Case Study 4.5 Integrating Mitigation and Adaptation in Climate Action Planning in Quito, Ecuador

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Keywords	Integration, multiple benefits, stakeholder engagement, impact assessment, adaptation and mitigation
Population (Metropolitan Region)	2,365,000 (Demographia, 2016)
Area (Metropolitan Region)	4,230 km² (STHV, 2010)
Income per capita	US$5,820 (World Bank, 2017)
Climate zone	Cfb – Temperate, without dry season, warm summer (Peel et al., 2007)

The Metropolitan District of Quito – Ecuador's capital, nested within the Andes Mountains – is highly vulnerable to the effects of climate change. Between 1891 and 1999, temperature rose by 1.2–1.4°C, which, combined with an increase in the frequency and intensity of landslides, floods, and forest fires, has increased risk for the city (Municipality of the Metropolitan District of Quito [MDMQ], 2012a; Zambrano-Barragán et al., 2011). In recent years, extreme weather events have affected infrastructure, human settlements, agriculture, and forests, while the loss of glaciers and highland ecosystems, known as *páramos*, threatens food security and water and hydropower supplies (MDMQ, 2012b; Rockefeller Foundation, 2013).

In response to current and potential impacts, and with the aim of reducing the city's carbon footprint, the Municipality of the Metropolitan District of Quito adopted a Climate Change Strategy in 2009, followed by an Action Plan in 2012. Although the Strategy made a clear distinction between adaptation and mitigation policies (MDMQ, 2009), the Action Plan addresses adaptation and mitigation in an integrated way. The actions are to be implemented during a five-year period and focus on ten strategic sectors: water resources, disaster risk management, sustainable transportation, agriculture, land-use planning, energy, waste management, industries, health, and ecosystems (MDMQ, 2012b).

Political leadership was the main driver for integrating adaptation and mitigation. In a context of limited financial and human resources, municipal leaders prioritized measures that had multiple benefits (including resilience and sustainable development). This decision not only responded to technical analyses carried out by the Municipality, but was also supported by a diverse group of stakeholders that participated throughout the Plan's design. One of the success factors of the stakeholder engagement process was to allow them to define the criteria of prioritization for the final set of measures that were included in the Action Plan; among the most supported criteria were precisely the capacity to deliver multiple benefits, as well as cost-effectiveness.

Case Study 4.5 Figure 1 View of Quito

Integration also offered officials from the Environment Secretariat – the institution that coordinates climate change management and the Action Plan process – the opportunity to mainstream climate change and generate political support across sectors and institutions. During the design process, the lead team analyzed the adaptation and mitigation potential of actions that were already planned by different sectors and promoted the recognition of their climate benefits in the Action Plan and across society. Other institutions saw the added value of their interventions, felt empowered, and supported the adoption of Quito's first Climate Action instrument.

While the planning process helped foster commitment from different stakeholders, integrating adaptation and mitigation has also proved to be a challenge. Actions with multiple benefits were more easily identified in sectors like land use, ecosystems, water, agriculture, and sustainable building, whereas health, waste management, and transportation were more related to either adaptation or mitigation. Moreover, as implementation moves forward, measuring the Plan's impact in a holistic manner is also challenging, In light of the fact that impacts related to adaptation and mitigation vary in temporal, spatial, and institutional scales, it is hard to measure and demonstrate performance *ex-post* (Klein et al., 2007). Communicating impact and defining targets for vulnerability reduction and adaptation are demanding tasks for urban policy-makers, making it a challenge to provide a balanced discourse between adaptation and mitigation.

The new city administration, which took office in 2014, has given continuity to the Climate Action Plan and its integrated vision for adaptation and mitigation. Policies for both an increase in resilience and a reduction of the carbon footprint were included in the new Development and Land Use Plan 2015–2025, and strategic actions with multiple benefits in sectors like sustainable building, water resources management, and land-use planning are being strengthened (MDMQ, 2015).

Moving forward, in early 2016, the Municipality performed an impact assessment and evaluation of the 2012–2016 Climate Action Plan. Based on performance results, and prioritizing on-the-ground implementation, it updated this planning instrument and its GHG inventory before the convening of Habitat III, the United Nations Conference on Housing and Sustainable Urban Development.[1] As the host city, Quito aimed to contribute to the debate on the New Urban Agenda by providing concrete examples of resilience and mitigation policies and actions.

Recognizing the need for further appropriation of climate action by municipal agencies and civil society in Quito and Ecuador in the following years, city officials expect to prioritize replicable, tangible, and visible initiatives. Since communicating the impact of adaptation initiatives in the city remains one of the major challenges, indirect, sectorial indicators are being developed and used to measure success. As an example, the city measured its water footprint and is using it as the base for the creation of a reduction and compensation mechanism by the private sector, the municipality, and other civil society stakeholders.

Although progress has been made in areas like institutional frameworks, information and knowledge, and collaboration for climate action in Quito, their scale and scope are still insufficient. In addition to win-win actions, transformational changes in Quito are increasingly required in sectors such as energy, water, mobility, and disaster risk management, particularly in terms of adaptation so that human rights are upheld. Efforts to promote equity and modify power relations in the city are key for vulnerability reduction and should remain at the core of urban climate action in Ecuador and Latin America.

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