and support of sustainable ecotourism businesses in and around Cobija city, focusing on the conservation of natural ecosystems, empowerment and livelihood enhancement of local communities, and the diversification of the urban economy.

This project promotes the establishment and support of sustainable ecotourism businesses in and around Cobija city, focusing on the conservation of natural ecosystems, empowerment and livelihood enhancement of local communities, and the diversification of the urban economy. Leveraging Cobija's rich cultural heritage, unique Amazonian landscapes, and strategic location on the Brazil–Bolivia border, the project builds on an enabling environment of engaged institutions, dynamic local enterprises, and community-driven initiatives. It offers a unique opportunity to generate inclusive economic growth, strengthen livelihoods, and safeguard the region's critical biodiversity and ecosystems for future generations

A dedicated strategy and tailored action plan will be developed by the Municipality, development actors, and local civil society to guide and prioritize ecotourism initiatives, ensuring they align with local needs, institutional capacities, conservation objectives, and sustainable growth opportunities. Ecotourism activities may include guided nature tours, cultural heritage experiences, community-based lodges, wildlife observation, and river ecotours. These businesses will be developed in harmony with environmental conservation goals and climate adaptation strategies, including Cobija' Urban Resilience Action Plan and Bolivia's Mother Earth framework, and integrated into urban planning to ensure accessibility, equity and sustainability.

#### Rationale:

At the Urban Dimension:

- Diversifies Cobija's urban economy beyond extractive industries, skilling, reskilling and upskilling local communities and the workforce, promoting green jobs and sustainable livelihoods.
- Encourages investment in eco-friendly infrastructure (e.g., green transport, nature trails, local markets, green-blue infrastructure and zoning), improving urban resilience, quality of life, and health and wellbeing of residents and ecosystems.
- Reduces pressure on urban services – such as social protection – by promoting and advancing decentralized economic activity in peri-urban and rural areas linked to ecotourism.

At the Biodiversity Dimension:

- Incentivizes conservation of surrounding forests, rivers, and ecosystems by creating economic value from biodiversity.
- Provides funding and awareness for protected areas and community-managed conservation zones.
- Reduces deforestation and land degradation by offering alternative income sources to unsustainable logging or agricultural practices.
- Strengthens and leverages the vital resilience-building ecosystem services provided by local biodiversity.

At the Climate Change Dimension:

- Supports climate adaptation by preserving natural buffers (e.g., forests, wetlands) that mitigate flood, landslide, erosion, air pollution and extreme heat risks.
- Builds community resilience through diversified, low-carbon livelihoods and employment.
- Enhances environmental education, awareness and stewardship about adverse and increasing climate change impacts and solutions among both locals and visitors.

#### Status

New

#### Action Owner

Private sector of Cobija, GAMC, Community

#### Type

Other Investment

#### Location

All districts of the city

#### Vulnerabilities Addressed

- Economic Dependence on Climate-Sensitive Sectors
- Deforestation and Land Degradation
- Loss of Ecosystem Services
- Poverty and Limited Livelihood Options
- Urban Pressure and Informal Expansion
- Loss of Cultural and Traditional Knowledge
- Low Community Awareness and Adaptive Capacity
- Limited Access to Climate-Resilient Infrastructure

#### Related Actions

1. Solid waste management awareness campaigns
4. Reforestation of Acre river and Arroyo Bahia

#### Strategic Alignment

##### Law 2074 – Promotion and Development of Tourism (2000)

- **Overview:** This key legislation provides the legal foundation for tourism in Bolivia, focusing on the promotion and structural development of the sector.
- **Relevance:** It directly enables the creation of tourism strategies and enterprises—including ecotourism businesses—by offering the statutory basis for policy, institutional frameworks, and sectoral planning.

## General Tourism Law / Broad Ecotourism Orientation

### Key Provisions:

- Promotes the development of tourism enterprises in rural, urban, and indigenous areas.
- Emphasizes sustainable, responsible, and culturally respectful tourism rooted in natural heritage.
- Specifies inter-institutional coordination, equitable redistribution of benefits, and capacity building for local stakeholders.

**Relevance:** These mandates align directly with your ecotourism strategy’s goals—supporting Indigenous participation, sustainable use of nature, and economic inclusion.

## Community Solidarity Tourism Model (ETSCs)

- **Overview:** This operational model centers on community-led, self-managed tourism companies within indigenous rural communities that uphold solidarity, cultural heritage, and ecological sustainability.
- **Relevance:** It serves as a blueprint for ecotourism pilots—emphasizing fair benefit sharing, local entrepreneurship, and cultural and environmental integrity.

## ORBITA – Bolivian Observatory for Sustainable Tourism

- **Overview:** ORBITA is a national initiative to strengthen tourism via data-driven strategies, gender equity, and digital innovation.
- **Relevance:** Offers tools and frameworks for informed decision-making, monitoring, and promoting inclusive ecotourism ventures that empower women and youth—vital for scaling pilots and measuring impact.

## Strategic Alignment with Environmental & Cultural Protection

### Protected Areas Management (SERNAP):

- The National Protected Areas Service (SERNAP) oversees Bolivia’s protected regions, employing zoning for sustainable use, tourism access, and cultural sensitivity.
- **Relevance:** Essential if your ecotourism strategy targets areas adjacent to or within protected zones. SERNAP’s framework ensures responsible tourism that supports conservation and cultural heritage.

## Foundational Environmental-Ethical Mandates

### a. Law 071 – Rights of Mother Earth (2010)

- **Overview:** Grants legal personhood to Mother Earth and enshrines the rights of ecosystems and life systems.
- **Relevance:** Embeds ecological ethics into tourism—underpinning the promotion of nature-based ventures that respect environmental integrity and Indigenous worldviews.

### b. Law 300 – Framework Law of Mother Earth (2012)

- **Overview:** Expands upon Law 071 and establishes the Institutional architecture (APMT) for climate and environmental governance.
- **Relevance:** Supports policies and programs—like ecotourism—that are aligned with the “Living Well” philosophy and integrate ancestral knowledge into sustainable development.

## Alignment with all 5 strategic objectives of Cobija:

- 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

#### Conservation of Biodiversity

- Ecotourism creates direct economic incentives to protect natural habitats, encouraging the preservation of forests, wildlife, and endemic species in the Amazonian region surrounding Cobija.
- It supports the maintenance of ecological corridors and protected areas by generating local income without degrading ecosystems.

#### Reduction in Deforestation and Land Degradation

- By providing alternative livelihoods to activities such as illegal logging or unsustainable agriculture, ecotourism helps reduce deforestation and soil erosion.
- Sustainable land use practices promoted by ecotourism (e.g., agroforestry, native species landscaping) contribute to long-term land health.

#### Improved Ecosystem Services

- Healthy ecosystems preserved through ecotourism support vital services such as carbon sequestration, water purification, and flood regulation.
- Forest conservation helps stabilize the microclimate and improves air quality in and around urban Cobija.

#### Low-carbon Economic Development

- Ecotourism encourages the use of renewable energy, sustainable construction, and low-impact mobility (e.g., walking, biking, river transport), reducing greenhouse gas emissions compared to conventional tourism or extractive industries.

#### Environmental Awareness and Stewardship

- Ecotourism promotes education among visitors and locals about conservation, climate change, and sustainable practices.
- This helps build a culture of environmental responsibility that can influence broader behavior and policy change.

#### Protection of Water Resources

By preserving riparian zones and forested watersheds, ecotourism helps maintain the health and flow of rivers like the Acre River, which is crucial for both biodiversity and urban water supply.



### Employment and Income Generation

- Ecotourism creates new job opportunities in guiding, hospitality, transportation, handicrafts, and environmental education, especially for youth, women, and Indigenous communities.
- Promotes inclusive and diversified livelihoods less vulnerable to climate-related shocks in traditional sectors like agriculture or forestry.

### Community Empowerment and Participation

- Encourages the active involvement of local and Indigenous communities in the design, management, and benefits of tourism initiatives.
- Strengthens local identity, cultural heritage, and pride in traditional ecological knowledge.

### Education and Capacity Building

- Provides training in sustainable business practices, environmental conservation, foreign languages, and customer service.
- Increases environmental awareness and climate literacy among both residents and visitors.

### Improved Social Cohesion

- Encourages cooperation among community members and organizations through shared economic activities and environmental stewardship.
- Helps build networks that enhance collective action and resilience to climate-related disruptions.

### Reduction in Urban-Rural Inequality

- By linking rural and peri-urban communities to sustainable markets and services, ecotourism reduces the migration pressure on Cobija's urban center.
- Facilitates more balanced regional development and shared prosperity.



### Diversification of the Local Economy

- Reduces dependence on extractive industries (e.g., timber) and climate-sensitive sectors like conventional agriculture.
- Introduces a sustainable, service-based sector with growth potential, increasing economic stability in the face of climate-related disruptions.

### Job Creation and Local Entrepreneurship

- Generates direct and indirect employment in guiding, lodging, food services, transportation, and handicrafts.
- Encourages micro and small enterprises, especially community-owned or family-run businesses, fostering local entrepreneurship.

### Attraction of Sustainable Investment

- Stimulates public and private investment in eco-friendly infrastructure, such as eco-lodges, renewable energy systems, and green transport.
- Improves access to climate finance and green development funds tied to conservation and sustainable tourism.

### Market Access for Local Products and Services

Expands markets for locally made goods such as crafts, food, and cultural services.

Strengthens linkages between tourism and other sectors like agriculture, forestry, and transportation.

### Stimulus for Infrastructure Development

- Promotes the development of sustainable urban and rural infrastructure (e.g., roads, water systems, communications) that benefits both residents and tourists.
- Enhances climate-resilient infrastructure that supports economic continuity during extreme weather events.

### Implementation Steps

Month	Step
1-3	<b>STEP 1: Conduct a Situational Assessment</b> <ul style="list-style-type: none"> <li>▪ Map existing natural and cultural assets (e.g., forests, rivers, Indigenous communities, historical sites).</li> <li>▪ Identify current tourism activities, infrastructure gaps, and environmental risks.</li> <li>▪ Assess community readiness, stakeholder interests, and potential market demand. Design considerations include drainage systems, reinforcement, and safety factors to ensure stability.</li> </ul>
4-5	<b>STEP 2: Engage Stakeholders and Build Partnerships</b> <ul style="list-style-type: none"> <li>▪ Involve local communities, Indigenous groups, municipal authorities, environmental NGOs, and the private sector.</li> <li>▪ Establish a multi-stakeholder ecotourism task force or working group.</li> <li>▪ Promote participatory planning to ensure inclusive and equitable development.</li> </ul>
6-8	<b>STEP 3: Develop a Community-Based Ecotourism Strategy and Action Plan</b> <ul style="list-style-type: none"> <li>▪ Define vision, goals, and target markets (e.g., national, international, eco-conscious travelers).</li> </ul>

	<ul style="list-style-type: none"> <li>Design sustainable tourism routes, zones, and experiences aligned with conservation goals.</li> <li>Integrate the strategy into Cobija's urban and climate adaptation plans.</li> </ul>
<b>9-10</b>	<b>STEP 4: Build Local Capacity and Provide Training</b> <ul style="list-style-type: none"> <li>Train local residents in tour guiding, hospitality, environmental education, sustainable business practices, language skills, and safety.</li> <li>Offer technical assistance for business development, cooperatives, and financial literacy.</li> <li>Support women and youth to participate equally in opportunities.</li> </ul>
<b>11-17</b>	<b>STEP 5: Invest in Eco-Friendly Infrastructure and Services for Pilots</b> <ul style="list-style-type: none"> <li>Develop or upgrade trails, viewpoints, river access points, eco-lodges, signage, and visitor centers using sustainable materials.</li> <li>Improve access to water, sanitation, and transport in ecotourism areas.</li> <li>Ensure infrastructure is climate-resilient (e.g., elevated structures, green energy, flood-proof paths).</li> </ul>
<b>18-19</b>	<b>STEP 6: Establish Environmental and Cultural Safeguards</b> <ul style="list-style-type: none"> <li>Create guidelines and limits to prevent over-tourism and minimize environmental impact.</li> <li>Implement waste management systems, visitor caps, and codes of conduct.</li> <li>Respect and protect Indigenous knowledge and cultural sites.</li> </ul>
<b>20-22</b>	<b>STEP 7: Marketing and Promotion</b> <ul style="list-style-type: none"> <li>Develop a local brand identity focused on Cobija's natural beauty, biodiversity, and cultural heritage.</li> <li>Create digital platforms, brochures, and media campaigns to attract eco-tourists.</li> <li>Partner with national tourism boards and international platforms to promote sustainably.</li> </ul>
<b>23-25</b>	<b>STEP 8: Secure Funding and Financial Incentives</b> <ul style="list-style-type: none"> <li>Mobilize public and private investment, climate finance, and development cooperation.</li> <li>Offer incentives for eco-friendly businesses (e.g., tax breaks, grants, microcredit).</li> <li>Create tourism revenue-sharing models that benefit conservation and local communities.</li> </ul>

**26-28**

<b>STEP 9: Monitor, Evaluate, and Adapt</b> <ul style="list-style-type: none"> <li>Establish indicators for environmental impact, visitor satisfaction, local income, and ecosystem health.</li> <li>Conduct regular reviews and adapt management practices based on feedback and climate data.</li> <li>Use participatory monitoring involving communities and local authorities.</li> </ul>
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**29-**

<b>STEP 10: Scale and Replicate Successful Models</b> <ul style="list-style-type: none"> <li>Document good practices and lessons learned.</li> <li>Replicate and adapt ecotourism models in other areas of Cobija and the Pando region.</li> <li>Integrate successful experiences into broader sustainable development policies.</li> </ul>
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## Financing

● **Indicative Cost**

USD 750.000

● **Potential Financing Instruments**

- Partnerships between local and regional governments
- Private sector funding
- Green and sustainable financing – green bonds, sustainability-linked loans, performance-based climate resilience grants (PBCRGs) or blended finance structures combining public, private, and philanthropic funds to develop ecotourism infrastructure, community facilities, and conservation areas.
- Impact investment and microfinance – dedicated funds or microcredit grant schemes for local entrepreneurs, cooperatives, and indigenous communities to start or expand ecotourism businesses, with repayment terms linked to social and environmental outcomes.
- Conservation and climate-biodiversity funds – access to national and international mechanisms such as biodiversity trust funds, climate adaptation grants, and payment for ecosystem services (PES) schemes to finance habitat protection, restoration, and ecotourism-linked conservation activities.

● **Revenue Opportunities**

- Conservation-linked visitor contributions – environmental or ecotourism levies / taxes / fees on accommodations and tours, entrance fees for protected areas, and voluntary carbon offset contributions, with revenues earmarked for biodiversity protection and community projects.
- Community- and concession-based income – guided tours, river ecotours, cultural heritage experiences, eco-lodge stays, licensed concessions for services (boat tours, cafes, craft shops), and “Cobija Ecotourism” business certification fees.

- **Local products and events** – sales of sustainable forest products, handicrafts, and traditional foods, alongside eco-festivals and cultural events that generate ticket sales and vendor fees while promoting Cobija’s natural and cultural assets.

## Risks and Mitigation Options

### Economic Risk

#### Risk: Seasonal or Low Tourist Demand.

Cobija may experience fluctuations in visitor numbers due to seasonality, climate-related access issues (e.g., floods), or limited national/international exposure.

#### Risk: Lack of Business Skills and Capacity.

Local entrepreneurs may lack experience in tourism management, marketing, or finance, leading to failed enterprises

#### Mitigation Measure

- Diversify tourism offerings across seasons (e.g., cultural events, agro-ecotourism, educational tours).
- Promote Cobija to domestic and regional tourists, not only international markets.
- Develop year-round attractions and improve accessibility during the rainy season.
- Provide targeted training and technical assistance in business planning, hospitality, and customer service.
- Support the formation of cooperatives or community-based tourism associations.
- Establish mentorship and partnership programs with more experienced tourism operators.

### Technical Risk

#### Risk: Inadequate Infrastructure and Accessibility.

Poor road conditions, limited public transport, or lack of visitor facilities can deter tourists and hinder service delivery.

#### Risk: Poor Integration of Climate-Resilient Design.

Ecotourism sites may be built without considering local climate risks (e.g., flooding, extreme heat, erosion), leading to damage and service disruption.

#### Mitigation Measure

- Invest in climate-resilient infrastructure (e.g., elevated walkways, eco-friendly transport, improved river docks).
- Prioritize strategic upgrades to access roads and signage to ecotourism sites.
- Coordinate infrastructure development with municipal urban planning and disaster risk reduction strategies.
- Incorporate climate adaptation criteria into site design, materials selection, and location planning.
- Use nature-based solutions (e.g., vegetation buffers, permeable surfaces, shade structures) to enhance resilience.
- Engage climate adaptation experts in planning and approval processes.

### Social Risk

- Invest in climate-resilient infrastructure (e.g., elevated walkways, eco-friendly transport, improved river docks).
- Prioritize strategic upgrades to access roads and signage to ecotourism sites.
- Coordinate infrastructure development with municipal urban planning and disaster risk reduction strategies.
- Incorporate climate adaptation criteria into site design, materials selection, and location planning.
- Use nature-based solutions (e.g., vegetation buffers, permeable surfaces, shade structures) to enhance resilience.
- Engage climate adaptation experts in planning and approval processes.

#### Mitigation Measure

- Ensure free, prior, and informed consent for Indigenous and traditional communities.
- Facilitate inclusive governance models with local representation in tourism planning bodies.
- Support community-owned and operated ecotourism enterprises.
- Promote respectful and authentic cultural exchanges guided by local custodians.
- Establish cultural protocols and codes of conduct for visitors and operators.
- Support community-led cultural interpretation and storytelling initiatives.

### Environmental Risk

#### Risk: Habitat Disturbance and Ecosystem Degradation.

Increased visitor traffic, trail construction, or infrastructure development can disturb wildlife, damage vegetation, or fragment ecosystems.

#### Risk: Waste Generation and Pollution.

Inadequate waste management may lead to littering, contamination of soil and water bodies, and visual pollution.

#### Mitigation Measure

- Conduct environmental impact assessments (EIAs) before developing ecotourism sites.
- Use low-impact design and eco-friendly materials for infrastructure.
- Limit visitor access to sensitive habitats and implement zoning to protect core conservation areas.
- Install proper waste collection and recycling facilities at all tourism sites.
- Implement “carry in, carry out” policies and visitor education campaigns.
- Use biodegradable products and promote zero-waste tourism practices.



Urban perspective  
Autonomous Municipal Government of Cobija

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# A better quality of life for all in an urbanizing world



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