RESILIENT QUITO

RESILIENCE STRATEGY

Metropolitan District of Quito

PIONEERED BY THE ROCKEFELLER FOUNDATION

100 RESILIENT CITIES

QUITO ALCALDÍA

Yunguilla - *Photo: Diego Naranjo*

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QUITO ALCALDÍA

Guapulo

MAURICIO RODAS

MAYOR OF THE METROPOLITAN DISTRICT OF QUITO

Throughout their history, the people of Quito ahave shown their ability to respond to the numerous challenges that their city has faced. Nevertheless, as Quito's urban area and the challenges it faces become more and more complex, the city requires a new, more solid foundation to create plans and actions to be able to systematically respond to our vulnerabilities. The Quito Resilience Strategy provides a framework for the city to develop the planning and preparedness necessary for us to achieve our 2040 vision, building on our strengths and addressing our challenges.

This Strategy's overarching principles are to ensure a high quality of life for all the residents of the Quito Metropolitan District. These principles are based on five multidimensional pillars of action. Central to these actions are citizen participation, environmental management to support the life of our residents, and the construction of the city's first metro line. Together, these will lead to achieving an integrated and efficient city. Other key elements of the Strategy include developing capacity through inclusion, strengthening our urban fabric, and guaranteeing safety and security from both natural and manmade threats.

Our partnership with The Rockefeller Foundation through the 100 Resilient Cities initiative has made it possible to create a rigorous strategy that integrates actions by various municipal departments as well as members of civil society and academia. The partnerships created through this initiative led to valuable exchanges of ideas, best practices and lessons learned from around the world.

This strategy is much more than an important input for the city's future. It represents a commitment to following and integrating its principles into a governing approach. At the one year anniversary of Quito's hosting the New Urban Agenda Habitat III conference, we reaffirm this important step toward achieving a resilient city in which all of Quito's residents can live together safely and securely.

Panecillo Virgin

MICHAEL BERKOWITZ

PRESIDENT OF 100 RESILIENT CITIES

On behalf of the entire 100 Resilient Cities team, I want to congratulate the city of Quito, Mayor Mr. Mauricio Rodas, and Chief Resilience Officer David Jacome, on the release of the Resilient Quito, a major milestone for the city and for our partnership. This document lays out an extraordinary vision of urban resilience that can serve as a model to all. We are excited to see this ambitious Strategy take shape and lead to a stronger and even more dynamic Quito.

Standing 2,800 meters above sea level at the center of the world on the equator, Quito is the political heart of Ecuador. The city not only boasts a rich history and cultural patrimony, represented by its beautiful historic center that received recognition as the first UNESCO World Heritage Site in 1978, but also an incredible wealth of biodiversity. With its central role as the host of the Habitat III Conference one year ago, Quito stands poised to become a model of urban resilience and signal to the rest of the world how the priorities of the New Urban Agenda can be realized.

Quito's Resilience Strategy reflects this potential, the amazing progress the city has made in understanding its natural assets and vulnerabilities, and how they present opportunities for developing strength and adaptability. To build Quito's resilience, it's necessary to have a deep understanding of the shocks and stresses the city endures, including severe natural hazards such as earthquakes, landslides, wildfires, and active volcanos; a history of economic instability; and unchecked urban sprawl and environmental degradation.

Quiteños themselves are key to the city's Resilience Strategy. Known for their solidarity, energy and ingenuity, Quiteños are also disproportionately young: 1 out of 2 is under the age of 29. In order to harness the momentum this presents; the Strategy contains several initiatives that aim to match young talent with professional and technical programs that will contribute to the city's economy and strengthen it overall.

Also fundamental to Quito's resilience-building efforts is its new metro line, the city's largest infrastructure project in history. Apart from its importance in linking a sprawling city, the new system presents an unprecedented opportunity for resilient urban development for the benefit of all Quiteños, by enabling a better quality of life through connectivity to job centers and to one another. It also presents a major environmental intervention that can reduce congestion, pollution, and the erosion of the city's rich biodiversity.

Other initiatives that will provide multiple benefits include a program for safe public spaces; green infrastructure interventions to protect vulnerable neighborhoods and the transportation system; actions for embedding principles of sustainability and resilience in the Innovation Agenda of the city and for strengthening the information system with a risk index that strategically allows planning for risk reduction.

This Strategy is only the beginning of the exciting work to come in the months and years ahead. And 100 Resilient Cities' partnership with the city of Quito is also just beginning. Now we can collectively begin implementing the actions and initiatives contained in the following pages, which will positively impact all Quiteños. We at 100 Resilient Cities could not be more pleased to be a partner in these efforts. Congratulations to the city of Quito!

DAVID JÁCOME POLIT

QUITO'S CHIEF RESILIENCE OFFICER

Today, when we must work on a global agenda that focuses on the well-being of all citizens, and with so many profound changes under way in our city's positive evolution, the Metropolitan District of Quito is in a unique position to take advantage of its human and biological capital while remaining faithful to its goal of becoming a more robust and inclusive city, and to identify our challenges and turn them into opportunities to create a prosperous future.

Through the Quito 2040 Vision, the city's residents have decided that the city will not only have a high quality of life but also be able to maintain that quality of life despite the many challenges that it faces and will continue to face in social, cultural, economic, and environmental terms. Building resilience for the city will ensure sustainable development for its inhabitants and set a clear agenda for the Metropolitan District's variety of management instruments.

The work reflected in this strategy reveals the Metropolitan District of Quito's strengths an d opportunities as it addresses the city's acute shocks and chronic stresses and prepares its citizens to face this century's challenges. While the scope is quite broad, the Resilience Strategy is not exactly a plan in the traditional sense of the word; instead it is an invitation to participate in a comprehensive work agenda. Resilient Quito establishes the path that we need to follow to strengthen our city by integrating procedures, programs, and policies that achieve pointed, multidimensional, and effective results.

The problems we are facing in the 21st century cannot be overcome with traditional tools and solutions. Urban resilience means taking on and adapting to complex challenges without forgetting to look ahead to the future. It is about being able to change our point of view, critically reviewing contributions to and from the city continuously, and developing abilities that make us stronger. The Quito Resilience Strategy places importance on what is possible. It proposes that we take advantage of the existing potential of our workforce, and it applies technical resources and best practices to equip Quito´s residents for success.

CONTENT

LIST OF ACRONYMS AND ABBREVIATIONS

100RC: 100 Resilient Cities
100RC Summit: 100 Resilient Cities Summit in New York City
AGRUPAR: Participatory Urban Agriculture Project
AMC: Metropolitan Control Agency
AMT: Metropolitan Transit Agency
APIVE : Association of Real Estate Developers of Housing in Ecuador
BRT: Bus Rapid Transit
CAE-P: Provincial College of Architects of Pichincha, Ecuador
CAMICON: Construction Industry Chamber
CO2: carbon dioxide
ConQuito: Economic Promotion agency
CRO: Chief Resilience Officer
CRF: City Resilience Framework
DMQ: Metropolitan District of Quito
EAP: Economically Active Population
EMASEO: Metropolitan Public Authority of Cleaning
EMSEGURIDAD: Metropolitan Public Authority of Security
EPMAPS: Metropolitan Public Authority of Drinking Water and Sanitation
EPMHV: Metropolitan Public Authority for Habitat and Housing
EPMMOP: Metropolitan Public Authority of Mobility and Public Works
EPMTP: Metropolitan Public Authority of Passenger Transportation
FONAG: Water Protection Fund - Quito
FOO: Field of Opportunity Workshop
GDP: Gross Domestic Product
GFDRR: Global Facility for Disaster Reduction and Recovery
GHG: greenhouse gases
GNP: Gross National Product
GUI: Green Urban Index
ha: hectare(s)
ICLEI: Local Governments for Sustainability
ICQ: Quito City Institute
IMP: Metropolitan Heritage Institute
IMPU: Metropolitan Urban Planning Institute
km: kilometer
km/h: kilometers per hour
MDMQ: Metropolitan District of Quito Municipality
MIDUVI: Ministry for Urban Development and Housing
NEC: National Electrical Code
NGO: non-governmental organization
NUA: New Urban Agenda
PMDOT: Metropolitan Plan for Development and Land Management
PRA: Preliminary Resilience Assessment
QHCC: Quito Historic City Center
RIA: Rapid Integrated Assessment
RUAF: Urban Agriculture and Food Systems Global Partnership
SA: Environment Department
SC: Communications Department
SCTyPC: Department of Territorial Coordination and Citizen Participation
SCU: Director of Culture
SDG: Sustainable Development Goals
SDPyC: Department of Productive Development and Competitiveness
SE: Education Department
STHV: Department of Territory, Habitat and Housing
SGP: General Planning Department
SGYSG: General Department of Security and Governability
SIM: Metropolitan Information System
SIS: Department of Social Inclusion
SM: Department of Mobility
SMA: Subject Matter Advisors
SOW: Scope of Work
SP: Strategy Partner
SS: Health Department
STHV: Department of Territory, Habitat and Housing
TNC: The Nature Conservancy
TOD: Transit-Oriented Development
UNDP: United Nations Development Program
UNISDR: United Nations Office for Risk Reduction
UN-Habitat: United Nations Human Settlements Program
Vs30: seismic shear wave velocities
WB: World Bank
ZEDE QUITO: Special Economic Development Zone of Quito

1. VISION OF QUITO'S RESILIENCE STRATEGY

> The Metropolitan District of Quito builds resilience based on its human, biological, and geographic diversity. The city is prepared for the future thanks to its high adaptive capacity, which is in turn based on social and economic inclusion. By improving efficiency, the city guarantees a high quality of life for its residents and ensures environmental sustainability. Quito looks forward, and grows ready to face the challenges of the 21st century, emerging as a stronger and more equitable city.

La Carolina Park - *Photo: Miguel Páez, Drones Creativity EC*

1.1 WHAT DOES RESILIENT QUITO MEAN?

Perched high in the Andes, the Metropolitan District of Quito (DMQ) stands out for a number of factors formed by its dynamic diversity. At 2,800 meters above sea level, the city sits amid volcanoes and deep valleys. Quito was named a World Heritage Site in 1978 not only for its architecture but also because of this dramatic landscape and its biological diversity. At the same time, this cultural and natural wealth is threatened by a variety of environmental, economic, and social challenges.

The Quito Resilience Strategy is based on an analysis of these dynamics and the weaknesses and opportunities they represent. It sets forth an integrated, cross-disciplinary approach to the city's main acute shocks and chronic stresses. The Strategy was developed through tools that establish a new way of planning as developed through a resilience lens. It is aligned with the Sustainable Development Goals (SDGs), the New Urban Agenda (NUA), which was approved in Quito during Habitat III, and the Metropolitan Plan for Development and Land Management (PMDOT), which governs the municipality's work. A key contribution of the 100 Resilient Cities initiative for the Metropolitan District of Quito is that its resilience-building process can be used throughout the city's planning. It integrates the efforts of various levels of government, the private sector, civil society, and the scientific community. The Strategy achieves this by through the parameters proposed in the city's comprehensive long-term plan to 2040. These parameters define development as centered on achieving a high quality of life for all residents, and a city that is integrated, safe, inclusive, and prosperous. Fundamental to this vision of DMQ is the city's first metro line, the largest infrastructure project in Quito's history. This project can enable the kind of planning that leads to real transformation, of space, of social structures, and of economic development, and that is a key element in building urban resilience. The first metro line is also an important component in the city's promotion of mitigation and adaptation to climate change. It plays a role in effective risk management and is an important opportunity to change the city's patterns of growth and development.

With most of the world's population living in urban areas, establishing urban resilience as a governing principle is fundamental to living in fairer and more sustainable societies. By building a resilient Quito, the city will be better able to find new opportunities, capitalize on existing ones, and be prepared to meet the challenges and risks it will face. This long-term commitment includes not only the Municipality as an institution, but all the people of Quito.

2. **EXECUTIVE** SUMMARY

Yaku Water Museum

Resilient Quito highlights the need to develop mechanisms that strategically respond to the acute shocks and chronic stresses that afflict the city. While the city's complex location creates structural vulnerabilities, other characteristics, such as its human and biological diversity, are clear signs of its historic ability to adapt. Resilient Quito is developed at a time of transformation for the Metropolitan District of Quito, both in terms of mobility and urban development. Construction of the first metro line and dedication to the New Urban Agenda, which was approved in Quito during Habitat III, define the new planning parameters.

The DMQ was selected to be part of the 100 Resilient Cities (100RC) initiative, which supports cities around the world in their efforts to build urban resilience. This opportunity made it possible for Quito to analyze the city's vulnerabilities and challenges, evaluate its responsiveness to face them, and apply a planning approach focused on resilience as part of the local government's guiding principles.

The first phase of this strategy consisted of preparing a Preliminary Resilience Assessment (PRA) based on stakeholder engagement, action identification and risk assessment tools provided by 100RC. With the participation of local government, academia, and the private and civil sector, The Resilience Office of Quito held a series of workshops to conduct surveys and interviews to determine the acute shocks and chronic stresses most relevant to the city. The PRA identified the challenges and helped the CRO establish priorities.

The second phase identified the five key areas of the city with the highest priority for support in order to build meaningful resilience. The prioritization process was driven by the Municipality's ongoing actions and inspired by other cities' best practices. 100RC offered technical support, and the local government supported the implementation of the work. This two-phase process established the pillars, goals, and actions that helped create the resilience strategy, as detailed below.

A. INCLUSIVE AND EMPOWERED CITIZENS

Building urban resilience begins with strengthening social fabric. This pillar focuses on facilitating participatory processes as guidelines for democracy, validating the public administration's work, and strengthening processes of co-responsibility between citizens and the municipality. It aims at strengthening institutional and community capacities to build participatory processes and provide clear and effective mechanisms for citizen engagement.

B. ROBUST AND SUSTAINABLE ENVIRONMENT

Management and conservation of the city's natural areas make sustainable urban development possible. The environmental pillar proposes developing efficient, participatory administration mechanisms for these areas that foster environmental consciousness and citizen involvement. This pillar also aims to encourage the use of nature based solutions for urban problems.

C. INTEGRATED AND COMPACT CITY

Scattered and uncontrolled urban sprawl has made the Metropolitan District of Quito a segregated and inefficient city. This pillar focuses on controlling urban sprawl, maximizing the positive impact of Quito's first metro line, and creating an integrated and efficient mobility system that favors active mobility.

D. RESOURCEFUL AND SOLID ECONOMY

Building economic resilience requires strengthening productive sectors and diversifying lines of business, all with an environment-friendly focus. This pillar creates an economic environment conducive to strengthening job supply and demand, with a special focus on youth. It fosters a diverse, sustainable, and innovative economy, and promotes the food-related economy as a guideline for development.

E. REFLECTIVE AND SAFE TERRITORY

This fifth pillar focuses on addressing the multiple threats and the high risk exposure due to the city's physical and socioeconomic vulnerability. This fifth pillar seeks to avoid creating new risks, mitigate existing risks, and prepare the city to respond to potential natural and man-made disasters.

The strategy also proposes mechanisms that facilitate cross-disciplinary planning and allow continuity over time. This includes the institutionalization of the resilience agenda and its monitoring mechanisms, alignment with international development plans, adherence to the Metropolitan Plan for Development and Land Management, and training of resilience practitioners.

2.1 STRATEGY SUMMARY AND CONTRIBUTION TO 2040 VISION

Quito's Resilience Strategy contributes to the 2040 Quito Vision in a comprehensive way. The multidimensionality of this strategy's goals and actions allows it to contribute to all of the vision's challenges.

VISION OF QUITO TO 2040

"Quito in 2040, will be a city with a high quality of life, capable of successfully facing all the challenges that arise in the social, cultural, economic and environmental fields and in the territory. It will thus become a resilient city and will have ensured the sustainable development of its population."

All DMQ residents and their organizations will have equal opportunities to achieve sustainable development in all areas of the district.

1 **INCLUSIVE AND OPEN CITY FOR EVERYONE**

Quito will be a city that guarantees and facilitates the development of productive activities with innovative technologies that generate employment and wellbeing for its inhabitants.

2 **GLOBAL AND COMPETITIVE CITY**

DMQ citizens and authorities, based on a firm commitment to nature, will ensure not only its conservation but also its proper use.

3 **ENVIRONMENTALLY RESPONSIBLE CITY**

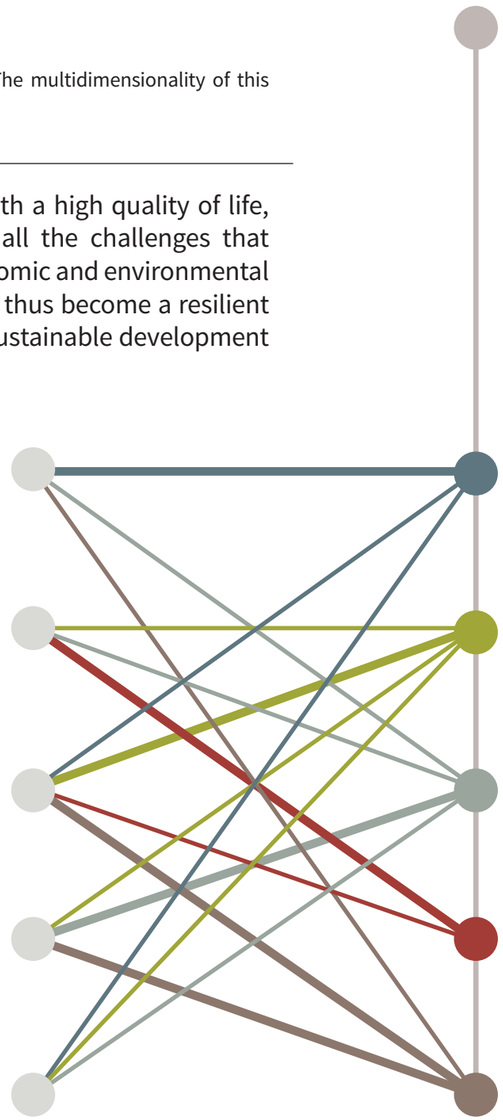
The citizens will find conditions of high functional, spatial and formal quality throughout the DMQ territory which create an environment that ensures a better quality of life.

4 **CITY DESIGNED FOR LIFE**

The urban structure and the decisions for the integral consolidation of the territory are based on the set of patrimonial, cultural and historical values.

5 **CITY THAT VALUES ITS CULTURE AND HISTORY**

VISION 2040 CHALLENGES



CROSS-CUTTING ACTIONS **T**

1. Ensure continuity and facilitate planning processes with a resilience lens — 5

INCLUSIVE AND EMPOWERED CITIZENS **A**

1. Encourage co-responsibility between citizens and the municipality through capacity building — 4
2. Develop institutional mechanisms that enable citizen participation — 4
3. Create quality public spaces for citizens — 3

ROBUST AND SUSTAINABLE ENVIRONMENT **B**

1. Manage natural and semi-natural areas and urban parks in the Metropolitan District of Quito — 3
2. Promote environmental awareness — 2
3. Take advantage of the benefits of nature in urban infrastructure planning — 4

INTEGRATED AND COMPACT CITY **C**

1. Control urban sprawl — 3
2. Maximize the impact of the first Quito Metro line on the city's development — 5
3. Achieve an integrated and efficient transportation system — 3
4. Promote active mobility in the city — 3

RESOURCEFUL AND SOLID ECONOMY **D**

1. Create an economic environment conducive for strengthening labor supply and demand — 3
2. Foster a diversified, sustainable, and innovative economy — 4
3. Promote the food economy as a foundation for development — 3

REFLECTIVE AND SAFE TERRITORY **E**

1. Avoid the creation of new risks — 7
2. Mitigate existing risks — 4
3. Prepare the Metropolitan District of Quito to address threats — 4

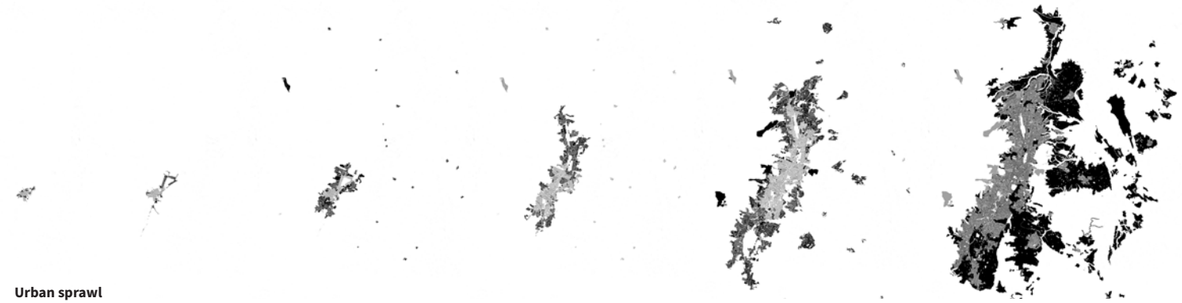
5 PILLARS RESILIENCE STRATEGY

16 GOALS **NUMBER OF ACTIONS**

3. CONTEXT

3.1 HISTORICAL CONTEXT

ACUTE SHOCKS, CHRONIC STRESSES, AND CITY MILESTONES THROUGHOUT HISTORY



NATIVE PEOPLE
The Quito Basin was a center for interregional coordination, and was occupied by numerous ethnic groups, including the Quitu-Caras..

←10,000 years of human settlements
1450 *Inca Conquest onset*

COLONIAL QUITO
The Spanish Conquest was motivated by a rumor that Atahualpa's treasure was located in Quito. Before the Spaniards arrived, Inca general Rumiñahui burned the city to the ground.

1534 *Spanish Foundation of San Francisco de Quito*
1534 Checkboard layout of the new "village"
1541 Quito declared as city
1563 Quito named as a Royal Audience

1809 *Firs independece uprising in South America* **1809**
1822 Battle of Pichincha Independence 1822
1830 The Republic of Ecuador is born, with Quito as its capital city 1830

QUITO REVOLUTION
The declaration made on August 10, 1809, was a milestone in South America's history.

French Geodesic Mission 1736
Visit defined the location of the Equator
Declared a World Heritage Site **1978**
1989, 1996
Tumbes-Chocó-Magdalena and the Northern Andes declared as biodiversity hotspots
First Declaration of Areas for Conservation and Sustainable Use in the Metropolitan District of Quito 2012

GLOBAL REFERENCE
Located in the middle of the world and standing out as an urban center with unique landscapes, Quito is a World Heritage Site.

SEISMIC TERRITORY
Crisscrossed by a system of tectonic fault lines, with the Quito fault being the largest one of the group, the city is exposed to constant seismic threats.

1541 Mount Antisana - MSK: 8
1587 San Antonio de Pichincha - Richter: 6,3; MSK: 8
1627 Quito - MSK: 7
1755 *Quito - Richter: 7,0; MSK: 9*
1797 Riobamba - Richter: 8,3; MSK: 8
1859 Quito / Ibarra - MSK: 9
1868 Ibarra - Richter: 6,3 y 6,7; MSK: 10
1919 Tambillo / Uyumbicho - MSK: 8
1938 *Los Chillos Valley - Richter: 7,1; MSK: 5*
1949 Ambato - Richter: 6,8
1987 *Sucumbíos - Richter: 6,9; MSK: 9*
1990 Pomasqui - Richter: 5,0; MSK: 7
2014 Quito - Richter: 5,1
2016 Pedernales - Ritcher: 7,8
2016 Quito - Ritcher: 4,7

RAINY SEASON
The rainy season poses a risk to the city due to rain-induced flooding and landslides. The winter season causes material losses and, on occasion, human casualties.

1975 Mudslide La Gasca - La Mariscal
1983 Mudslides Cotocollao and former Quito Airport
1986 Mudslide La Raya
1997 *Mudslide Santa Clara de San Millán*
2008 Floods and landslides El Recreo
2009 Mudslide Rumihurco
2010 Landslides and floods across the city
2011 Landslide La Forestal
2012 Mudslide Ibarra neighborhood

2013 Mudslide Pomasqui
2017 Quito declares an emergency for rains - Record rains: May 15 mm

VOLCANIC THREAT
A number of active volcanoes are located in or near the DMQ. The volcanic threat that is most frightening because of its level of destruction is mud and debris flows (lahar). (MDMQ, 2016)

1534 Mount Cotopaxi eruption
1566 Mount G. Pichincha eruption
1575 Mount G. Pichincha eruption
1582 Mount G. Pichincha eruption
1660 Mount G. Pichincha eruption
1734 Mount Cotopaxi eruption
1742 Mount Cotopaxi eruption
1744 Mount Cotopaxi eruption
1768 Mount Cotopaxi eruption
1802 Mount Reventador eruption
1856 Mount Reventador eruption
1877 Mount Cotopaxi eruption
1894-1898 Mount Reventador eruption
1998-1999 *Mount G. Pichincha* eruptions
2000-2002 Mounts Reventador and G. Pichincha eruptions
2015 Mount Cotopaxi reactivates

ECONOMIC CRISES
The marked cycles of Ecuador's economy and a number of market trends have influenced the city's socioeconomic fabric.

1914 Cocoa crisis
1970 Oil Boom
1999 *Financial Crisis / Banking Holiday*
2000 Dollarization
2009–2014 Second oil boom

HOTSPOT FOR PROTEST
Since it is the seat of government, Quito is affected by civil demonstrations and political crises that deepen social fragmentation.

1592 Tax Revolution
1765 Quito's Neighborhoods revolution
1875 Assasination of President G. Moreno
1895 Liberal Revolution
1912 President Eloy Alfaro's body dragged through town
1932 Four-day war
1976-1979 Military dictatorship
1990 First indigenous uprising
1997 Fall of President Abdalá Bucaram
1997 Rosalía Arteaga takes power as president and then is removed from power in a period of 2 days
1999 Taxi drivers demostration blocks the streets of the entire city
2000 Fall of president Jamil Mahuad
2000 Military triumvirate takes power for a few hours
2005 *Forajidos Revolution*
2005 Fall of President Lucio Gutierrez
2010 30S
2013 Protests against oil explotation in the Yasuni National Park
2015 Indigenous protests
2017 Post-presidential election protests

FOREST FIRES
A significant percentage of the DMQ contains areas that are highly susceptible to forest fires, especially in the forests that run from north to south (MDMQ 2016).

1991 1,231 forest fires
1999 1,567 forest fires
2009 2,700 ha burned
2012 *3,796 ha burned*
Quito declares a state of emergency
2015 3,102 ha burned

INNOVATING MOBILITY
Systems for mobility have brought with them development and have become mechanisms for reducing social vulnerability.

Guayaquil-Quito Railroad Route 1908
Electric trams 1914
Trolley (first Bus Rapid Transit [BRT] line) 1995
Ecovía (second BRT line) 2000
New Airport 2013
Quito Metro **2019**

3.2 QUITO: RESILIENCE CONTEXT

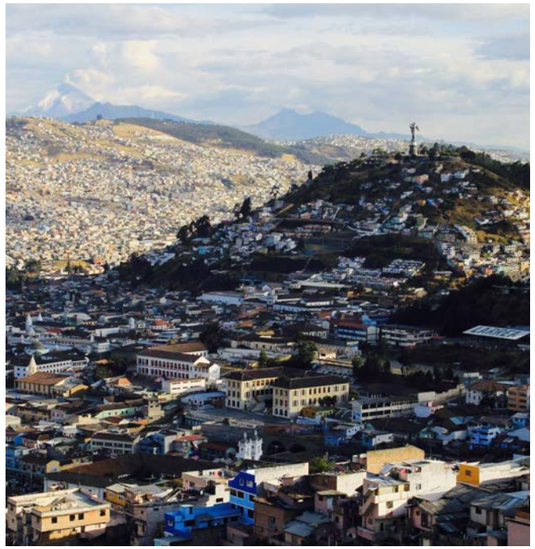


Photo: Camila Lanusse

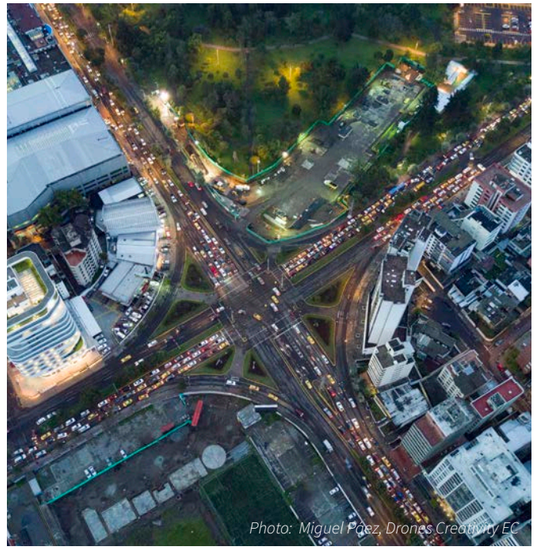


Photo: Miguel Páez, Drones Creativity EC

Due to its designation as Ecuador's capital city, its geographic position, and its tangible and intangible heritage, the DMQ has an economic, ecological, and cultural role to play on the world stage. Archaeological remains discovered at the foot of Mount Ilaló (at the El Inga site in the southeastern part of the city) show the existence of workshops that attest to the presence of human settlements in the area dating back at least 10,000 years (Lozano, 1991). Since that time and throughout its history, the city has been a mosaic of cultural diversity expressed through its traditions, art, and architecture. The population is settled along a horizontal strip surrounded by mountain ranges and high peaks, including Mount Pichincha and Mount Itchimbía. For many years, these high elevations contained urban sprawl. Within this plateau, the city has many faces, among them the Quito Historic City Center (QHCC), whose streets, squares, buildings, churches, convents, and monuments reflect a past that is connected to the present and needs to be preserved. Another face is modern Quito, a city driven to become a prosperous urban center while addressing structural inequalities.

From a social perspective, Quito is a young city. Its demographics offers potential for significant economic development. The working age population (economically active) in the city is of higher proportion than the dependent population (children and senior citizens). If appropriately taken advantage of, the city's current age distribution is an opportunity to boost the city's economic engine and contribute to its socioeconomic growth. Additionally, the city's social capital is characterized by a long tradition of collaborative practices and participation in decision-making process required for planning the city's and its diverse communities' development (MDMQ, 2015). The DMQ's social fabric is highly dynamic, which is reflected in the city's history, initiatives, and notable ability for creativity and innovation. However, this historic strength has been affected by the social fragmentation caused by political factors, social differences, and the dynamics of the market, technology and urbanization. All of these have had corrosive effects on social cohesion and mobility (MDMQ, 2015).

In environmental terms, the city's diverse ecosystems are part of the planet's life support systems. Its territory contains immensely rich valleys and mountains as well as conservation corridors that are part of the Tumbes-Chocó-Magdalena bioregion, one of the planet's biodiversity hotspots. As a result of their biological, cultural, and social assets, these areas meet the conditions needed for sustainable development opportunities in the DMQ. However, these areas are under pressure from practices that contribute to environmental degradation, such as mining, intensive livestock grazing, and overproduction of wood, which are affecting native forests and moorland. Urban expansion has also had a detrimental effect on the environmental and the city's ecology. All of these actions exacerbate the stresses on the different ecosystems, contaminate water sources and networks, and put the city's capacity to supply ecosystemic services at risk (MDMQ, 2015).

Mobility significantly influences the quality of life for city residents; its inefficient operation affects day-to-day activities. In the DMQ, inadequate mobility is one of the main chronic stresses, reflected mainly in the quality of service, measured by its accessibility, quality, and use of public places; transfer time, coverage, environmental impacts due to greenhouse gas emissions (GHG), and decline in air quality. The city's disorganized growth hinder the efforts of the municipality to address its citizens' demands for access to services, including transportation. The construction of the city's first metro line and its integration with existing mobility systems represent a historic opportunity to rethink urban development and its dynamics. A weak approach to capitalizing on this opportunity would reverse the city's potential for transformative action and worsen existing segregation and lack of coordination issues.

From an economic standpoint, in addition to being an important financial center, the DMQ achieves high marks for education, human talent, infrastructure, and access to credit (MDMQ, 2015), all of which are significantly better than the rest of the country. Nevertheless, the lack of job opportunities is an underlying problem, which is often due to the lack of coordination between job-training efforts and the job market demands. The city has high concentrations of wealth and levels of inequality and informality, resulting in an economy that shows levels of employment and underemployment that are above the national average (INEC 2017). The economy is also vulnerable to factors such as the national dependence on oil prices and international markets for raw materials, especially in the case of the flower industry, the DMQ's main export. The need to strengthen the economy and diversify productive industries is closely related to the macroeconomics environment; in Ecuador's case, this is specifically related to dollarization. The absence of monetary management policy tools significantly reduces the ability to respond to external economic shocks.

In relation to land management, the city's unregulated growth affects its functionality and increases its vulnerability to natural threats, such as earthquakes, landslides, and wildfires. The risk focal points in the territory are located in places vulnerable to both natural and man-made threats. The level of exposure is augmented by physical and socioeconomic factors. Given the city's topography, many informal settlements are located in areas with non-mitigable risk, such as slopes or gorges. Many of these areas do not have access to public utilities, infrastructure, and equipment, making them prone to violence and unsafe conditions. Given the demographic growth forecasted for these areas in the coming decades, the construction of safe habitat needs to be a priority.

Quito's youth

3.3 CITY STATISTICS

ACUTE SHOCKS AND CHRONIC STRESSES

Ecuador

16.5 million (INEC, 2017)

Population

97.8 billion (BCE, 2016)

GDP

28.356.000 ha.

Surface Area

Actual 2,6 million (INEC, 2017)

2020 2,8 million (INEC, 2017)

2040 3,4 million (IMPU, 2016)

23% (MDMQ)

423,000 ha. (MDMQ)

One out of every 2 Quiteños

is under 29 years of age

(MDMQ 2015, based on INEC 2010)

Quito

58 inh. km²

66 Parishes

Area

42,530 urban ha. (MDMQ, 2015)

Informal Construction: 60% (MDMQ, 2015)

7.8% Total Unemployment Rate (INEC, 2017)

11.9% Underemployment (INEC, 2017)

Employment

80.3% Employded (INEC, 2017)

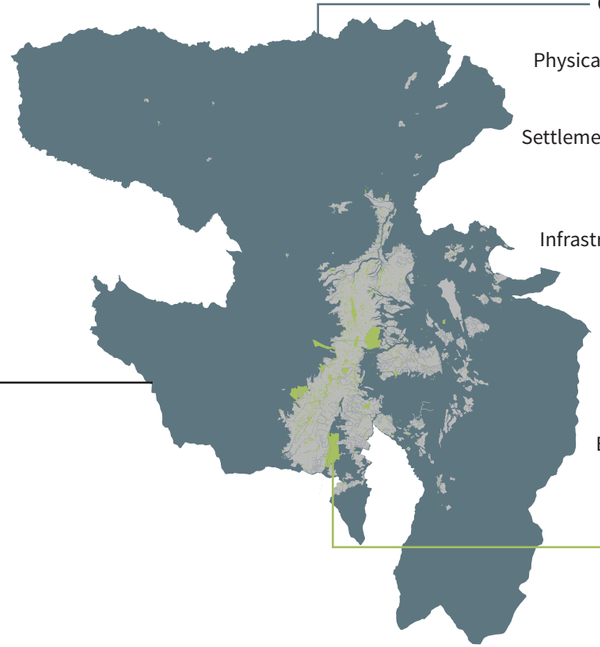
20% Gender Gap (INEC, 2017)

60% Youth Unemployment (INEC, 2015)

1269 **Neighborhoods**

189 **Neighborhood Assemblies**

$20 Million in participatory budgets (SGCTyPC, 2017)



Chronic Stresses (EPR, 2017)

- Physical Vulnerability of Households
- Settlements in risk-prone areas
- Exposed Infrastructural Services
- Socio-economic Vulnerability
- Environmental Degradation
- Biodiversity Loss

Acute Shocks (MDMQ, 2016)

- Heavy Rainfall
- Earthquake
- Landslides
- Forest Fire
- Volcanic Eruptions

Green Urban Index

inhabitant/m² (STHV, 2017)

9 OMS

13 DMQ

Distribution

79% Of the population does not have access to quality public space

Mobility

15.4% Pedestrian

0.3% Bike

22.6% Private Transportation

61.7% Public Transit

73% Collective Transport

70% percentage of road infrastructure is occupied by private transport

used by **30%** of the population

50.6 min Average Public Transit Trip Duration

12.1km/h Average Speed (MDMQ, 2015)

2.08 tons of CO2 Emissions per capita per year

2,037 tons of Trash Per day (60% domestic) (ATLAS AMBIENTAL, 2016)

14.78 °C Average temperature

1.2 °C Temperature Increase in the last 100 years (ATLAS AMBIENTAL, 2016)

4. URBAN RESILIENCE

"Urban resilience refers to the ability of people, communities, companies and systems that form part of a city to survive, adapt, and grow regardless of the types of acute shocks and chronic stresses they experience."*

- 100 Resilient Cities

* • Acute shocks are sudden and intense events that threaten a city.
• Chronic stresses weaken the fabric of a city on a daily or cyclical basis.

Planning for urban resilience requires an understanding of the systems and subsystems that make up the city and its surroundings. "Socioecological systems" refer to environmental life support systems, which includes moorlands, mountains, forests and rivers; while "sociotechnological systems" are related to infrastructure, mobility systems, and water or electrical supply (Meerow et al., 2016). The interaction and interdependence between such systems generates synergies and clashes. The constantly changing dynamics of these systems require prepared responses and resilience structures that both support and depend on each other (Kristinsson, 2012).

In a changing world, cities and their populations need to adjust, recover quickly and come out stronger after acute shocks and stresses in their habitat. Building urban resilience does not mean returning to a previous or normal condition. IIt is about developing the capacity to prepare and adapt to change, and to be able to continue functioning in a more effective and efficient way.

Cities have proven to be historically resilient. However, while the increasing size of the world's urban population offers opportunities to increase efficiency in access to services, economic opportunities, political participation and other areas, it also presents new challenges associated with scattered and informal settlements, environmental degradation, greater demand for resources, and increased inequality. This makes resilience a fundamental factor in guaranteeing the quality of life in cities. Given its importance, resilience principles are aligned with global agendas, such as the SDGs, which propose to eradicate poverty, protect the planet, and ensure prosperity for all as part of the 2030 agenda, the NUA, the Paris Climate Change Agreement, and the Sendai Framework for Disaster Risk Reduction.

Miranda Park

5. 100 RESILIENT CITIES
INITIATIVE

100 Resilient Cities (100RC) – Pioneered by The Rockefeller Foundation, is dedicated to helping cities around the world become more resilient to the physical, social, and economic challenges that are a growing part of life in the 21st century. The 100RC initiative supports the cities in their efforts to adopt and incorporate resilience into their urban planning processes by providing access to forefront tools and technical assistance, as well as by channeling resources for action implementation. The 100RC Network receives this support through four mechanisms:

1. Financial and logistical guidance for establishing an innovative new position in city government—a Chief Resilience Officer (CRO), who will lead the city's resilience efforts;

2. Support for a CRO to lead stakeholders in the development of a resilience-building strategy. This strategy, developed over the course of 6 to 9 months, will serve as the city's roadmap to resilience;

3. Access to tools, service providers, and partners from the private, public, and non-profit sectors who can help cities develop and implement their resilience strategies. Current partners include data analysis companies, reinsurance companies, architects, energy experts, among others;

4. Membership of the 100RC Network, through which CROs can share best practices, solve problems collectively, and learn from each other and from other resilience experts.

The Metropolitan District of Quito Municipality (MDMQ) has been part of this network since the first round, after being chosen from among more than 400 cities around the world. The development of the Resilient Quito Strategy underscores its commitment to building Quito's resilience and implementing concrete actions aimed at improving the city's capacity to adapt and thrive in the face of potential acute shocks and chronic stresses. The Quito Resilience Strategy followed the 100RC methodology and program guidelines, and was developed through a participatory process that included meetings and consultations with a wide variety of stakeholders from both the public and private sectors, non-governmental organizations (NGOs) and academia. The process has been enriched by the various perspectives, opinions, and sources of information.

The city's collaboration in this global program is an opportunity to share knowledge, techniques, and best practices in order to consolidate an urban vision that considers resilience in its development within the context of a global learning community.

5.1 TOOLS AND APPROACH

The 100RC program provides cities with an established set of methodolgies and tools that can be adapted to each local context. The City Resilience Framework (CRF), developed by Arup with support from The Rockefeller Foundation, is a tool that helps cities explore the strengths and weaknesses of their systems in terms of four dimensions: Health and Well-being, Economy and Society, Infrastructure and Environment, and Leadership and Strategy.

Each dimension contains three “drivers” that subdivide into 12 components. The CRF aims to provide a uniform analysis framework for all cities that are part of the 100RC Network. The 100RC program uses several diagnostic tools based on the CRF in its work with cities to examine interdependencies and identify where they need to build their capacities.

Source 100RC - Edited by author.

5.2 QUALITIES OF RESILIENT SYSTEMS

Urban resilience qualities were defined as part of the development of the CRF . The following qualities determine how the systems proposed through the actions presented in this strategy address the possible acute impacts and chronic stresses, including the way in which they contribute to building resilience.

1. Reflective: learning from past experiences and incorporating the acquired knowledge to evaluate future decisions.

2. Robust: implementing well-designed, built, and managed systems.

3. Inclusive: prioritizing citizen participation in decision making to establish mechanisms for arriving at appropriate public decisions.

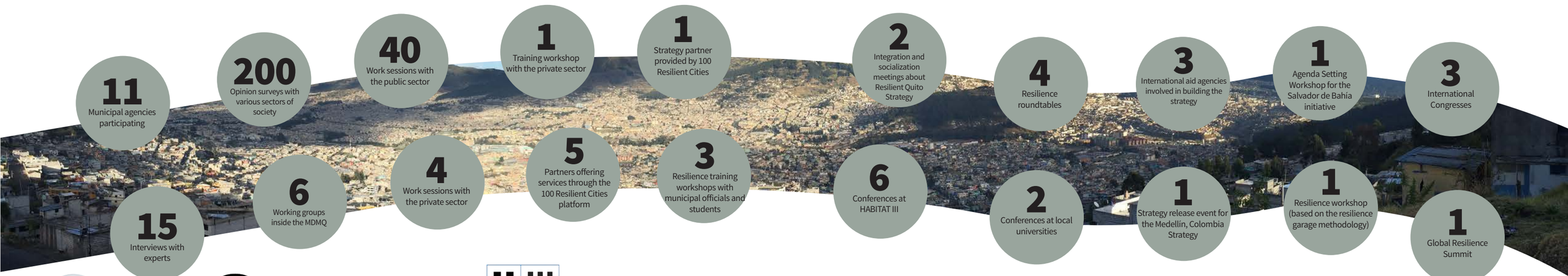
4. Integrated: coordinating a wide range of systems and institutions to reach a goal.

5. Resourceful: considering alternative and innovative ways for using resources and find solutions.

6. Redundant: purposely creating additional capacity to keep the city’s operating systems going in the event of a failure or collapse.

7. Flexible: systems capable of adapting to unforeseen changes that may arise in moments of risk, in critical situations, when data is lacking, or when new stakeholders are being included.

5.3 PROCESS TO CREATE A RESILIENCE STRATEGY



December 2013
Quito named part of the 100RC program

October 2014
Resilience Agenda Setting Workshop in Quito

RESILIENT QUITO

January 2015
Signed grant agreement between 100RC and MDMQ

April 2016
Participation in Resilience Garage MEX

August 2016
David Jácome Polit designated as Quito's CRO

October 2016
Strategy startup workshop

HABITAT III
QUITO - OCTOBER 2016

October 2016
Participation in Habitat III

January 2017
Preliminary Resilience Assessment (PRA)

March 2017
Creation of the Phase 2 Scope of Work (SOW)

May 2017
Participation in the Resilient Cities Congress (ICLEI)

June 2017
Participation in the World Reconstruction Congress
(Global Facility for Disaster Reduction and Recovery [GFDRR], World Bank [WB])

July 2017
Opportunities workshop (FOO)

July 2017
Participation in the Resilience Practitioners Summit in New York City (100 RC Summit)

October 2017
Quito Resilience Strategy Launch - Anniversary of Habitat III

- **Actions Inventory**
- **Semi-structured interviews with various stakeholders**
- **Opinion surveys**
- **Diagnostic workshops and identification of areas of discovery**

PHASE 1. *Preliminary Resilience Assessment* - Discovery Areas

This phase consists of a preliminary comprehensive diagnosis of the city, which is used as a basis to identify the areas where efforts need to be made to build a resilient city. In addition, a Resilience Steering Committee is created within local government, identifying important stakeholders to successfully develop and implement the strategy.

- **Identification and development of activity workshops**
- **Resilience training workshops**
- **Consultation and work with platform partners**
- **Review of other cities in the network resilience strategies**
- **Identification of best practices**
- **Socialization workshops for strategic actions**

PHASE 2. *Development of the Resilience Strategy*

Based on the shocks and stresses identified in Phase 1, the strategy establishes specific actions to be implemented by the local government and other key players to strengthen different systems. This phase delves into the issues identified in Phase 1 through a process that includes stakeholders and teams throughout the city, platform partners, and other cities within the network. Subsequently, actions, teams, and partnerships with new stakeholders are presented to contribute and validate the process of building the city's resilience. This phase concludes by publishing a roadmap to resilience.

- **Implementation**

PHASE 3. *Implementation of the Resilience Strategy*

During this phase, the activities established in the Resilience Strategy are implemented and monitored, together with the stakeholders identified in the first two phases.

6. **PROBLEM** STATEMENT

RESILIENCE CHALLENGES AND OPPORTUNITIES

GIven that cities are the sum of several interdependent systems, their problems require multidimensional solutions. This is why building urban resilience is fundamental to achieving robust, sustainable and inclusive cities.

The 2.6 million inhabitants of the DMQ are exposed to a wide range of acute shocks and chronic stresses. According to the results from the tools used in the first phase to produce the PRA, earthquakes, volcanic eruptions and economic crises are dominant. However, there are other, smaller-magnitude and more frequent shocks like floods or forest fires. The vulnerable population is concentrated in critical areas, which exacerbates their exposure to threats and amplifies the impact an event may have.

At the same time, the city's functioning continues to be affected by chronic stresses. The most relevant are social exclusion, environmental degradation, lack of an efficient transportation system, and lack of a diversified economy that provides job opportunities. These issues mainly harm the most vulnerable sectors of the population.

However, there are a number of factors that contribute to building the city's resilience. One of these is the age demographic, which offers favorable conditions for the economy. Natural areas that are part of the urban and peripheral habitat constitute life support systems with wide-ranging positive effects on the population's quality of life. Infrastructure projects rethink the approach to sustainable urban development and contribute to efficient mobility, while the city's social structures allow the consolidation of containment networks and disaster response and preparation actions. This last factor also involves citizen co-responsibility plans that enhance the ability to manage and validate public participation development agendas.

Acute Shocks

Amplified by climate change

- Landslides
- Heavy Rainfall
- Volcanic Eruptions
- Earthquakes
- Forest Fires

Chronic Stresses

- Physical vulnerability of households
- Settlements in risk-prone areas
- Exposed infrastructural services
- Socio-economic vulnerability
- Environmental degradation
- Biodiversity loss

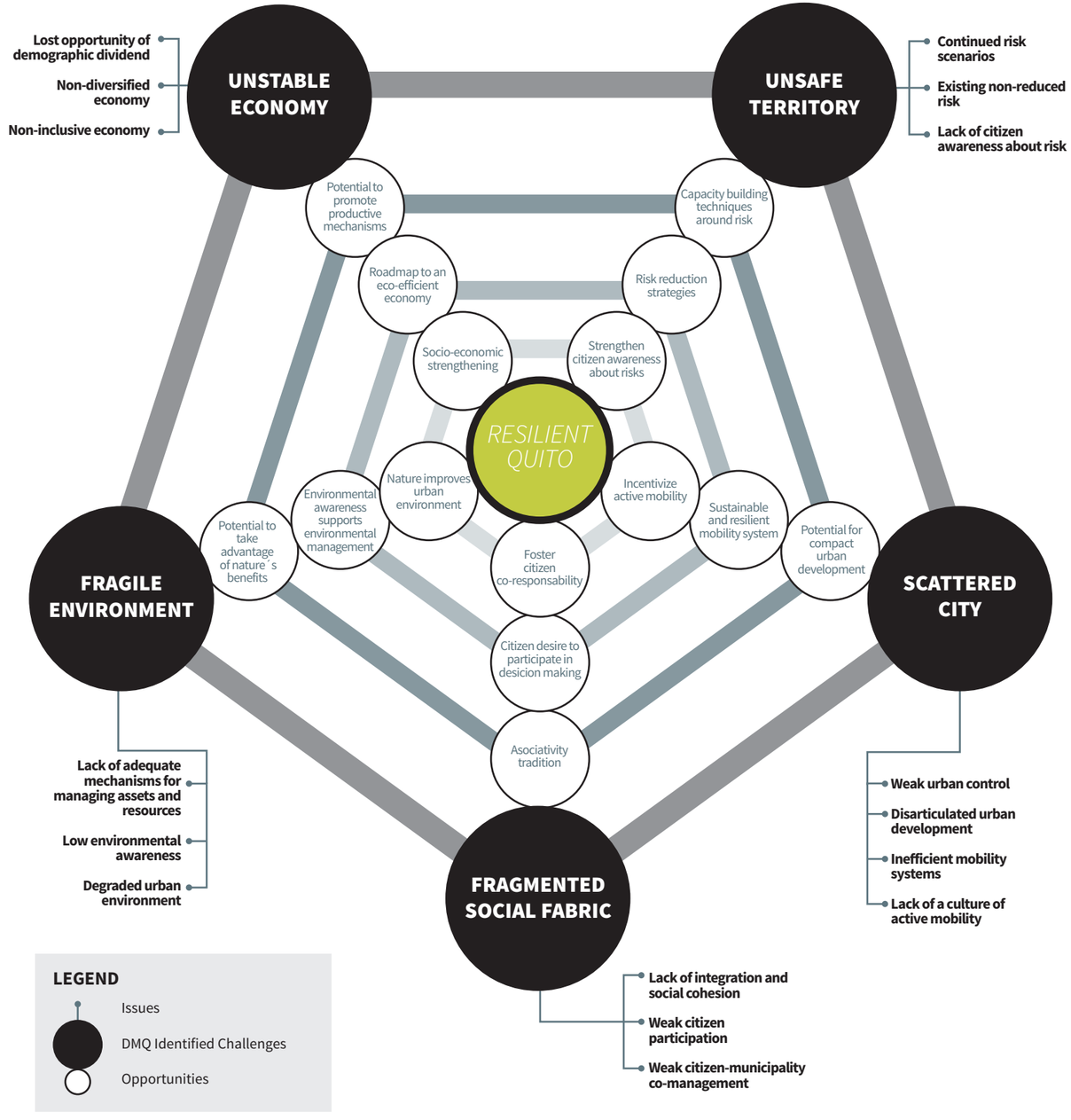
Endogenous

Exogenous

$$\text{RISK} = \frac{\text{THREAT} \cdot \text{EXPOSURE} \cdot \text{VULNERABILITY}}{\text{RESPONSE CAPACITY}}$$

- Organizational capacity of society to respond
- Installed physical capacity of response in the city

The risk formula in this strategy is not presented in a conventional way. Sustained in several studies, including the Preliminary Resilience Assessment, the formula has been adapted to show the multidimensionality of factors within the DMQ that create or increase new risk.



7. STRATEGY

Social, economic, and environmental issues are present throughout the DMQ. Therefore, the Quito Resilience Strategy should be applied in such a way that its pillars and actions work hand in hand. For example, the issues of traffic and air pollution are best addressed by applying various actions from all pillars. A first step in the short term might be to encourage citizens to use low-emission public transportation and adopt active mobility mechanisms (e.g., public bicycles). A complementary step is to improve public space with nature-based solutions that improve environmental quality and promote the use of public spaces. These improvements could include components that help increase citizen safety and foster a culture of mass transit system use. In the long term, planning and developing a compact city with a wide range of uses and services would help to reduce the number of trips, trip distances, and dependence on private vehicles while boosting the local economy. Replacing cars with non-emission vehicles is an important strategy, but it is not realistic to expect that citizens will switch to non-emission vehicles or stop using cars in favor of mass transit in the short or medium term. Therefore, problems may continue to appear in different ways, causing other unintended shocks, which is why the actions taken should be reviewed periodically.

The Chakana is an important polysemic symbol of several Andean cultures. This geometric figure was used as a guideline for mathematical, philosophical, social, and religious concepts. The Chakana also symbolizes the relation of man to the cosmos, being the object of a millenary cult by offering the “order” and the “measure”. This symbol collects the concepts behind each of the pillars of the resilience strategy and unifies them under a single objective: “balance”.

The Quito Resilience Strategy has been developed in collaboration with AECOM, the strategy partner provided by 100 Resilient Cities.

PILLAR A
Inclusive and Empowered Citizens

PILLAR B
Robust and Sustainable Environment

PILLAR C
Integrated and Compact City

PILLAR D
Resourceful and Solid Economy

PILLAR E
Reflective and Safe Territory

Photo: Miguel Moreno - Acciona Producciones y Diseño

7.1 STRATEGIC APPROACH TO BUILDING A RESILIENT CITY

People constitute the basis of this strategy to make the DMQ resilient. The starting point is to create the ability to plan the development of neighborhoods, communities, and the city in general in a participatory manner. This mechanism aims to strengthen social cohesion and promote self-organization (Peterson et al., 2005), which, in turn, strengthens the city's ability to cope with, recover from, and stand stronger against potential acute shocks and chronic stresses. This strategy takes into account the willingness of Quito's residents to share or participate in planning and decision making; based on this interest, the proposal seeks to create an environment that builds social institutions and, in turn, the capacities associated with human development (Stewart, 2013).

In this sense, citizen participation becomes a vehicle to engage the strategy's various pillars. The actions identified will facilitate participatory processes that should be accompanied by other processes focused on strengthening the ability of communities to organize and empower themselves. At the same time, the Municipality must strengthen its receptiveness to demands coming from society while furthering its own participation in them.

Effective environmental conservation and management mechanisms, based on participatory processes, are fundamental to building urban resilience. Resourceful management requires that those who benefit directly and are related to local natural resources get involved in the planning and management of the use of such resources (Ingles et al., 1999). Given the importance of the Metropolitan District of Quito's natural heritage, conservation of such areas fostering the provision of ecosystem services (such as air quality improvement, water supply, temperature regulation, or recreational experiences such as scenic walks) are not only urgently needed, but also provide an opportunity for economic development for people living in such areas.

Urban areas have replaced many previously existing ecosystems, thereby changing natural dynamics (UN Habitat, 2015). This trend should be redirected through solutions that prioritize environmental care. This strategy sets out the idea of maximizing ecosystem services while decreasing their demand, which is reflected in GHGs, water consumption, and waste. The proposal also focuses on generating environmental consciousness among citizens to increase the effectiveness of such efforts.

Urban, periphery, and rural areas depend on the economic and social dynamics of their environment. A decisive part of this context is mobility, one of the greatest sources of pollution in the Metropolitan District of Quito. The search for zero- or low-carbon alternatives, such as the Quito Metro, is crucial to reducing demands on the environment, and these alternatives contribute to the city's sustainable development.

Such infrastructure projects also have a positive economic effect. They offer opportunities to take advantage of the benefits of the economies of agglomeration, related to the benefits that companies obtain by locating near each other, and to provide adequate and available housing in safe areas with the necessary infrastructure. This helps to decrease existing risk and avoid the generation of new risk. By these means a compact, integrated, and low-emission urban growth is proposed.

The proposed urban development has the potential to generate employment for the DMQ's human capital. To fulfill this potential, productive agendas should be fostered to create decent, high-quality job opportunities and bridge the knowledge and skill gaps between human capital and the productive sector. Promoting innovation and entrepreneurship from a sustainability perspective complements this potential. This approach highlights proposals that contemplate an added value, such as circular economy or urban agriculture, as part of a broader understanding of the food system. Such proposals not only focus on economic production, but also strengthen food security. The goal is to create resilient economies that have the ability to recover from possible acute shocks and an economic evironment that allows for an ongoing diversification of sectors.

Quito's economy is characterized by deep inequalities. Thus, one portion of the city's residents have an exaggerated exposure to the risks associated with their socio-economic condition. Building a safer city requires planning and taking actions to reduce physical vulnerability. Decreasing risk means that natural and man-made threats need to be identified and integrated into local planning. Thus, strengthening urban development regulations includes mitigating existing risks, avoiding the creation of new risks, and even considering relocation processes when necessary.

Building resilience needs to be an ongoing process; therefore, the principles need to be embedded in the city's planning and administration. Its multidimensional aspects require sustained analysis and follow-up with the aim to re-evaluate approaches and renew commitments. This multidimensional characteristic is defined by the ability to build networks and interaction between different stakeholders, making it possible to develop and reconfigure proposals in an ongoing search for effective results.

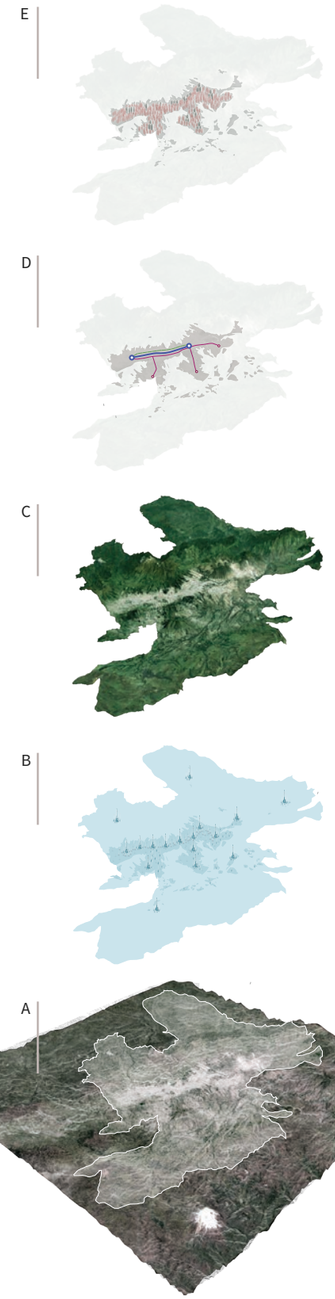
E The provision of housing in safe and adequate places helps to deconcentrate the risk located in the outskirts of the city and provides adequate conditions and services to improve the quality of life.

D A sustainable and resilient transportation system ensures the efficient functionality of the city. At the same time it reduces the demand for ecosystem services.

C The DMQ's natural heritage and natural resources provide conditions of life support and a development opportunity for the city.

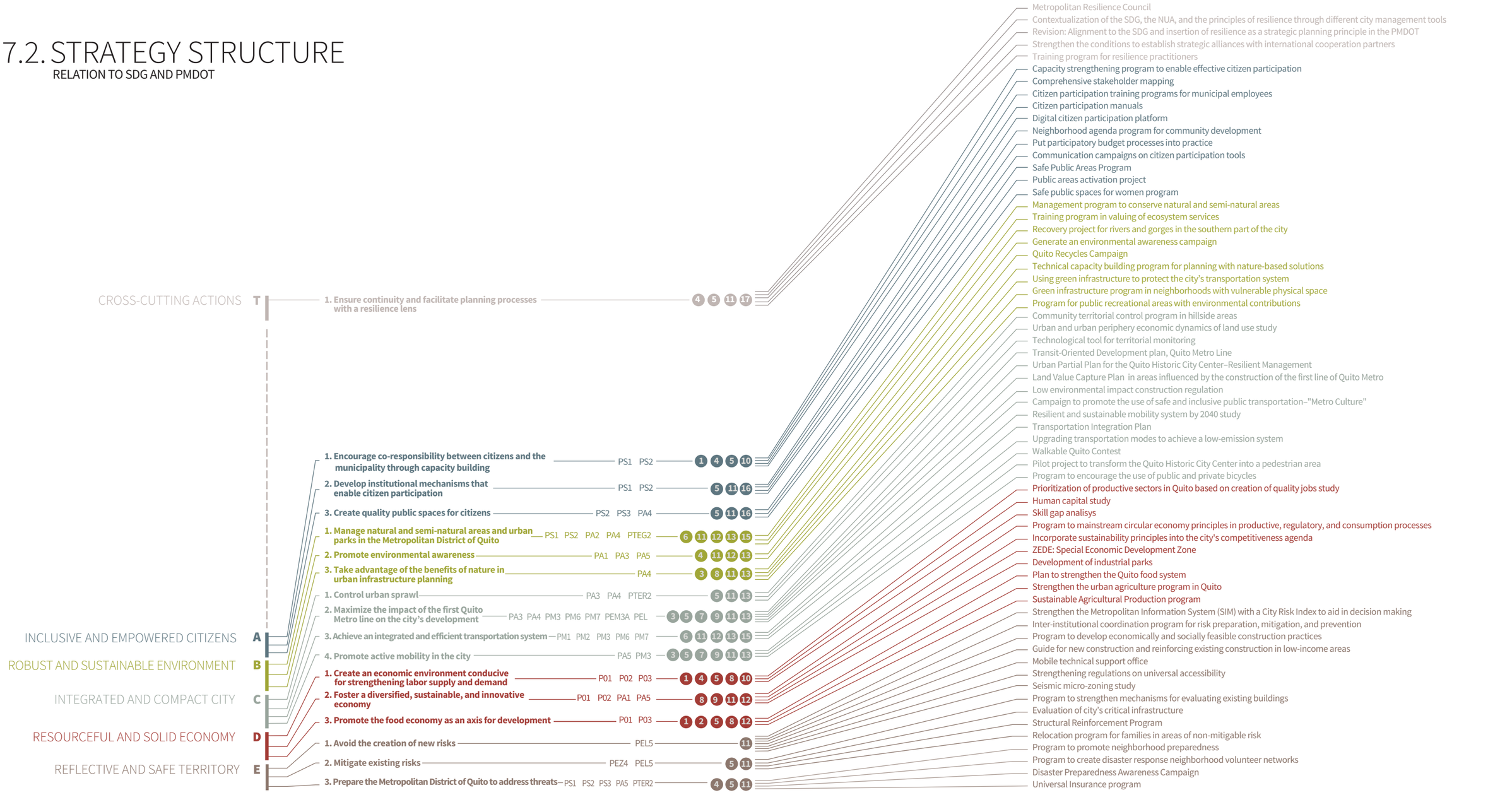
B The strengthening of the social capital by taking advantage of the great human diversity located in the urban centralities ensures that Quito residents can effectively face any adverse situations, through collective action.

A The location of the DMQ presents a great geographical variety that offers diverse landscapes. At the same time it presents challenges that must be faced when planning and managing urban development.



7.2. STRATEGY STRUCTURE

RELATION TO SDG AND PMDOT



7.3 HOW TO READ THE STRATEGY

The strategy is constituted of 5 pillars, 16 goals, and 64 actions. They are defined throughout this strategy and are the result of the analysis of the discovery areas established in the Preliminary Resilience Assessment and the activities outlined Scope of Work during Phase 2.

Each pillar includes a problem statement and the current framework within which the strategy has been developed. Next, goals for each pillar are defined and from there actions are proposed. Here, the platform partners who have collaborated on assessment and technical advice in developing each of the pillars are identified. The cities in the 100RC Network that have inspired the proposal are also identified.

Each pillar details actions or projects that are local, international or within the 100RC Network that have served as inspiration. It also describes platform partners that have been building resilience or have had a major influence on developing goals and actions in the strategy. The discussion of each pillar highlights the contribution, creativity, influence, or similarity of these actions or projects and compares them with the actions of the Metropolitan District of Quito Resilience Strategy.

The following details are provided for each action: a description, the type, status , implementation timeline, owners, other implementation partners, and how it relates to other goals of the strategy. A set of performance indicators is presented that makes it possible to measure implementation. Impact indicators, PMDOT alignment, and contribution to the SDGs are discussed in the appendices at the end of document.

STATUS:

Pre-existing: Action that already exists in the Municipality that will be reinforced.

Underway: Action planned together with the Resilience Office that is already being implemented.

Planned: Action that has an implementation plan.

Aspirational: Action that requires further research and planning.

TIMELINE: Implementation time

Short-term: 6 months to 1 year

Medium-term: 1 to 2 years

Long-term: 2 or more years

ACTION OWNER: Actor who is responsible for carrying out the action.

IMPLEMENTATION PARTNERS: Participating departments, private-sector stakeholders, academia, community, 100RC platform partners

NETWORK OF CITIES: Cities in the 100RC Network with similar actions that have worked or that could be used as support and inspiration.

PERFORMANCE INDICATORS: How the implementation of this action will be measured.

TYPE

Flagship: An action that differs from others because of its major contribution to the city's resilience.

Priority: An action needed to build the city's resilience.

Support: A supporting action, or part of priority or flagship actions.

Flagship, priority, or supporting actions are urgent and need to be implemented as soon as possible.

ACTION NUMBER
PILLAR GOAL ACTION

DESCRIPTION
General description of the action
- What will be done
- How will it be done

RESILIENCE DIVIDEND
How this action contributes to build city resilience

A1.1

Capacity strengthening program to allow for effective citizen participation

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Department of Territorial Coordination and Citizen Participation*

ACTION OWNER: *Private trainers, neighborhood assemblies, students*

NETWORK OF CITIES: *Boston, Byblos, Mexico City, Pittsburgh*

PERFORMANCE INDICATORS:
- Number of programs carried out
- Number of participants

DESCRIPTION

Consists of a citizen training program with four strategic issues: leadership, strategic planning, entrepreneurship, and participation in citizen assemblies. This program is currently found in neighborhood assemblies and will be expanded into schools and universities to include young people between the ages of 16 and 29 years. This action will aid in promoting a new generation of neighborhood leaders

RESILIENCE DIVIDEND

Training programs contribute to generating empowered citizens and improved social cohesion. Inclusion of diverse groups in this process ensures ongoing training of community leaders and further appropriation of existing participation tools and mechanisms, thus ensuring that the decisions made in participatory processes effectively represent the city's social diversity (Putnam, 1993).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A2 A3 B1 B2 C1 E1 E2 E3

RESILIENCE QUALITIES

Reflective ***Robust*** ***Inclusive*** ***Integrated*** ***Resourceful*** ***Redundant*** ***Flexible***

CONTRIBUTION TO OTHER GOALS: How this action contributes to other goals in the strategy

PILLAR A

INCLUSIVE AND EMPOWERED CITIZENS

A1 - Encourage co-responsibility between citizens and the municipality through capacity building

A2 - Develop institutional mechanisms that enable citizen participation

A3 - Create quality public spaces for citizens

This pillar has been developed with the collaboration of the Department of Territorial Coordination and Citizen Participation ,with input from Santiago, Chile, and Porto Alegre, Brazil, cities of the 100RC Network. It also received input from the city of Madrid, Spain.

PROBLEM STATEMENT

Photo: Francisco Galárraga

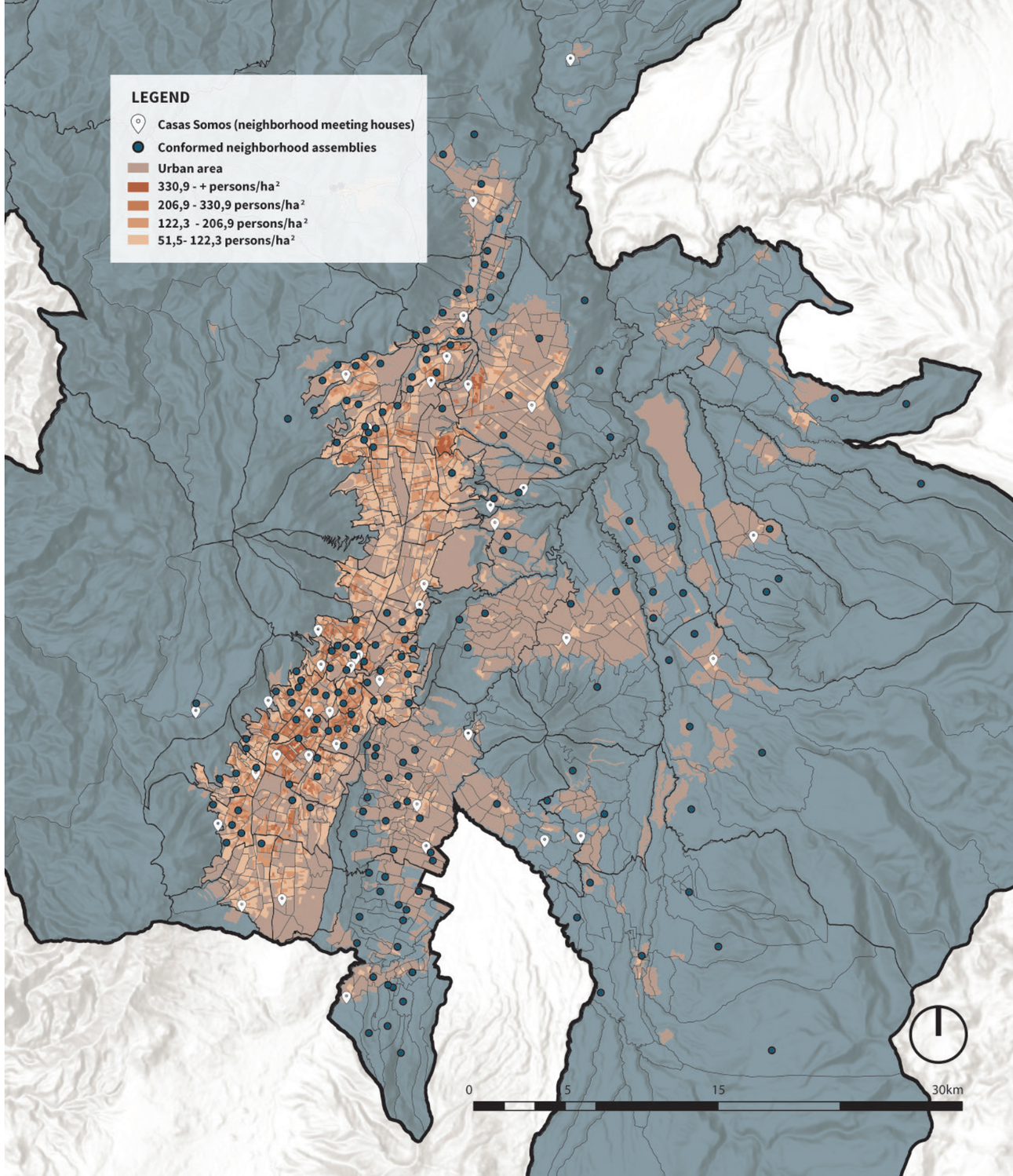
The city's accelerated and unplanned growth creates challenges, including lack of integration and social cohesion. The Metropolitan District of Quito has a fragmented and weak social fabric, with minimal public empowerment. This is partly due to the poor application of social participation tools, loss of community ties, and low citizen initiative and commitment.

Effective land management requires integrated and participatory planning and administrative processes. Strengthening the social fabric and encouraging citizen participation are crucial factors for these processes. In turn, these processes require promoting actions that include stakeholder meetings to facilitate work with neighborhoods or communities, identifying groups of people in vulnerable situations, creating places for citizens to meet up and promote cohesive communities, and applying public policies that focus on reducing existing gaps (MDGQ, 2015).

Participatory policies must recognize citizen needs and the significant social diversity, while facilitating collaborative processes in an inclusive manner. The city has sufficient social capital to build solid institutions while the municipal administration has developed mechanisnms to facilitate the process. However, the dynamics that are key to an effective citizen participation have not always come together as required. The Metropolitan District of Quito has more than 2000 neighborhoods, however only 189 have established assemblies. This indicates a still-developing participatory agenda, resulting in a large majority of the population, which includes vulnerable groups, with no representation.

Citizen participation is based on the ability of communities and citizens to self-manage, coupled with the receptive attitude of the city's institutions. The Municipality of the Metropolitan District of Quito has been making changes to its management model to adopt this definition of participatory policies. These changes, which include tools and social programs, along with a closer relationship and openness with its citizens, need to be further reinforced. A government that has a close relationship with its citizens needs to make connections with key social players when making decisions, and promote consultations and participatory mechanisms during the entire lifecycle of local public policies.

Participatory democracy not only validates the work of public administration, but also strengthens and provides feedback on responsiveness and reaction abilities in the face of acute shocks and chronic stresses. The goal of promoting citizen representation in local administration contributes to form an environment that facilitates co-responsibility between citizens and the Municipality by democratizing decision making for inclusive development.



A1 Encourage co-responsibility between citizens and the municipality through capacity building

A1.1

Capacity strengthening program to enable effective citizen participation

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Department of Territorial Coordination and Citizen Participation*

IMPLEMENTATION PARTNERS: *Private trainers, neighborhood assemblies, students*

NETWORK OF CITIES: *Boston, Byblos, Mexico City, Pittsburgh*

PERFORMANCE INDICATORS:
- Number of programs carried out
- Number of participants

DESCRIPTION

Consists of a citizen training program with four strategic categories: leadership, strategic planning, entrepreneurship, and participation in citizen assemblies. This program currently exists in neighborhood assemblies and will be expanded into schools and universities to include young people between the ages of 16 and 29. This action will help to promote a new generation of neighborhood leaders.

RESILIENCE DIVIDEND

Training programs contribute to generating empowered citizens and improved social cohesion. Inclusion of diverse groups in this process ensures ongoing training of community leaders and further appropriation of existing participation tools and mechanisms, thus ensuring that the decisions made in participatory processes effectively represent the city's social diversity (Putnam, 1993).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A2 A3 B1 B2 C1 D3 E1 E2 E3

A1.1.1

Comprehensive stakeholder mapping

STATUS:
Planned

TIMELINE:

ACTION OWNER: *Department of Territorial Coordination and Citizen Participation*

IMPLEMENTATION PARTNERS:
Zonal administrations, community

NETWORK OF CITIES: *Santa Fe*

PERFORMANCE INDICATORS:
- Designed and implemented work methodology
- Number of identified new stakeholders that participate in the processes

DESCRIPTION

Comprehensive mapping of Metropolitan District of Quito stakeholders is a technical process that involves visiting neighborhoods, communes, and organizations to identify key stakeholders that are representative leaders. This work in the field makes it possible to include other stakeholders in the citizen participation process, including communities that are excluded otherwise.

RESILIENCE DIVIDEND

Effective mapping of community stakeholders makes it possible to have more efficient and inclusive citizen participation. Effective mapping also allows the municipal administration to more easily identify the needs of its citizens. A well-organized and well-represented neighborhood is likely to transmit its needs to the corresponding authorities, allowing that neighborhood to receive better attention, while improving community control of the territory (Sullivan et al., 2006).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A2 A3 B1 C1 D3 E3

A1.2

Citizen participation training programs for municipal employees

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Department of Territorial Coordination and Citizen Participation*

IMPLEMENTATION PARTNERS:
General Administration, ICAM, municipal employees, private trainers

NETWORK OF CITIES: *Boston, Oakland*

PERFORMANCE INDICATORS:
- Number of training sessions
- Number of civil servants trained

DESCRIPTION

This program is coordinated with training sessions for municipal employees in relation to citizen participation mechanisms as established in the ordinances that provide the rules for participatory processes in the Metropolitan District of Quito. The target is to promote and foster these methods in the Municipality's activities that involve relationships with citizens, including:
- Curriculum design and delivery method
- Delivery of training courses

RESILIENCE DIVIDEND

Training municipal employees based on existing mechanisms seeks to promote citizen participation processes and to put them into practice within the municipal administration. Facilitation and proper implementation of existing tools has a great effect on the results of participation processes, while strengthening the municipality's image and ensuring the continuity of policies, programs and projects over time and across future administrations (Cousins and Whitmore, 1998).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A2 A3 B1 C1 E3

A1.3

Citizen participation manuals

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Department of Territorial Coordination and Citizen Participation*

IMPLEMENTATION PARTNERS:
Community, Metropolitan District of Quito Municipality

NETWORK OF CITIES: *Boston*

PERFORMANCE INDICATORS:
- Designed and published manuals
- Number of access to manuals

DESCRIPTION

This action involves creating two citizen participation manuals. The first will be aimed at municipal employees to facilitate participatory processes, and the second will be aimed at citizens, detailing the processes and tools that they can use to participate in the Municipality's procedures. The manuals will include regulations, guides, and best practices and processes and will be easily accessible, in both hard copy and digital formats.

RESILIENCE DIVIDEND

Manuals for citizen participation processes ensure that processes are correctly followed (Cousins and Whitmore, 1998) and aids in creating continuity of such best practices over time. This action also contributes to efforts in promoting transparency and the Metropolitan District of Quito's open government program.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A2 A3

A2 Develop institutional mechanisms that enable citizen participation

A2.1

Digital citizen participation platform

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Department of Territorial Coordination and Citizen Participation*

IMPLEMENTATION PARTNERS:
General Planning Department (SGP), community, Madrid City Council

NETWORK OF CITIES: *Thessaloniki*

PERFORMANCE INDICATORS:
- Working online platform
- Number of platform entries and participation

DESCRIPTION

Today's digital age dictates public institutions to create a paradigm shift in the way they develop public policies and requires the active participation of citizens. A digital platform seeks to facilitate this process by channeling digital citizen participation to support traditional face-to-face participation and focusing on implementing different decision-making mechanisms, such as participatory budgets or "empty-chair", as a place at the city council to discuss policies, or other citizen advocacy strategies like advisory committees or public hearings. The platform's main contributions are: (1) Access to relevant information; (2) Free expression and exchange of opinions; (3) Fostering training of social capital; (4) Automation of citizen participation processes; and (5) Youth involvement in public decisions. *

RESILIENCE DIVIDEND

This type of tool not only helps to spark the interest of people who are not usually actively involved in public interest matters, but also gets them to take action, thus contributing to a better understanding of accessible and transparent information. The platform works to diversify participants and public discussion. If democratic participation has been seen as the closest thing to direct democracy (Hague Loader. Eds. 1999), then digital participation is the way to achieve it.

** The Metropolitan District of Quito's citizen participation platform is being developed thanks to the support of the Madrid City Council, which has been in the process of implementation since the middle of 2017 using transfer of knowledge. The DMQ platform is based on the CONSUL platform, which is linked to its web domain: www.decidemadrid.es.*

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 A3

Current *MDMQ Gobierno Abierto* platform

A2.2

Neighborhood agenda program for community development

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Department of Territorial Coordination and Citizen Participation*

IMPLEMENTATION PARTNERS: *SGSyG, IMPU, community*

NETWORK OF CITIES: *Bristol, Pittsburgh, Rotterdam*

PERFORMANCE INDICATORS:
- Number of neighborhoods with a neighborhood assembly
- Number of neighborhoods with a set development agenda

DESCRIPTION

Building neighborhood development agendas involves defining strategies, guidelines, and priorities as a social organization mechanism. The purpose of the program is to facilitate and promote participatory planning, co-management, and self-organization. These agendas are designed through workshops held with the community and neighborhood assemblies. They promote mechanisms, tools, and best practices to facilitate the process and follow up after implementation. These agendas will be used as the basis to define neighborhood programs and projects to be carried out.

RESILIENCE DIVIDEND

By promoting autonomous community organizations with the capacity to make planing decisions at a neighborhood level, the population becomes committed and responsible, thus strengthening social cohesion. In each neighborhood, the city is built as a proactive community, and its management is fueled by its own citizens (Nelson and Wright, 1995).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 A3 C2 D3 E1 E2 E3

A2.3

Put participatory budget processes into practice

STATUS:
Underway

TIMELINE:

ACTION OWNER: *Department of Territorial Coordination and Citizen Participation*

IMPLEMENTATION PARTNERS: *Zone administrations, parish assemblies, general administration, community, AECOM Porto Alegre*

NETWORK OF CITIES: *Boston, Byblos, Río de Janeiro, Semarang, Thessaloniki*

PERFORMANCE INDICATORS:
- Number of participants in participatory budget process
- Number of prioritized and completed projects

DESCRIPTION

The participatory budget mechanism, which is used for citizens to contribute and be decide on a certain percentage of the municipal budget, is a key tool that the Metropolitan District of Quito Municipality has been promoting. It will be reinforced by adding dissemination mechanisms and others to facilitate legal instruments required for its regulation. Easily accessible digital tools will be proposed accordingly. The goal behind these changes is for the participation method to become more inclusive, efficient, and effective so that it can reach a larger portion of the population. At the same time, the idea is for investment to focus on projects that contribute to the social, environmental, and economic development agenda of neighborhoods and the whole city.

RESILIENCE DIVIDEND

Participatory budgets are a useful mechanism for efficient investment in projects and services that address the community's needs. There is also a clear system for involving the community in planning for its own development, thus promoting citizen empowerment (Cabannes, 2004).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 A3 E2 E3

DECIDE MADRID International Benchmark: Decide Madrid

The "Decide Madrid" website, launched in September 2015 by the Madrid City Council, is a place where Madrid residents can decide on their city's policies. The website works through four participatory phases:

Debates: In this phase, citizens can propose a topic or weigh in on a debate using agree or disagree buttons.

Proposals: In this phase, citizens can create proposals to improve their quality of life. The proposals can be validated by other Madrid residents. Once they receive 1% support from Madrid's registered voters, the proposals are moved to the debate section. Finally, the proposal passes on to the voting section. If it receives more votes in favor than against, the City Council adopts it and begins implementation.

Participatory budgets: Registered Madrid voters also have the option of creating a spending bill. If the proposal is accepted, it is placed into the support phase to prioritize the most interesting options. The City Council evaluates the feasibility and cost of the proposals that received the most support.

Voting: In the voting phase, citizens decide on how the available budget will be spent. Votes are taken on the different proposals that have gained support in the previous phases.

In addition to simplifying and expanding the City Council's participatory processes, this website provides information on projects that are already being implemented.

A2.4

Communication campaigns on citizen participation tools

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Department of Territorial Coordination and Citizen Participation*

IMPLEMENTATION PARTNERS: *Community, Communications Department (SC), AECOM*

NETWORK OF CITIES: *Mexico City, Rotterdam, Thessaloniki*

PERFORMANCE INDICATORS:
- Designed and implemented campaign
- Surveys on campaign impact

DESCRIPTION

This action is to design and implement publicity and awareness campaigns that focus on citizen participation instruments. The goal is to inform citizens about their participation rights and strengthen their involvement in decision-making. The campaign seeks to transmit and increase citizens' importance and influence in the city's development.

RESILIENCE DIVIDEND

Lack of citizen knowledge about the existence and operation of citizen participation mechanisms limits their scope and effectiveness. By effectively publicizing the information, more participants are attracted, thus fostering participation of different groups and strengthening both the institutional image and the efforts derived from such processes.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A2 A3 B1 B2 C1 D3 E1 E2 E3

A3 Create quality public spaces for citizens

A3.1 Safe Public Areas Program

STATUS:
Underway

TIMELINE:

ACTION OWNER: *General Department of Security and Governance.*

IMPLEMENTATION PARTNERS:
Metropolitan Public Authority for Security (EMSEGURIDAD), Department of Territory, Habitat and Housing (SGCTyPC), Metropolitan Public Authority of Mobility and Public Works (EPMMOP), SGCTyPC,

NETWORK OF CITIES: *Mexico City, Santiago*

PERFORMANCE INDICATORS:
- Number of projects developed with participatory processes
- Number of recovered public spaces

DESCRIPTION

The Safe Public Areas Program, run by the General Department of Security and Governance, focuses on areas facing social safety problems by recovering and/or building public places through a participatory planning and design process. By providing services and infrastructure that are agreed upon by the community, functional and useful areas are created. The program has had positive results around the city. Currently, four pilot projects have been planned in Conocoto, Calderón, Nueva Aurora, and Tumbaco. The action strengthens this project by providing technical advising in both design and planning through a resilience lens, focusing on environmental sustainability, and monitoring of shocks.

RESILIENCE DIVIDEND

The participatory design of public areas actively and responsibly promotes its use, and therefore, has a direct influence on the area's security and social cohesion. By meeting the needs of the population and creating a joint work plan, social capital, appropriation and inclusion are achieved, while also encouraging entrepreneurship at the neighborhood level (Forester, 1999).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 A2 B1 B2 B3 C2 C4 E2 E3

De las Diversidades Park

A3.2 Public areas activation project

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Department of Culture*

IMPLEMENTATION PARTNERS:
SGCTyPC, community, SGSyG

NETWORK OF CITIES: *New York*

PERFORMANCE INDICATORS:
- Number of activities organized
- Number of attendees per year

DESCRIPTION

This project complements efforts to build safe and functional public areas; organizes free activities, such as open-air movie screenings, in the city's different parks and public squares. It includes activating free Wi-Fi areas with the support of the QuitoTeConecta program. The activities are financed through public-private partnerships.

RESILIENCE DIVIDEND

Activating public areas through recreational, cultural, or sporting activities provides a series of benefits that include strengthening social cohesion, increasing safety in public areas, and even leading to improvements in health and education for the population (Stevens, 2007).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 A2 A3 B2 B3 C2 C4 E3

A3.3 Safe public spaces for women program

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER:
San José Municipal Foundation

IMPLEMENTATION PARTNERS:
Metropolitan Public Authority of Public Transportation (EPMTP), UN Women

NETWORK OF CITIES: *Rotterdam*

PERFORMANCE INDICATORS:
-Number of implemented campaigns
-Number of complaints with a satisfactory response

DESCRIPTION

This program is a campaign against harassment of women on public transportation and in public areas. It includes a digital platform where a text message can be used to report any type of harassment that occurs. This action is related to the campaigns carried out to promote appropriate use of the Quito Metro.

RESILIENCE DIVIDEND

Facilitating reports of harassment in public areas contributes to preventing their practice, while empowering women and activating public areas that used to be considered unsafe.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 A2 C2 E3

PILLAR B

ROBUST AND SUSTAINABLE ENVIRONMENT

B1 - Manage natural and semi-natural areas and urban parks in the Metropolitan District of Quito

B2 - Promote environmental awareness

B3 - Take advantage of the benefits of nature in urban infrastructure planning

This pillar has been developed in collaboration with the Environmental Department, Water Protection Fund - Quito (FONAG), and 100RC's platform partner, The Nature Conservancy (TNC).

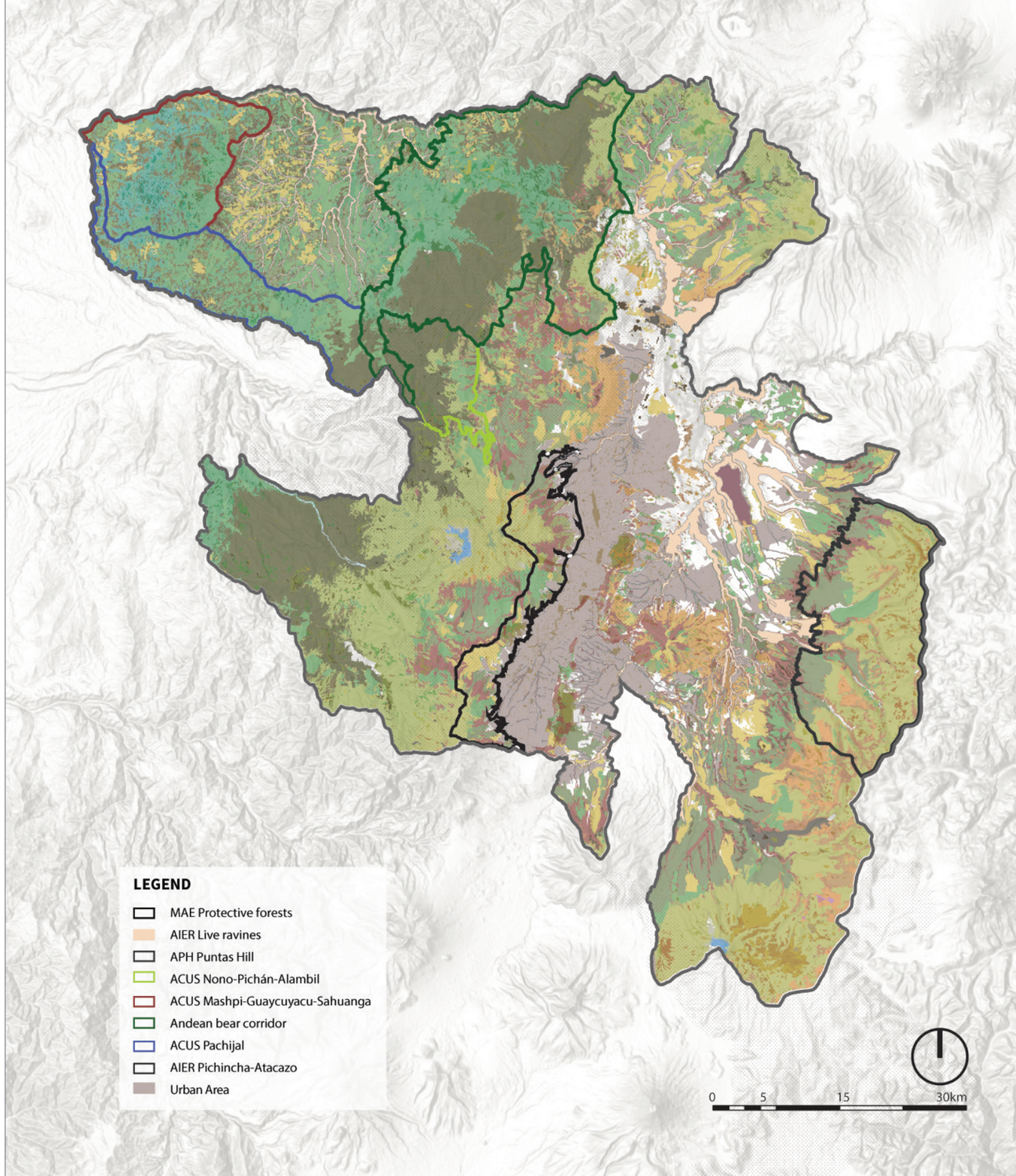
North-west Quito

PROBLEM STATEMENT

About 60 percent of the Metropolitan District of Quito is covered by natural vegetation. These areas are characterized by a diverse topography and a variety of climates; they consist of 120,000 hectares (ha) of rainforests in the western part, 47,000 ha of bushes and dry forests in the Guayllabamba basin; 45,000 ha of gorges and intervened areas, and 45,000 ha of paramo (andean moor) which appear at 3,600 meters (m) above sea level (Environment Department, 2016). This natural heritage is the city's backbone, and its future seems prosperous given that close to 40 percent of the territory is protected by a variety of legal instruments to safeguard its high environmental value. There is urgency to properly manage this natural heritage, based on the relation communities - natural areas, becomes a critical need since our quality of life depends on that.

The city's agricultural production systems, which take up 119,366 ha (28.2 percent of the area of the metropolitan district) produce a wide variety of products, including food, flowers, commercial forests, and aquaculture (Environment Department, 2016). While the Metropolitan District of Quito's rich ecosystems significantly contribute to the city's habitat and economic production, ecological management should focus on reducing the pressure affecting them. However, above all, actions should be focused on avoiding the loss of these areas and their biodiversity, as they provide important services such as water, air, and carbon sequestration capacity, to name a few. Valuing ecosystem services allows us to not only obtain resources but also propose participatory mechanisms for managing and administering such areas.

At the urban level, environmental degradation and physical vulnerability are underlying problems. When the city's planning and design take nature and its benefits into account, it is possible to find solutions with positive outcomes. One clear advantage of nature's presence in cities is air pollution reduction; improved air quality also contributes to reducing urban heat island effect and creates micro-climates that encourage prolonged use of public areas (TNC, 2016). If they are correctly implemented, nature-based solutions can also help improve conditions involving physical vulnerabilities,



Natural pastures
Cultivated pastures
North Andes high-mountain evergreen forest
North Andes mountain shrub
Short cycle crops
Suro with trees
Secondary forest
Suro with shrubs
Seasonal evergreen forest
Inter-andean dry forest
Regerating scrub
Mountain grassland
High-mountain and mountain grasslands
Low forest and high-andean scrubs
Eucalyptus forest
Saxicola vegetation inter-andean mountain
North Andes mountain rainforest
Permanent cultivated land
North Andes pre-mountain rainforest
Inter-andean dry shrubland
High-mountain straw
High-andean low shrubs and scrubs
Semi-permanent and permanent crops
Rock
Glaciars
Sandbanks
Eroded soils
Canteras

B1 Manage natural and semi-natural areas and urban parks in the Metropolitan District of Quito

B1.1

Management program to conserve natural and semi-natural areas

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Environment Department*

NETWORK OF CITIES: *Durban, Santa Fe, Mexico City, Melbourne, Boulder*

IMPLEMENTATION PARTNERS: *SGP, SDPYC, ConQuito, Department of Territory, Habitat and Housing (STHV), SGCTyPC*

PERFORMANCE INDICATORS:
- Management model designed and implemented
- Number of hectares managed under the models

DESCRIPTION

One of the 21st century's defining challenges is to improve the ability to manage complex and changing social and ecological systems. By incorporating different stakeholders, participatory management models can be developed based on practices that are friendly to the environment and natural areas. This financial and administrative management is based on institutional, community, academic, or entrepreneurial needs. Four strategies will be considered: (1) using adaptive management or co-management, (2) engaging and integrating various stakeholders, (3) facilitating self-organization, and (4) establishing safe boundaries to avoid ecosystem degradation (Biggs et al., 2015)

RESILIENCE DIVIDEND

Incorporation and coordination of numerous stakeholders and systems, both in terms of environmental conservation and promoting the socio-economic development of populations in natural areas, makes it possible to take advantage of knowledge gained from successful experiences, leading to diversification of management efforts and empowering a more proactive population. This also raises environmental awareness about the benefits and responsibilities we have with nature to avoid its degradation (Biggs et al., 2015).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 B2 B3 C1 D3 E3

Local Belnchmark: Atacazo - FONAG

Water conservation and supply is vital to a resilient city. The FONAG trust was created in 2000 to guarantee sufficient quantity and quality of water for Metropolitan District of Quito residents using resources from Metropolitan Public Authority of Drinking Water and Sanitation (EPMAPS) and other public and private stakeholders. FONAG executes, finances, and co-finances processes that contribute to protecting, conserving, maintaining, and recovering the city's water sources.

Important progress has been made in working with communities to conserve and maintain strategic areas inside of the Metropolitan District. The Atacazo initiative is coordinated with TNC, and fosters activities such as aiding members of the community with the gradual replacement of 400 sheep with alpacas. This project is helping achieve lower environmental impact from economic activities in the area, while maintaining or even increasing the revenue for families generated from selling sheep wool.

The project includes socialization, training, and ongoing collaboration so that changes to productive activities are successful and the community members can become protection and recovery agents of the area. The results of this process are already evident: topsoil and native plant growth are recovering, thus protecting the city's water sources.

Photo: FONAG

B1.2

Training program in valuing of ecosystem services

STATUS:
Underway

TIMELINE:

ACTION OWNER: *Environmental Department*

IMPLEMENTATION PARTNERS: *SGP, SDP, ConQuito, STHV, SGCTyPC, TNC*

NETWORK OF CITIES: *San Juan, New Orleans, El Paso*

PERFORMANCE INDICATORS:
- Number of training workshops
- Number of municipal employees trained
- Number of designed policies and programs with valued ecosystem contributions

DESCRIPTION

Using in-person workshops and lectures, municipal employees, scholars, and other stakeholders are trained on the InVest (TNC) tool for valuing ecosystem services. The objective of this program is to assign a monetary value to the services provided by nature and place them into categories as either supply (food, water, wood, fibers, fuel), climate regulation (flood control, heat reduction, water supply) or cultural (recreation, aesthetics, religion, education). Collecting new data and systematizing existing data on natural assets facilitates a cost-benefit analysis to evaluate the social suitability of environmental projects. Data collection and systematization also foster the ability to create policies and programs with environmental benefits

RESILIENCE DIVIDEND

Economic growth affects ecosystems. These effects, in turn, have consequences for human well-being. The valuation of ecosystem services makes it possible to incorporate environmental, economic, and social considerations in the decisions related to the city's development for the benefit of all of its residents. (Brink et al., 2012).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 B2 B3 C1 D2 D3 E3

B1.3

Recovery project for rivers and gorges in the southern part of the city

STATUS:
Underway

TIMELINE:

ACTION OWNER: *EPMAPS*

IMPLEMENTATION PARTNERS:
Environmental Department (SA), SGP, SDPYC, ConQuito, STHV, SGCTyPC

NETWORK OF CITIES: *Mexico City, Medellín*

PERFORMANCE INDICATORS:
- Meters of decontaminated riverbed
- Number of recovered hectares

DESCRIPTION

This project is a comprehensive recovery project for the Machángara River in the southern part of the city. The project includes river sanitation, flood prevention infrastructure, gorge cleaning and recovery, stream bed recovery, and a linear park. Project actions are supplemented by participation and empowerment of the local community.

RESILIENCE DIVIDEND

This activity has environmental benefits, provides quality public areas, social cohesion and citizen participation, and aids in protecting against flooding. It also includes possible recovery of flora and fauna in the sector.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 A3 B2 B3 C4 E2 E3

B2 Promote environmental awareness

B2.1

Generate an environmental awareness campaign

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Environmental Department*

IMPLEMENTATION PARTNERS:
EPMMOP, SC, Pacífico

NETWORK OF CITIES: *Toyama, Bristol*

PERFORMANCE INDICATORS:
- Campaign designed and implemented
-Audience and impact survey

DESCRIPTION

Reducing the city's environmental demands is based on citizen awareness of their effect on the environment. Developing a communication campaign in which citizens themselves can experience the benefits of nature is an effective mechanism to raise awareness about the importance of personal and collective contributions to reducing the city's environmental footprint.

RESILIENCE DIVIDEND

Efforts made to preserve nature and take advantage of its benefits are amplified when citizens take an active role and become agents of change. These activities ensure the effectiveness of environmental programs and projects, save public resources used in environmental management, and reduce the risk of polluting natural areas, to name a few (Lehman and Geller, 2004).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 A3 B1 B3 C1 C2 C3 C4 D2 D3 E1 E2 E3

B2.2

Quito Recycles Campaign

STATUS:
Underway

TIMELINE:

ACTION OWNER: *Environmental Department*

NETWORK OF CITIES: *Amman, Santiago, Toyama*

IMPLEMENTATION PARTNERS:
Community

PERFORMANCE INDICATORS:
- Campaign designed and implemented
- Tons of recycled waste diverted from landfills

DESCRIPTION

The Quito Recycles Campaign aims to capture, manage, and reuse the city's waste while encouraging citizen participation. The campaign, which has a mobile application and digital platform, seeks to encourage cooperation between environmental management agents and the general public. It focuses on recovering recyclable waste, special and hazardous domestic waste, and organic waste in municipal markets. There is also a special interest in designing a mechanism and strategies related to textile production in the industrial sector.

RESILIENCE DIVIDEND

The Quito Recycles Campaign seeks to foster environmental awareness among residents and involve people in reducing the tons of domestic and industrial waste that goes into landfills. The campaign encourages knowledge exchange, social cohesion, and empowerment.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 D2 E1

B3 Take advantage of the benefits of nature in urban infrastructure planning

B3.1

Technical capacity building program for planning with nature-based solutions

STATUS:
Planned

TIMELINE:

ACTION OWNER: *Environmental Department*

IMPLEMENTATION PARTNERS: *IMPU, SGP, STHV, Metropolitan Heritage Institute (IMP), ConQuito, EPMMOP, EPMAPS, Academia, TNC*

NETWORK OF CITIES:
New Orleans.

PERFORMANCE INDICATORS:
- Number of trainings
- Number of public and private entities trained

DESCRIPTION

Implementing solutions based on the numerous benefits of nature in facing various physical, environmental, and social challenges in the city requires the understanding of policymakers and urban planners. The program seeks to provide training and knowledge transfer through workshops and courses designed for municipal employees, scholars, and other stakeholders. The goal is to foster capacity for future implementation.

RESILIENCE DIVIDEND

Understanding the benefits that nature provides to the city is important, especially given that the challenges of adapting to climate change require a comprehensive approach that can differentiate between green and gray infrastructure to achieve successful solutions. The inclusion of nature in the urban environment brings with it various benefits, some of which are social. This action ensures continuity of this practice, improves the city's image and quality, and contributes to decreasing manmade or natural risk (McDonald, 2015).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 B2 C1 C2 C4 D3 E1 E2

Atlanta BeltLine *Photo: Flickr DEEPROOT*

B3.2

Using green infrastructure to protect the city's transportation system

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Department of Territory, Habitat and Housing*

NETWORK OF CITIES: *Atlanta*

IMPLEMENTATION PARTNERS: *SA, SGP, EPMMOP, EPMAPS, Metro of Quito, TNC, AECOM*

PERFORMANCE INDICATORS:
- Formulation of regulations on the inclusion of nature-based solutions for mobility systems
- Number of green infrastructure projects implemented

DESCRIPTION

As discussed in the action B3.1, nature can mitigate weather impacts, such as floods and forest fires, and other impacts derived from human activities, such as air pollution. Incorporating nature in urban design is recognized as an effective practice in protecting both people and infrastructure. This action encourages the design and adaptation of public areas to include green infrastructure through training and providing appropriate planning tools and regulations. The initiative also involves pilot programs along the metro line and its stations to show the benefits of green infrastructure and developing legislation to promote the use of such options.

RESILIENCE DIVIDEND

Taking advantage of the wide variety of solutions that nature can offer brings multiple benefits, including safer transportation system operations and better conditions to encourage the use of public transport. This initiative improves the urban landscape, contributes to the Green Urban Index (GUI), and encourages greater use of public areas.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 B2 C2 C3 C4 E3

Inspiration from the 100RC network: Atlanta BeltLine

The Atlanta BeltLine is a sustainable re-urbanization project that connects 45 Atlanta neighborhoods using a circuit of pedestrian trails, trollies, and parks along old city railroad lines. This infrastructure belt has increased environmental awareness in a city known for its suburban expansion and points to several lessons learned on urban revival.

The Atlanta BeltLine not only provides a modern and sustainable transportation system, but also supports affordable housing, local economic development, job creation, public health, urban art, and environmental renewal, all related to sustainability.

Green infrastructure and local ecosystem recovery are keys to the system's success. Insertion of native species has had a positive impact on the increase in biodiversity, and nature-based solutions for rainwater collection and treatment have saved money to the city. Since the city faces chronic droughts, using this same strategy, an abandoned quarry next to one of the trails will be turned into a park-reservoir that will provide 30 days of water supply for the city, as opposed to Atlanta's current three-day reserve.

The Atlanta BeltLine has changed the lifestyle and transportation habits of many Atlanta residents in areas that were completely abandoned and polluted nine years ago.

B3.3

Green infrastructure program in neighborhoods with vulnerable physical space

STATUS:
Underway

TIMELINE:

ACTION OWNER: *Department of Territory, Habitat and Housing*

NETWORK OF CITIES: *Mexico City, Medellín, New Orleans, Rotterdam*

IMPLEMENTATION PARTNERS: *SA, SGP, EPMMOP, EPMAPS, TNC, academic sector*

PERFORMANCE INDICATORS:
- Formulated norms on the inclusion of nature-based solutions for neighborhood protection
- Number of green infrastructure projects implemented

DESCRIPTION

The large number of potential shocks and chronic stresses that affect vulnerable neighborhoods must be tackled with effective and low-cost solutions. Nature plays a fundamental role, both as a containment element, reducing the risk of landslides, and by improving the quality of neighborhood spaces. The inclusion of nature-based solutions through workshops, training, and providing appropriate planning tools for vulnerable communities will be promoted through incentives. The training will be imparted to municipal employees and the community. This action includes developing pilot participation programs with the community to show the benefits of green infrastructure and develop regulations to aid in implementing these interventions.

RESILIENCE DIVIDEND

Understanding the benefits of nature makes it possible to prioritize cost-effective actions that have ecological impact; this prioritization can generate social and urban benefits. These solutions can be planned and built through citizen participation and can result in risk reduction, strengthened social cohesion among the most vulnerable people, and an improved urban image.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 A2 A3 B2 C1 C4 D3 E1 E2 E3

B3.4

Program for public recreational areas with environmental contributions

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Department of Territory, Habitat and Housing*

IMPLEMENTATION PARTNERS: *SA, SGP, EPMMOP, EPMAPS*

NETWORK OF CITIES: *Bangkok, Mexico City*

PERFORMANCE INDICATORS:
- Regulation on the inclusion of nature-based solutions
-Number of parks and squares that have included this practice

DESCRIPTION

The action aims to include the benefits of nature in recreational areas through design regulations. The program includes creating pilot projects to show the benefits of green infrastructure.

RESILIENCE DIVIDEND

Appropriate design of recreational areas in the city helps these areas to gain benefits from nature and improves the physical, environmental, and aesthetic quality of these spaces. By including green infrastructure in the design of such areas, numerous physical and psychological advantages boost the quality of life for city residents (Beatley, 2011).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 B2 C2 C4 E2

La Carolina Park

PILLAR C

INTEGRATED AND COMPACT CITY

C1 - Control urban sprawl

C2 - Maximize the impact of the first Quito Metro line on the city's development

C3 - Achieve an integrated and efficient transportation system

C4 - Promote active transportation in the city

This pillar has been developed with the collaboration of the Territory, Habitat and Housing Department; the Metropolitan Heritage Institute; the Metropolitan Quito Metro Authority; the Municipality main office, and the input of Medellín, a member of the 100RC Network.

PROBLEM STATEMENT

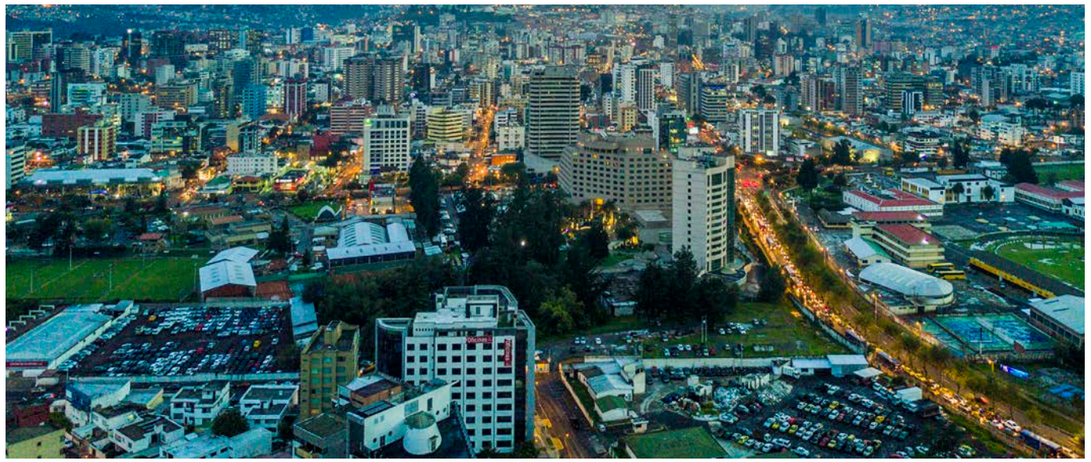
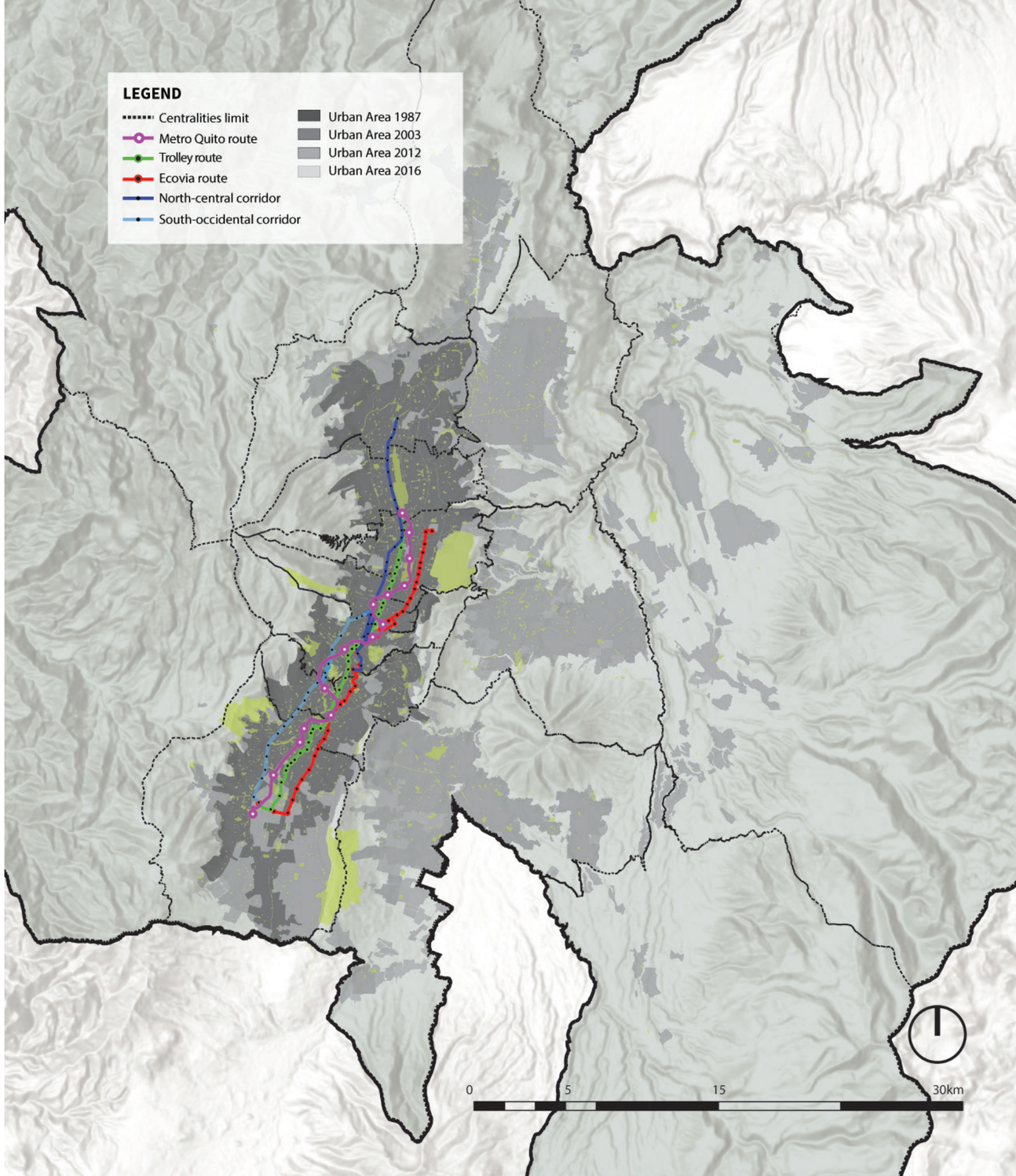


Photo: Miguel Páez, Drones Creativity EC

The Metropolitan District of Quito has experienced scattered and unplanned growth since the 1970s. This phenomenon, in some cases resulting from unregulated land use, has resulted in approximately 180,000 people (about 7 percent of the population) living in unregulated communities as of 2014 (MDGM, 2015). The pace at which these settlements are occurring exceeds the city's ability to plan its urban development and has caused expansion of the urban footprint beyond the initial model of a "compact central city" into an expansive and uncoordinated city. Today, the Metropolitan District of Quito has a low-density structure that is scattered, segregated, not very compact, and dysfunctional (MDMQ, 2015). Thus, homes are in places that are increasingly far from the central city, but employment and services are still mainly concentrated (54 percent) in the main central area (8 out of the 65 DMQ parish centers) (City Institute, 2015).

This situation leads to serious problems involving mobility, accessibility, and the provision of services, all of which affect the city's efficient functioning and, therefore, the quality of life for Quito residents. Controlling this growth, and planning an appropriate type of development is an important alternative available to reduce social and land inequality. A well-planned and managed land results in sustainable and efficient urban, social, and productive growth leading to appropriate population and economic distribution (MDMQ, 2015). Planning for this type of development should include areas with greater density, urban quality, and safety. The plan should also provide for greater diversity in land use. The objective is to leverage the vitality generated by an integrated mass transportation system while also promoting alternatives such as walking and bicycling (The World Bank, 2013), and providing an incentive to the real estate market around the transportation system to support the city's progress.

According to the city's Environmental Department, transportation generates the greatest amount of CO_2 emissions (56 percent) in the city (2,902,402 tons of CO_2 per year) (2016), and its operation affects both urban environmental conditions and the health of Quito residents. For this reason the city requires mobility alternatives that contribute to reducing the carbon footprint and improving environmental quality, while coping with the possible effects of climate change and other natural hazards. The first Quito Metro line, as the main spine of the city's mobility system, enables the generation of environmentally friendly alternatives that contribute to sustainable development and build resilience towards the year 2040.



C1 Control urban sprawl

C1.1

Community territorial control program in hillside areas

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Department of Territorial Coordination and Citizen Participation*

NETWORK OF CITIES: *Mexico City, Medellín*

IMPLEMENTATION PARTNERS:
Zonal administrations, STHV, General SGSyG communities

PERFORMANCE INDICATORS:
- Designed and implemented mechanisms
- Number of projects co-managed between the Municipality and the community in the identified areas.

DESCRIPTION

Controlling the city boundary helps to prevent urban sprawl. The action proposes the use and co-management of hillside land with the communities. This objective is achieved through productive, recreational, and artistic projects, as part of a plan for territorial appropriation and empowerment as an alternative way for protecting urban limits. The action focuses on hillside areas, which have particularly vulnerable buildings with high exposure to natural hazards.

RESILIENCE DIVIDEND

The action would establish city limits, curb urban sprawl into sensitive natural areas, prevent the creation of new risks by avoiding settlements in unsafe places, and provide community services, including income-generating activities. The communities also benefit from an improved urban image and greater community participation in urban development.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 A3 B1 B2 B3 C3 C4 D3 E1 E2 E3

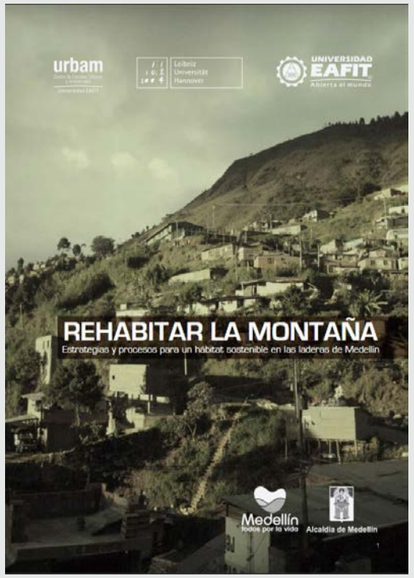
Inspiration from the 100RC network:
Comprehensive Project *Rehabitar la Montaña:* Anticipating the informal growth on the slopes of Medellín

Rehabitar la Montaña is a proposed project that was developed by the EAFIT University in Medellín and Leibniz University of Hannover, together with the Mayor's Office of Medellín, to provide alternatives to urban problems derived from informal settlements on the slopes of Medellín. Settlements in thse areas are more vulnerable to natural disasters, like landslides and floods, and also deteriorate the environment due to unplanned and uncontrolled expansion of urban sprawl. The initiative focuses on two strategies: (1) anticipating settlements and (2) mitigating existing risk.

The anticipation strategy consists of analyzing the land to identify areas that are inclined to be occupied by informal settlements. This effort is then followed by settlement discouragement through environmental restoration, sustainable forestry, nature trails, parks, or urban agriculture in the identified areas. It also redirects growth to areas that are more appropriate for human settlements. This redirection is done by providing facilities, public utilities, public parks, etc., to make the areas more attractive.

The mitigation strategy focuses on actions that reduce risk and improve the quality of life in communities that are already occupying hillside slopes. This strategy involves slope stabilization using bio-engineering, sustainable water and solid waste management, and resettlement of high-risk dwellings.

The project uses a community model in which citizen participation is key for its success. Social involvement includes communication, training, and awareness programs for the communities to become allies and co-manage the areas where they live.



C1.2

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Department of Territory, Habitat and Housing*

IMPLEMENTATION PARTNERS: *SA, SDPyC, ConQuito*

NETWORK OF CITIES: *Byblos*

PERFORMANCE INDICATORS:
- Study of the operation of land markets
- Design and implementation of land use management policies

Urban and urban periphery economic dynamics of land use study

DESCRIPTION

The strong pressure to change the use of urban periphery and rural land areas requires a comprehensive understanding of the phenomenon, with accurate and systematic information about the land market. The study proposes evaluating the socio-economic pressures and dynamics influencing the city's land market to support a series of technical decisions, both in public and private programs that promote better land management, planning, and development.

RESILIENCE DIVIDEND

One of the biggest challenges the city faces is urban sprawl. Controlling this expansion prevents environmental degradation, traffic congestion, and the financial burden caused by the municipality having to provide unplanned yet quality public services and utilities. Development can be planned based on this information to address rapid urban growth (Dowall, 1995).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 B1 C2 C3 D2 D3 E1 E2

C1.3

STATUS:
Planned

TIMELINE:

ACTION OWNER: *General Planning Department*

IMPLEMENTATION PARTNERS:
AMC, STHV

NETWORK OF CITIES: *Barcelona*

PERFORMANCE INDICATORS:
- Tool developed and operational
- Number of unregulated structures identified with the tool

Technological tool for territorial monitoring

DESCRIPTION

The sheer size of the land and other problems undermine the city's capacity to control its horizontal and vertical growth. The proposal includes developing a technological tool that makes it possible to monitor dynamics involving real estate development (height and extension) using satellite geo-referencing. The action aims to strengthen and facilitate the application of control units. This tool has been evaluated positively for its inclusion in the city's Seismic Risk Reduction Plan.

RESILIENCE DIVIDEND

Action identifies anomalous construction and settlements in areas that are sensitive either due to risks that cannot be mitigated or because of their potential ecosystem services. The objectives are to avoid the creation of new risks and further environmental degradation, and prevent associated social problems like lack of safety. This action also contributes to the development of a more cost-efficient city (Carruthers and Ulfarsson, 2003).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

B1 C2 C3 D3 E1 E2 E3

C2 Maximize the impact of the Quito Metro line on the city's development

C2.1

STATUS:
Underway

TIMELINE:

ACTION OWNER: *Department of Territory, Habitat and Housing*

NETWORK OF CITIES: *Mexico City, Thessaloniki*

IMPLEMENTATION PARTNERS: *SGP, SGP, Metropolitan Public Authority for Habitat and Housing (EPMHV), IMP, Quito Metro, AECOM, Construction Industry Chamber (CAMICON), Provincial College of Architects of Pichincha, Ecuador (CAE-P), Association of Real Estate Developers of Housing in Ecuador (APIVE)*

PERFORMANCE INDICATORS:
- Developed and validated plan
- Metropolitan ordinances developed and implemented
- Pilot plans implemented as part of the implementation process

Transit-Oriented Development Plan, Quito Metro Line

DESCRIPTION

The construction of the Quito Metro system has a high impact on the city's structure. A comprehensive plan for transit-oriented development (TOD) is key to organizing and maximizing the benefits associated with public transportation, land use, planning of public areas, and economic dynamics for sustainable and resilient urban development. This proposal is a powerful alternative that is capable of contributing to changing the city growth trends from horizontal and scattered to concentrated and compact. The plan proposes implementing two pilot plans to test the proposed designs.

RESILIENCE DIVIDEND

TOD maximizes the amount of residential, business, and recreational areas within easy reach of public transportation. TOD can potentially affect the well-being of much of the population. When implemented with an equitable vision, TOD is a robust strategy that enhances the benefits associated with urban development for the city's different groups (Suzuki et al., 2013).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 B1 B3 C1 C3 C4 D1 D2 E1 E2

Metro Quito "La Carolina" station influence area. *Photo: Miguel Páez, Drones Creativity EC, Drones Creativity EC*

International Benchmark: El Pedregal, TOD in Bogotá

The Transmilenio transportation system was implemented in Bogotá in the year 2000, and today it is one of the world's top bus rapid transit (BRT) systems. With 110 kilometers (km) of exclusive lanes, 138 stops, nine terminals, and a fleet of 2,207 buses, the system transports more than 2.4 million passengers per day, making it the most used BRT in the world. In Bogotá, public transportation accounts for 41 percent of all daily trips made.

El Pedregal is a BRT station located where two major city roads cross: Seventh Avenue, the most important street in Bogotá, with stores, institutions, and universities, and 100th Street, which connects the city business center to the western part of the city and the airport. There are plans to expand the Transmilenio to include BRT lanes on both streets, thus increasing public transportation arrivals at the station. The Bogotá Land Use Plan identified El Pedregal as a possible site for urban revival because of its location next to the city's financial center, its low population density, and its small number of landowners.

The planning agency has established that development will follow a SAP (Small Area Plan), which is the legal concept used to design districts or neighborhoods as either new developments or renovation projects. The SAP can be promoted by the public or private sector, provided that a successful public consultation process is carried out before the plan's approval. By law, a SAP must meet certain requirements essential to urban design. For example, at least 17 percent of the plan area needs to be set aside for public use. To increase population density and take advantage of available space, the developer is required to either pay for or provide public assets like roads, schools, or, in this case, a public transit station.

The El Pedregal Partial Plan was adopted in 2015. Aldea Proyectos, a private company with experience on similar projects in Bogotá, was chosen to manage the development project. Commercial towers and a transit hub are already under construction, and the estimated completion date for the project is 2020. The city anticipates that this initiative will consolidate the commercial aspect of the area and provide a solution to traffic problems existing in the northern part of the city.

C2.2

Urban Partial Plan for the Quito Historic City Center–Resilient Management

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Metropolitan Institute of Heritage*

IMPLEMENTATION PARTNERS:
STHV, IMPU, SA, SP, Department of Mobility (SM), Community, UNESCO

NETWORK OF CITIES: *Byblos*

PERFORMANCE INDICATORS:
- Developed and validated plan
- Validated ordinance
- Number of urban operations carried out

DESCRIPTION

The Metropolitan Plan for Development and Land Management proposes seven policies for the Quito Historic City Center and lays them out through eight specific goals. The Partial Plan incorporates resilience across its planning process. The policies aim to maintain and improve the quality of life for city center residents and visitors, coordinate different means of transport and all associated development, and develop conservation, participation, and occupancy plans. The plan conceives projects that focus on building responsiveness to face the shocks and stresses specifically identified in this area.

RESILIENCE DIVIDEND

Sustainable urban development in the historic city center requires ambitious socio-economic development policies, pollution reduction, and protection for heritage sites. Sustainable urban development planning is also geared toward long-term goals and applies knowledge to prevent negative consequences. The plan seeks the inclusion of population groups to support basic values related to equity and the environment (Naess, 2001).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 A3 B3 C3 C4 D2 E1 E2

C2.3

Land Value Capture Plan in areas influenced by the construction of the first line of Quito Metro

STATUS:
Planned

TIMELINE:

ACTION OWNER: *Department of Territory, Habitat and Housing*

IMPLEMENTATION PARTNERS: *SGP, SDyPC, BID, BM, AECOM*

NETWORK OF CITIES: *Rio de Janeiro*

PERFORMANCE INDICATORS:
- Developed and validated plan
- Approved metropolitan ordinance

DESCRIPTION

Assigning an actual value to land according to its use, type of construction, and location, as affected by the construction of specific public works, such as the first line of the Quito Metro, enables the city to take advantage of economic resources derived from the dynamics of land use and occupation. As a redistributive measure, the mechanism makes it possible to calculate and take advantage of land values from a technical perspective, considering the city's socio-economic realities and development proposals.

RESILIENCE DIVIDEND

One characteristic of a resilient city is its ability to finance development that contributes to its safety and sustainability. Taking advantage of land value appreciation is a resourceful mechanism that can be used to invigorate municipal resources and allow investment to promote economic growth, including employment and safe housing, in the Metropolitan District of Quito (Suzuki et al., 2015).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 B3 C1 C3 C4 D1 D2 E1 E2 E3

24 de Mayo Boulevard

C2.4

Low environmental impact construction regulation

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Department of Territory, Habitat and Housing*

IMPLEMENTATION PARTNERS:
CAMICON, CAE-P, APIVE, academic sector}

NETWORK OF CITIES: *Amman*

PERFORMANCE INDICATORS:
- Developed and validated plan
- Existing regulation instrument
- Number of projects developed with incentives

DESCRIPTION

This action seeks to incentivize real estate projects to incorporate environmental efficiency principles into construction through regulations. The proposed regulations are based on criteria involving resource use and consumption efficiency, social inclusion, and economic and urban development. The proposal builds on existing tools that need to be improved, updated, and given greater reach so that they can become more effective.

RESILIENCE DIVIDEND

Encouraging real estate development with a lower environmental impact reinforces the characteristics of a compact and eco-efficient city. Constructing buildings with eco-efficient parameters leads to resilience and co-responsibility from the construction and real state sectors (Torgal and Jalali, 2011).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

B2 B3 C4 D2 E1 E3

C2.5

Campaign to promote the use of safe and inclusive public transportation–“Metro Culture”

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Quito Metro*

IMPLEMENTATION PARTNERS:
Municipal Foundation San Jose, SIS

NETWORK OF CITIES: *Mexico City*

PERFORMANCE INDICATORS:
- Campaigns implemented
- Target audiences
- Users’ satisfaction
- Satisfaction of users with special needs

DESCRIPTION

The campaign is part of a social, educational, and cultural management model for effective use of the Quito Metro system. The objective of this campaign is to consolidate a new civic culture, harmonious coexistence, good behavior, solidarity, respect for basic rules in using public resources, self-respect, and respect for others.

RESILIENCE DIVIDEND

The first metro line is an opportunity to promote a more inclusive city for the most vulnerable, both in terms of access and safety. Implementing a transportation system with such characteristics needs to be based on experiences involving equitable access and improvement of residents’ quality of life, mainly in vulnerable groups of the population such as single mothers (Loukaitou-Sideris, 2009).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 C3 C4 E3

C3 Achieve an integrated and efficient transportation system

C3.1

Resilient and sustainable mobility system by 2040 study

STATUS:
Underway

TIMELINE:

ACTION OWNER: *Mobility Department*

IMPLEMENTATION PARTNERS: *STHV, SM, SA, EPMTP, AECOM, Metro de Quito, BID, AECOM*

NETWORK OF CITIES: *Bangkok, Mexico City, New Orleans, Santiago, Santa Fe*

PERFORMANCE INDICATORS:
- Number of modifications in the mobility system of the city using the evaluation table
- Integration of the model with the mobility master plan

DESCRIPTION

This study proposes to prepare a city model with a development policy that focuses on resilience and sustainability. It proposes a system to evaluate and integrate different means of transportation and a series of measures to make trips within the city more efficient and with fewer environmental impacts. Specifically, this study proposes an analysis and recommendations based on energy efficiency and a smaller ecological footprint. It also incorporates the qualities of resilient systems and involves adaptation to and mitigation of climate change. These variables will be part of an evaluation tool that will be used in making decisions and creating contingency plans for identified natural and human induced threats. Such plans need to be coordinated with other contingency plans from other agencies, such as “Quito Listo”.

RESILIENCE DIVIDEND

Mobility not only affects social issues, but is also related to the city’s efficiency and productivity. To this effect, the model begins with an analysis and serves as a guide in creating a proposal for a well-designed system for building resilience and for the city´s sustainable development. The program also contributes to risk reduction, improving air quality, and the ongoing operation of the mobility systems (Shiftan et al., 2003).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 B3 C1 C2 C4 D2 E1 E2 E3

C3.2

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Mobility Department*

IMPLEMENTATION PARTNERS: *STHV, Quito Metro, EPMTP*

NETWORK OF CITIES: *New Orleans, Bangkok*

PERFORMANCE INDICATORS:
- Proposed integration plan incorporated into the city mobility scheme
- Level of user satisfaction

Transportation Integration Plan

DESCRIPTION

The transportation integration plan deals with the complexities of combining the public and private setups, existing in the Metropolitan District of Quito based on the needs of their users, efficiency, and territorial factors. The plan will integrate multiple forms of transport and will involve a comprehensive and fully integrated system of routes, schedules, rates, and collection.

RESILIENCE DIVIDEND

An integrated transportation system will improve the quality of the service and adjust transportation supply to transportation demand. This new system will reduce operating costs and travel times and will bring outlying and poorer groups closer, fostering inclusion by providing affordable and effective transportation options. By decreasing traffic congestion, it will also contribute to improving air quality (Abrate et al., 2009).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 B2 B3 C1 C2 C4 D1 D2

C3.3

STATUS:
Planned

TIMELINE:

ACTION OWNER: *Mobility Department*

IMPLEMENTATION PARTNERS:
EPMTP, EPMMOP, STHV

NETWORK OF CITIES: Thessaloniki

PERFORMANCE INDICATORS:
- Number of buses purchased that meet environmental standards

Upgrading transportation modes to achieve a low-emission system

DESCRIPTION

When updating existing BRT units (Trolebus, Ecovía, etc.) that have been operating for several years, it is important to consider environmental standards, with an emphasis on emissions reduction. As part of the city's integrated transportation system, new units must necessarily contribute to improving the system's quality and its passengers' comfort.

RESILIENCE DIVIDEND

This action uses the available city infrastructure and proposes its efficient improvement with a smaller ecological footprint. The decrease in environmental demands is not only an effective mechanism for climate change effects mitigation but also a valuable input to the city's air quality and its citizens' health.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

B2 B3 C2 C4

C4 Promote active mobility in the city

C4.1

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Department of Territory, Habitat and Housing*

NETWORK OF CITIES: *Amman, Ciudad de México, Santiago, Thessaloniki*

IMPLEMENTATION PARTNERS: *SM, EPMMOP, Metro de Quito, SA, Amman*

PERFORMANCE INDICATORS:
- Launched contest
- Number of projects adopted by the municipality as a base for pedestrian infrastructure improvements

Walkable Quito Contest

DESCRIPTION

This action proposes to launch a contest with proposals to improve pedestrian and bicycle routes with better conditions in-terms of space and safety in public areas. Such strategies are necessary in a city where public areas have adapted to unplanned growth in a city with a challenging topography. This contest seeks solutions to complement municipal efforts to create more efficient means of transportation, design sidewalks, and improve public areas and mobility plans.

RESILIENCE DIVIDEND

A walkable city is increasingly valued for a variety of reasons: pedestrian mobility not only reduces congestion and has low environmental impact, but also has social and recreational value. Recent studies suggest that walking promotes mental and physical health. Urban environment quality is key to encouraging people to choose walking over driving (Southworth, 2005).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 B2 B3 C2 C3 D2 E2 E3

Bulevar Calle Manabí

C4.1.1

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Metropolitan Heritage Institute*

NETWORK OF CITIES: *Mexico City*

IMPLEMENTATION PARTNERS: SM, STHV, Quito Metro, SA

PERFORMANCE INDICATORS:
- Pilot implementation
- User satisfaction survey

Pilot project to transform the Quito Historic City Center into a pedestrian area

DESCRIPTION

In the Quito Historic City Center, about 72 percent of residents and visitors move around by public transportation and on foot. This characteristic is both a strength and a burden that must be managed when seeking resilience, socio-economic urban development, and improvement of habitability. The IMP is working to design and implement a plan to transform part of the Quito Historic City Center into a pedestrian area. An eight-stage pilot program has been planned; the first stage involves Garcia Moreno Street between Olmedo and Bolivar Streets, Chile Street between Benalcazar and Imbabura Streets, and Venezuela Street between Chile and Espejo Streets.

RESILIENCE DIVIDEND

Different analyses indicate that people living in walkable neighborhoods have higher levels of social capital compared to those living in the car-oriented suburbs. These types of proposals not only create a greater probability of getting to know neighbors, participating in politics, trusting others, and being socially committed (Leyden, 2003), but also helps boost the local economy.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 B2 B3 C2 C3 D2 E2 E3

C4.2

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Metropolitan Public Company of Mobility and Public Works*

NETWORK OF CITIES: *Mexico City, Santiago, Thessaloniki*

IMPLEMENTATION PARTNERS: *Quito Metro, STHV, SA, SM*

PERFORMANCE INDICATORS:
- Designed and implemented program
- Number of public bicycle users

Program to encourage the use of public and private bicycles

DESCRIPTION

The use of bicycles will be promoted through public-private partnerships in which users of this means of transport receive various benefits from sponsoring companies (e.g., access to promotional products) or their employers. The Municipality provides areas for advertisement, infrastructure, and bicycle parking lots; develops and coordinates the program; and provides conditions to encourage bicycle use. The maintenance of bicycle lanes, signage, road education, and strengthening the public bicycle program that already operates in the city are all important tasks to encourage the use of private bicycles.

RESILIENCE DIVIDEND

Promoting a change of the transportation culture in the city requires a major effort that demands support from private stakeholders who could offer incentives for bicycle use. This change would receive the support of urban cyclist groups and organizations that seek to encourage bicycle use by the general public. This action reduces vehicle congestion, improves air quality, activates the use of public areas, and therefore, has a significant impact on the health of city residents (Litman, 2004).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 B2 B3 C2 C3 D2

PILLAR D

RESOURCEFUL AND SOLID ECONOMY

D1 - Create an economic environment conducive for strengthening labor supply and demand

D2 - Foster a diversified, sustainable, and innovative economy

D3 - Promote the food economy as a foundation for development

This pillar has been developed with the collaboration of the Department of Economic Development and Competitiveness, ConQuito, platform partner Ernst & Young, and the input from New Orleans, Los Angeles, Paris, and New York, cities of the 100RC Network.

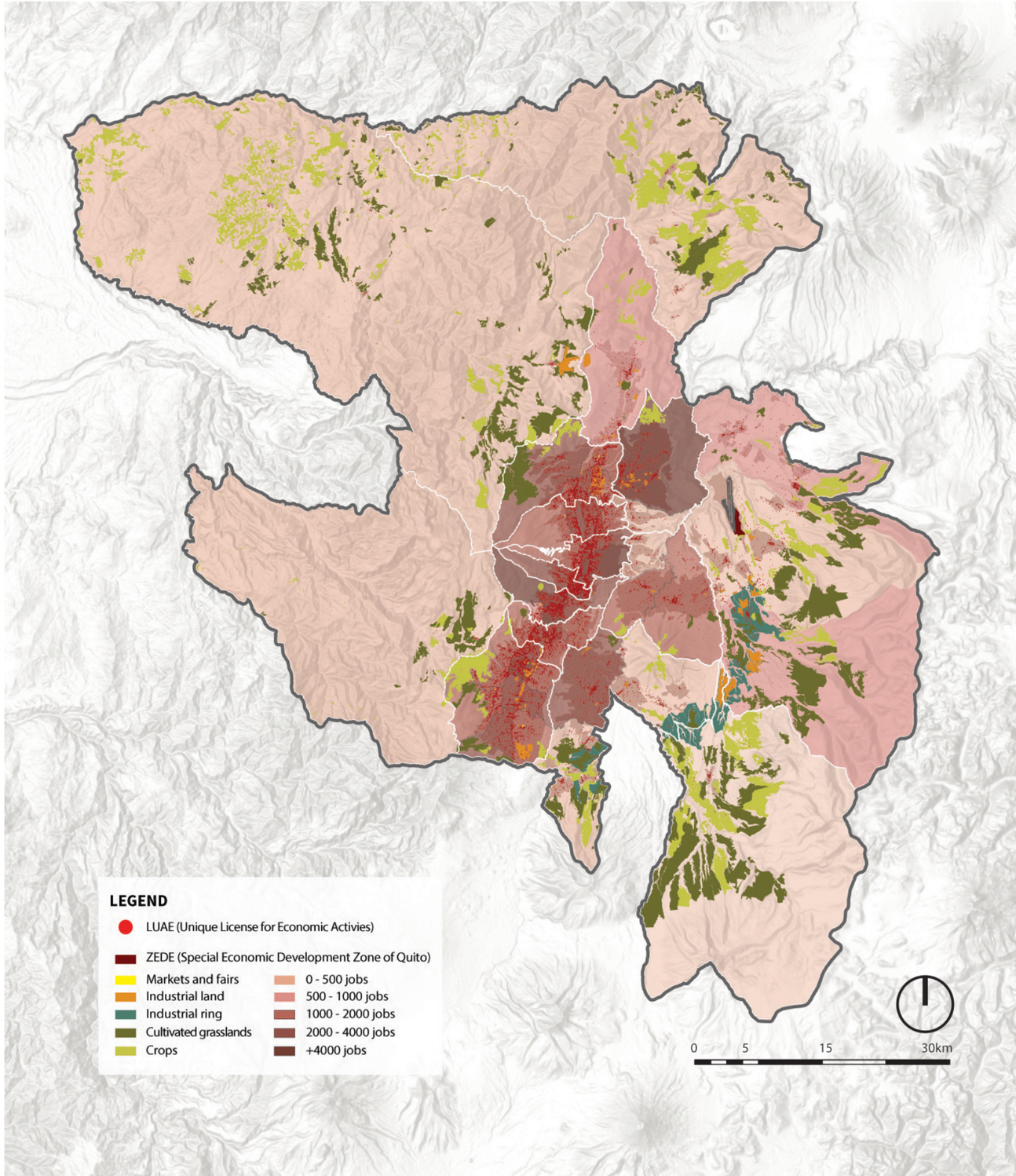
PROBLEM STATEMENT

In socioeconomic terms, demographic distribution is one of Quito's most important characteristics: half of the population is under 29 years old. When analyzing this we found that one out of four inhabitants is between age 30 and 49 (27 percent), and a similar number (28 percent) is between age 15 and 29, making these two the most prevalent age cohorts, alongside that of children and adolescents under the age of 14 (27 percent) (PMDOT 2015-2025 (I), MDMQ). This situation is particularly important in the construction of long-term resilience, since the population's age structure is expected to change in the coming decades (a reduction in the number of children and an increase in older adults). This change will mean a smaller working population contributing to production, with increased pressure on the social security system for the elderly.

Although the Metropolitan District of Quito is prosperous, it is at the same time sensitive to external economic factors such as the price of oil. The DMQ produces 23 percent of the national gross domestic product (GDP), the highest of any city in Ecuador (MDMQ, 2015). However, it is a city where wealth is concentrated. In the Metropolitan District of Quito, there are 101,937 economic establishments (according to the 2010 Economic Census), most of which are microenterprises (89 percent). These establishments account for 2.3 percent of total sales and 36 percent of employment. Though only 1 percent of businesses are large companies, they represent 88.2 percent of sales and employ 32 percent of the workforce (MDMQ, 2015). Efforts to achieve greater inclusion of the population are affected by the gap between the available human capital and the needs of the productive sector. Knowledge about these aspects makes it possible to develop mechanisms to prepare the potential workforce.

Even though Quito is the city with the highest concentration of technology in the country, its investment in business innovation and research is incredibly low compared to other Latin American cities. Of the total number of companies, only 1.1 percent invest in research and development, and this investment is concentrated in the large companies (PMDOT 2015-2025 (ii), MDMQ). From this perspective, programs that promote sustainability principles should encourage investment in innovation to increase economic diversity in the productive sector. These programs could also take advantage of the entrepreneurial vocation of Quito, evidenced by the 31,812 establishments created in 2009 and 2010, 55 percent of which report sales of less than $USD 9,999 per year (according to Economic Census 2010, quoted in MDMQ 2015). The goal is to foster and allow ongoing commercial diversification with an inclusion and environmental sustainability focus.

Looking through the lens of inclusion, a clear example of economic diversification is found in efforts that have been made by the Municipality to develop the Urban Farming Program. However, the city produces only 5 percent of its food requirement, and its food system is highly vulnerable to weather and seismic and volcanic events (RUAF, 2017). Thus, support for programs like the Urban Vegetable Gardens and the development of the food economy not only makes it possible to give boost vulnerable socio-economic sectors, but also works toward achieving food security.



D1 Generate an economic environment that is conducive to strengthening labor supply and demand

D1.1

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Department of Competitiveness and Productive Development*

IMPLEMENTATION PARTNERS: *ICQ, ConQuito, private sector, guilds, E&Y, universities*

NETWORK OF CITIES: *Boston, Semarang*

PERFORMANCE INDICATORS:
- Completed study
- Number of programs and projects that push for inclusive and quality jobs

Prioritization of productive sectors in Quito based on creation of quality jobs study

DESCRIPTION

The action begins by identifying the potential of the city's diverse productive sectors using an inclusive development approach. This action creates a multifactor evaluation methodology that contributes to creating quality employment, sustainability, and attractiveness for investors. The action creates a tool that can be used on a continuous basis to keep improving the method. Identifying productive sectors helps to strategically strengthen the labor supply.

RESILIENCE DIVIDEND

Economic resilience must necessarily be built on sustained economic growth (Caldera Sanchez, 2017). Allowing sectors to become stronger is a useful mechanism to consolidate economic development processes. This process makes it possible to integrate different sectors and stakeholders in the city's agenda to raise its competitiveness. Participants in the process might include other sectors such as academia; which would result in the inclusion of a diversity of actors that operate within the city's informal economy.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 C2 D2 D3 E2

D1.2

STATUS:
Planned

TIMELINE:

ACTION OWNER: *Department of Competitiveness and Productive Development*

IMPLEMENTATION PARTNERS: *ICQ, ConQuito, academic sector, private sector*

NETWORK OF CITIES: *Semarang, Thessaloniki*

PERFORMANCE INDICATORS:
- Developed study
- Number of programs and projects of capacity reinforcement

Human capital study

DESCRIPTION

Young societies that receive immigrants, such as Quito, have the population conditions that lead to an effective demographic bonus (the city's large workforce and youth is taken advantage of as an aid to development). This action proposes a qualitative and quantitative study to characterize the people who make up the economically active population and the conditions under which employers can take them in. The recommendations will begin by identifying strengths and weaknesses of these groups of people, which can then be used as input for public policies.

RESILIENCE DIVIDEND

Identifying the demographic dividend makes it possible to make strategic decisions so that th young can be inserted into the city's formal job market. Using the demographic dividend can result in up to 2 percent GDP growth per capita (UNFPA, 2016). Additionally, this action leads to a population that is both prepared and empowered to take on its own economic development, reduce its unemployment, and reduce its socioeconomic vulnerability and therefore risk.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 C2 D2 D3 E2

D1.3

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Department of Competitiveness and Productive Development*

IMPLEMENTATION PARTNERS: *ICQ, ConQuito, academic sector, private sector*

NETWORK OF CITIES: *Amman, Bristol, Da Nang, Rotterdam, Semarang, Thessaloniki*

PERFORMANCE INDICATORS:
- Completed study
- Number of implemented job placement programs and projects

Skill gap analysis

DESCRIPTION

This action, which performs a study on gaps in abilities in the city's socio-economic context, provides the information needed to undertake dialogue between the private sector and the Municipality. Once the job market (the production sectors offering quality job opportunities) and the possible workforce (human capital) have been characterized, new strategies can be proposed to build abilities, migrate laborers form one sector to another with better opportunities, or promote training for new abilities to take advantage of both the supply and the demand of labor.

RESILIENCE DIVIDEND

A comprehensive human capital plan aids in strategically formulating public policies (The World Economic Forum, 2016). Calculating the gap between human capital and the job market in the different parts of production sectors ends up strategically building up the former, turning it into the production factor needed to enhance the local economy (UN Habitat, 2015) and reduce socioeconomic vulnerability. This effort makes it possible to take informed and effective action to facilitate the involvement of other stakeholders, like the academia.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

B1 C2 D2 D3 E2

D2 Foster a diversified, sustainable, and innovative economy

D2.1

Program to mainstream circular economy principles in productive, regulatory, and consumption processes

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Department of Competitiveness and Productive Development*

IMPLEMENTATION PARTNERS:
ConQuito, SA, EMASEO, Academia

NETWORK OF CITIES: *Bristol, Mexico City, Rio de Janeiro, Santa Fe, Thessalonikii*

PERFORMANCE INDICATORS:
- Designed and implemented program
- Number of circular economy entrepreneurships

DESCRIPTION

The circular economy is an alternative that includes innovative processes in existing production and consumption models, part of a plan to generate goods and services that have added value and low environmental impact. The city needs to reduce the ecological footprint associated with waste management. This action seeks to take advantage of the opportunity to create new production markets by promoting waste reuse, recycling, and, above all, waste reduction, from a perspective of environmentally responsible production. To implement these practices, new technologies, services, and business models will be incorporated. Fostering change in consumer behavior patterns is also necessary.

RESILIENCE DIVIDEND

The program builds on the concept of industrial ecology, which emphasizes the benefits of waste and residue reduction, reuse, and recycling in production value chains. These benefits create a symbiosis between several industries that benefits society and provides new employment opportunities with a high level of social inclusion (Jacobsen, 2006).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 B2 D1 D3 E2

D2.2

Incorporate sustainability principles into the city's competitiveness agenda

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Department of Competitiveness and Productive Development*

IMPLEMENTATION PARTNERS:
ConQuito, Academia, Chamber of Industries and Productivity

NETWORK OF CITIES: *Glasgow, Rio de Janeiro*

PERFORMANCE INDICATORS:
- Principles incorporated in the city's innovation agenda
- Number of new lines of businesses with the ability to create jobs and revenue under these principles

DESCRIPTION

The action promotes innovative development and economic diversification by incorporating sustainability principles. Specifically, the action focuses on the city's competitiveness agenda, as developed by the corresponding Department, which guides public policies on productive development. Technical contributions and support in participatory processes will be provided to important stakeholders to create economic entrepreneurship.

RESILIENCE DIVIDEND

The diversification of business lines builds resilience strategies to face economic fluctuations and eventual crises (UN-Habitat, 2015). Diversification stimulates competitiveness among different sectors and works to foster the value chain proposed in the competitiveness agenda. This project is based on integration, which seeks out synergies between sectors and strategic actions associated with entrepreneurship and the well-being of vulnerable groups.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 B2 B3 C2 D1 D3 E1 E2

Inspiration from the 100RC network: Promotion of circular economy in Rio de Janeiro

Today, consumption and production patterns follow a linear model of extraction, use, and elimination. On the one hand, we have greater demand for raw materials, leading to associated environmental impacts. On the other hand, more and more waste is being generated, and with that issues related to its transportation and disposal arise. To counter this issue, Rio de Janeiro, as part of its resilience strategy, has proposed "promoting an inclusive, diversified, low-carbon circular economy," with two main initiatives: (1) create an agency to promote a circular economy in the city and (2) give value to solid and organic waste. These actions seek to empower citizens through job creation and support the city's efforts to mitigate and adapt to the effects of climate change.

There are three main objectives behind creating a municipal agency for this project: (1) to reduce waste sent to landfills, (2) to create jobs by giving value to waste, and (3) to foster efficient use of resources to create a circular economic model. In a circular economy products are developed taking into consideration their useful life, reuse, recycling, and transformation of the materials so that "business ecosystems" can be developed. In this ecosystems the waste generated by one industry is used as raw materials by another.

By assigning value to solid waste, civil society becomes more involved in the circular economy, with the agency's support. Mini-recycling and composting centers are created as gathering points, giving value to and exchanging solid and organic waste. These centers will not only provide materials, but they will also make possible organic waste composting, which can be used by residents and distributed to local urban gardens.

D2.3

ZEDE: Special Economic Development Zone

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Department of Competitiveness and Productive Development*

IMPLEMENTATION PARTNERS: *MDMQ, United Nations Development Program (UNDP), private sector, central government*

NETWORK OF CITIES: *Medellín*

PERFORMANCE INDICATORS:
- Implementation of ZEDE
- Number of companies based in the ZEDE area

DESCRIPTION

The Special Economic Development Zone of Quito (ZEDE QUITO) will be located near the new city airport. The project seeks to make this zone an ideal area for new investment. Tax and customs incentives, among other incentives, are expected to attract investment to the city and provide competitiveness to various productive sectors.

RESILIENCE DIVIDEND

The implementation of ZEDE Quito will generate productive markets, new exports, more employment, and orderly urban development in the Metropolitan District of Quito and its surroundings.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

C2 D1 D3

D2.4

Development of industrial parks

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Department of Competitiveness and Productive Development*

IMPLEMENTATION PARTNERS: *MDMQ, United Nations Development Program (UNDP), private sector, central government*

NETWORK OF CITIES: *Medellín*

PERFORMANCE INDICATORS:
- Ordinance enactment
- Implementation of the ordinance

DESCRIPTION

Industrial parks, which occur in both urban and rural areas, may be recent or date back several decades. Special planning, management, and treatment are key to guaranteeing coexistence with the community and neighborhoods that have settled around them. This action seeks to regulate areas where residential, commercial, and industrial land uses coexist through zoning and city planning regulations.

RESILIENCE DIVIDEND

The industrial parks require medium- and long-term planning to bring together a large variety of industries while guiding them towards a healthy coexistence with other land uses, including residential areas. This action promotes local economic development and reduces commutes by providing jobs near residential areas.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

C1 D1 D3 E2

D3 Promote the food economy as a pillar for development

D3.1

Plan to strengthen the Quito food system

STATUS:
Planned

TIMELINE:

ACTION OWNER: *Department of Productive Development and Competitiveness*

IMPLEMENTATION PARTNERS:
ConQuito, SGSyG, STHV, SMA, RUAF

NETWORK OF CITIES: *Bristol, Boulder, Mexico City*

PERFORMANCE INDICATORS:
- Developed and implemented plan
- Number of implemented programs to strengthen the city's food system

DESCRIPTION

The Quito food system is the set of stakeholders, processes, and resources that contributes to providing food to the city. Some of the characteristics of the food system increase its vulnerability; among these are its dependency on the imported food (approximately 85 percent of food is imported), weak distribution systems, and isolated communities. After analysis of its different components, including vulnerabilities, threats, strengths, and potential, an action plan is proposed to influence the final availability and accessibility of varied and nutritious food products. This action also seeks to influence consumers' ability to choose healthy diets by providing nutrition and health education through policies, incentives, and appropriate governance.

RESILIENCE DIVIDEND

Food policy will be of great importance to economic development efforts over the coming decades (Timmer and Pearson, 1985). Food challenges must be adequately analyzed to be solved. This type of analysis is a complex task that entails having a long-term vision on how the food system can evolve and become a social and economic asset for the city. To the extent that the food system becomes an asset, it not only helps to strengthen Quito's socio-economic fabric, but also contributes to the city's development efforts by supporting a healthy population and making it less vulnerable to possible acute shocks (RUAF, 2017).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

B1 B2 C2 D1 D2 E1 E2 E3

D3.2

Strengthen the urban agriculture program in Quito

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *Department of Competitiveness and Productive Development*

IMPLEMENTATION PARTNERS:
ConQuito, comunidad

NETWORK OF CITIES: *Amman, Los Angeles, New Orleans, Paris, Santa Fe, Semarang*

PERFORMANCE INDICATORS:
- Developed and implemented mechanisms
- Tons of food produced
- Number of people participating in urban agriculture
- Extension of gardens

DESCRIPTION

Developing agricultural practices in the Metropolitan District of Quito has environmental, economic, and social dimensions. This program develops from a characteristic that is unique to the ancient Ecuadorian Andean population and its connection to agriculture. The action proposes to strengthen the food supply grown in the city, implementing mechanisms to improve both the quantity and the quality of production in urban gardens as well as the demand for such products. This action involves providing mechanisms for large possible markets, such as the services sector, while maintaining product availability at local markets.

RESILIENCE DIVIDEND

As an income-generating activity and job creation mechanism, this action helps to improve living conditions, especially in terms of inclusion and social protection of the vulnerable population (RUAF, 2017). This project also contributes to resilience and food security by strengthening existing production systems (Armar-Klemesu, 2000) in the Andean society, which is now more urban.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 A3 B1 B2 B3 C1 D1 D2 E1 E2

D3.3

Sustainable Agricultural Production program

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Environmental Department*

IMPLEMENTATION PARTNERS: *SDPyC, Department of Social Inclusion (SIS)*

NETWORK OF CITIES: *Amman, Bangkok, Santiago, Toyama*

PERFORMANCE INDICATORS:
- Development and implementation of the program
- Number of hectares cultivated under sustainability principles

DESCRIPTION

The urban periphery and rural area of the Metropolitan District of Quito is large and has a major agricultural production component. This action focuses on agricultural production, with an emphasis on environmental sustainability, and ensures that those involved in the process have access to quality working conditions. The proposal is based on a methodology (UNDP Green Commodities) that consists of four aspects: (1) coordination among sectors, (2) promotion of responsible labor and transportation practices, (3) support for country-side farming systems, and (4) promotion of sustainable production (processes with the smallest possible ecological footprint) through incentives and by facilitating access to techniques and materials.

RESILIENCE DIVIDEND

The main export, not related to oil extraction services, in the DMQ come from agriculture. Improving productive processes and labor dynamics among the various actors involved in agricultural production strengthens the economy and makes it possible to generate more and better sources of income. These improvements also generate inclusive employment (UNDP, 2016) while preserving the natural environment.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

B1 B2 B3 C2 D2 E1 E3

Local benchmark: AGRUPAR

The Participative Urban Agriculture Project (AGRUPAR), which was developed by the Metropolitan District of Quito in 2002, fosters self-production of food by making use of empty public and private lots as a strategy to reduce food insecurity. This initiative facilitates improvement in the access, availability and quality of the food consumed, and makes food an important source of income and savings for its participants. It is currently applied as a Metropolitan District of Quito sustainability indicator, and its practice contributes to reducing food system vulnerability.

AGRUPAR promotes organic production based on agricultural ecology, small species breeding , direct sale of production surpluses, economic and social inclusion of vulnerable sectors, and promotion of responsible consumption, with emphasis on local, fresh, diversified, healthy, and nutritious food.

The project provides training and follow-up assistance for agriculture and food processing for approximately 1,300 gardens (domestic gardens, community centers, and schools and with services for disabled people, children under 5 years old, senior citizens, refugees, immigrants, and other groups), where 84 percent of participants are women. AGRUPAR has 17 weekly bio-markets for direct sale of production surpluses, where over 105 types of crops are sold, generating revenue of $USD 300,200 (in 2016, the bio-market represented 25 percent of the farm's total sales). It has been estimated that 47 percent of production is sold and 53 percent is consumed by the cultivators. The project is found in 97 percent of urban parishes and 91 percent of rural parishes, occupying more than 30 ha.

PILLAR E

REFLECTIVE AND SAFE TERRITORY

E1 - Avoid the creation of new risks

E2 - Mitigate existing risks

E3 - Prepare the Metropolitan District of Quito to address threats

This pillar has been developed with the collaboration of the General Department of Security and Governance; the Department of Territory, Habitat and Housing; the General Planning Department; the Architects Association of Ecuador; the Construction Chamber of Ecuador; and the World Bank's GFDRR, a 100RC platform partner.

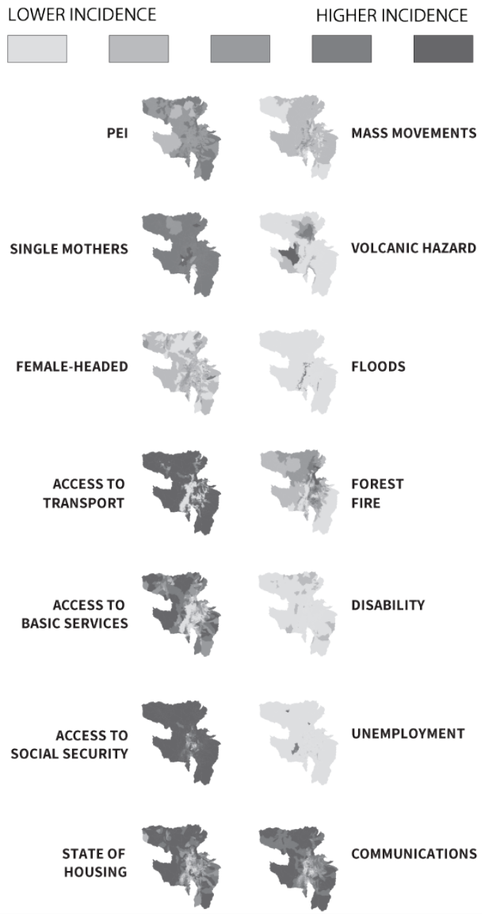
Bicentenario Park - Former Mariscal Sucre airport

PROBLEM STATEMENT

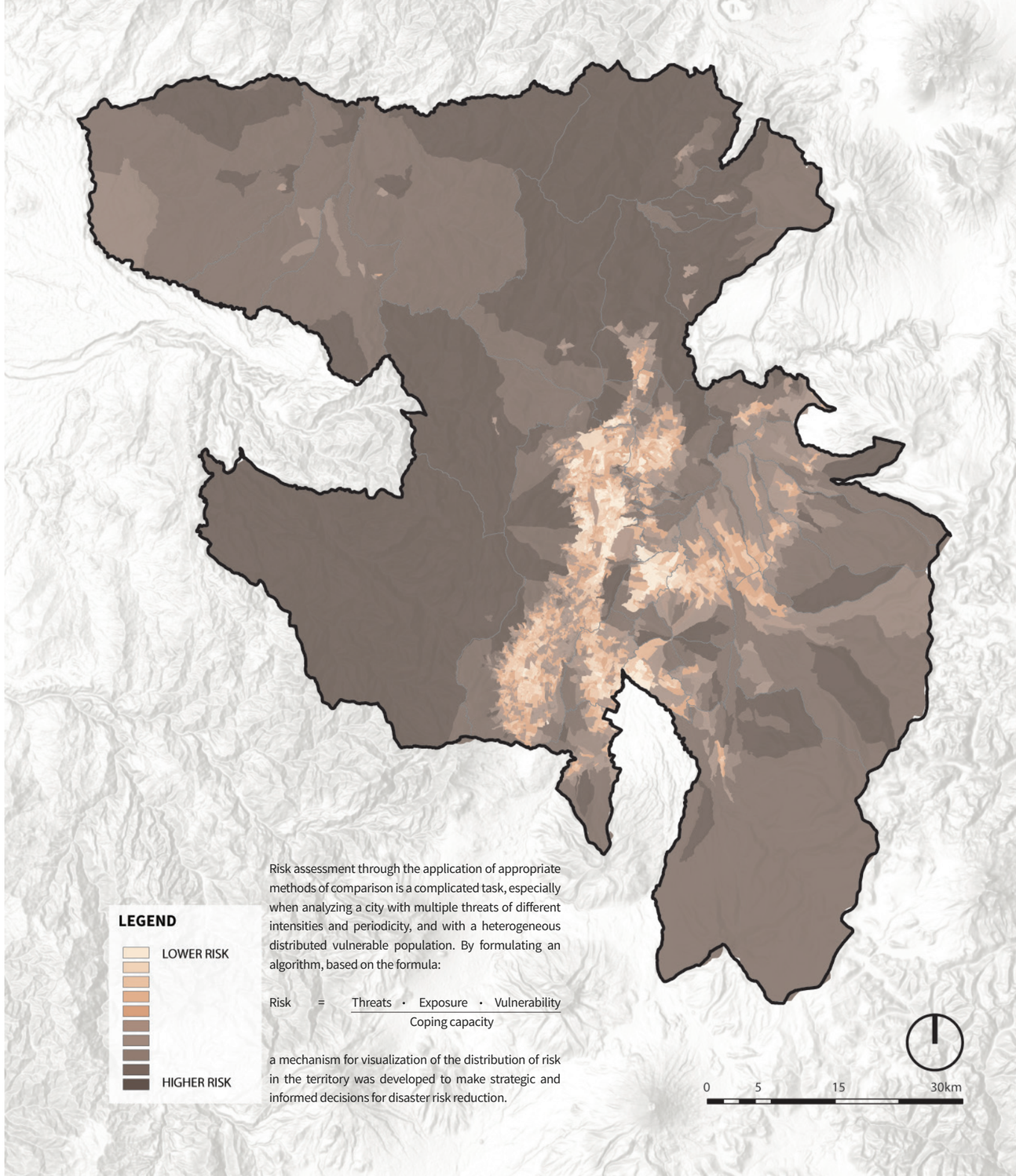
Quito, tucked within the slopes of Mount Pichincha on top of several geological faults, is continually threatened by at least five types of acute shocks: landslides, intense rainfall, volcanic eruptions, seismic movements, and forest fires (by natural or man-made causes) (Atlas of Threats, 2015). Quito's location, its high level of exposure to these threats and physical and socioeconomic vulnerabilities, create concentrated risk zones throughout the territory. A series of legal instruments contained within a broad legal framework for risk management in Ecuador -at the national level-, or the Metropolitan Ordinance that creates the Metropolitan System of Comprehensive Risk Management for the Metropolitan District of Quito -at the local level-, establish preventative actions and regulations for the various levels of government in the event of a disaster, depending on its magnitude. However, these regulations must be accompanied by clear prevention and risk reduction mechanisms. With this aim, the Municipality of the Metropolitan District of Quito needs to incorporate the scope of risk in its planning and territorial management. Likewise, it is important for the city to motivate and prepare its citizens to become involved in efforts to prevent and reduce vulnerabilities.

No study accurately shows or quantifies the number of informal structures. However, according to statements by various municipal technicians, approximately 60 percent of construction in the Metropolitan District is informal (MDMQ, 2015). The sheer size of the territory and the limited ability to provide control make it difficult to stop this trend, as does the lack of enforcement of specific building regulations for the DMQ. The seismic threat and the particular types of soils found in the city makes this issue one of the city's greatest weaknesses. The lack of a compliance culture worsens this problem. This situation results from a set of factors related to poverty, migration, and lack of accessible information and affordable technical advising services for low-income families. The Municipality's efforts to recognize large informal settlements (MDMQ, 2015) should be complemented by a detailed analysis of the physical status of the buildings and the land itself to modify, reinforce, or relocate settlements in protected and high-risk areas or places without proper infrastructure (MDMQ, 2015).

Likewise, properly preparing for threats makes it possible for the population to recover faster after being affected by a disaster. To this end, it is important to ensure effective neighborhood organization and enhance the natural desire of Quito residents to help each other out. Efforts to avoid new risks and reduce existing ones make it possible to transfer risk through insurance on existing buildings at an affordable cost. This approach will make financial resources available to achieve effective and inclusive recovery when needed.



[1] Informality in land occupation is a phenomenon triggered by several factors, such as lack of land ownership titles, lack of building permits, and occupation of areas not anticipated to be used for development.



E1 Avoid the creation of new risks

E1.1

Strengthen the Metropolitan Information System (SIM) with a City Risk Index to aid in decision making

STATUS:
Underway

TIMELINE:

ACTION OWNER: *General Planning Department*

IMPLEMENTATION PARTNERS: *SGSyG, STHV, ICQ*

NETWORK OF CITIES: *Amman, Berkley, Mexico City, Santiago, Semarang, Toyama*

PERFORMANCE INDICATORS:
- Platform Implemented
- Number of points of access to the platform

DESCRIPTION

In a city where risk varies and is not evenly distributed, information must be available to evaluate the most vulnerable and most exposed areas so that actions can be prioritized. This action creates an algorithm to visualize the distribution of risk throughout the territory, using the following formula: threat x exposure x vulnerability / responsiveness. This program also strengthens the SIM and makes it a risk management resource for public administration. This open-access platform is also available to the general public, civil society, and the academia.

The components are:
-Complement the pool of metropolitan indicators
-Complement municipal geographic information
-Centralize strategic information

RESILIENCE DIVIDEND

Urban development planning must prioritize and effectively manage actions in the land especially when the risk is distributed heterogeneously due to physical and socio-economic factors (Rygel et al., 2006). This action strengthens the coordination between different parts of the municipality; allows for efficient use of financial, time, and human resources; and ensures effective management, especially when it is necessary to differentiate risks based on the type of event: (1) intensive risk (low recurrence but very high magnitude and intensity (e.g., earthquakes or volcanic eruptions) and (2) extensive risk (i.e., high recurrence but low magnitude and intensity (e.g., landslides or floods). The two types of risk should be planned to be mitigated, and managed accordingly, prioritizing attention on the vulnerable sectors of society.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 B1 C1 E1 E2 E3 D4 T1

E1.2

Inter-institutional coordination program for risk preparation, mitigation, and prevention

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *General Department of Security and Governance*

IMPLEMENTATION PARTNERS:
Department of Territorial Coordination and Citizen Participation (SCTyPC), SGP, SA, SIS, Health Department (SS), SC, Director of Culture (SCU), SDPyC, SM, Education Department (SE), STHV, IMP, IMPU, AMC, AMT

NETWORK OF CITIES: *Mexico City, Santiago, Semarang, Rio de Janeiro*

PERFORMANCE INDICATORS:
- Number of officials trained
- Development and implementation of multisector risk reduction policies

DESCRIPTION

By requiring a multisectoral approach, planning to build resilience while taking into account risk requires coordination with the various stakeholders that make up the Municipality. The proposal aims to strengthen coordination for such efforts and the capacities of the various agencies and institutions during the planning, execution, and evaluation phases of risk policies. The Manual of the Emergency Operations Committee and Metropolitan Ordinance 265 set out a program focused on the following topics:

- Risk training for municipal technicians from different departments
- Strengthening the Metropolitan Risk Management Office as an agency for municipal participation in the planning, execution, and evaluation of risk policies.

RESILIENCE DIVIDEND

Management that contributes to resilience is able to plan, respond to, and act in a coordinated manner with efficient use of resources. Risk management requires a multidimensional view that provides for a technical solution for each specific department, whether it pertains to territorial or environmental planning, social inclusion, or other topics. Efficiency and effectiveness of actions by various agencies of the local or national governments ensure better management of any event and create trust among citizens (Ranghieri and Ishiwatari, 2014).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 C1 C2 E2 E3

E1.3

Program to develop economically and socially feasible construction practices

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Department of Territory, Habitat and Housing*

IMPLEMENTATION PARTNERS: *SGSYG, CAE, CAMICON, universities, Ministry for Urban Development and Housing*

NETWORK OF CITIES: *Semarang, Medellín*

PERFORMANCE INDICATORS:
- Developed and implemented program
- Number of certified builders

DESCRIPTION

The benefits of reviewing blueprints and inspecting construction projects should be made available to all the people of Quito. These processes improve construction practices and reduce physical vulnerability. This program is carried out by distributing information to builders, especially the ones working in low-income areas, through the following actions:

- Establish a team of construction advisors
- Develop and implement training and certification workshops for builders

RESILIENCE DIVIDEND

According to a study, development of abilities is defined as being the process of developing skills, instincts, processes, and resources that organizations and communities need to adapt, manage, and reduce disaster-derived risks (World Bank, 2016). Failure to comply with construction standards in the city's housing increases people's vulnerability to acute shocks such as earthquakes, landslides, or volcanic eruptions and exacerbates existing chronic stresses. This action generates a culture of regulatory compliance in the city, encourages a close relationship between residents and the municipality, and encourages citizen participation as an agent of change.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

C1 C2 D1 D2 E2 E3

E1.3.1

Guide for new construction and reinforcing existing construction in low-income areas

STATUS:
Planned

TIMELINE:

ACTION OWNER: *Department of Territory, Habitat and Housing*

IMPLEMENTATION PARTNERS: *SGSyG, CAE-P, CAMCON, WB's GFDRR WB, universities, MIDUVI*

NETWORK OF CITIES: *Medellín*

PERFORMANCE INDICATORS:
- Guide developed and adopted
- Number of recognized and improved houses

DESCRIPTION

Often, construction standards are difficult to understand and impossible to achieve in vulnerable socio-economic sectors. Therefore, this guide provides construction processes, materials, and a degree of adaptation to local needs and conditions to close this economic and technical gap. The processes to recognize construction in the city will be strengthened with this aid. The action involves creating instructional material for construction workers, especially those who are illiterate, with particular attention to incremental building.

RESILIENCE DIVIDEND

Economic and social inclusion and improving the physical quality of buildings all benefit from technical and social access to affordable construction practices. This not only reduces the physical vulnerability and level of exposure of buildings, but also improves the quality of habitability for people.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

C1 C2 D1 D2 E2 E3

E1.3.2

Mobile technical support office

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Association of Architects of Ecuador*

IMPLEMENTATION PARTNERS:
CAMICON, STHV, universities

PERFORMANCE INDICATORS:
- Implemented mobile office
- Number of processes in mobile offices

DESCRIPTION

This action proposes to bring mobile architectural and engineering consulting services to the most vulnerable social sectors of the Metropolitan District of Quito. The mobile office facilitates technical access, at no cost, to improve the quality of buildings and thereby reduce their vulnerability to various hazards. The mobile office is staffed by construction students and professionals, and their services include a catalog of structural and architectural plans for houses, a review of blueprints, and provision of construction manuals. The action involves:
- Mobile office program design
- Coordination with the different stakeholders involved in creating the offices

RESILIENCE DIVIDEND

This action brings professionals, academics, and the community closer together (World Bank, 2016). Focusing the advising service in sectors of the city that do not have access to technical resources, the mobile office helps prevent inadequate construction practices and reduces the city's physical vulnerability. This project also generates a culture of compliance, risk awareness, and citizen empowerment in and involvement with prevention initiatives.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

C1 C2 D1 D2 E2 E3

E1.4

Strengthening regulations on universal accessibility

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Department of Territory, Habitat and Housing*

IMPLEMENTATION PARTNERS: *CAE-P, CAMICOM, universities*

NETWORK OF CITIES: *Santiago*

PERFORMANCE INDICATORS:
-- Architecture and urbanism standards reformed and approved
- Number of buildings with universal accessibility

DESCRIPTION

The first step to improving accessibility and inclusion around construction projects is to strengthen building codes. Their integration and compliance is then ensured throughout the regulatory process. The action proposes revising and reinforcing the regulations on universal accessibility and spatial inclusion with no design barriers.

RESILIENCE DIVIDEND

Factors that negatively affect social inclusion, such as buildings without universal access should be reversed (Emerson et al., 2009). Regulations for buildings are important to developing an inclusive society. To this effect, this action seeks to facilitate accessibility for people with physical, sensory, or cognitive disabilities. This action also ensures greater possibilities to deal with acute shocks from natural hazards.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A3 E2 E3

E1.5

Seismic micro-zoning study

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *General Department of Security and Governance*

IMPLEMENTATION PARTNERS: *STHV, CAE-P, CAMCOM, universities*

NETWORK OF CITIES: *Santiago*

PERFORMANCE INDICATORS:
- Study included in the territorial management tools of the city

DESCRIPTION

A seismic micro zoning study for the city will define areas of the DMQ with different and dynamic land behavior in earthquakes. The concept is to implement a long-term program (5 to 7 years) that involves scientific and technical cooperation from academia to conduct geophysical, geotechnical, and geological research campaigns in the DMQ, with annual deliverables on the following topics:
- Geotechnical characterization of the subsoil based on static mechanical properties and common dynamics
- Characterization of vertical profiles of seismic shear wave velocities (Vs30) using geophysical methods
- Determination of a Quito basin structural model
- Definition of transfer functions and surface response spectra
- Estimate of the seismic hazard in the DMQ

RESILIENCE DIVIDEND

These analyses provide information to plan and regulate land occupation and provide construction standards to prevent physical and human losses (Dan et al., 2005). This study provides technical parameters for structural design with better precision than what is currently established in the National Construction Code (NEC)-2015. It will also facilitate prioritization of areas of the city that are most vulnerable and serve as an input to plan urban expansion into low-population-density areas.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

C1 C2 E2 E3

E2 Mitigate existing risks

E2.1

STATUS:
Planned

TIMELINE:

ACTION OWNER: *Metropolitan Control Agency*

IMPLEMENTATION PARTNERS: *STHV, CAE-P, CAMICON, universities*

NETWORK OF CITIES: *Santiago, New York, San Francisco*

PERFORMANCE INDICATORS:
- Designed and developed program
- Number of trained officials for evaluation
- Number of buildings evaluated

Program to strengthen mechanisms for evaluating existing buildings

DESCRIPTION

Most buildings constructed before the existence of construction regulations or those built without regulatory compliance should be evaluated for structural and other safety considerations. The current inventory of buildings contributes significantly to the risk in the city. These processes must be effective and efficient. Strengthening of technical capacities to evaluate existing buildings is achieved through the following:

- Creation of a manual with criteria to evaluate existing structures
- Training in evaluating existing buildings using the Rapid Visual Screening method

RESILIENCE DIVIDEND

An efficient evaluation method is a tool needed to identify and make an inventory of buildings that are potentially vulnerable to earthquakes (Lizundia et al., 2015). This evaluationof existing buildings in the city makes it possible to direct efforts to reduce physical vulnerability, strengthen structures, and assess the applicability of relocating certain families. This program also opens the door to alternative markets in the construction sector in structural reinforcement.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

C1 C2 D1 E1 E3

Photo: Francisco Galárraga

E2.1.1

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *General Department of Security and Governance*

IMPLEMENTATION PARTNERS: *STHV, MDMQ, CAE-P, CAMICON, universities*

PERFORMANCE INDICATORS:
- Number of elements evaluated

Evaluation of city's critical infrastructure

DESCRIPTION

The survival of buildings alone does not guarantee a functioning city. Urban service systems, such as hospitals, schools, or water and electricity supply systems, are key to protecting the population. Achieving interdependence requires a unified approach (for example, analysis of the metro system's impact on factors such as the water or communications systems) to ensure the adequacy and continuity of the DMQ's public service system. The action includes training technicians and practitioners on evaluation tools developed by UNISDR and UN-Habitat, such as the "Ten Essentials" and the "Disaster Resilience Decision Making Scorecard for Cities." These and other tools will be considered in the preparation of the DMQ Post-Disaster Recovery and Reconstruction Plan.

RESILIENCE DIVIDEND

Rapid recovery from potential acute shocks, along with protection and assistance for the population, require analysis and strengthening of urban systems to provide services, especially in uncertain future scenarios such as climate change (Ruth and Coelho, 2007). Establishing this effort a priority will make it possible to evaluate and plan more effective activities.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

B1 C1 C2 D2 D3 E1 E3

E2.2

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *Department of Territory, Habitat and Housing .*

IMPLEMENTATION PARTNERS:
EPMHyV, SGSyG, CAE-P, CAMICON

PERFORMANCE INDICATORS:
- Designed and developed program
- Number of people trained
- Number of reinforced buildings

Structural Reinforcement Program

DESCRIPTION

After identifying vulnerable buildings, the structures need to be reinforced through a program that promotes this practice. The proposed program must be affordable and collaborative to reach the largest number of families. To this end, a community work approach will be used. These community builders will receive advising by professionals who, armed with manuals for different construction types and materials, will guide these processes in a coordinated way.

RESILIENCE DIVIDEND

This action helps reduce the existing risk and supports processes to identify buildings in the city. Strengthening existing structures before a disaster affects human safety and aids in the rapid repair of existing unsafe buildings. This practice, in turn, makes it possible for displaced people to return to their homes after an extreme impact (Build Change and Swisscontact, 2015). Participative structural reinforcement is a preventive action based on best practices. By involving different stakeholders in the real estate industry, more assistance is available, along with community collaboration.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

C1 C2 D2 D3 E1 E3

100RC PLATFORM PARTNER: BUILD CHANGE LATIN AMERICA

Build Change, one of the 100RC Network platform partners, is an organization whose mission focuses on saving lives in developing countries during earthquakes and typhoons by reinforcing homes or schools that are in risk of collapse. Build Change designs disaster-resistant homes and schools and trains builders, owners, engineers, and government employees on proper construction. The program is carried out in close contact with its beneficiaries, making them part of both the decision-making and construction processes. The result is a lasting change in construction practices by developing abilities for the local population.

Some strategies that Build Change uses in its projects are adopting local solutions to determine the most profitable construction models, empowering homeowners who design their houses, participating in production processes, taking advantage of knowledge and technology developed around the world (technical excellence), purchasing available materials (economic growth for the community), creating jobs for local construction workers, and exchanging knowledge with other post-disaster construction agencies.

In Latin America, Build Change has worked in countries such as Guatemala, Peru, Ecuador, and Colombia. In Colombia, both the Bogotá and the Medellín Mayor's Offices have recognized the importance of involvement as key to improving home construction. As a result, they have allocated funds to subsidize structural improvements in vulnerable neighborhoods. Build Change provides technical support to these municipalities to reinforce unsafe buildings and hopes to eventually expand the program in places where it currently has a presence as well as other countries.

E2.3

Relocation program for families in areas of non-mitigable risk

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *General Department of Security and Governance*

IMPLEMENTATION PARTNERS: *STHV, SGCTPC, EPMHV*

NETWORK OF CITIES: *Santa Fe, Medellín*

PERFORMANCE INDICATORS:
- *Program designed and approved*
- *Number of participatory relocation processes*
- *Number of relocated families*

DESCRIPTION

Following an evaluation of risk situations that lack any available solution in terms of morphoclimatic and geomorphological phenomena, some families or individuals may need to be relocated to safe areas and dwellings. This action proposes strengthening the existing municipal relocation program using new mechanisms, such as public-private partnerships and participatory planning, with the aim of facilitating the availability of housing units and social inclusion in the planned areas.

RESILIENCE DIVIDEND

A post-disaster relocation process improves the quality of life for residents, eliminates their exposure, reduces their vulnerability, and becomes a disaster risk-reduction measure. This relocation is not only physical, but also social. Processes that are carried out inappropriately lead to environmental degradation, overcrowding, and isolation which can affect the social fabric (Riyadh and Norris, 1996). Effective, integrated, and consensual solutions, implemented in a participatory manner with technical support, are a part of the program that involves several social sectors and requires their participation.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

C1 C2 D2 D3 E1 E3

E3 Prepare the Metropolitan District of Quito to address threats

E3.1

Program to promote neighborhood preparednesss

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *General Department of Security and Governance*

IMPLEMENTATION PARTNERS:
SCTyPC, community, AECOM

NETWORK OF CITIES: *Berkeley, Boston, Da Nang, Medellín, San Francisco, Santiago, Semarang*

PERFORMANCE INDICATORS:
- *Designed and developed program*
- *Number of neighborhoods where the program has been implemented*

DESCRIPTION

In connection with the Quito Listo, a municipal initiative to generate direct and clear communication through training in mitigation, attention, response, risk management, development and all other directed actions to have a prepared city, this action proposes strengthening community dynamics in neighborhoods to ensure participatory and preventive evaluations, improved communication, and organized communities with assigned roles.

RESILIENCE DIVIDEND

When catastrophic events occur and plans for an organized and timely response collapse, community organizations often step in to provide relief (Majchrzak et al., 2007). The neighborhood organization creates awareness about the danger of threats, strengthens risk management, and amplifies the city's responsiveness. Strengthening social cohesion in urban structures such as neighborhoods, enhances effective responsiveness to potential acute shocks and the chronic stresses that affect them (Pelling, 2003).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 C1 C2 E1 E2

E3.1.1

Program to create disaster response neighborhood volunteer networks

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *General Department of Security and Governance*

IMPLEMENTATION PARTNERS:
SCTyPC, community

NETWORK OF CITIES: *Amman, Medellín, Santa Fe, Santiago, Semarang*

PERFORMANCE INDICATORS:
- Program designed and approved
- Number of volunteer networks and number of registered volunteers

DESCRIPTION

Through the neighborhood risk management committees, promoted by the SGSyG, this action seeks to develop neighborhood networks of young volunteers that respond immediately to possible acute shocks or chronic stresses, particularly those related to natural hazards. The volunteer neighbors are prepared to maintain safety, especially for the most vulnerable, through established technical procedures, until the situation is controlled by the responsible authorities.

RESILIENCE DIVIDEND

Post-disaster experiences and assessments show that some formal and informal volunteer organizations have worked in disaster response and mitigation assistance. The results highlight the value of creating community groups on disaster-related issues and decision making in recognition of the social capital, resources, and experience that these groups bring (Wachtendorf and Kendra, 2004).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 E1 E2

E3.1.2

Disaster Preparedness Awareness Campaign

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *General Department of Security and Governance*

IMPLEMENTATION PARTNERS:
EMSEGURIDAD, SCTyPC, Pacífico

NETWORK OF CITIES: *Mexico City, Medellín, Santiago, Semarang*

PERFORMANCE INDICATORS:
- Number of campaigns carried out
- Campaign impact survey

DESCRIPTION

The lack of awareness about possible disasters is a chronic stress, since it lessens community preparedness. A difficulty that prevents awareness is the distance between government officials, universities, and organizations, on the one hand, and citizens in general, on the other hand. The campaign is designed to create a common language, reinforce connections, and then contribute with simple solutions. Part of this action, for instance, is the setting up of low-cost early warning systems.

RESILIENCE DIVIDEND

The effects of possible acute shocks can be predicted and mitigated by using citizen observations and taking advantage of accessible artifacts and technology. This process raises awareness, empowers the community, and generates positive outcomes. In this way, the community benefits from its own data (Minson et al., 2015).

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

A1 E1 E2

E3.2

Universal Insurance program

STATUS:
Underway

TIMELINE:

ACTION OWNER: *Mayor's office*

IMPLEMENTATION PARTNERS:
SGSyG, STHV, Municipal Cadaster, General Administration

NETWORK OF CITIES:
Medellín, Porto Alegre, Santiago

PERFORMANCE INDICATORS:
- Insurance system designed
- Number of buildings insured

DESCRIPTION

The Metropolitan District of Quito must be prepared to face threats of all kinds and must have the capacity to recover quickly. This action proposes insuring buildings as an urgent need to aid in the city's economic recovery after a large disaster. This initiative, to be applied across the entire city, would substantially reduce insurance premium costs and should be affordable for the most vulnerable population.

RESILIENCE DIVIDEND

Insurance is an effective way to protect assets and livelihoods at risk. An insurance program ultimately reduces reliance on humanitarian aid. It also helps people to rebuild their lives, especially in the most vulnerable sectors. Having access to ex ante disaster risk reduction measures and building on realistic and viable recovery plans builds confidence and encourages greater investment in city development (RMS, 2017). This action also encourages community awareness about risk, building code compliance, and the generation of an insurance culture.

RESILIENCE QUALITIES

CONTRIBUTION TO OTHER GOALS

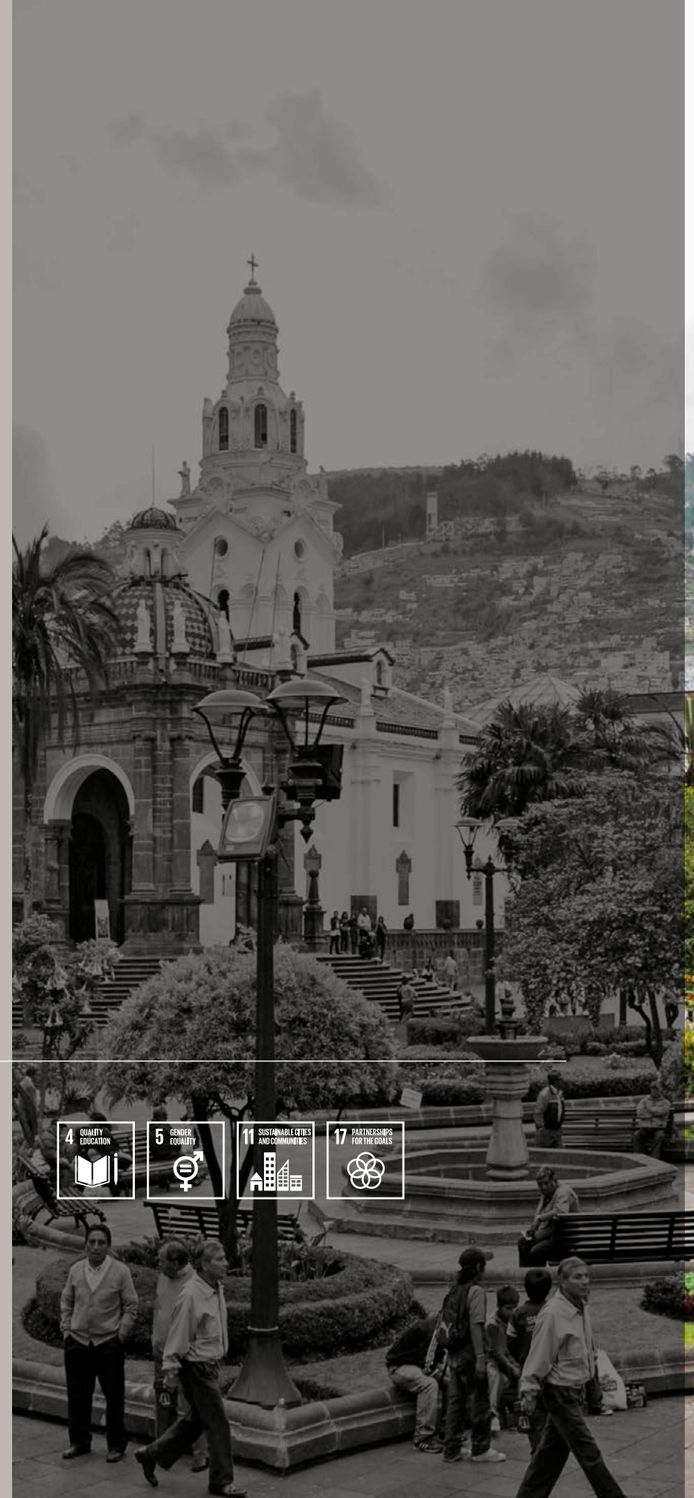
C1 C2 D2 E1 E3

Volunteers collecting donations in Quito after the April 2016 earthquake

CROSS-CUTTING ACTIONS

Resilience, as a cross-cutting element to be applied in the city's strategic planning, proposes efficient alternatives to the challenges of urban development. This approach requires a long-term vision which must include mechanisms that guarantee its incorporation and strengthening over time.

The actions are presented in a way that shows their contribution to the management of the strategy's pillars and how they enable follow-up mechanism for implementation. At the same time, the actions are based on a holistic approach and qualities and must be reviewed on an ongoing basis to include principles of efficiency and sustainability.



T1 - Ensure continuity and facilitate planning processes with a resilience lens

Plaza Grande

T1 Ensure continuity and facilitate planning processes with a resilience lens

T1.1

Metropolitan Resilience Council

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *General Planning Department*

IMPLEMENTATION PARTNERS:
Public sector, different levels of government and public companies, private sector, guilds

NETWORK OF CITIES: *Santa Fe, Medellín, Rotterdam*

PERFORMANCE INDICATORS:
- Implemented council
- Number of sectors represented in the council

DESCRIPTION

The creation of a Metropolitan Resilience Council enables the participation of various stakeholders, including different levels of government, international organizations, the private sector, and academia, to monitor implementation and continue the city's Resilience Strategy. The Metropolitan Resilience Council also provides guidance and technical and organizational experience to support the development and promotion of future actions that will strengthen the construction of resilience in the city.

RESILIENCE DIVIDEND

The city's preparedness in facing possible acute shocks and increasingly extreme chronic stresses is strengthened through coordination between representatives of different parts of society. The growing need not only to plan for these events, but also to reduce the acute shocks through conscious adaptation requires a coordinated effort. This type of inclusive planning leads to long-term benefits, such as the appropriation of actions by different stakeholders and the co-responsibility of several sectors under a common agenda.

RESILIENCE QUALITIES

INSPIRATION FROM THE 100RC NETWORK:
SANTIAGO RESILIENCE COUNCIL

As part of the process to build the Santiago City Resilience Strategy, a Public-Private Resilience Council was created, made up of 35 experts from academia, government, NGOs, private-sector representatives, and professional associations. Public-sector participants included regional departments and ministries, local governments, and mayors. The private sector is represented by utility companies, the Chilean Chamber of Commerce, and the Chilean Construction Chamber; there are also representatives from academia and other social organizations. The objective is to include diverse stakeholders from the city in making decisions on issues related to the impacts and stresses faced by Santiago.

The council holds monthly topical sessions with the city's resilience team, following an approach especially created to generate ideas and share input on each topic. This method is key to analyze a representative case in each problem area and identify lessons learned, recommendations, and specific actions that can be implemented at a regional level. The information is organized after each session and sent to the roundtable participants before presenting the proposals to the appropriate agencies.

After publishing the Chile Resilience Strategy, the Public-Private Resilience Council will continue to hold meetings as a control agency and to follow up on implementation of the strategy.

T1.2

Contextualization of the SDG, the NUA, and the principles of resilience through different city management tools

STATUS:
Planned

TIMELINE:

ACTION OWNER: *General Planning Department*

IMPLEMENTATION PARTNERS: *MDMQ, UNPD*

NETWORK OF CITIES: *Athens, Berkeley, Bristol, Mexico City, New York*

PERFORMANCE INDICATORS:
- Number of metropolitan management instruments aligned with international agendas
- Number of municipal activities that contribute to the SDG

DESCRIPTION

International agendas, the NUA, and the SDG need to be supported through the PMDOT, the Resilience Strategy, and other city management tools. Among other activities, risk should be included in such instruments. Through a system of indicators that allows their territorialization, the impact of actions within the Metropolitan District of Quito will be measured in response to efforts to implement these international frameworks.

RESILIENCE DIVIDEND

By fulfilling goals set under international agendas, we are able to ensure that the Municipality guides the city toward sustainable urban development that is inclusive, safe, and resilient.

RESILIENCE QUALITIES

T1.2.1

Revision: Alignment to the SDG and insertion of resilience as a strategic planning principle in the PMDOT

STATUS:
Pre-existing

TIMELINE:

ACTION OWNER: *General Planning Department*

IMPLEMENTATION PARTNERS:
UNDP, MDMQ

NETWORK OF CITIES: *New York*

PERFORMANCE INDICATORS:
- PMDOT approved and aligned with international agendas
- PMDOT includes resilience as a strategic city planning principle

DESCRIPTION

The Metropolitan Development and Territorial Management Plan, which defines the guiding principles and the Municipality's activities and planning, needs to be reviewed. Its actions, goals, and guidelines should be aligned with the SDG and the NUA. This verification includes inserting resilience as a strategic city planning principle and a system of indicators to monitor its implementation and impact.

RESILIENCE DIVIDEND

As an instrument governing municipal management, the PMDOT must ensure that all actions undertaken contribute to the goals set through international agendas. Thus, the objectives of this action are to act as a guide for specific management instruments developed by different departments, provide principles, and contribute to the global agenda.

RESILIENCE QUALITIES

T1.3

Strengthen the conditions to establish strategic alliances with international cooperation partners

STATUS:
Planned

TIMELINE:

ACTION OWNER: *International Relations Metropolitan Direction*

IMPLEMENTATION PARTNERS: *MDMQ, international organizations*

NETWORK OF CITIES: *Santiago*

PERFORMANCE INDICATORS:
- Number of activities in collaboration with international organizations

DESCRIPTION

The proposed action seeks to strengthen and create links with NGOs, multilateral agencies, and other cities through reimbursable and non-reimbursable cooperation plans or humanitarian aid in the event of disasters to receive and manage international cooperation more efficiently. The action consists of strengthening and coordinating the work between the international organizations and their local peers by defining needs and identifying international cooperation programs that contribute to the city's management and its resilience agenda.

RESILIENCE DIVIDEND

The alignment of the Municipality of the Metropolitan District of Quito with international aid agencies provides the city with mechanisms and opportunities for technical advising, exchanges, and access to support programs to ensure effective cooperation. This alignment is also an opportunity for urban management to comply with international standards.

RESILIENCE QUALITIES

T1.4

Training program for resilience practitioners

STATUS:
Aspirational

TIMELINE:

ACTION OWNER: *General Planning Department*

IMPLEMENTATION PARTNERS:
MDMQ, academia

NETWORK OF CITIES: *Santa Fe, Surat, Río de Janeiro, Dakar, Medellín, Melbourne, Da Nang*

PERFORMANCE INDICATORS:
- Number of training sessions
- Number of people trained

DESCRIPTION

The purpose of this action is to promote the practice of building urban resilience through training initiatives such as workshops, meetings, and other activities to give continuity and structure to these processes. This action is aimed at university students, municipal officials and private companies and seeks to communicate the concepts, tools, and mechanisms available.

RESILIENCE DIVIDEND

Training resilience practitioners ensures that this practice is sustained over time and becomes a local, national, and regional contribution. In addition, citizens are provided with tools to incorporate solutions through private companies, public administration, and the academic world, among other entities.

RESILIENCE QUALITIES

Quito's Historic Center at night

8. **MONITORING:** METHODOLOGY

Beyond the management indicators proposed to monitor each action, the effective implementation of the DMQ Resilience Strategy requires a permanent process of monitoring and follow-up of the strategy's achievements and reach. To accomplish this, a system of indicators able to monito impact articulated with the pillars and goals of the strategy, the Metropolitan Plan for Development and Land Management (PMDOT), the United Nations Sustainable Development Goals (SDG), and the New Urban Agenda (NAU) is established.

The design of the indicators is based on a multidimensional approach that identified cross-disciplinary support points to ensure a comprehensive strategy. It should be noted that implementation of the strategy does not focus on a single theme, but incorporates a systems approach through synergies between actions. Within the strategy, the correlation between these actions through the goals is not only addressed within each pillar, but between the goals of all pillars—an exercise that enables contributions to other pillars simultaneously. As a second step, a contribution and correlation analysis was carried out with the objectives and goals of the PMDOT.

Subsequently, the contribution of the Resilience Strategy to achieve the SDG was supported by the memorandum of understanding signed between the Municipality of the Metropolitan District of Quito and the United Nations Development Program in Ecuador for the implementation of the SDG and NAU in the city. From this agreement, a process has begun to align local planning and management goals with global agendas. Within this framework, a specific diagnosis was made of the level of alignment of the PMDOT with Agenda 2030 (SDG). The Rapid Integrated Assessment (RIA) methodology developed by the United Nations Development Program (UNDP) has been used to help countries and cities assess their level of preparedness for the implementation of the United Nations SDGs. The result of this assessment has made it possible to identify the existing relationships between PMDOT policies and objectives and SDG goals and targets. These will serve as a basis for a proposal to align the PMDOT with Agenda 2030 and the SDG.

This assessment also serves as a basis for the design of an array of impact indicators that can contribute in a multidimensional way, at the level of objectives and policies, to the PMDOT and to the SDG. The indicators outlined seek to be abstract, general, and replicable in the medium and long term. They consist of variables that are concrete and empirically measurable, and they record the recurrence of phenomena and their persistence over time or their variations.

All these elements allow a selective mechanism of indicators to function, which operates through filters of relevance and consistency. Relevance refers to logical construction based on the content of the strategy; consistency, however, refers to the existence of sources of information or to the feasibility of constructing and applying instruments that allow it to be produced. In the first case, the indicators and their variables will function based on the administrative information from the management processes (information gathered through administrative data from local and national government bodies). In the second case, it is a matter of designing and applying instruments deliberately constructed to produce such information (quantitative and qualitative techniques). Appendix 2 presents the matrix of indicators for Resilient Quito, which is structured according to the five pillars of work and their respective goals and indicators. The identification of these indicators has taken into account the different planning and management instruments (such as the ICQ-MDQ quality of life index, PMDOT policies and objectives, the United Nations SDGs, and the NUA indicators and targets) that correspond to these goals. Each indicator is accompanied by its description and assessment.

9. **THE ROAD** FROM HERE

MOVING THE RESILIENCE AGENDA FORWARD

Photo: FONAG

Resilient Quito is the result of the priceless contributions of many people with profound knowledge of the city. The intuition and inspiration generously provided by key actors during countless discussions, brainstorming sessions, structured workshops, and research fueled this work. This must continue.

After its publication, an implementation plan will be constructed with the different municipal agencies of the city and partners working together to identify priority actions and design and develop programs and projects that create a time frame transcending election cycles, identify resources, and establish a road map in order to achieve effective results. Together with these stakeholders, we will forge the connections between Resilient Quito and the city, especially with and for the most vulnerable. In this sense, the Resilience Advisory Council and its members will act not only as partners in the implementation, but also in the follow- up process to Resilient Quito.

At the institutional level, the process carried out with the different municipal agencies clearly established the importance of multisector contributions and the need to generate internal synergies. For this reason, special emphasis will be placed on delving deeper into the model of collaborative work and inviting stakeholders from the private sector, the academic world, other municipalities, and NGOs to join in the effort. We start by recognizing that there is accumulated knowledge and experience as well as successful practices that can contribute to the city's development.

At the international level, through the 100RC initiative, we have found that there is a wide "library" of valuable experiences, and that the great potential of collaboration with cities has much to contribute in terms of acute shocks and common chronic stresses. 100RC and other networks can help us build an international agenda that guides and catalizes efforts through relevant experiences. At the same time, continued collaboration with the initiative's platform partners, which have contributed with work, initiatives and technical guidance, and with other new partners with different capacities and knowledge, will allow us to use all these resources strategically to implement the resilience agenda.

Finally, the road to building resilience is a continuous process of constant learning in order to face multiple and ever-changing urban challenges. The city's capacity to survive and thrive requires a monitoring system to ensure periodic evaluations that show the advances in implementing the Resilience Strategy. This monitoring system will also make it possible to verify the impact of the different initiatives that contribute to building the city's resilience.

10. ACKNOWLEDGMENTS

The Resilience Strategy of the Metropolitan District of Quito would not be possible without the input of people from various organizations who hope to contribute to the development of a city that improves and safeguards the quality of life of its inhabitants. We hope to build, cultivate and expand lasting relationships and collectively promote Quito's resilience and sustainable development agenda.

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11. GLOSSARY

Anthropogenic threat: Threat that originates from human actions (uncontrolled burning of grassland, accidents, settlements in unsafe zones).

Biodiversity: Term used to refer to the variety of life on earth, including all organisms, species and populations; the genetic variation between them; and their complex communities and ecosystems (UNEP).

Biological diversity: Biodiversity is not equitably distributed, but varies widely across the world as well as within regions. Among other factors, the diversity of all living things (biota) depends on temperature, precipitation, altitude, soils, geography and the presence of other species.

Citizen participation: Individual and collective actions designed to identify and address issues of public interest. It is a collective commitment to work to make a difference in the civic life of communities and to develop the combination of knowledge, skills, values and motivation to make that difference. It means promoting quality of life, both through political and non-political processes (New York Times).

Climate change: A change in climate, directly or indirectly attributable to human activity, that alters the composition of the global atmosphere and adds to the natural climate variability observed over comparable periods of time (UNFCCC).

Climate change adaptation: Adjustment in natural or human systems in response to actual or expected stimuli or climatic effects, mitigating harm or exploiting beneficial opportunities (UNFCCC).

Climate change mitigation: In the context of climate change, this refers to human interventions to reduce sources of greenhouse gases or increase sinks of greenhouse gases. The reduction includes using fossil fuels more efficiently or switching to solar or wind energy; "sinks" are forests or oceans in such a condition that they are able to remove large amounts of carbon dioxide from the atmosphere (UNFCCC)**.**

Collective transport: Public transport or common transport of passengers.

Decent work: Sums up the aspirations of people in their working lives. It implies opportunities for productive work that provides a fair income, workplace safety, and social protection for families; better prospects for personal development and social integration; freedom to express concerns, organize, and participate in decisions that affect their lives; and equal opportunities and equal treatment for all women and men (ILO).

Demographic Bonus: The potential for economic growth that can be derived from changes in the age structure of a population, especially when the proportion of the working-age population (ages 15 to 64) is higher than that of the population below 14 years and over 65 years (UNFP).

Disaster: A serious disruption in the functioning of a community or society that causes a large number of deaths as well as material, economic, and environmental losses, and impacts that exceed the capacity of the affected community or society to deal with the situation through use of its own resources.

Early warning system: The set of capacities needed to generate and disseminate timely and meaningful alert information to enable individuals, communities, and organizations threatened by a disruptive event to prepare and act appropriately and with sufficient time in advance to reduce the likelihood of loss or damage (UNISDR).

Economy of agglomeration: In an urban economy, agglomeration economy refers to the benefits obtained from the agglomeration of economic activities. This concentration in a given area allows the growth and expansion of economic activities in other areas due to the location and cost minimization decisions that companies take to maintain high productivity and gain competitive advantages (Stephen, 2013).

Ecosystem: A community of living organisms in conjunction with non-living components of their environment (e.g., air, water, or mineral soil) that interact as a system. These biotic and abiotic components are considered to be linked together through nutrient cycles and energy flows (Odum, 1971).

Ecosystem diversity: Addresses ecosystem variations within a geographic location and their overall impact on human existence and the environment.

Ecosystem services: The benefits people and communities derive from ecosystems. Among the benefits that ecosystems can offer are so-called "regulatory services," such as flood regulation, drought and soil degradation, as well as "provision services," such as food and water; "support services," such as soil formation and nutrient cycling; and "cultural services," such as recreational, spiritual, religious, and other non-material benefits (UNISDR).

Environmental degradation: Reducing the capacity of the environment to respond to social and ecological needs and objectives (UNISDR).

Exposure: The population, properties, systems or other elements present in areas where there are threats, which are therefore likely to experience potential losses (UNISDR).

Geological fault: In geology, a discontinuity in a volume of rock through which a significant displacement occurs as a result of the movement of rock mass. The release of energy associated with rapid movement in active faults is the cause of most seismic movements (Allaby, 2015).

Greenhouse gases: The atmospheric gases responsible for causing global warming and climate change. The main GHGs are carbon dioxide (CO2), methane (CH4) and nitrous oxide (N20). Less frequent but very potent greenhouse gases are hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF6) (UNFCCC).

Governance: Term designating the effectiveness, quality, and good orientation of state intervention, which provides a good part of its legitimacy on the basis of achieving lasting economic, social, and institutional development and promoting a healthy balance between the state, civil society, and economic markets (RAE).

Human development: Expanding people's opportunities, paying heed to the richness of human lives and not just the wealth of economies (UNDP).

Human diversity: The various physical and social aspects of the human family, i.e., its genetic and cultural variety (Durham, 1991).

Natural threat: A natural process or phenomenon that can cause death, injury, or other health impacts, as well as property damage, loss of livelihood and services, social and economic disruption, or environmental damage.

Participatory democracy: The effort to create opportunities for all members of a population to contribute meaningfully to decision making, and the effort to broaden the range of people who have access to such opportunities (Shirky, 2008).

Physical vulnerability: The risk assessment of an element exposed to a possible acute impact requires a consideration of the physical vulnerability of the element, which expresses its propensity to suffer damages (Douglas, 2007).

Resilience: The ability of a system, community, or society exposed to a threat to resist, absorb, adapt, and recover from its effects in a timely and effective manner, including preservation and restoration of its basic structures and functions (UNISDR).

Resilience qualities: Seven qualities that allow cities to withstand, respond, and adapt more easily to acute shocks and chronic stresses (100RC).

Response capacity: The ability of people, organizations, and systems to address and manage adverse conditions, emergencies, or disasters, using available resources and skills (UNFCCC).

Risk: The combination of probability of occurrence of an event and its negative consequences (UNISDR).

Social capital: Networks that, together with norms, values, and shared understanding, facilitate cooperation within or between groups. In this definition, networks are understood as real-world links between groups or individuals (e.g., networks of friends, family networks, networks of former colleagues). Social capital provides the means of facilitating cooperation, exchange, and innovation (OECD).

Social cohesion: A group's tendency to be unified while working towards a goal or striving to meet the emotional needs of its members (Carron and Brawley, 2000).

Social vulnerability: A pre-existing condition that affects the ability of a society to prepare and recover from a disruptive event.

Sustainability: Derived from the words "sustained" and "ability," refers to the capacity of biological systems to remain diverse and productive over time. In more general terms, it refers to the permanence of systems and processes. The guiding principle of sustainability is sustainable development, which includes the four interconnected domains: ecology, economics, politics, and culture (James et al., 2015).

Sustainable development: Meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland Commission). It cannot be achieved without ensuring that all women, men, boys, and girls enjoy human dignity and the right to expand their capacities, ensure their reproductive health and rights, find decent work, and contribute to economic growth (UNFPA).

Threat: A phenomenon, substance, human activity, or dangerous condition that can cause death, injury, or other health impacts, as well as damage to property, loss of livelihood and services, social and economic disruption, or environmental damage (UNISDR).

Urban compactness: an urbanism and urban design concept for a compact city, of short distances, that promotes a relatively high residential density with mixed uses within a city. It is based on an efficient public transport system and an urban design that encourages walking and cycling, low energy consumption, and pollution reduction. The concept favors a large resident population offering opportunities for social interaction as well as a sense of security due to the number of people with "eyes on the street" (Jacobs, 1961).

Vulnerability: The characteristics and circumstances of a community or system that make them susceptible to the harmful effects of a threat (UNISDR).

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15. APPENDICES

15.1 APPENDIX A - ACTIONS TABLE

ACTION	NAME	TYPE	STATUS	TIMELINE	RESILIENCE DIVIDEND	ACTION OWNER	IMPL. PARTNERS	CONTRIB	100RC NW
PILLAR A — INCLUSIVE AND EMPOWERED CITIZENS									
A1. Encourage co-responsibility between citizens and the municipality through capacity building									
A1.1	Capacity strengthening program to enable effective citizen participation	Priority	Pre-existing	Short-term	• Empowered citizenship and social cohesion. • Inclusion of diverse groups in participatory processes • Constant training of Community leaders	Department of Territorial Coordination and Citizen Participation	Private Trainers, Neighborhood Assemblies, Academia	A2 A3 B1 B2 C1 E1 D3 E2 E3	Boston, Byblos, Mexico City, Pittsburgh
A1.1.1	Comprehensive stakeholder mapping	Support	Planned	Short-term	• More effective and inclusive citizen participation • Closer municipal administration to the citizen's needs	Department of Territorial Coordination and Citizen Participation	Zonal administrations, Community	A2 A3 B1 C1 D3 E3	Santa Fe
A1.2	Citizen participation training programs for municipal employees	Priority	Aspirational	Short-term	• Promotes and enforces processes of citizen participation within the municipal administration • Strengthens the municipal image • Ensures continuity of policies, programs and projects	Department of Territorial Coordination and Citizen Participation	SGP, General Administration, ICAM, MDMQ	A2 A3 B1 C1 E3	Boston, Oakland
A1.3	Citizen participation manuals	Support	Aspirational	Short-term	• Promotes proper compliance with the processes • Facilitates the continuity of good practices over time • Contributes to the Municipality's transparency and open government efforts	Department of Territorial Coordination and Citizen Participation	Community, MDMQ	A2 A3	Boston
A2. Develop institutional mechanisms that enable citizen participation									
A2.1	Digital citizen participation platform	Priority	Pre-existing	Short-term	• Arouses the interest of people who do not usually get involved in matters of public interest • Provides accessible and transparent information. • Allows diversification of actors and methods of public deliberation	Department of Territorial Coordination and Citizen Participation	SGP, Community, Madrid City Council	A1 A3	Thessaloniki
A2.2	Neighborhood agenda program for Community development	Priority	Aspirational	Medium-term	• Promotes an autonomous Community organization with capacity to make decisions and manage its development • Strengthens social cohesion • Generates a committed, responsible and proactive population	Department of Territorial Coordination and Citizen Participation	SGSYG, IMPU, Community	A1 A3 C2 E1 E2 D3 E3	Bristol, Pittsburgh, Rotterdam

A2.3	Put participatory budget processes into practice	Priority	Underway	Medium-term	• Promotes efficient investment • Responds to Community requirements. • Involves the Community in planning their own development • Promotes citizen empowerment	Department of Territorial Coordination and Citizen Participation	Zonal Administrations, parish assemblies, General administration, Community, AECOM	A1 A3 C2 E1 E2 E3	Boston, Byblos, Rio de Janeiro, Semarang, Thessaloniki
A2.4	Communication campaigns on citizen participation tools	Support	Pre-existing	Short-term	• Encourages the participation of different sectors of society • Strengthens the institutional image and the efforts derived from participatory processes	Department of Territorial Coordination and Citizen Participation	Community, SC, AECOM	A2 A3 B1 B2 C1 E1 D3 E2 E3	Mexico City, Rotterdam, Thessaloniki
A3. Create quality public spaces for citizens									
A3.1	Safe Public Areas Program	Flagship	Underway	Medium-term	• Promotes responsible and active occupation of public space • Directly influences the security and social cohesion in the area • Generates social capital, appropriation and inclusion • Encourages entrepreneurship at neighborhood level	General Department of Security and Governability	EMSEGURIDAD, SGCTyPC, EPMMOP, STHV	A1 A2 B1 B2 B3 C2 C4 E2 E3	Mexico City, Santiago Chile
A3.2	Public areas activation project	Priority	Pre-existing	Short-term	• Strengthens social cohesion • Increases safety in public spaces • Improves the health and education of the population	Culture Department	SGCTyPC, Community, SGSyG	A1 A2 A3 B2 B3 C2 C4 E3	New York
A3.3	Safe public spaces for women program	Priority	Pre-existing	Short-term	• Prevents harassment in public space • Empowers women • Enables spaces previously considered unsafe	Municipal Foundation San Jose	SIS, EPMTP, UN Women	A1 A2 C2 E3	Rotterdam
PILLAR B — ROBUST AND SUSTAINABLE ENVIRONMENT									
B1. Manage natural and semi-natural areas and urban parks in the Metropolitan District of Quito									
B1.1	Management program to conserve natural and semi-natural areas	Flagship	Aspirational	Long-term	• Environmental conservation • Promotes socioeconomic development of the populations located in natural areas • Diversifies management efforts • Empowers and promotes proactive population. • Generates environmental awareness	Environment Department	SGP, SDP, ConQuito, STHV, SGCTyPC,	A1 B2 B3 C1 D3 E3	Santa Fe, Mexico City, Melbourne, Boulder, Durban.
B1.2	Training program in valuing of ecosystem services	Priority	Underway	Medium-term	• Allows to incorporate environmental, economic and social considerations in the decisions related to the development of the city	Environment Department	SGP, SDP, ConQuito, STHV, SGCTyPC, EPMMOP, TNC	A3 B2 B3 C1 D2 D3 E3	San Juan, New Orleans, El Paso

B1.3	Recovery project for rivers and gorges in the southern part of the city	Priority	Underway	Long-term	• Environmental benefits • Provides quality public space, social cohesion and citizen participation. • Protects against flooding • Recovery of flora and fauna in the sector	EPMAPS	SA, SGP, SDP, ConQuito, STHV, SGCTyPC	A1 A3 B2 B3 C4 E2 E3	Mexico City, Medellín
B2. Promote environmental awareness									
B2.1	Generate an environmental awareness campaign	Priority	Aspirational	Short-term	• Ensures the effectiveness of environmental programs and projects • Efficient use of public resources in environmental management • Reduces the risk of contamination of natural areas	Environment Department	EPMMOP, SC Pacífico	A1 A3 B1 B3 C1 C2 C3 C4 D2 D3 E1 E2 E3	Toyama, Bristol
B2.2	Quito Recycles Campaign	Priority	Underway	Medium-term	• Reduces the number of tons of domestic and industrial waste going to sanitary landfills • Generates environmental awareness • Encourages the exchange of knowledge, social cohesion and empowerment	Environment Department	Community	A1 D2 E1	Amman, Santiago Chile, Toyama
B3. Take advantage of the benefits of nature in urban infrastructure planning									
B3.1	Technical capacity building program for planning with nature-based solutions	Priority	Planned	Short-term	• Ensures the continuity in time of the inclusion of nature in the urban area • Improves the image and quality of the city • Helps reduce risk	Environment Department	IMPU, SGP, STHV, IMP, ConQuito, EPMMOP, EPMAPS, academia, TNC	A3 B2 C1 C2 C4 D3 E1 E2	New Orleans
B3.2	Using green infrastructure to protect the city's transportation system	Priority	Aspirational	Medium-term	• Safer transport system operation • Encourages the use of public transportation • Improves the urban image, contributes to the Green Urban Index • It contributes to a greater social occupation of the public space	Department of Territory, Habitat and Housing	SA, SGP, EPMMOP, EPMAPS, Quito Metro, TNC, AECOM	A3 B2 C2 C3 C4 E3	Atlanta
B3.3	Green infrastructure program in neighborhoods with vulnerable physical space	Priority	Underway	Long-term	• Allows prioritizing cost-effective interventions with ecological impact • Reduces risk, responds to the needs of the most vulnerable • Strengthens social cohesion • Improves the urban image	Department of Territory, Habitat and Housing	SA, SGP, EPMMOP, EPMAPS, TNC, academia	A1 A2 A3 B2 C1 C4 D3 E1 E2 E3	Mexico City, Medellín, New Orleans, Rotterdam
B3.4	Program for public recreational areas with environmental contributions	Support	Aspirational	Medium-term	• Improvement of physical, environmental and spatial quality of the city • Physical and psychological benefits by including green infrastructure	Department of Territory, Habitat and Housing	SA, SGP, EPMMOP, EPMAPS	A3 B2 C2 C4 E2	Bangkok, Mexico City

PILLAR C — INTEGRATED AND COMPACT CITY									
C1. Control urban sprawl									
C1.1	Community territorial control program in hillside areas	Priority	Aspirational	Medium-term	• Marks the limit of the city, it stops the expansion of the urban footprint, improves the urban image • Prevents the creation of new risk • Enables the creation of income-generating activities, provides services to Communities • Greater Community participation in urban development	Department of Territorial Coordination and Citizen Participation	STHV, Zonal Administrations, SGSyG, Communities	A1 A3 B1 B2 B3 C3 C4 D3 E1 E2 E3	Mexico City, Medellín
C1.2	Urban and urban periphery economic dynamics of land use study	Support	Aspirational	Long-term	• Promotes horizontal expansion control • Prevents environmental degradation, traffic congestion and the financial burden to the municipality • Development can be planned to cope with uncontrolled urban growth	Department of Territory, Habitat and Housing	SA, SDPyC, ConQuito, IDB	A1 B1 C2 C3 D2 D3 E1 E2	Byblos
C1.3	Technological tool for territorial monitoring	Support	Planned	Short-term	• Prevents the creation of new risk and environmental degradation. • Prevents the generation of social problems, such as social insecurity. • Contributes to the development of a more efficient city in cost and operation	General Planning Department	SCTyPC, Zonal Administrations, AMC, STHV	B1 C2 C3 E1 D3 E2 E3	Barcelona
C2. Maximize the impact of the first Quito Metro line on the city's development									
C2.1	Transit-Oriented Development Plan, Quito Metro Line	Flagship	Underway	Long-term	• Maximizes residential, business and recreational space within walking distance of public transportation. • Impact on welfare of a large portion of the population.	Department of Territory, Habitat and Housing	SGP, EPMHV, Quito Metro, IDB, WB, AECOM, CAMICON, CAE-P, APIVE	A3 B1 B3 C1 C3 C4 D1 D1 D2 E1 E2	Mexico City, Thessaloniki
C2.2	Urban Partial Plan for the Quito Historic City Center–Resilient Management	Priority	Pre-existing	Long-term	• Seeks ambitious socio-economic development, pollution reduction and critical heritage protection policies • Focused on long-term goals • Prevents consequences • Includes all population groups	Metropolitan Heritage Institute	STHV, IMPU, SA, SGP, SM, Community, UNESCO	A1 A3 B3 C3 C4 D2 E1 E2	Byblos
C2.3	Land Value Capture Plan in areas influenced by the construction of the first line of Quito Metro	Priority	Underway	Long-term	• Strengthens municipal resources • Allows investment in economic growth, inclusive employment and safe housing in the MDMQ	Department of Territory, Habitat and Housing	SGP, SDPC, IDB, WB,AECOM	A3 B3 C1 C3 C4 D1 D2 E1 E2 E3	Rio de Janeiro
C2.4	Low environmental impact construction regulation	Support	Pre-existing	Medium-term	• Strengthens the characteristics of a compact and eco-efficient city • Leads to resilience from co-responsibility	Department of Territory, Habitat and Housing	CAMICON, CAE, APIVE, academia	B2 B3 C4 D2 E1 E3	Amman
C2.5	Campaign to promote the use of safe and inclusive public transportation–"Metro Culture"	Support	Pre-existing	Long-term	• Promotes an inclusive city, both in access and security • Improves the quality of life of the inhabitants through equitable access, especially for vulnerable population	Quito Metro	Municipal Foundation San Jose, SIS	A3 C3 C4 E3	Mexico City
C3. Achieve an integrated and efficient transportation system									
C3.1	Resilient and sustainable mobility system by 2040 study	Priority	Underway	Long-term	• Seeks the development of a well-designed system with a resilience lens aiming for a sustainable development of the city • Contributes to risk reduction, improvement of air quality and the continuous operation of mobility systems	Mobility Department	STHV, SA, Quito Metro, EPMTP, IDB, AECOM	A3 B3 C1 C2 C4 D2 E1 E2 E3	Bangkok, Mexico City, New Orleans, Santiago Chile, Santa Fe
C3.2	Transportation integration plan	Support	Planned	Medium-term	• Improvement in service quality by adjusting the supply and demand of transportation • Reduces operating costs • Reduces travel times • Brings closer the marginalized population • Builds inclusion by providing affordable and effective mobility options. • Contributes to better air quality	Mobility Department	STHV, Quito Metro, EPMTP	A3 B2 B3 D1 D2 C1 C2 C4 D2	New Orleans, Bangkok
C3.3	Upgrading transportation modes to achieve a low-emission system	Support	Planned	Short-term	• Improves mobility infrastructure and reduces the ecological footprint • Reduces environmental demands • Contributes to the environmental quality and health of the inhabitants of Quito	Mobility Department	EPMTP, EPMMOP, STHV	B2 B3 C2 C4	Thessaloniki
C4. Promote active mobility in the city									
C4.1	Walkable Quito Contest	Priority	Aspirational	Medium-term	Walkability: • Reduces congestion • Has low environmental impact • It has a social and recreational value • Promotes mental and physical health	Department of Territory, Habitat and Housing	SM, EPMMOP, Quito Metro, SA	A3 B2 B3 C2 C3 D2 E2 E3	Amman, Mexico City, Santiago Chile, Thessaloniki
C4.1.1	Pilot project to transform the Quito Historic City Center into a pedestrian area	Priority	Pre-existing	Medium-term	• Increases levels of social capital • Enables stronger neighborhood ties, political participation, and trust in others • Contributes to decongestion • Promotes the local economy and the use of the mass transit system	Metropolitan Heritage Institute	SM, STHV, Quito Metro, SA	A3 B2 B3 C2 C3 D2 E2 E3	Mexico City

C4.2	Program to encourage the use of public and Private bicycles	Priority	Aspirational	Medium-term	• Reduces vehicular congestion • Improves air quality • Activates public space • Has a positive impact on the health of citizens	Mobility Department	EPMMOP, Quito Metro, STHV, SA	A3 B2 B3 C2 C3 D2	Mexico City, Santiago Chile, Thessaloniki
PILLAR D — RESOURCEFUL AND SOLID ECONOMY									
D1. Create an economic environment conducive for strengthening labor supply and demand									
D1.1	Prioritization of productive sectors in Quito based on creation of quality jobs study	Priority	Pre-existing	Short-term	• Consolidates economic development processes • Integrates diverse sectors and actors in the competitiveness agenda of the city • Includes the social sectors that operate within the informal economy of the city	Department of Productive Development and Competitiveness	ICQ, ConQuito, Private sector, Unions, E&Y, universities	A1 C2 D2 D3 E2	Boston, Semarang
D1.2	Human capital study	Priority	Planned	Short-term	• Allows to take strategic decisions to insert human capital in the formal labor sector • It can result in up to 2% growth of GDP per capita. • Reduces socio-economic vulnerability and therefore risk in the territory	Department of Productive Development and Competitiveness	ICQ, ConQuito, academia, Private sector	A1 C2 D2 D3 E2	Semarang, Thessaloniki
D1.3	Skill gap analisys	Support	Aspirational	Long-term	• Boosts local economy growth, strengthening human capital • Reduces socio-economic vulnerability • Allows to take informed and effective actions that facilitate the accompaniment of other actors, such as the academy	Department of Productive Development and Competitiveness	ICQ, ConQuito, Academia, Private sector	B1 C2 D2 D3 E2	Amman, Bristol, Da Nang, Rotterdam, Semarang, Thessaloniki
D2. Foster a diversified, sustainable, and innovative economy									
D2.1	Program to mainstream circular economy principles in productive, regulatory, and consumption processes	Priority	Aspirational	Medium-term	• Within production value chains, it reduces the generation of waste, reuses and recycles waste and by-products • Opens new job opportunities with a high value of social inclusion	Department of Productive Development and Competitiveness	ConQuito, SA, EMASEO, Academia	A1 B2 D1 D3 E2	Bristol, Mexico City, Rio de Janeiro, Santa Fe, Thessaloniki
D2.2	Incorporate sustainability principles into the city's competitiveness agenda	Priority	Pre-existing	Short-term	• Builds resilience strategies to deal with economic fluctuations and eventual crises • Stimulates competitiveness in different sectors • Strengthens the chain-linking scheme proposed in the competitiveness agenda	Department of Productive Development and Competitiveness	ConQuito, Academia, Chamber of Industries and Productivity	A3 B2 B3 C2 D1 D3 E1 E2	Glasgow, Rio de Janeiro
D2.3	ZEDE: Special Economic Development Zone	Priority	Pre-existing	Long-term	• Generates productive linkages, new exports and greater employment in Quito and surroundings • Promotes orderly urban development	Department of Productive Development and Competitiveness	MDMQ, UNDP, Private Sector, Central Government	C2 D1 D3	Medellín
D2.4	Development of industrial park	Priority	Pre-existing	Long-term	• Establishes and plans in medium and long terms a conglomeration of industries based on different land uses • Promotes a healthy coexistence between different land uses • Boosts local economic development • Reduces city transit	Department of Productive Development and Competitiveness	MDMQ, UNDP, Private Sector, community	C1 D1 D3 E2	Medellín
D3. Promote the food economy as an axis for development									
D3.1	Plan to Strengthen the Quito food system	Flagship	Aspirational	Medium-term	• Helps strengthen the socio-economic fabric of Quito • Contributes to the city's development efforts • Fosters a healthy population, less vulnerable to possible acute shocks	Department of Productive Development and Competitiveness	ConQuito, SGSyG, STHV, SMA, RUAF	B1 B2 C2 D1 D2 E1 E2 E3	Bristol, Boulder, Mexico City
D3.2	Strengthen the urban agriculture program in Quito	Priority	Pre-existing	Short-term	• Generates income and promotes jobs • Helps to improve living conditions, especially for vulnerable population • Contributes to resilience and food security • Strengthens production systems already present in Andean society, now urban	Department of Productive Development and Competitiveness	ConQuito, community	A1 A3 B1 B2 B3 C1 D1 D2 E1 E2	Amman, Los Angeles, New Orleans, Paris, Santa Fe, Semarang
D3.3	Sustainable Agricultural Production Program	Priority	Aspirational	Long-term	• Strengthens the economy • Fosters better income and inclusive employment • Promotes conservation of the natural environment	Environment Department	SDPC, SIS	B1 B2 C2 B3 D2 E1 E3	Amman, Bangkok, Santiago Chile, Toyama
EJE E — REFLECTIVE AND SAFE TERRITORY									
E1. Avoid the creation of new risks									
E1.1	Strengthen the Metropolitan Information System (SIM) with a City Risk Index to aid in decision making	Flagship	Underway	Medium-term	• Prioritization and effective management of actions in the territory • Strengthens the coordination of the different municipal bodies • Efficient use of financial resources-time and human-	General Planning Department	SSyG, STHV, ICQ	A3 B1 C1 E1 D4 E2 E3 T1	Amman, Berkeley, Mexico City, Santiago Chile, Semarang, Toyama

E1.2	Inter-institutional coordination program for risk preparation, mitigation, and prevention	Support	Aspirational	Medium-term	• Allows a multidimensional view, where each sector, such as territorial or environmental planning, or social inclusion, among others, contribute with technical solutions in risk prevention	General Department of Security and Governability	SCTyPC, SGP, SA, SIS, SS, SC, SCU, SDPyC, SM, SE, STHV, IMP, IMPU, AMC, AMT	A1 C1 C2 E2 E3	Mexico City, Santiago Chile, Semarang, Rio de Janeiro
E1.3	Program to develop economically and socially feasible construction practices	Priority	Aspirational	Long-term	• Development and strengthening of skills, instincts, processes and resources to adapt, manage and reduce disaster risks • Generates a culture of regulatory compliance in the city • Encourages citizenship-municipality closeness • Encourages citizen participation as an agent of change.	Department of Territory, Habitat and Housing	SGSYG, CAE, CAMICON, Universities, MIDUVI	C1 C2 D1 D2 E2 E3	Semarang, Medellín
E1.3.1	Guide for new construction and reinforcing existing construction in low-income areas	Support	Planned	Medium-term	• Ensures economic and social inclusion and improvement of the physical quality of buildings • Improves the quality of habitability of people.	Department of Territory, Habitat and Housing	SGSYG, SGCTyPC, CAE, CAMCON, WB-GFDRR, Universities, MIDUVI	C1 C2 D1 D2 E2 E3	Medellín
E1.3.2	Mobile technical support office	Support	Aspirational	Medium-term	• Shortens the distances between professionals, academics and the community in general • Generates a culture of compliance • Raises risk awareness • Citizen empowerment in prevention initiatives	Provincial College of Architects of Pichincha	CAMICON, STHV, Universities	C1 C2 D1 D2 E2 E3	
E1.4	Strengthening regulations on universal accessibility	Priority	Aspirational	Long-term	• Facilitates the accessibility of people with physical, sensorial or cognitive disabilities • Ensures greater possibilities to face acute shocks coming from natural threats	Department of Territory, Habitat and Housing	CAE, CAMICOM, Universities	A3 E2 E3	Santiago Chile
E1.5	Seismic micro-zoning study	Priority	Pre-existing	Medium-term	• Information for planning and regulation of land use to prevent physical and human losses • Facilitates the prioritization of sectors of the city that are most vulnerable • Allows planning urban growth in areas with low population density	General Department of Security and Governability	STHV, CAE, CAMICOM, Universities	C1 C2 E2 E3	Santiago Chile

E2. Mitigate existing risks									
E2.1	Program to strengthen mechanisms for evaluating existing buildings	Priority	Planned	Short-term	• Assessment of the city's constructions that allows direct efforts to reduce physical vulnerability • Allows valuing the relocation of families • Allows opening alternative markets in the construction sector	Metropolitan Control Agency	STHV, CAE, CAMICON, Universities	C1 C2 D1 D2 E3	Santiago Chile, New York, San Francisco
E2.1.1	Evaluation of city's critical infrastructure	Support	Aspirational	Medium-term	• Allows prompt recovery after possible acute shocks • Strengthens urban systems of critical services • Evaluation and planning interventions to make them effective	General Department of Security and Governability	STHV, MDMQ, CAE, CAMICON, Universities	B1 C1 C2 D2 D3 E1 E3	Santa Fe
E2.2	Structural Reinforcement Program	Priority	Aspirational	Long-term	• Helps reduce existing risk, as well as supports processes for recognizing buildings in the city • Promotes rapid repair of existing unsafe buildings • Enables the return of displaced persons to their homes after a possible extreme impact • Facilitates assistance and takes advantage of collaborative actions from the Community.	Department of Territory, Habitat and Housing	EPMHyV, SGSYG, CAE, CAMICON	C1 C2 D2 D3 E1 E3	Medellín
E2.3	Relocation program for families in areas of immitigable risk	Priority	Pre-existing	Medium-term	• Improves the quality of life of the inhabitants, • Reduces vulnerability • Disaster Risk Reduction Measure • Includes several social sectors and demands their participation	General Department of Security and Governability	STHV, SGCTPC	C1 C2 D2 D3 E1 E3	Santa Fe, Medellín
E3. Prepare the Metropolitan District of Quito to address threats									
E3.1	Program to promote neighborhood preparedness	Priority	Aspirational	Medium-term	• Community organization often emerges to provide relief in times of emergency • The neighborhood organization generates awareness of threats • Amplifies the city's reaction	General Department of Security and Governability	SCTyPC, Community	A1 C1 C2 E1 E2	Berkeley, Boston, Da Nang, Medellín, San Francisco, Santiago Chile, Semarang
E3.1.1	Program to create disaster response neighborhood volunteer networks	Support	Aspirational	Medium-term	• Formal and informal volunteer organizations contribute to disaster response and mitigation assistance • Contributes to the strengthening of social capital	General Department of Security and Governability	SCTyPC, Community	A1 E1 E2	Amman, Medellín, Santa Fe, Santiago Chile, Semarang
E3.1.2	Disaster Preparedness Awareness Campaign	Support	Pre-existing	Short-term	• By observation from citizens, using accessible artifacts and technology, enables to anticipate acute shocks • Generates risk awareness • Fosters an empowered Community	General Department of Security and Governability	EMSEGURIDAD, SCTyPC Pacífico	A1 E1 E2	Mexico City, Medellín, Santiago Chile, Semarang

E3.2	Universal insurance program	Priority	Underway	Medium-term	• Insurance is an effective way to protect assets and livelihoods at risk • Reduces dependency on humanitarian aid. • Helps people rebuild their lives, especially in the most vulnerable sectors • Encourages community awareness of risks, compliance with building codes and the generation of an insurance culture	Mayor's office	SGSyG, STHV, Municipal Cadaster, General Administration	C1 C2 D2 E1 E2	Medellín, Porto Alegre, Santiago Chile
Cross-Cutting Actions									
T1. Ensure continuity and facilitate planning processes with a resilience lens									
T.1.1	Metropolitan Resilience Council	Flagship	Aspirational	Medium-term	• Enables the participation of various actors - including different levels of government, international organizations, the private sector and academia - to monitor implementation and continuity of the City's Resilience Strategy • Provides technical and organizational guidance and support	General Planning Department	Different levels of government and public authority, Private Sector, Unions, Academia		Santa Fe, Medellín, Rotterdam
T.1.2	Contextualization of the SDG, the NUA, and the principles of resilience through different city management tools	Priority	Planned	Medium-term	• Ensures that the planning and work of the Municipality lead the city toward sustainable, inclusive, secure and resilient urban development	General Planning Department	MDMQ, UNDP		Athens, Berkeley, Bristol, Mexico City, New York
T.1.2.1	Revision: Alignment to the SDG and insertion of resilience as a strategic planning principle in the PMDOT	Support	Pre-existing	Short-term	• Ensures that all actions undertaken contribute to the goals set by the international agendas	General Planning Department	UNDP, MDMQ		New York
T.1.3	Strengthen the conditions to establish strategic alliances with international cooperation	Support	Planned	Short-term	• Provides the city with mechanisms and opportunities for technical advice, exchanges and access to support programs that ensure effective cooperation • Urban management responds to international standards.	Metropolitan Direction of International Affairs	MDMQ, International Agencies and Bodies		Santiago Chile
T.1.4	Training program for resilience practitioners	Priority	Aspirational	Medium-term	• Ensures that resilience building is sustained over time and is a local, national or regional input • Provides citizens with tools to incorporate resilience solutions into private enterprise, public administration and academia	General Planning Department	MDMQ, Academia		Santa Fe, Surat, Rio de Janeiro, Dakar, Medellín, Melbourne, Da Nang

15.2 APENDIX B - IMPACT INDICATORS

The Institute of the City of Quito developed the following impact indicators to serve as a basis for the Resilience Strategy for the Metropolitan District of Quito monitoring, management and implementation

Inclusive and Empowered Citizens

MILESTONES	INDICATORS	DEFINITION	PMDOT 2015-2025 POLICY	PMDOT 2015 - 2025 OBJECTIVES	SUSTAINABLE DEVELOPMENT 2030 GOALS	SDG GOALS
A1. Build capacity among citizens and the municipality to manage and empower a co-responsible city	Neighborhood action. Disaggregated by sex, age, ethnicity and disability.	Percentage of households that marked they have taken part in neighborhood actions, as compared to the total number of households meeting the social and environmental needs proposed by them	PS1. PS2.	Obj. S1.1 Obj. S1.3 Obj. S2.1	1 4 5 10	1.4 4.7 5.5 10.2
	Neigborhood belonging. Disaggregated by sex, age, ethnicity and disability.	Percentage of households that feel part of the neighborhood in which they live, as compared to the total number of households				
	People who feel involved in the design of the city and have full knowledge of human and city rights. Disaggregated by sex, age, ethnicity and disability.	Percentage of people who feel involved in the design of the city, especially in situations of social and economic vulnerability compared to the total population				
	Use of TICS for Citizen Participation	Percentage of people using TICS to access services and procedures, municipal information and decision making, compared to the total population				
	Number of times citizens have used participation mechanisms	Number of DMQ people who are actively involved in participation processes for social inclusion and have participated in neighborhood assemblies, participatory budget, empty chair and other initiatives. Disaggregated by sex, age, ethnicity and disability				
A2. Develop institutional mechanisms that enable citizen participation	Reporting channels in construction and services	Existence of reporting channels by work and service	PS1. PS2.	Obj. S2.1 Obj. S2.2 Obj. S2.4	5 11 16	5.5 11.3 16.7
	Number and type of participation mechanisms present in institutional designs of local government. Disaggregated by sex, age, ethnicity and disability.	Percentage of ordinances, local policies and documents (plans, agendas, others) that were created with citizen input				
	Measuring the performance of the Open Government System	Number of visits to the Open Government page				
A3. Create quality public places for citizens	Fair treatment. Disaggregated by sex, age, ethnicity and disability.	Percentage of household members who think people in their environment have been friendly	PS2. PS3. PA4.	Obj. S2.5 Obj. S3.5 Obj. A4.1	5 11 16	5.2 5.5 11.1 11.3 11.7 11.9 16.1
	Good Neighborhood Relations in the Neighborhood	Percentage of households that consider their neighborhood relationships in the public space to be good relative to the total number of neighborhood households.				
	Satisfaction with the implementation of public works and municipal management in the public space. Disaggregated by sex, age, ethnicity and disability.	Perception of the population on the implementation and management of public space.				
	Proportion of victims of violence, harassment or crimes in green areas and public spaces. Disaggregated by sex, age, ethnicity and disability.	Percentage of victims of violence, harassment or crimes in green areas and public spaces.				
	Participation in green and public space protection activities. Disaggregated by sex, age, ethnicity and disability.	Percentage of people and neighborhood organizations that indicate having carried out green and public space protection activities.				
	Level of appreciation of urban space spatial values. Disaggregated by sex, age, ethnicity and disability.	Citizen Perception of urban space quality and its resilience to urban disasters.				

Robust and Sustainable Environment

Integrated and Compact City

B1. Manage natural and semi-natural areas and urban parks in the Metropolitan District of Quito	Natural and semi-natural surface areas	Percentage of hectares of natural and semi-natural areas with inclusive management models and financing sources	PS1. PS2. PA2. PA4. PTEG2.	Obj. S1.3 Obj. S2.1 Obj. A2.1 Obj. A4.4 Obj. PTEG2.A	6 11 12 13 15	6.6 11.4 11.7 12.2 12.4 13.2 13.3 15.1 15.2 15.4 15.10
	Public space area per inhabitant	Relationship between public space and population				
	Natural area access and quality. Disaggregated by sex, age, ethnicity and disability.	Perception of the quality and accessibility of natural, semi-natural and metropolitan areas. Disaggregated by sex, age, ethnicity and disability.				
	Conservation, restoration and protection of urban ecosystems	Percentage of the municipal budget destined to the conservation, restoration and protection of urban ecosystems, relative to the total municipal budget				
B2. Promote environmental awareness	Concern for the environment	Indicates the average level of concern (on a scale of 1 to 5) that households have with respect to the environmental situation surrounding their environment.	PA1. PA3. PA5.	Obj. A1.1 Obj. A3.1 Obj. A5.2 Obj. A5.3	4 11 12 13	4.7 11.6 12.8 13.3
	Reduction of CO2 eq emissions per capita	Total number of emissions, adding the sectors with highest emissions, divided by the total number of DMQ inhabitants				
	Application of the four Rs in suppliers, producers and customers	Number of households that classify organic and inorganic waste as a daily activity, reduce the consumption of unnecessary products, reuse and recover waste, compared to the total number of households.				
	Sustainable water consumption	Average water consumption of a DMQ household, according to international standards				
	Inclusion of environmental education in elementary and high school curriculums	Inclusion of environmental education in elementary and high school curriculums. Disaggregated by sex, age, ethnicity and disability.				
	Incentives to reduce environmental impacts	Existence of incentives to reduce environmental impacts in municipal public policies.				
B.3 Take advantage of the benefits of nature in urban infrastructure planning	Access to green areas and environmental quality public space	Inclusive access to green areas for public use, such as parks, squares and boulevards, with environmental stewardship and disaster prevention measures (when applicable)	PA4.	Obj. A4.1	3 6 11 13	3.9 6.3 11.1 11.3 11.5 11.6 11.7 13.2
	Distance to public spaces and green areas	Determine the distance between homes and green areas of public use, such as parks, squares and boulevards.				
C1. Control urban sprawl	Relationship between urban sprawl and population growth	Relationship between the number of urbanized hectares versus population growth	PA3. PA4. PTER2.	Obj. A3.1 Obj. A4.5 Obj. PTER2.b	1 11 13	1.4 11.1 11.3 11.5 11.6 11.7 13.2
	Overcrowding	Housing habitability conditions, based on the number of inhabitants in the household. Overcrowding is understood as a household with more than 3 family members per available room.				
	Percentage of unoccupied and informal occupied urban land	Percentage of unoccupied and informally occupied urban land				
	Geographic difference in land use value	Geographic difference in land use value				

Integrated and Compact City	C2. Maximize the impact of the first Quito Metro line on the city's development	Increase of health, educational, leisure, commercial and productive activities to the metro are of direct influence (500 - 600 mt) and of indirect influence (800 -1000 mt)	Number of health institutions, educational, leisure, trade and productive activities in the area of direct and indirect influence of Metro stops	PA3. PA4. PM3. PM6. PM7. PEM3 A. PEL5.	Obj. A3.1 Obj. A4.5 Obj. M3.1 Obj. M6.1 Obj. M7.1 Obj.PEM3 A.3.A Obj. PEM3 A.3.B Obj. PEM3 A.3.C Obj. PEL5.B	3 5 7 9 11 13	3.9 5.1 7.3 9.1 11.1 11.2 11.3 11.5 11.6 11.7 13.2
		Coverage of public transport systems	Percentage of territory covered by lines of the integrated public transport system				
		Reduction of eq CO2 emissions per capita	Percentage of gradual reduction of vehicular emissions				
		Satisfaction of users with the integrated public transport system. Disaggregated by sex, age, ethnicity and disability.	User´s perception of the integrated public transport system and its the quality of service				
		Consolidation of urbanized areas	Increase in the percentage of land occupation in urbanized areas				
	C3. Achieve an integrated and efficient transportation system	Time of conmute to educational institutions	Number of health institutions, educational, leisure, trade and productive activities in the areas of direct and indirect influence of Metro stops	PM1. PM2. PM3. PM6. PM7.	Obj. M1.1 Obj. M2.1 Obj. M3.1 Obj. M6.1 Obj. M7.1	3 7 9 11 13	3.9 7.3 9.1 11.2 13.2
		Percentage of territory with public transport coverage	Household members average conmuting time in minutes from their home in the DMQ to a hospital or clinic.				
		Percentage of territory with public transport coverage	Surface territory area within the established walking range to the public transport system				
		Conmuting time to the workplace	Household member average conmuting time in minutes to the workplace				
		Adaptation of Quito´s logistic infrastructure capacity to movement of cargo	Number of modifications to Quito's urban infrastructure for confluence with existing and future movement of cargo				
	C4. Promote active mobility in the city	Use of public transportation. Disaggregated by sex, age, ethnicity and disability.	Percentage of household members who commute for different reasons through the following means of transportation: - Bus - Cab - Public Van	PA5. PM3.	Obj. A5.3 Obj. M3.1 Obj. M3.2	3 4 5 11 12 13	3.9 4.7 5.5 11.1 11.2 11.6 12.8 13.3
		Use of non-polluting means of transportation (bike and pedestrian). Disaggregated by sex, age, ethnicity and disability.	Percentage of people using non-polluting means of transport				
Resourceful and Solid Economy	D1. Generate an economic environment that is conducive to strengthening labor supply and demand	Increase in inclusive and low environmental impact productive networks Disaggregated by sex, age, ethnicity and disability.	Number of calculated productive linkage as a function of SRI CIUU4 that are inclusive and have low environmental impact	PO1. PO2. PO3.	Obj. O1.1 Obj. O2.1 Obj. O2.2 Obj. O3.1	1 4 5 8 10	1.5 4.3 4.4 5.1 5.5 8.2 8.3 8.6 8.12 10.2
		Poverty gap by consumption. Disaggregated by sex, age, ethnicity and disability.	Difference between household consumption expenditure per capita and the cost of the basic food basket.				
		Enough working hours. Disaggregated by sex, age, ethnicity and disability.	Head of household or spouse average hours worked / who claim to have a job when the research instrument is applied				
		Qualified PEA staff. Disaggregated by sex, age, ethnicity and disability.	Degree of average schooling of individuals belonging to the Economically Active Population (EAP) in the household. This indicator is intended to reflect qualified personnel within the household, using as a reference individuals with higher education				
		Social security affiliates employed. Disaggregated by sex, age, ethnicity and disability.	Percentage of employed social security affiliated persons in the household				

Resourceful and Solid Economy	D2. Foster a diversified, sustainable, and innovative economy	Number of companies that handle high technology-low environmental impact products that support the local chain	Number of companies implementing sustainable procurement policies and sustainable action plans	PO1. PO2. PA1. PA5.	Obj. O1.1 Obj. O1.2 Obj. O2.1 Obj. A1.1 Obj. A1.2 Obj. A5.1	8 9 11 12	8.2 8.3 8.4 9.3 9.4 11.6 12.4 12.5 12.6
		Number of companies that perform good environmental practices	Number of companies that have been awarded national and international certificates of good environmental practice.				
	D3. Promote the food economy as an axis for development	Percentage of family income from food grow and production.	Percentage of production and sales via any channel that earns family income	PO1. PO3.	Obj. O1.2 Obj. O3.1	1 2 5 8 12	1.4 1.5 2.1 2.3 2.4 5.5 8.2 8.3 12.3
		Number of people who grow and produce food. Disaggregated by sex, age, ethnicity and disability.	Number of people who have been included in the city´s formal economy by the cultivation and production of food				
		Percentage of the GVA of Quito corresponding to companies of production and processing of foods that guarantee food security.	Percentage of the GVA of Quito corresponding to companies of production and processing of foods that guarantee food security.				
Reflective and Safe Territory	E1. Avoid the creation of new risks	Housing material deficit	Conditions of habitability of the house in regards to material safety. Measured through the quantitative and qualitative housing deficit.	PEL5.	Obj. PEL5.C	11	11.1 11.3 11.5
		Number of informal neighborhoods	Variations in the registration of informal neighborhoods				
		Compliance with construction regulations	Percentage of buildings that comply with construction regulations, compared to total number of buildings.				
	E2. Mitigate existing risks	Number of regularized neighborhoods and inhabitants. Disaggregated by sex, age, ethnicity and disability.	Percentage of population living in slums, improvised settlements or inadequate housing in areas of non-mitigable risk	PEZ4. PEL5.	Obj. PEZ4.B Obj. PEL5.C	5 11	5.1 11.1 11.3 11.5 11.7
		Institutions with natural and anthropic risk prevention plans	Number of institutions that have established risk prevention plans in their regulations				
		Ecological footprint	Indicators of ecological footprint				
	E3. Prepare the Metropolitan District of Quito to address threats	Local capacity of having safe sites	Relation between reception of population capacity in safe places and the total population.	PS1. PS2. PS3. PA5. PTER2.	Obj. S1.1 Obj. S2.5 Obj. S3.5 Obj. A5.3 Obj. PTER2.b	4 5 11	4.7 5.5 11.3 11.5
		Number of people prepared to act in the face of a catastrophe. Disaggregated by sex, age, ethnicity and disability.	Number of people who have received instruction or who are part of a disaster action program				
		Shelter capacity	Relation between the capacity of reception of population in shelters and the total population.				
Cross-Cutting Actions	E4. Ensure continuity and facilitate planning processes under a lens of resilience	Preparation of resilience practitioners. Disaggregated by sex, age, ethnicity and disability.	Number of students with theoretical and practical knowledge to promote the resilience agenda			4 5 11 17	4.7 5.5 11.3 17.1 17.9 17.17 17.19
		Configuration and implementation of the monitoring system	Level of implementation of the monitoring system of the Resilience Strategy				

15.2 APPENDIX B1 - PMDOT

PMDOT POLICY 2015-2025	PMDOT OBJETIVES 2015-2025
1 Social Development: Quito a Solidary city where no one is left behind	
PS1. Ensure an intercultural social policy that promotes cohesion, equality and human rights	S1.1 A comprehensive social policy has been institutionalized, it has an emphasis on vulnerable population groups (childhood, disability, students, and seniors), priority attention groups and those who present other breach situations.
	S1.3 The municipality has promoted the recognition, attention and integration of the rural zone to development processes of the DMQ.
PS2. Strengthen the social fabric by promoting citizen participation in the construction of public policies and development through close and transparent governance.	S2.1 Citizen participation processes have been shared between various instances and processes in order to positively impact all phases of public policy (planning, implementation and monitoring) and services.
	S2.2 The DMQ has a participatory planning model that involves citizens in decision-making processes.
	S2.4 The MDMQ has developed tools and mechanisms of closeness, agility and transparency in the provision of its processes, management and services.
	S2.5 The MDMQ promotes citizen coexistence and the integration of different actors and sectors of the city under the principle of ethnic, gender, intergenerational and territorial equity.
PS3. Promote improvements in the living conditions for the inhabitants of Quito.	S3.5 The population of Quito has adopted healthy lifestyles and reduced their exposure to critical risk factors.
2 Productive Economic Development and Competitiveness: Quito, City of Opportunities	
PO1. Drive linkages between value chains and clusters in order to transform the production matrix and incentivize cooperation between stakeholders and economic inclu-sion in the chain. The enhanced matrix will be orient¬ed towards innovation and knowledge, and managed with sustainability criteria	O1.1 The city has articulated productive sectors through a strategy of competitive improvement.
	O1.2 The local government supports changes in the production matrix through the articulation between local purchases and the strengthening of its productive sectors.
PO2. City government will support the economic development of the city by fostering the progress of com-petitiveness factors which are the foundation for the diversification and specialization of production chains aimed at changing of the production matrix	O2.1 Specific action plans for each cluster have been structured, and the local government has established the necessary mechanisms to strengthen its competitiveness components.
	O2.2 City´s productive development is carried out with an inclusive vision towards vulnerable groups (children, people with disabilities, students, seniors), small-scale enterprises and people from Popular and Solidarity Economy, with a vision of shared value
PO3. Work will be performed in order to promote an equitable strategy to promote competitiveness and local development in the rural and urban areas of the city.	O3.1 Territorial equity is a priority of local government. The municipality works in the endogenous productive development of its rural, marginal and urban areas in an inclusive, comprehensive and sustainable manner.
3 Quito, Smart city: Environment	
PA1. Guarantee integral waste management under the Zero Waste concept or circular economy, with a focus on participation, citizen responsibility, environmental and social responsibility.	A1.1 The generation of waste is reduced by the systematic application of prevention measures, based on co-management with citizens and economic activities.
	A1.2 The management of waste has continuous improvement by applying a model of integral management with a focus on citizen co-responsibility, in all of its phases from generation, differentiated collection, harvesting, treatment and final disposal.
PA2. Promote the environmental sustainability of the territory guaranteeing Ecosystemic services of the natural heritage, promoting its knowledge, its sustainable management and its contribution to the urban and rural fabric.	A2.1 The consolidation of the Metropolitan System of Natural Protected Areas has been achieved, promoting the environmental sustainability of the territory, its knowledge, its sustainable management and its contribution to the urban-rural fabric.
PA3. Ensure local sustainability by focusing on the reduction and compensation of the carbon footprint and the resilience of the DMQ emphasized in climate change.	A3.1 Citizenship and the most emitting sectors have reduced their carbon footprint, and compensation projects are promoted.
PA4. Guarantee the right of citizens to live in a healthy environment, by ensuring the quality of natural resources.	A4.1 Environmental pollution has been reduced, through regulation and a prevention approach to productive sectors, activities and projects within the DMQ.
	A4.4 Wastewater discharge into water streams and into the watershed is eliminated, and a process of recovery of streams is consolidated.
	A4.5 Air pollution caused by car transport has been reduced.
PA5. Promote the principles of a sustainable city, supported by joint commitments that can influence the production patterns, behaviors and consumption habits of all sectors of the DMQ.	A5.1 Economic activities implement measures aimed at sustainable production (optimization of resource use, inputs and raw materials and reduction of pollutants).
	A5.2 Behavioral changes in citizens are evidenced, they now apply measures aimed at sustainable consumption.
	A5.3 Citizens improved behavior and habits as they understand its impact on the environmental management of the DMQ. They assume the responsibility for solving environmental problems and climate change actions.
Quito, Smart City - Mobility, an articulation factor	
PM1. Substantially improve the quality, coverage, connec-tivity and integration of the services of the Metro¬politan Transportation System, allocating the financial resources in correspondence to the demands of trips served.	M1.1 Public Transport will be used as a preferred transportation mode. This will happen with the use of a mass transit integrated system with high levels of quality and efficiency, using Metro as the main city spine with enhanced travel times, connectivity and coverage.
PM2. Promote the use of clean technologies in public transport in order to allow optimal levels of automotive performance to improve the quality of the environment.	M2.1 Gas emission levels and noise generated by motor vehicles will be reduced, improving their technology, especially the public transport fleet.
PM3. Increase the participation of foot and bicycle trips through the elaboration of programs and projects that generate citizen acceptance and facilitate intermodality.	M3.1 Quality pedestrian networks will be implemented, they will meet design standards in order to facilitate pedestrian mobility, especially for the most vulnerable groups (chil-dren, people with disabilities, students, seniors).
	M3.2 With the provision of safe infrastructure, the use of bicycles will be encouraged as an alternative mode of short distance travel. This will include connections that favor the exchange with motorized transportation modes.
PM6. Structuring and planning the road system in accordance with the strategic growth of the city and urban planning, prioritizing public transport to reduce depen-dence on private transport, being keen on allocating facilities to motivate the development of pedestrian mobility and cycling.	M6.1 The road system will be improved and increased, especially arterial and express ways in order to enhance the conditions of circulation, connectivity and accessibility to different work, housing, and recreation nodes.
PM7. Develop mobility planning jointly with land use plan-ning, in order to create new central and peripheral urban spaces by providing them with mixed land uses, with equip-ment that can handle the different labor, educational, administrative and recreational activities, in order to in¬duce short distance travel without the need to use a private vehicle.	M7.1 Connectivity between isolated sectors will be improved and increased. Areas are isolated due to inadequate road communication and poor public transport and the origin of this problem is the lack of road infrastructure.
POLICY 1 - GLOBAL SCALE	
PTEG1. Seek integration with decentralized autonomous governments in order to give continuity to productive processes, especially agricultural and agroindustrial, and to give coherence to the way of using and occupying the land with the surrounding territories. A demarcation of precise boundaries between the consolidated urban territory, the territory with ecological protection, and the territory that does not belong to either of these two conditions is in order, in favor of a coherent articulation between urban sys¬tems, productive systems and ecological systems needs that unfold in the territory.	PTEG2.A Consolidate a territorial model with well-defined boundaries between the urban, agricultural and protected territories.

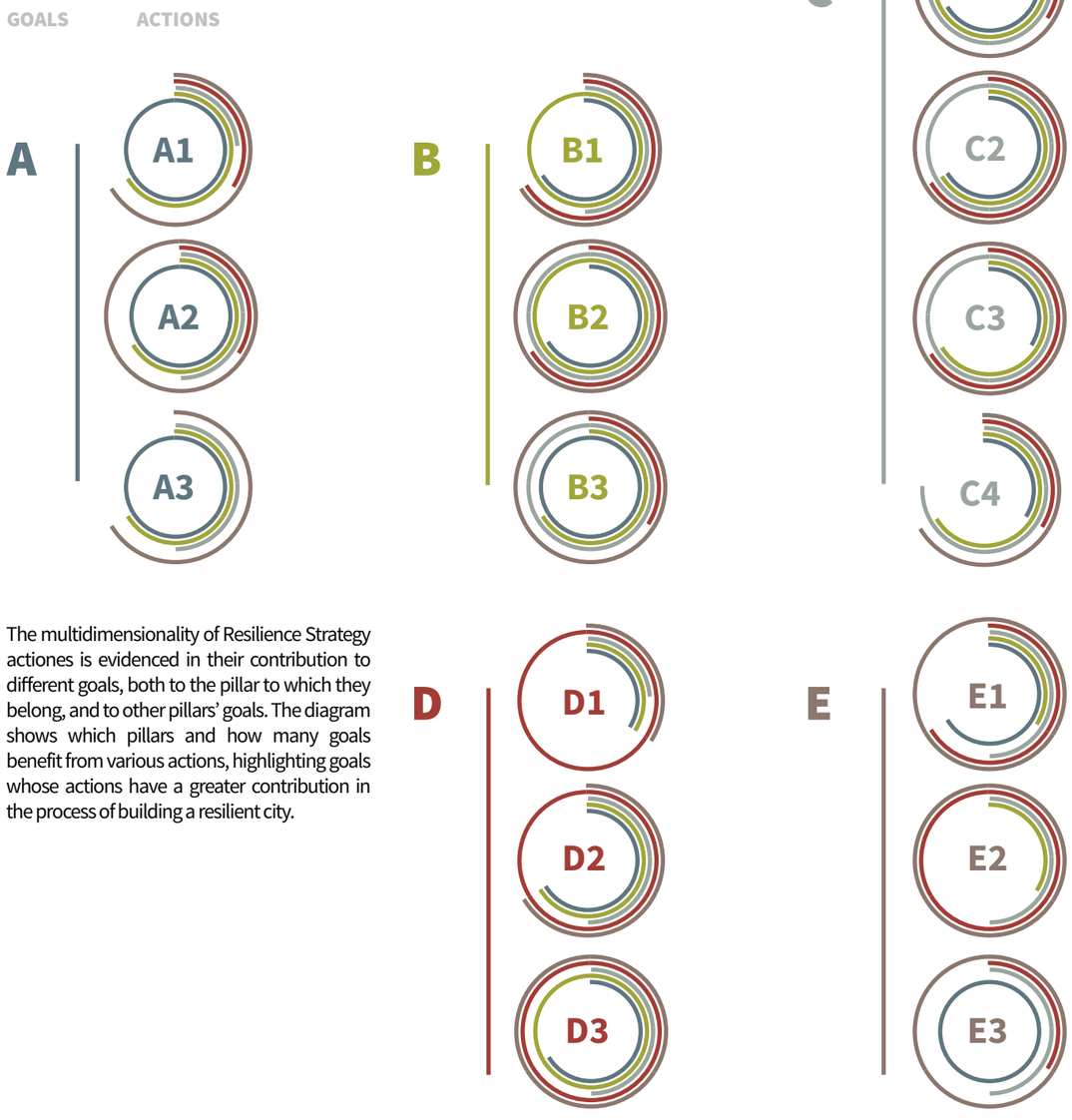
POLICY 2 - REGIONAL SCALE	
PTER2. Seek integration with decentralized autonomous governments in order to give continuity to productive processes, especially agricultural and agroindustrial, and to give coherence to the way of using and occupying the land with the surrounding territories. A demarcation of precise boundaries between the consolidated urban territory, the territory with ecological protection, and the territory that does not belong to either of these two conditions is in order, in favor of a coherent articulation between urban sys¬tems, productive systems and ecological systems needs that unfold in the territory.	PTER2.b Protect and consolidate the urbanized territory.
POLICY 3 - METROPOLITAN SCALE	
PEM3 A densification of the urbanized territory, and the constitution of a structure of productive centralities that favor a dynamic, compact and multimodal urbanism.	PEM3 A.3.A Constitute a system of metropolitan centralities of high productive capacity that will transform the business fabric of the DMQ.
	PEM3 A.3.B Organize and improve the quality of infrastructure in consolidated centralities.
	PEM3 A.3.C Increase density and intensity of land uses to high levels of efficiency in order to accommodate new population.
POLICY 4 - ZONAL SCALE	
PEZ4. Constitution of a multinodal structure of urban public service subcentralities that favor the densification of the existing urban fabric and guarantee access to services throughout the urbanized territory.	PEZ4.B Increase density, decongest the urban fabric and redistribute the population according to safety criteria.
POLICY 5 - LOCAL SCALE	
PEL5. Improvement of the quality of life of Quito citizens through the enhancement of the environmental quality of the urban landscape, of the deficit in housing and the implementation of measures that regenerate building construction and public space	PEL5.B Improve public space quality in the DMQ
	PEL5.C Systemic improvement on the housing deficit and built environments (neighborhoods) as a contribution to the reduction of the housing deficit and improvement of the quality of life.

15.2 APPENDIX B2 - SDG

SDG	TARGETS
1: End poverty in all its forms everywhere	1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance
	1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters
2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round
	2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment
	2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
3: Ensure healthy lives and promote well being for all at all ages	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
4: Ensure inclusive and quality education for all and promote lifelong learning	4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university
	4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
	4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development
5: Achieve gender equality and empower all women and girls	5.1 End all forms of discrimination against all women and girls everywhere
	5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
	5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life
6: Ensure access to water and sanitation for all	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
7: Ensure access to affordable, reliable, sustainable and modern energy for all	7.3 By 2030, double the global rate of improvement in energy efficiency

8: Promote inclusive and sustainable economic growth, employment and decent work for all	8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors
	8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services
	8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead
	8.6 By 2020, substantially reduce the proportion of youth not engaged in employment, education or training
	8.12 By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization
9:Build resilient infrastructure, promote sustainable industrialization and foster innovation	9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
	9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets
	9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
10. Reduce inequality within and among countries	10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status
11: Make cities inclusive, safe, resilient and sustainable	11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
	11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
	11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
	11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage
	11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
	11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
	11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
	11.9 By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels
12: Ensure sustainable consumption and production patterns	12.2 By 2030, achieve the sustainable management and efficient use of natural resources
	12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
	12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment
	12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
	12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle
	12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature
13: Take urgent action to combat climate change and its impacts	13.2 Integrate climate change measures into national policies, strategies and planning
	13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss	15.1. By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements
	15.2. By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally
	15.4. By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development
	15.10 Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems
16: Promote just, peaceful and inclusive societies	16.1 Significantly reduce all forms of violence and related death rates everywhere
	16.7. Ensure responsive, inclusive, participatory and representative decision-making at all levels
17: Revitalize the global partnership for sustainable development	17.9 Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation
	17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships
	17.19 By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries

15.3 APENDIX C: CONTRIBUTION OF ACTIONS TO DIFFERENT GOALS



The multidimensionality of Resilience Strategy actiones is evidenced in their contribution to different goals, both to the pillar to which they belong, and to other pillars' goals. The diagram shows which pillars and how many goals benefit from various actions, highlighting goals whose actions have a greater contribution in the process of building a resilient city.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