

Sustainable and Resilient Cities



Through work in 40 countries, RTI International has gained an understanding of global cultures by applying international best practices within the context of local needs. We are fully invested in supporting our international partners and can provide responsive support, relevant expertise, and decisive leadership.

Overview

The world's population is becoming ever more urbanized. In 1950, less than 30% of the world's population lived in cities. By 2000, this number grew to 47% and it is expected to grow to more than 70% by 2050.

RTI has been working in—and with—cities for decades to serve our clients by solving issues related to climate change, energy, water, waste management, and air quality. We leverage our multidisciplinary capabilities, subject matter experts, and cutting-edge technologies to create holistic, long-lasting solutions. We excel at building integrated, multidisciplinary teams that can quickly and creatively solve complex challenges such as those associated with rapid urbanization in the face of climate change. We bring science to city planning and operations that will lead to resilient, sustainable, and affordable urbanization.

Project Highlights

The following projects highlight our experience and expertise.

Climate Change

Urban Climate Change Vulnerability Mapping and Analytical Framework, 2015–present. We are working with the U.S. Environmental Protection Agency (EPA) to develop and implement an indicator-based urban vulnerability analysis framework to understand risks

to communities from exposure to pollutants released from waste management operations because of extreme events (e.g., floods, wildfires, hurricanes) associated with climate change. This project is developing indicators as well as mapping and analyzing data to further understand the risks communities face from exposure to water and airborne pollutants resulting from impacts of projected gradual and extreme events.

Uruguay: Low Carbon Development Options, 2012–2014.

In partnership with The World Bank, RTI focused on identifying cost-effective greenhouse gas (GHG) mitigation measures in the transportation, energy, agriculture, and waste management sectors; assessing the private and social costs and benefits associated with alternative strategies; and developing an economic evaluation of the potential sectoral and macroeconomic impacts of adopting alternative mitigation options for achieving a low-carbon growth path for Uruguay through 2035.

Energy

Demand Side Management (DSM) in Abu Dhabi, 2008–present. The Emirate faces varying challenges in the provision of electricity and water, both of which drive the need for immediate DSM action. RTI assessed energy and water usage for the Abu Dhabi government to help officials plan for the increasing demand for water and electricity. We also partnered with Abu Dhabi engineers,

economists, planners, and regulators to investigate current electricity and water use and to identify waste and inefficiency. A range of initiatives—including more stringent building codes, public conservation campaigns, and installation of water-efficient irrigation technologies—are among some of the measures adopted to reduce energy and water use.

Residential Lighting Standard for the United Arab Emirates (UAE), 2011–2012. We developed a voluntary residential lighting standard for the UAE to expedite the adoption of energy-efficient lighting and to reduce related energy consumption. The lighting standard became effective in 2014, with an estimated potential annual energy savings of more than 2,000 gigawatt hours (GWh) and cost savings of more than AED 650 million.

Water Resources

Hydro-BID: Integrated Model of Climate Change and Water Resources, 2011–present. RTI is working with Inter-American Development Bank to apply Hydro-BID to develop case studies of water resource and availability management challenges in Peru, Ecuador, Argentina, and Brazil, in close collaboration with local partners. We also provide training workshops and case study results to build capabilities of local institutions for using Hydro-BID and to illustrate applications of new analytical modules.

Economic Consequences of Failing to Adapt to Sea Level Rise in the Hampton Roads Region, 2016. This study, in partnership with the Blue Moon Fund, analyzed and estimated the expected costs and economic impacts of sea level rise over the next 50 years for the Hampton Roads region of the United States—ranked as 10th in the world in value of assets exposed to sea level rise. The study concluded that forecasted sea level rise could increase the costs and economic damages to communities and infrastructure from coastal flooding events by up to \$100 million annually.

Waste Management

Solid Waste GHG Inventory Development and Capacity Building Support, 2004–present. RTI partnered with the EPA to develop the annual GHG inventory for solid waste; we also provide capacity-building support to international

governments to improve the transparency, completeness, and accuracy of GHG inventories. Under this interagency agreement, RTI has provided in-person workshops and trainings to Bangladesh, Colombia, Peru, and Malaysia.

Solid Waste Management Holistic Decision Model, 2012. In support of World Bank member countries, RTI applied our life cycle and full-cost accounting municipal solid waste decision support tool to analyze management alternatives and their potential application in Nepal, Bosnia, Argentina, China, and Japan. We developed life cycle assessments for the current waste management strategies and designed strategies so that each of the areas received the best environmental and cost benefits from waste management. The analyses included recycling, composting, and combustion with electricity generation.

Air Quality

Environmental Benefits Mapping and Analysis Program—Community Edition (BenMAP-CE), 2014–present. RTI currently supports the EPA in the development of BenMAP-CE. This model is used to conduct air pollution benefits assessment, which is the art and science of applying findings from epidemiological and economics literature to estimate health impacts and economic value of air pollution changes. The BenMAP-CE software simplifies this practice by applying the algorithms and data that users need to calculate the quantity and dollar value of premature deaths and illnesses associated with changes in air pollution.

Combating Air Pollution in Northern India, 2016. We collaborated with air quality experts and Indian stakeholders to share insights and best practices to improve air quality. From this project, we developed a strategy to establish sustainable follow-on activities to continue collaborations with India and to improve ambient air quality.

More Information

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