



PROJECT HIGHLIGHTS

1.6 Million People Benefitting from Flood Mitigation Measures in Sri Lanka

Background

The Metro Colombo Urban Development Project (MCUDP) addresses the urgent problem of urban flooding, which regularly paralyses the economy of Colombo and the entire country. This project also seeks to support local authorities in the metro Colombo area to rehabilitate and manage their drainage infrastructure and improve the systematic collection of solid waste, which often clogs drainage systems and leads to flooding.

Challenges

The metro Colombo area is Sri Lanka's commercial hub and accounts for almost half of the country's gross domestic product (GDP). However, the area is highly vulnerable to flooding and has experienced regular floods for the past 30 years, affecting a large number of people annually. In May and November 2010, two major floods inundated the city directly affecting more than 450,000 residents. These floods also cost the country millions of dollars in economic losses, due to business interruption and severely damaged public and private properties.

Approach

In a bid to transform the metro Colombo area into a modern, world-class, middle income country capital, the government has launched an ambitious economic and physical regeneration program. This process includes a sustainable, long-term, flood risk management program. At the request of the government, the World Bank is supporting Colombo's transformation under the MCUDP, which was approved in March 2012 and is still in its early stages. The MCUDP will consist of two main components:

- Investment in urgent flood mitigation infrastructure and supports drainage improvement activities.
- Building the institutional capacity of the government agencies and the local authorities in the metro Colombo area to enhance long term flood risk management.

The first interventions will target primary and secondary canals and lakes to increase the water conveyance and retention capacity. To ensure the sustainability of drainage system maintenance, the MCUDP will finance the purchase of maintenance machinery. A water-based transport system will be introduced, on a pilot basis, as a possible source of sustainable funding for water system maintenance. An integrated flood management system for the greater Colombo basin will also be developed and will include a detailed drainage study and a real-time monitoring system.

To encourage proper maintenance of Colombo's waterfront areas, the MCUDP will develop the Beira Lake waterfront and the Beddegana Wetland, located in the metro Colombo area. Beira Lake's embankment system will be improved and a promenade will be constructed to provide recreational space within the core area of the city. A wetland park will be constructed near the Beddagana Wetland and will include bird watching facilities, play areas, jogging tracks, and similar amenities. This will prevent encroachment on the wetlands by unauthorized settlers and commer-

Region: South Asia
Country: Sri Lanka



Focus Area:
Risk Reduction

Structural and non-structural measures; land use planning, policies and regulation, infrastructure retrofitting, etc.



Highlights

Nearly 1.6 million people will benefit from flood mitigation measures.

An integrated approach to flood risk reduction with cutting edge design technology.

Reduce flood risk in the capital city to secure public and private investments.

A sustainable and ambitious economic and physical regeneration program.

Reduced damages to residential properties and public infrastructure.

Avoidance of economic losses from disruption of business activities.

Reduced emergency management and relief costs, and reduced post-disaster health services costs.

Fewer flood events will increase Colombo's development potential and improve the city's image and encourage private investments.



Results

Reducing floods in Colombo will generate multiple economic and social benefits. Nearly 1.6 million people will benefit from flood mitigation measures, including about 220,000 people living in the Municipal Council areas of Colombo, Dehiwela-Mt Lavinia, Sri Jayawardenapura-Kotte, and Kolonnawa. The main economic benefits include:

- Reduced damages to residential properties and public infrastructure.
- Avoidance of economic losses from disruption of business activities.
- Reduced emergency management and relief costs, and reduced post-disaster health services costs.
- Fewer flood events will increase Colombo's development potential and improve the city's image and encourage private investments.

The intangible benefits include:

- A healthier, more beautiful city that offers better protection for its bio-diversity.
- Greater recreational opportunities for residents and tourists.

Partnership

The Global Facility for Disaster Reduction and Recovery (GFDRR) will assist with the initial technical studies, including the development of hydraulic and hydrologic models of macro and micro drainage systems in the Colombo basin. This includes a LiDAR (Light Detection and Ranging) survey of the metro Colombo area, which will be used to generate a high resolution digital terrain model, to develop an urban drainage model. Component 1 will also develop bathymetric and hydrographic surveys of retention areas and the canal network, land use maps, and analysis products of short interval rainfall, all of which will be used to design the flood mitigation interventions. These studies will also be useful in any future development activities in the metro Colombo area. The Japan Policy and Human Resources Development Fund (PHRD) has also joined the GFDRR in supporting the development of a detailed flood risk assessment and a flood risk mitigation strategy for the metro Colombo area, further strengthening the MCUDP.

Next Steps

The MCUDP's first interventions will target primary and secondary canals and lakes to increase the water conveyance and retention capacity. Machinery will be purchased to ensure sustainability of the drainage system, and the streets will be rehabilitated, among other activities. If these actions prove effective, the same approach may be applied to other flood-affected cities in the future.

LEARN MORE

World Bank Projects & Operations Information: Metro Colombo Urban Development Project
(<http://www.worldbank.org/projects/P122735/metro-colombo-urban-development-project?lang=en>)



CONTACT

Rosanna Nitti, Senior Urban Specialist and Task Team Leader, rnitti@worldbank.org



Suranga Kahandawa, Disaster Risk Management Specialist and GFDRR Focal Point for Sri Lanka, skahandawa@worldbank.org

Produced and edited by Rosanna Nitti, Suranga Kahandawa and Christina Irene, The World Bank.

<http://go.worldbank.org/6NPGH7VV80>

www.gfdr.org



Flood mitigation initiatives are helping to sustain the socioeconomic development of country by protecting communities, livelihoods and assets.

“We have been displaced twice already during recent floods. Floods disrupt my children’s education and learning activities, too.”

Subrina, a resident of the Colombo area, whose house gets flooded almost every year and will benefit greatly from the flood mitigation measures.

Lessons Learned

Designs for flood management interventions need to take into account a significant variability in rainfall intensities.

Strategic planning and catalytic investments require the development of institutional capacity.

A sound city development strategy is crucial for a city's sustainable development.



GFDRR
Global Facility for Disaster Reduction and Recovery