

CLIMATE- AND WEATHER- RELATED RISKS IN URBAN AREAS



SEA LEVEL RISE

- Increased vulnerability to storm surges
- Compromised infrastructure
- Contaminated groundwater
- Increased incidence of vector-borne diseases



TEMPERATURE INCREASE

- Amplified urban heat island effect
- Increased mortality and negative impacts on human health
- Increased energy use and demand
- Stressed water systems



DROUGHT

- Stressed water services and groundwater supplies
- Negative impacts on sanitation and human health
- Decreased water supply for industries reliant on fresh water
- Reduced food availability and access



FLOODING

- Compromised stormwater management systems
- Contaminated groundwater
- Disrupted transport and trade
- Spread of waterborne diseases

HOW GI CONTRIBUTES TO BUILDING URBAN CLIMATE RESILIENCE

By 2050, an additional 2.5 billion people will be living in cities. 90% of this increase will take place in Africa and Asia.

Reduced heat impacts:

Reduced urban heat island effects; improved insulation & energy efficiency; reduced heat-related mortality and illness

Increased biodiversity:

Increased habitat for wildlife in wetlands, forests and green roofs; improved drought resistance from native landscaping and trees; improved food security and livelihoods from urban agriculture and coastal mangroves

Improved air and water quality:

Reduced water pollution through stormwater runoff filtration; increased carbon sequestration and reduced air pollution (e.g., ozone, nitrogen dioxide, sulfur dioxide and particulate matter)

Improved stormwater management:

Decreased flooding by reducing runoff, erosion and sedimentation; reduced pressure on existing stormwater management infrastructure; increased groundwater infiltration



OPPORTUNITIES FOR THE PRIVATE SECTOR

Development Incentives

Typically offered to developers during the development permit application process. Examples include expedited permitting, a reduced permit fee or an increase in floor area ratio

Property Assessed Clean Energy

Revenue bond issued by the city to residential, commercial or industrial property owners to finance GI and associated renewable energy installations, energy efficiency retrofits or stormwater retrofits on their properties

Credit Enhancement

Loans extended by the city to improve the terms of private financing or credits offered to reduce up-front costs, thereby reducing financial risk to investors

Payment for Ecosystem Services

An economic transaction between resource owners (e.g., private land owners) and direct beneficiaries of the improvements in ecosystem services (e.g., the city)

Public-Private Partnerships

A long-term contract (e.g., concession agreement) with the city wherein a private stakeholder provides infrastructure or other services traditionally delivered by the city

Tax Increment Financing

Financing in a designated area based on revenue generated by the anticipated property tax increase resulting from GI implementation

Green Bonds

A municipal bond issued specifically for projects that have environmental or climate benefits; typically asset-linked and backed by a city's balance sheet

Commercial Incentives

Incentives that can reduce the cost for businesses to install or operate GI. Examples include stormwater fee discounts, tax credits, or rebate programs

WHAT CAN CITIES DO TO PROMOTE GI DEVELOPMENT AND INVESTMENT?



MAINSTREAM GI INTO PLANNING DOCUMENTS

- » Develop a long-term GI plan
- » Add GI policy and interventions to department/agency-level policy and action plans
- » Incorporate GI into infrastructure investment planning
- » Establish a monitoring and evaluation system for GI



UPDATE CODES TO INCLUDE GI AND ENFORCE NEW REGULATIONS

- » Develop and enforce a retention standard for stormwater
- » Require GI to manage runoff from impervious surfaces
- » Institute a stormwater management fee
- » Introduce a discharge permit process
- » Develop green building codes



DEVELOP INCENTIVES TO PROMOTE GI

- » Provide development incentives
- » Offer fee discounts to property owners for installing GI
- » Issue start-up and implementation grants
- » Provide rebates and financing



COMMUNICATE AND DEMONSTRATE THE BENEFITS OF GI

- » Build an evidence base
- » Demonstrate the benefits of GI through pilot projects
- » Disseminate information about GI through public signage



SEEK OUT TECHNICAL ASSISTANCE AND COORDINATION FOR GI IMPLEMENTATION

- » Request or submit proposals for policy support from the national government or donors
- » Request or submit proposals for capacity building and implementation support from the national government or donors
- » Develop partnerships with local academic institutions, NGOs and peer cities to learn about best practices