

# CITY OF KABUL, AFGHANISTAN

## The Challenge

### Surface water management due to urban flooding.

Kabul- the capital of Afghanistan has extensively been affected by three decades of war. Lack of basic infrastructures has caused significant challenges in the city. Particularly, lack of sewer and drainage systems for storm and surface water management is more evident in the city. As a result of the mentioned problems, a huge amount of rain water is accumulated on the streets during rainy seasons. The recent increase in amount of flush flooding, which is due to climate change, has exacerbated the problem. Likewise, mixture of grey water with storm water in open ditches on two sides of the roads has largely affected storm water quality. Almost all of the drainage systems in the city is functioning a dual role. Both storm and grey water is flowing at the same system. At the same time, presence of hills inside the city has increased challenges in storm water management. Considerable amount of sludge coming from the hills sediment on the drainage system. As a consequence:

- Water accumulation has damaged the infrastructures, particularly roads;
- It has caused considerable challenge to movement, particularly pedestrian and traffic management;
- Has largely affected quality of life in the city;
- Water contamination and increase in water born diseases;



## The Solution/Initiative

The following initiatives have been taken into account to tackle storm water challenges in Kabul City:

- Conducting comprehensive study of storm water in Kabul City in order to prepare storm water drainage network.
- Establishing sustainable system for storm water management in the city
- Constructing efficient infrastructures and drainage systems such as canals, side ditches, catch basins, bio swales, ponds, bio retention and infiltration trenches across the city
- Separation of storm water from grey water in the city
- Using infiltrating drainage systems across the city to absorb surface water in order to recharge ground water
- Cultivating proper shrubs on the hillsides in order to avoid sediment transmission during heavy rains
- Preparing regular plan for cleaning of existing canals, rivers and drainage systems around the city
- Privatization of maintenance and cleaning services of drainage systems.



## The Evidence

The following data are available:

- Details of existing infrastructures
- Existing canals network
- Condition of existing drainage system
- DEM file of Kabul City
- Satellite Imagery of Kabul City
- Rainfall Data of the city

The following data are needed:

- Accurate rainfall data
- Updated DEM file
- Up to date satellite imagery of Kabul City
- Topographic survey of the city

## Policies, Plans & Regulation

The following areas require legal base:

- Establishing sewerage system;
- Establishing decentralized Waste water management system, as the city is divided into four basins topographically;
- Implementation of Sponge City principles, for the purpose of water harvesting;
- Maintenance and cleaning of drainage systems shall be entrusted to private sector.

## Governance

The key stakeholders are:

- Kabul Municipality (KM)
- Afghanistan Urban Water Supply and Sewerage Corporation(AUWSSC)
- NEPA-Afghanistan
- World Bank

- NGOs
- International donors
- Universities and schools
- Private Sector
- Ministry of Energy and Water
- People (service receivers)



## Financing

The financial support by the government and international donors are key in success of storm water management projects.

Currently there is a \$3.5M project is undergoing for feasibility study and design of the system, funded by the USAID

## Technical support

In order to overcome the problems, Kabul Municipality(KM) needs technical support of experts, universities, international organizations like JICA, UNESCAP, UCLG and UN-Habitat. Technical support can be provided through direct consultation and conducting trainings.

## Timeline for Implementation of Proposed Activities

### 3 months

- Cleaning of existing canals and drainage systems
- Maintenance of existing canals

### 6 months

- Construction and repairing of canals
- Study and design drainage network
- Constructing new drainage systems
- Enforcement of Sponge city Principles
- Legal and regulatory framework Preparation / revision

### 12 months

- Design development of a new drainage network for the city
- Cultivating proper shrubs on the hillsides in order to avoid sediment transmission during heavy rains
- Embarking on attracting funding for development of the system

### >12 months

- Privatization of maintenance and cleaning services of drainage systems
- Construction of new drainage systems based on the proposal of new studies
- Embark on Development of the system

