

Capstone Client: United Nations Department of Economic and Social Affairs

Project Title: Strengthening the Capacity of Local Governments in Developing Countries - Investing and Effectively Managing Their Infrastructure Assets

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Abstract: Infrastructure projects in developing countries often don't account for maintenance and risk administration costs, to the detriment of their long-term success. To guide national and sub-national governments in efficiently managing their assets, the UN Department of Economic and Social Affairs (UN DESA) and the UN Capital Development Fund released the joint publication "Managing Infrastructure Assets for Sustainable Development: A Handbook for Local and National Governments."

To complement the Handbook's contributions, Columbia's Capstone Team conducts in-depth research into replicable, sustainable models for infrastructure asset management. The research aims to identify innovative and sustainable financing solutions for municipalities to support IAM throughout its entire lifecycle. The effectiveness of these solutions is addressed through the examination of four case studies: 1) Rio de Janeiro, Brazil's enhancing of PPP financing and scope to finance the Smart City project; 2) Beijing, China's PPP funding and sustainable management of Metro Line 4; 3) Pune, India's implementation of the Expressway Intelligent Traffic Management System (ITMS); and 4) Haikou, China's franchising of food waste disposal by introducing foreign advanced technology.

The findings include the importance of notable financing and technological components in improving local governments' asset management, revenue generation, and operational efficiency. The research concludes that robust governance frameworks, innovative financing structures, competitive bidding, cost control, predictable revenue generation, and best practice adaptation are crucial for project success and long-term sustainability.