EU-USCA CLIMATE RISK AND RESILIENCE COOPERATION

CLIMATE FINANCE ADVISORS

EUROPEAN UNION

CASE STUDY

Cloudburst Management Plan, City of Copenhagen

IDENTIFYING HAZARDS:

In July 2011, Copenhagen was hit by a 1,000-year storm event: a sudden burst of almost six inches of rain fell and left the city under almost three feet of water, overwhelming the city's sewer and stormwater systems. Partly in response to this event, the city developed its Copenhagen Climate Adaptation Plan, through which the city determined that the primary climate risk for the city will be more frequent and heavier rain events. The Danish Meteorological Institute projects both an increase in precipitation and a decrease in rain events, resulting in more intense rain events and associated flooding. Using IPCC projections, the Danish Government estimated that the intensity of heavy rainfall could rise by 20-50% by 2100. The Adaptation Plan points out that the intensity of rain predicted to occur once in 10 years will increase by around 30% by 2100, a change that would overwhelm existing sewage and runoff systems.

POLICY APPROACHES TO INCREASE RESILIENCE:

In preparing the adaptation plan, the city utilized a cost-benefit analysis (CBA) method to evaluate two potential solutions proposed:

- **Conventional approach** of enlarging and upgrading the current sewer and stormwater systems to ensure that these remained separate and could handle such events, and
- **Blue-Green Approach** including the partial draining of a lake in the city, separating areas into catchment zones, and the installation of spillways along roads to channel stormwater to canals, to the lake, and the sea.

Setting a maximum allowed risk of sewage leakage at ground level at once every 10 years, the city reviewed the proposed costs of each plan against the expected quantified benefits to health, the environment, and economic activity. Based on this assessment, the second option was found to have a 50% greater total savings than the first.

Red Catchments are highest at risk to flooding and sea surges.
Source: Copenhagen Cloudburst Management Plan

Interested in learning more about this work or Climate Finance Advisors, contact us here: info@climate-fa.com

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