



A HIGH ALTITUDE CHALLENGE

The Colombian capital, Bogotá, as well as its 21 surrounding municipalities, benefit from water and other services provided by the high Andean ecosystems of the Chingaza-Sumapaz-Guerrero strategic conservation area. This includes: 2 departments, 22 municipalities, more than 550 thousand hectares, 6 environmental authorities and more than 10 million people. In other words, this area is responsible for the current and future socio-economic development not only of the capital, but also of the entire region. However, climate change threatens natural resources, particularly water availability.

In this context, the Ministry of Environment and Sustainable Development, together with Conservation International, have been implementing since 2015 the project Adaptation to Climate Impacts on the Water supply and regulation in the Chingaza-Sumapaz-Guerrero area. The project is financed by the Global Environment Facility (GEF) and administered by the Inter-American Development Bank (IDB). It has four strategic partners with that shares its objectives: the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM); the Regional Autonomous Environmental Corporation of Cundinamarca (CAR); the Bogota Water Utility and the Regional Autonomous Environmental Corporation of Guavio (Corpoaguavio).

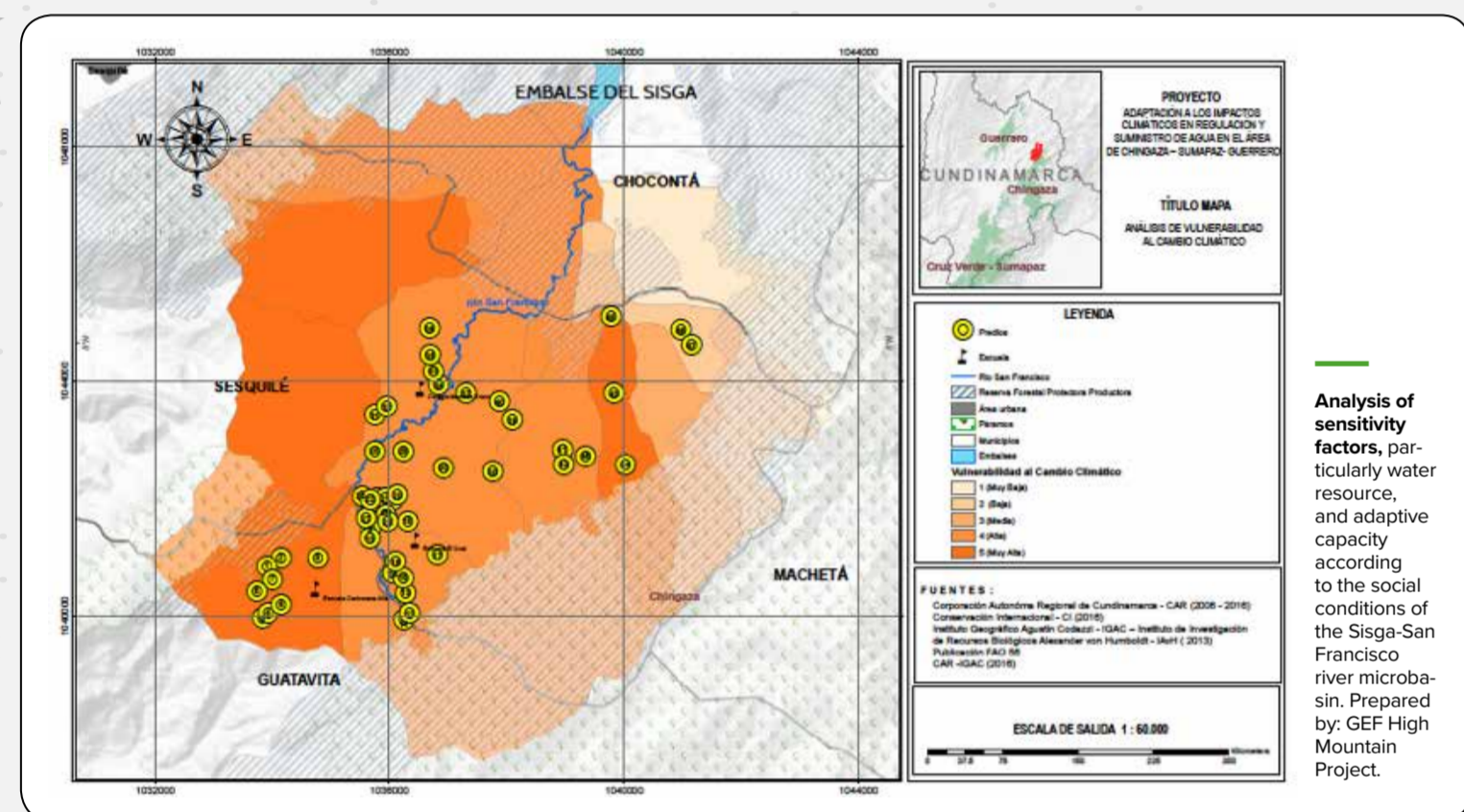
PRIORITY BASINS

PROJECT HYDROLOGICAL UNIT	LOCATION IN THE BOGOTÁ RIVER BASIN	STUDIED SUB BASIN	MUNICIPALITIES	PARAMO COMPLEX
NEUSA RIVER	NEUSA RIVER BASIN	GUANDOOQUE RIVER BASIN	TAUSA / COGUA	GUERRERO
SISGA RESERVOIR	SISGA RESERVOIR HYDROLOGICAL UNIT	SAN FRANCISCO RIVER BASIN	SESQUILÉ/GUATAVITA	CHINGAZA
SIECHA RIVER	TOMINÉ RESERVOIR HYDROLOGICAL UNIT	CHIPATÁ RIVER BASIN	GUASCA	CHINGAZA
CHISACÁ RIVER	TUNJUELITO RIVER BASIN	CHISACÁ RIVER BASIN	LOCALITY OF USME (D.C.)	SUMAPAZ

Source: GEF High Mountain Project

WHERE DO WE START?

Science for decision making in vulnerable territories



The communities in paramos and high mountains are highly vulnerable to the impacts of climate change. In these socio-ecosystems, which have been historically inhabited, several production systems have been developed, including potato monoculture and dairy production, with very significant environmental and social impacts.

For this reason, the project seeks to increase knowledge about: 1) climate change scenarios in the project area, 2) the possible impact that climate change will have on the ability of these areas to supply and regulate water in climate change scenarios, 3) socio-ecological vulnerability with emphasis on social, economic, cultural and gender issues, and, 4 we have led the implementation of adaptation measures for the improvement of land use, efficient water use and to enhance the capacities of the communities that inhabit them.

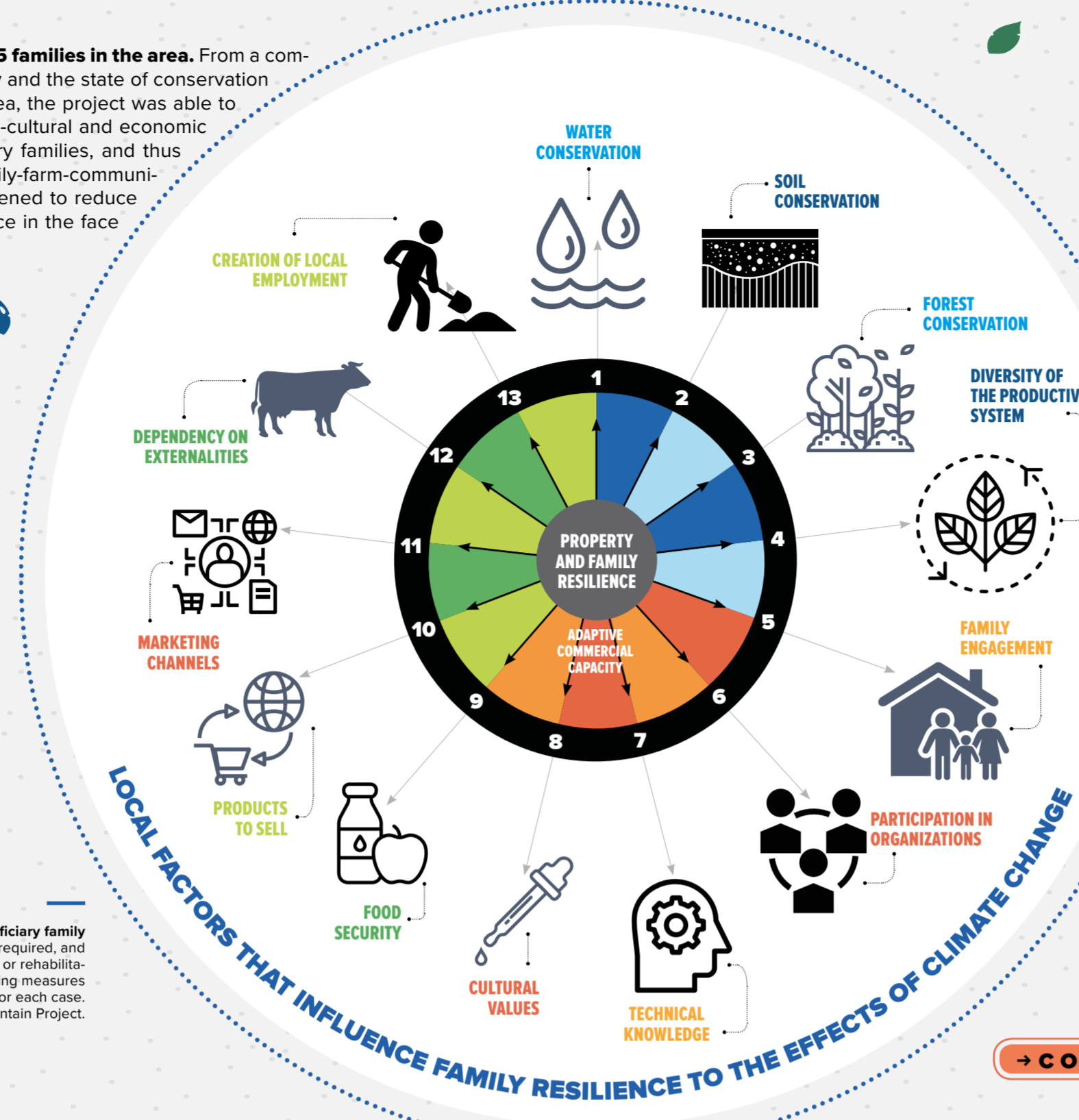


RESILIENCE: AN ABILITY TO FACE a climate change event

The project will benefit at least 65 families in the area. From a comprehensive analysis of the territory and the state of conservation of the natural resources of the Area, the project was able to establish the environmental, socio-cultural and economic situation of each of the beneficiary families, and thus identify which elements of the family-farm-community relationship should be strengthened to reduce vulnerability and increase resilience in the face of climate change.

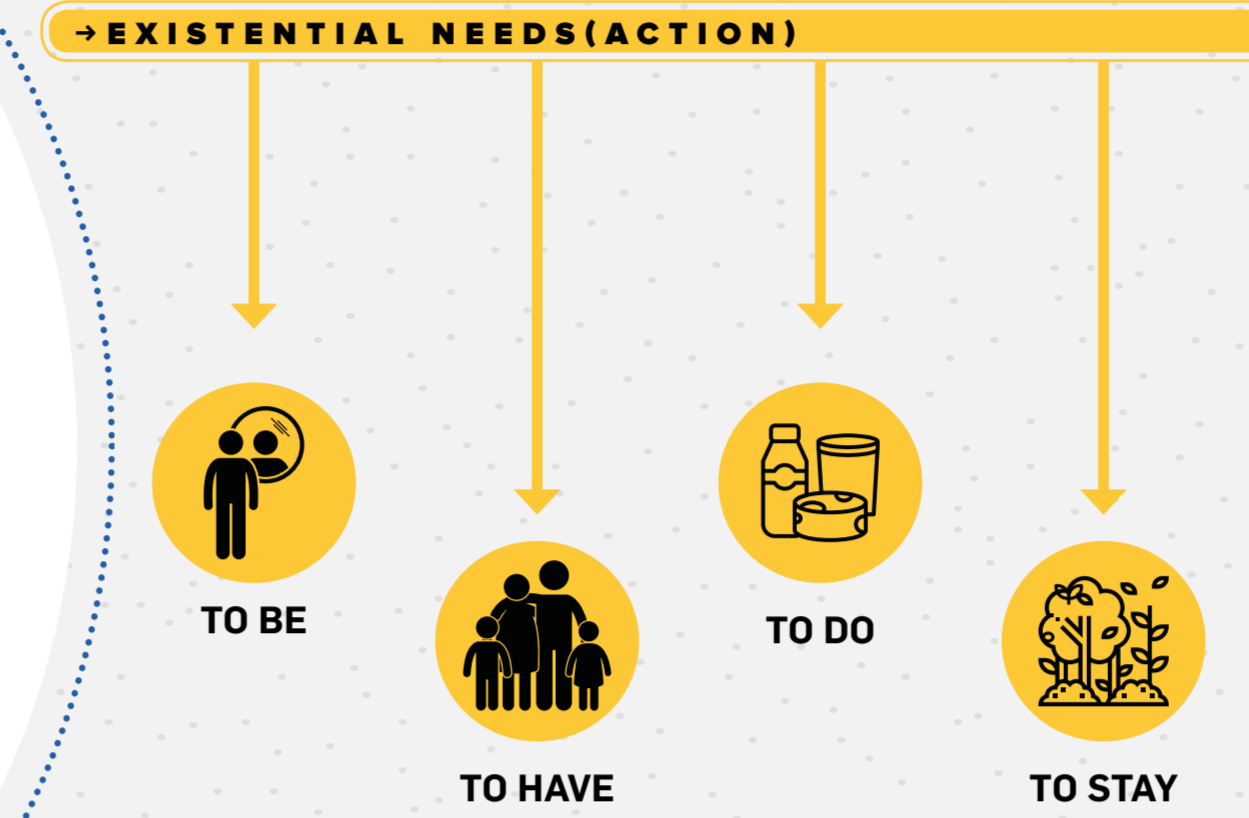
The project understands resilience as the ability of a socio-ecosystem to cope with a dangerous or disturbing event. This implies responding or reorganizing in such a way that it can preserve its essential function, identity and structure, while maintaining its capacity for adaptation, learning and transformation.

This group of indicators is applied to each beneficiary family as an input to estimate the level of intervention required, and to guide the selection of ecological restoration or rehabilitation, productive reconversion and strengthening measures for the most convenient local organizations for each case. Prepared by: GEF High Mountain Project.



COMPLEMENTARY MEASURES

The project has generated great technical knowledge, but the most relevant outcome is the knowledge exchange that occurs between the scientific and the local. The development on a human scale proposed by Manfred Max Neef, as well as the contributions of the Association for Rural Development, have been key to simultaneously develop mechanisms for adaptation to climate change based on ecosystems (AbE), and complementary mechanisms that strengthen community capacities, foster knowledge management and influence the life plans of rural families:



COMPLEMENTARY MECHANISMS INCLUDE:

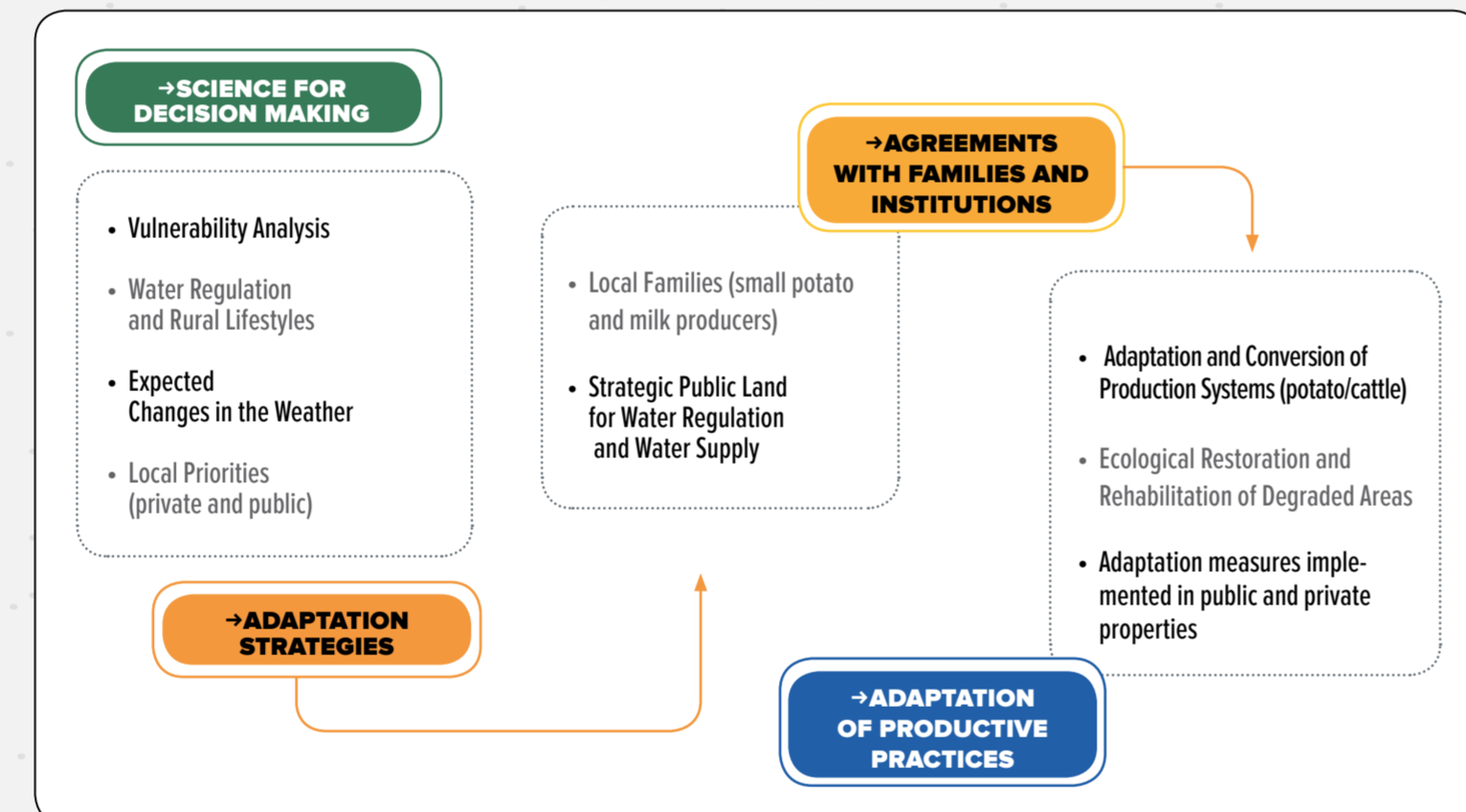
COMMUNITY MONITORING.

The effects of changing climate on the daily activities of peasant families pose the challenge of understanding weather behavior in greater depth, on a daily basis. The use of simple technology to record and monitor climate, humidity and precipitation variables is giving communities the possibility to make more accurate decisions about planting, harvesting and natural events that would otherwise affect their crops and consequently make them vulnerable.

The community monitoring network in the San Francisco River basin was consolidated more than five months ago.



APPLYING SCIENTIFIC KNOWLEDGE FOR ADAPTATION IN THE TERRITORY



All the actions seeking ecological restoration and adaptation of production systems designed by the project focus on reducing the vulnerability of rural families to climate change and variability, and on balancing the roles of each family member in the work they carry out in their land. Currently, communities strengthen their skills through the exchange of knowledge and experiences, with innovative, simple and replicable practices following the Adaptation model based on AbE Ecosystems. Prepared by: GEF High Mountain Project.

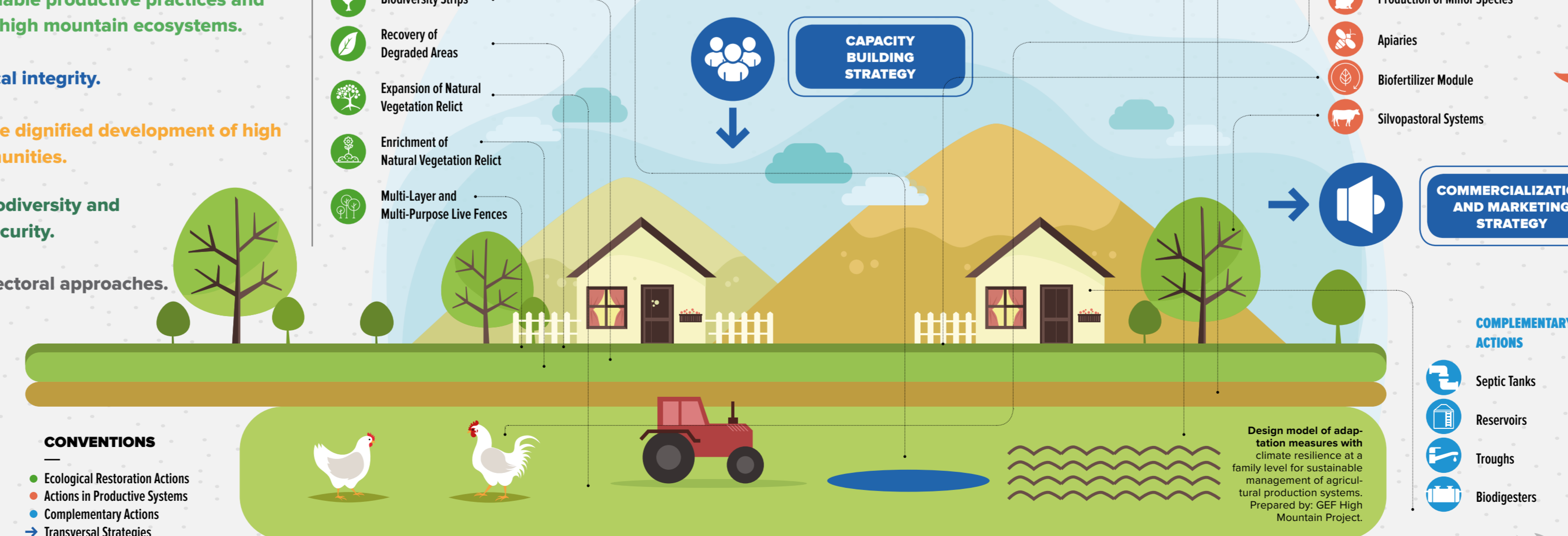
VALUE CHAINS

Training for skill development in order to:

- Achieve profitability and sustainability over time.
- Promote sustainable productive practices and harmonics with high mountain ecosystems.
- Protect ecological integrity.
- Contribute to the dignified development of high mountain communities.
- Increase agrobiodiversity and improve food security.
- Promote multisectoral approaches.

- Isolation of Areas of Importance for Water Regulation
- Biodiversity Strips
- Recovery of Degraded Areas
- Expansion of Natural Vegetation Relict
- Enrichment of Natural Vegetation Relict
- Multi-Layer and Multi-Purpose Live Fences

ADAPTATION MEASURES TO CLIMATE CHANGE IN FARMS



CAPACITY STRENGTHENING

The goal is to develop capacities that enable self-management in local actors to design and implement their own adaptation actions to the effects of climate change, and develop skills through innovative, simple and replicable practices that arise from collective knowledge construction between communities and technicians. The strengthening of capacities is oriented towards the knowledge of territory elements with special emphasis on water regulation such as soil, biodiversity, and efficient water management. Therefore, from knowledge, market potential and territorial environmental offer, families can run their farms in the short, medium and long term.



FIGURES

65

Beneficiary families participated in an exchange of knowledge on agroecology at the La Cosmopolitana farm in Restrepo, Meta.

100

Public officials from Ministries, environmental authorities and research institutes received training at the "Climate change management in environmental and territorial planning" course, developed jointly with the Pontifical Xavierian University.

6

Peasant leaders trained in participatory community monitoring, through an exchange of experiences in San Vicente de Chucuri, Santander.

WE DON'T WORK ALONE

We have analysed the situation and joined forces with local organizations that know the territory and carry out continuing processes. We have grown stronger together. Among these groups, the following stand out:

Arts Collegium: through photography and video, girls, boys and young people from Guatavita, Sesquilé and Guasca learn, recognize and appropriate their natural environment, striving for generational sustainability.

Association of Women Entrepreneurs of Guatavita (Ameg): this association is part of the initiative to strengthen entrepreneurship and value chains from the transformation of milk. Many Ameg members are linked to the project through their farms; therefore, they are part of an ongoing strengthening process.

Sesquilé Women Association (Amuses): this association is in charge of the restoration of the San Francisco river basin. It is an example of how gender equity and restoration go hand in hand. Many Amuses members are linked to the project through their farms; therefore, they are part of an ongoing strengthening process.

Sabias Montañeras: through multimedia elements, this collective seeks to exalt the integral role of rural women, highlighting their traditional trades, their ability to keep their customs latent and their relationship with the territory in which these tasks are carried out.

Bosque Nativo: this association helps the project carry out the implementation of ecological restoration strategies in the municipality of Tausa.

OUR IMPACTS

We contribute to fulfilling Colombia's commitments to the Paris Agreement, especially in relation to the goals of the Nationally Determined Contributions (NDC) in terms of adaptation to climate change.

We articulate government institutions with private companies to fulfill the project's goals.

We monitor climate communally to obtain daily information at a local (farm) level, which facilitates decision-making and adaptation to climate variability and change.

We strengthen the capacities of territorial entities such as public officials to incorporate climate change management into territorial planning instruments.

550

HECTARES HAVE BEEN REHABILITATED AND RECOVERED.

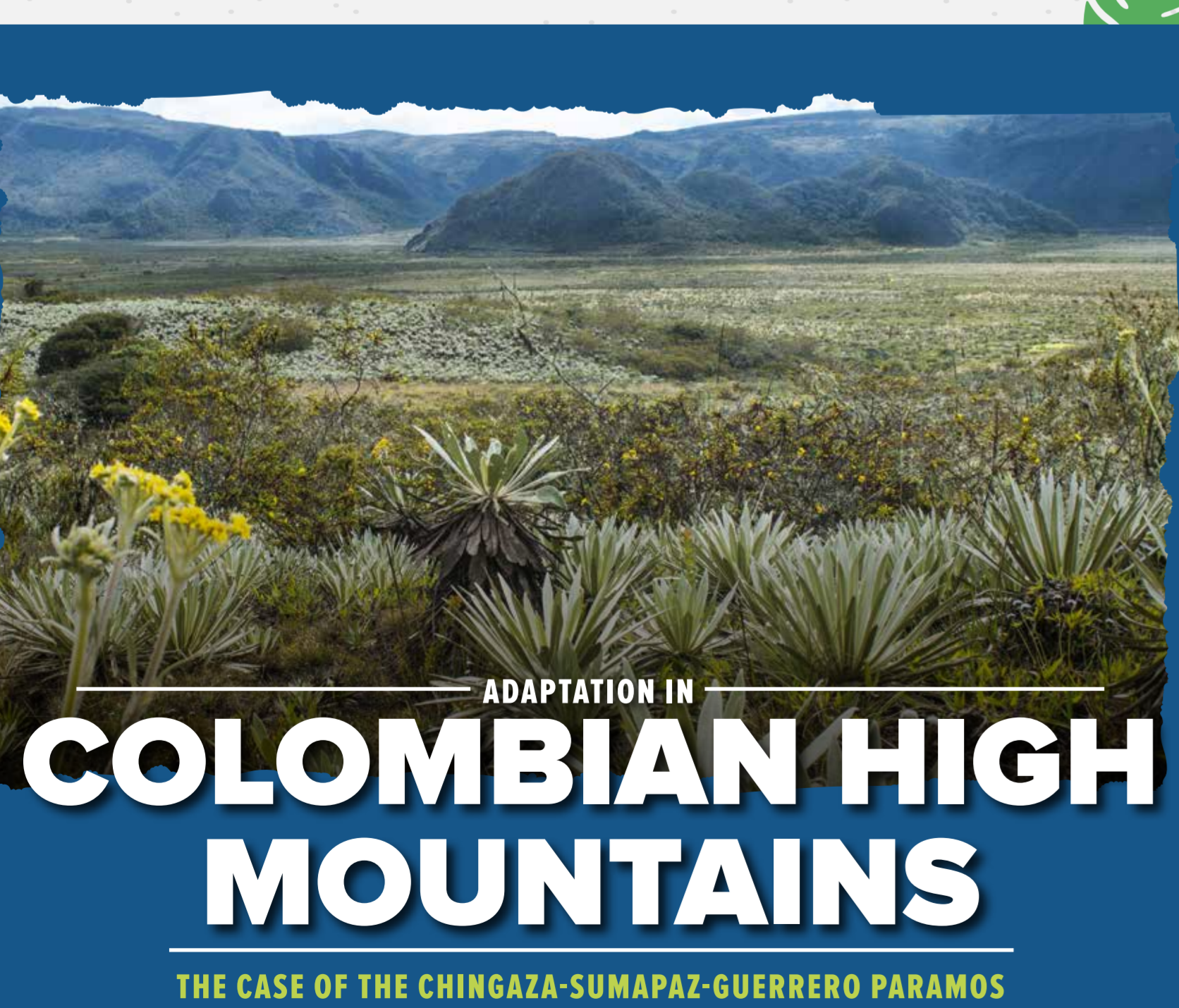
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FAMILIES IMPLEMENTING ADAPTATION MEASURES.

4.2

MILLION DOLLARS COMMITTED TO DESIGN E IMPLEMENTATION OF SYSTEMS OF ADAPTATION TO CLIMATE CHANGE (INFRASTRUCTURE AND SUPPLIES).

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ADAPTATION IN COLOMBIAN HIGH MOUNTAINS

THE CASE OF THE CHINGAZA-SUMAPAZ-GUERRERO PARAMOS

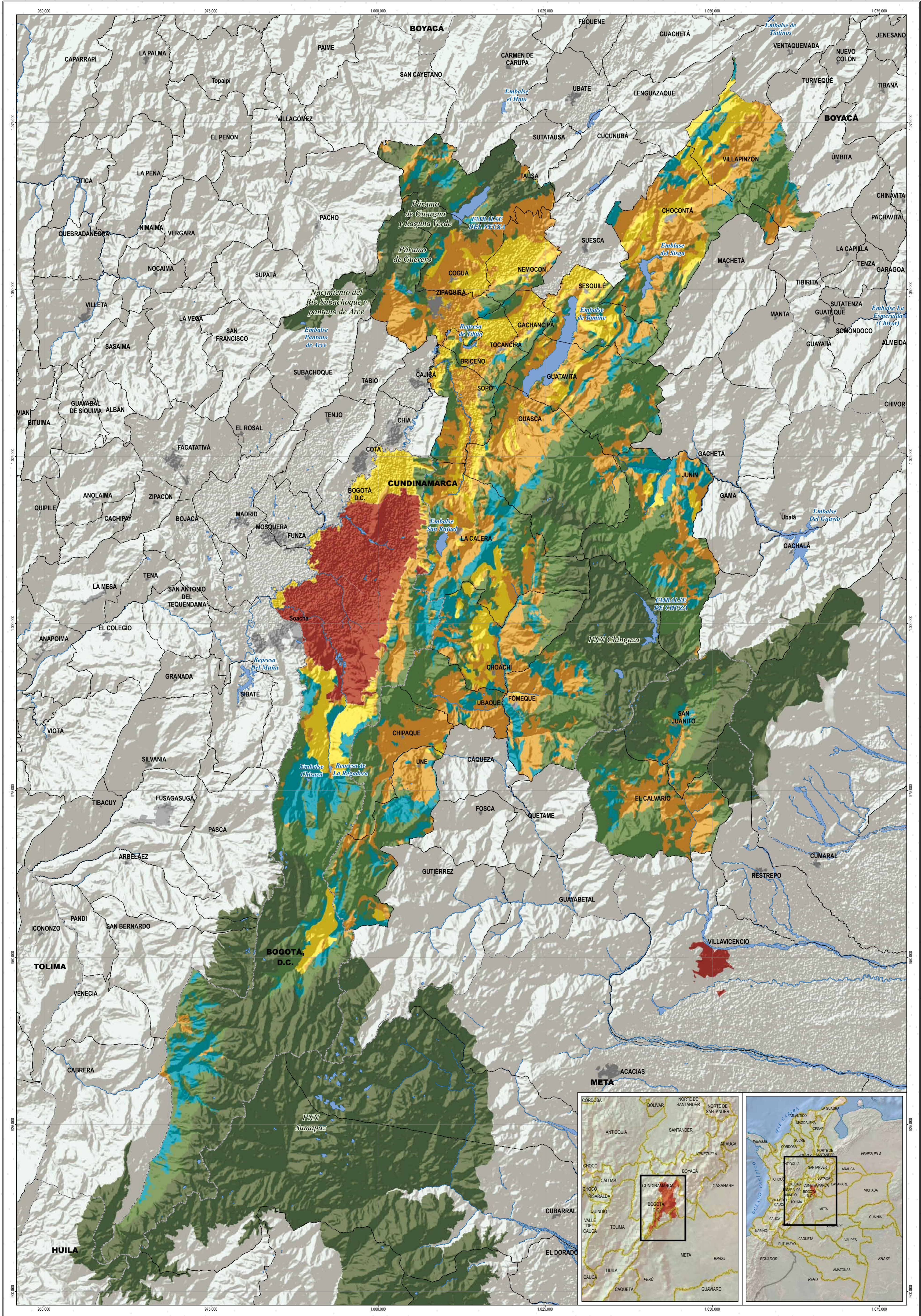
BUILDING SUSTAINABLE TERRITORIES

CONVENTIONS

- Protected areas
- Preservation
- Restoration
- Sustainable use
- Other uses

WHAT WE WANT

- Protect natural capital.
- Promote sustainable production that does not compete with high mountain characteristics.
- Identify financial mechanisms that contribute to ecosystems continuing to function and providing their services not only to those who inhabit them but also to those who benefit from them beyond their limits.
- Generate actions against climate change based on scientific knowledge.
- Strengthen water governance as a mechanism to reduce community vulnerability.



WE CONTRIBUTE TO COMPLY WITH THE SUSTAINABLE DEVELOPMENT GOALS (SDGs).

