

On behalf of:



Federal Ministry  
for the Environment, Nature Conservation  
and Nuclear Safety

of the Federal Republic of Germany

In cooperation with:



Federal Ministry  
of the Interior, Building  
and Community



Implemented by:

**giz** Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH

# Global Project “Cities Fit for Climate Change”

SPLUMA FORUM  
23 August 2019

Helene Epstein  
eThekweni Municipality



*‘This project is part of the International Climate Initiative (IKI). The German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU) supports this Initiative on the basis of a decision adopted by the German Bundestag. The project also cooperates with the German Ministry of the Interior, Building and Community (BMI).’*



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**Cities Fit for Climate Change (CFCC)**- “aims to strengthen *cities* as *actors of sustainable development*, and assist cities in the development of *integrated, resilient and low carbon instruments* for sustainable urban development.”

A global programme implemented by GIZ - ***On behalf of the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB).***

Three partner countries - India, Chile and South Africa.

**EThekweni Municipality** has been selected to participate.



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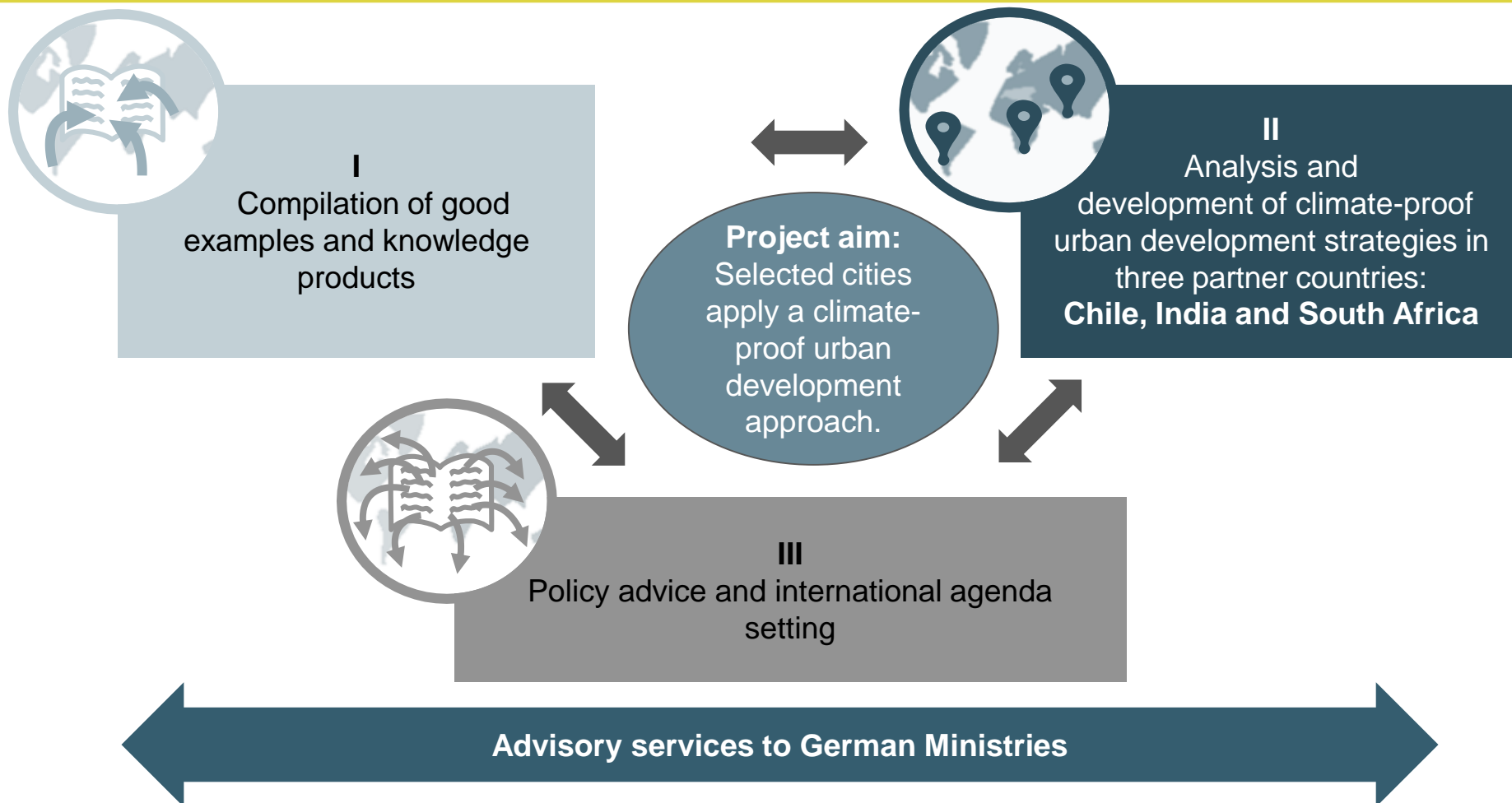
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## Focal areas







# Climate-proof Urban Development

- ‘Climate proofing’ includes methods, instruments and procedures that ensure that plans, programmes and strategies, as well as the associated investments towards the current and future impacts of climate change will be made resilient and adaptable, and that they also aim for the corresponding plans, programmes and strategies to take into account the aim of climate change mitigation - Birkmann and Fleischhauer, 2010





## PRINCIPLES AND OBJECTIVES OF CLIMATE PROOF URBAN DEVELOPMENT

Principle	General objective	Objective for climate-proof cities
Inner development before expansion in the periphery	Sustainable land management, reducing settlement expansion, fostering local economy in the inner city.	Creating short distances, maintaining green areas around cities, preserving and creating open spaces.
Mixed-use city of short distances	Preventing urban sprawl and providing a better quality of life for urban dwellers.	Reducing CO <sub>2</sub> emissions by limiting need for individual transport and commuting.
Enhancing green areas in the city	Diversifying the urban fabric and enhancing the quality of life of its residents.	Preserving natural space to respond to unforeseen disasters (e.g. flooding) or erratic weather events, reducing heat islands
Mainstreaming adaptation and mitigation into urban development	Ensuring integrated planning with consideration of all relevant sectors	Considering the climate risks and adaptation measures in all decision-making processes, connecting mitigation and adaptation measures to regular planning cycles and tools



# Durban: Climate Resilience Implementation for Spatial Planning

## Objectives of the Project:

- To integrate the Durban Climate Change Strategy into Spatial Development Framework (SDF)
- To develop an itemised implementation plan of all the relevant climate related development projects
- Developed through participatory approach of cross-departmental CFCC steering committee

### Objective:

Recommended changes  
to the SDF and lower  
order plans by sector

**climate-  
proof  
urban  
planning**





## Analysis of Existing CC responses in the SDF – Key Informants

### International

- Paris Agreement
- SDG 11 Make cities and human settlements inclusive, safe, resilient and sustainable
- New Urban Agenda
- Durban Adaptation Charter

### National

- National Climate Change Response White Paper
- National Development Plan
- Integrated Urban Development Framework
- Provincial Growth and Development Strategy

### Local

- Municipal Adaptation Plans
- Durban Climate Change Strategy
- Range of municipal projects with a spatial focus –
- Eg. Revision of flood lines, Sea Level rise tool, DMOSS, Wind Resource Map, integrated Public Transport Network



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## Projected Impacts

- Increase in average annual temperature
- Increase in aggregated rainfall
- More intense rainfall events
- More heat waves
- Future storm surges and sea level rise







# Durban Climate Change Strategy (DCCS) 2015

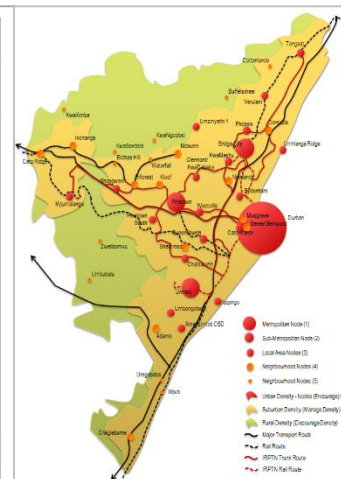
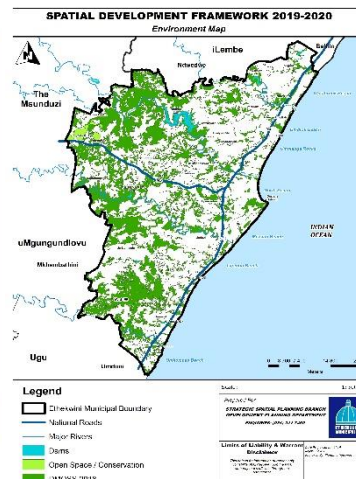
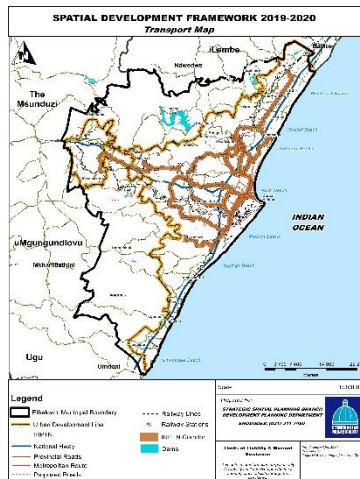
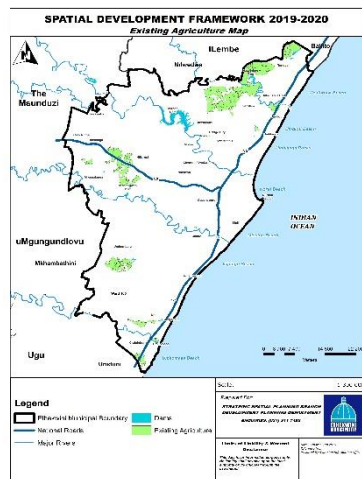
## 10 Themes

### • Adaptation:

- Water, Sea Level Rise, Biodiversity, Food Security, Health

### • Mitigation:

- Energy, Transport, Waste and Pollution
- 2 cross cutting with responses
- Knowledge Generation and Economic Development





# Climate Resilience Implementation for Spatial Planning

## Process



## 2. Water

### 2.1 Overview

The Durban Climate Change Strategy identifies the following responses for the water sector that have a spatial dimension:

- Implement watershed management that responds to projected climate change impacts to optimise yields of clean freshwater and storage capacity in dams.
- Recognise, make use of and manage the role that open spaces, natural areas and agricultural land can play in providing flood and storm water protection services.
- Adopt a risk-averse approach to water quality protection by imposing stringent controls on water polluting land uses and activities to ensure that the impacts of climate change are not exacerbated.
- Adopt and enforce a risk-averse approach to spatial, land use and infrastructure planning and development controls that respond to potential climate change amplified flood risks.
- Identify and relocate existing critical infrastructure that is in areas of high flood risk to areas of lower risk.
- Identify and prioritise the relocation or upgrading of informal and low income settlements that are vulnerable to flooding.

Since the SDF includes a layer reflecting the Durban Metropolitan Open Space System (D'MOSS), by default it includes many of the open spaces that protect water management areas, mitigate floods and are prone to floods. The D'MOSS layer is primarily intended to protect biodiversity for its intrinsic value and the ecosystem services it provides. However, it is not certain whether all areas supplying significant water services have been included in D'MOSS.

### 2.3 Implementation Plan

It is also proposed that the following projects be implemented to further enhance the water and climate change content of the SDF.

Project Name	Project Description	Responsible departments	Estimated budget	2017/2018	2018/2019	2019/2020
Identify key water management and key watershed areas	Undertake a research project to identify key water management and key watershed areas which support the supply of clean and abundant freshwater in eThekweni Municipality. Since most of eThekweni Municipality's water is supplied from outside of the municipal area, key areas of importance are most likely to be located above catchments of dams. These areas are important for protecting the quality of water entering dams and reducing sedimentation. This may require the prevention of certain land uses/activities upstream of dams so that water quality is not compromised. Other areas that may be of importance are areas upstream of communities that are dependent on natural water resources as well as those that protect ground water resources. Once this information exists a layer can be added to the SDF and addressed in detail in lower order plans.	Climate Protection Branch (CPB), Water & Sanitation.	R500,000		X	
Identify open spaces that provide protection from flooding.	A research project is proposed to specifically map open areas that provide flood mitigation services and to compare this with the D'MOSS layer. Since all open space is likely to provide some flood mitigation service it will be necessary for the research to rate the importance of these areas relative to each other to understand which open spaces play a particularly important role in this regard. A layer identifying the areas rated as most important for flood impact management can then be added to the SDF.	CPB, Coastal Engineering, Storm Water, Catchment Management Department	R1,000,000		X	

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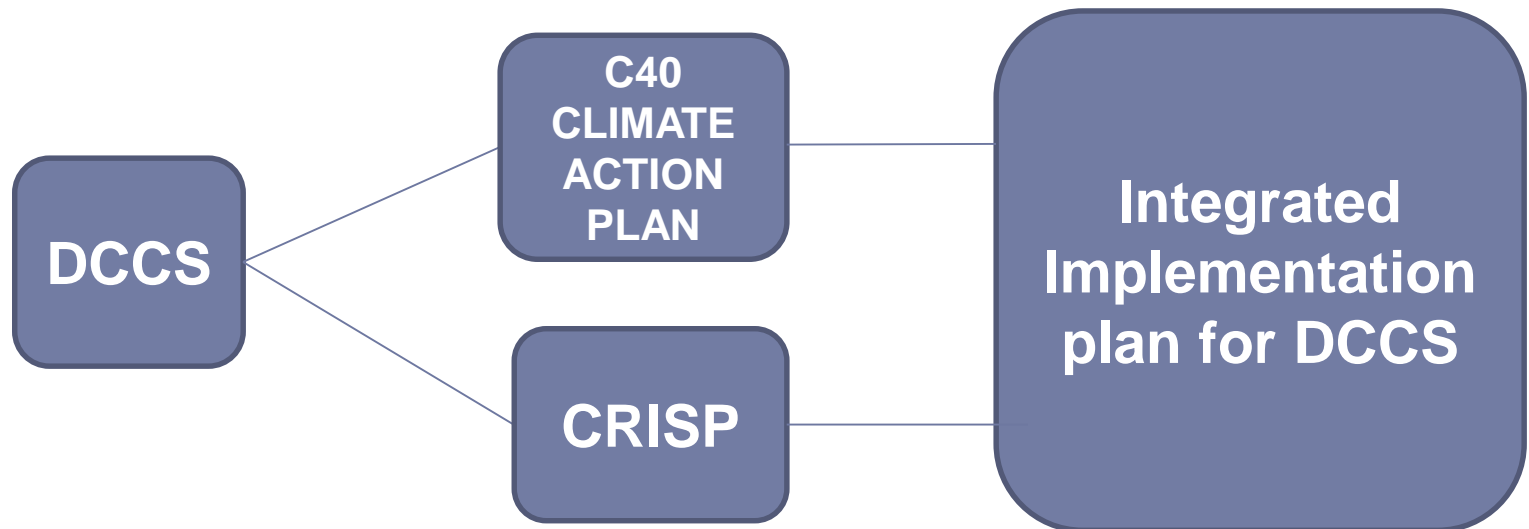
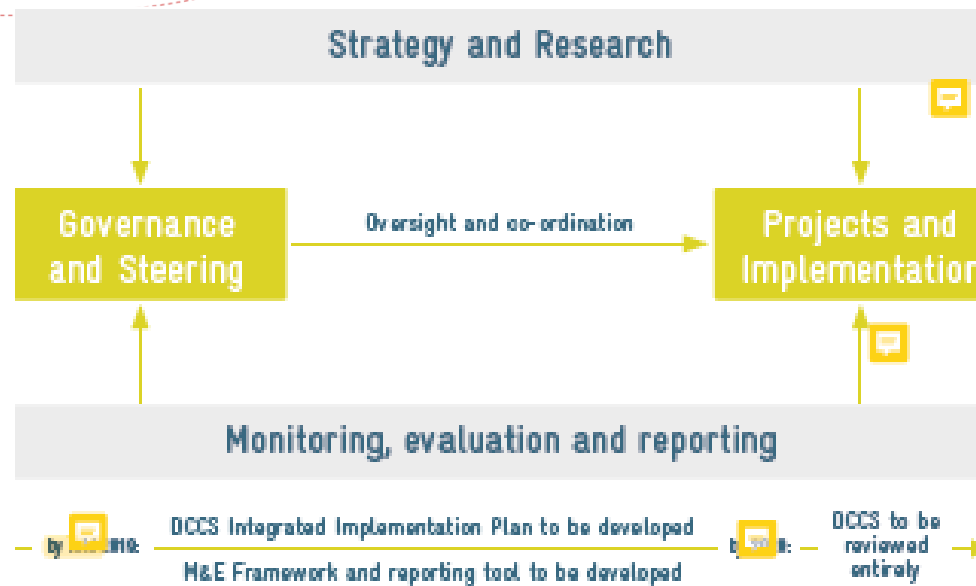
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# From Policy to Action - Climate Resilience Implementation for the SDF

## Recommendation: Implementation Plan

- Set up a technical/administrative committee to coordinate climate change response in the Municipality.
- Support climate change focussed research.
- Identify approaches to facilitating the uptake of green services and products.
- Identify priority transport nodes, priority feeder routes, priority stations and transport corridors and promote the facilitation of densification around these transport nodes and stations.
- Update land use scheme to accommodate small scale renewable energy installations.
- Identify open spaces that provide protection from flooding.
- Establish a working group to identify areas where coastal infrastructure at risk could be relocated to in the long term.
- Develop an Agricultural Policy
- Amend land use scheme to incorporate mitigation measures for buildings to respond to increasing heat.
- Develop Energy Efficiency Guidelines for Precinct Planning.
- Develop a Renewable Energy potential map

# DURBAN CLIMATE CHANGE GOVERNANCE AND IMPLEMENTATION





# CLIMATE RESILIENCE IMPLEMENTATION FOR SPATIAL PLANNING (CRISP)



Integration into SDF



Land Use  
Guidelines /  
CIF

Climate Governance



DCCS Technical  
Task Team  
established

Changes in sector  
plans



Risk Averse  
Planning –  
**Coastal and  
riverine**

Changes in sector  
plans



Non-  
motorised  
Transport

Incorporation of  
actions into lower  
order plans and  
schemes



Renewable  
Energy  
Guidelines  
into Schemes

# URBAN DESIGN AND CLIMATE WORKSHOP FOR ISIPINGO DURBAN



**Water: 2019**  
Issues and Challenges



**Current flooding in greater  
Isipingo**

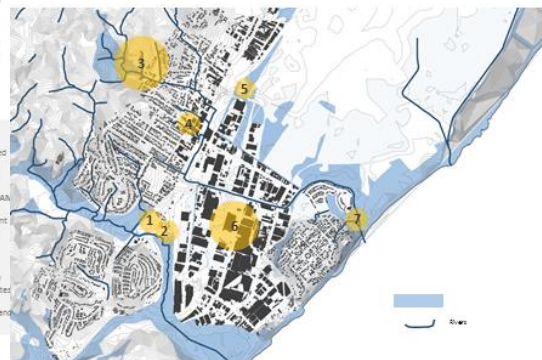
## Water Issues / Challenges:

1. Human Health and Safety Concerns  
Caused by:
  - Flash Floods
  - Toxic runoff
  - Difficulty accessing food and clean water during flooding
2. Damage to infrastructure and community/industry property
3. Decrease in Water Quality / Ecosystem Damage

## CHALLENGING AREAS

1. TRANSIT CAMP – Area frequently flooded (endangering residents). Located on former wetland site.
2. MALFUNCTIONING WEIR: Only 50% Flow to Canals
3. SIGNIFICANT RUNOFF FROM UPSTREAM CBD – Impervious surfaces, lack of building-level stormwater management plans, frequently blocked and aging sewers, polluted runoff
5. ILLEGAL CONTAINER DEPOT WITHIN WETLANDS
6. CANALS – inadequate flow for estuary health, causes flooding of industrial sites, severely polluted.
7. ESTUARY – insufficient flow, garbage and sewage, sand blockage of outlet.

**Water: 2050**  
Potential Strategies



**Flooding after interventions –  
2050**

## Desired Outcomes:

1. Improved Water Quality and Reduced Human Health and Safety Risk
2. Less frequent flooding, which in turn reduces damage to public and private sector investments
3. Ecosystem Restoration (reclaimed wetland areas and estuary)
4. New recreation and eco-tourism opportunities.

## WATER MANAGEMENT STRATEGIES / PROJECTS

1. RELOCATE TRANSIT CAMP
2. ISIPINGO INLET WEIR RESTORATION
3. WATER RETENTION PROJECT
4. GREEN INFRASTRUCTURE AND STORMWATER MANAGEMENT WITHIN CBD
5. RESTORE WETLAND / RELOCATE CONTAINERS
6. CANAL SYSTEM UPGRADES
7. ESTUARY IMPROVEMENTS

## GAPS:

Durban does not have all relevant fine-scale data to replicate in other areas

Lack of clear guidelines and procedures to replicate

Lack of funding

## Outcomes:

Change in thinking in planners to look at climate change as part of planning approaches

Better working relationship with Climate Change unit.

Project for rehabilitation of wetlands approved and earmarked for review under local area plan

Influence on local area plans and land use schemes

Planning with finer level of detail

Updating current business as usual scenarios with interventions to reduce climate impacts



# CAPACITY DEVELOPMENT FOR CLIMATE CHANGE AND PLANNING

Climate Change  
and Organisational  
Development



Climate Change  
and Planning  
Good practice  
(UDL)



Community level  
capacity (Palmet case  
study) - A shared  
governance  
Community of  
Practice



# Closing Workshop – May 2019





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# Sourcebook: climate-proof urban development



The Sourcebook on  
climate-proof urban  
development in a nutshell



Climate-Proof Urban  
Development Approach  
(ClimPUDA)

The Fields of Action are:

1 Governance and Management



2 Policies and Strategies



3 Measures: From Policy to Action



4 Capacity Development



URBAN LIVING LAB  
NEIGHBORHOOD CENTRE



MOBILITY

Smart Mobility  
Smart Services



TECHNOLOGY

Smart Data Platform  
Smart Lampposts  
Munich Smart City-App



## Lessons learned



### Governance and Management

- Foster a strong political leadership
- Promote cross-sectoral collaboration within the administration
- Political participation: Involve external actors
- Ensure transparency in planning to create legitimacy
- Pursue rural-urban/regional cooperation on equal terms
- Enhance relationship with regional and national governments



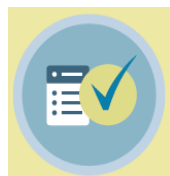
### Policies and Strategies

- Integrate adaptation and mitigation into relevant plans and strategies
- Formulate new climate-related strategies and policies
- Promote strategic communication for specific target groups
- Enable monitoring and evaluation
- Identify financing/funding streams and options
- Integrate global, national, regional and local strategies and policies





## Lessons learned



### Measures: From Policy to Action

- Formulate an action plan
- Prioritise spatial measures
- Foster local knowledge and private/civic engagement
- Secure sound financing
- Sensitize target groups
- Monitor and evaluate actions



### Capacity Development

- Individual level: Create knowledge (training) among municipal staff
- Organizational level: Collect and use knowledge on climate-proof urban development
- Societal level: Educate and raise awareness
- Vertical capacity: Capacity building should also be undertaken bottom-up rather than top-down



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## More information about the project

Overview if the CFCC global project

<https://www.giz.de/en/worldwide/43392.html>

International Dialogue Forums

Integrated urban development for climate-proof cities: International Dialogue Forum on Climate-Proof Urban Development; 27 – 30 August 2018  
Chennai, India

<https://mia.giz.de/qlink/ID=245890000>

The governance of local climate action and how to foster multi-sectoral collaboration: International Dialogue Forum on Climate-Proof Urban Development; 12 – 14 September 2017 Santiago de Chile; cities fit for climate change

<https://mia.giz.de/qlink/ID=245891000>

How to Improve Integration of Climate Change Aspects into Urban Development Instruments, Strategies and Initiatives: International Dialogue Forum on Climate-Proof Urban Development; 14 – 16 February 2017 Durban, South Africa; cities fit for climate change

<https://mia.giz.de/qlink/ID=245892000>

Reports Partner Countries

'From Policy to Action' – Climate Resilience Implementation Plan for Spatial Planning (CRISP) for the eThekweni Municipality

<https://mia.giz.de/qlink/ID=245904000>

Cambio Climático en Planificación Urbana Integrada

<https://mia.giz.de/qlink/ID=245905000>

Eyes on the Canal - Reimagining Chennai's Buckingham Canal

<https://mia.giz.de/qlink/ID=245903000>

Studies

Challenges and Opportunities for Urban Climate Finance

<https://mia.giz.de/qlink/ID=243661000>

Guiding Urban Concepts and Climate Change in Germany's Urban Planning Practice

<https://mia.giz.de/qlink/ID=245607000>

Conceptos urbanos rectores y cambio climático en la práctica de la planificación urbana de Alemania

<https://mia.giz.de/qlink/ID=245608000>

Videos

CFCC Video

[https://www.international-climate-initiative.com/en/nc/infotheque/videos/film/show\\_video/show/cities\\_fit\\_for\\_climate\\_change/](https://www.international-climate-initiative.com/en/nc/infotheque/videos/film/show_video/show/cities_fit_for_climate_change/)

CFCC Sourcebook and ClimPUDA

<https://youtu.be/00jqJN79riY>





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