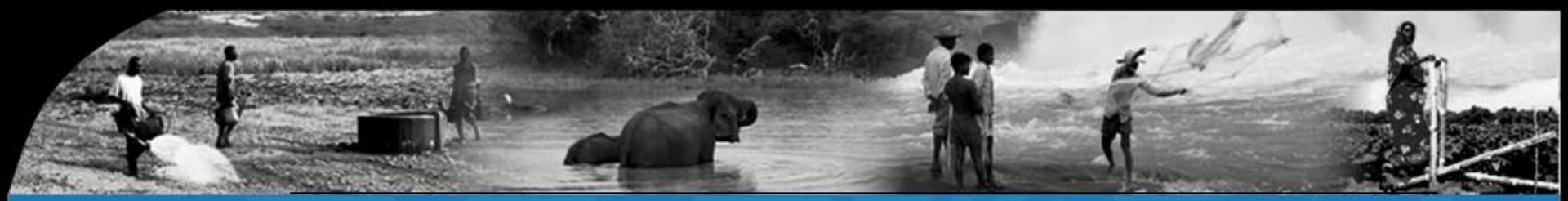

Managing water at the urban-rural interface: The key to climate change resilient cities

IWMI (Accra), WRI (Accra) & Addis Ababa University (Addis Ababa)

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Project Leader

URAdapt

Managing Water at the Urban-Rural Interface: The key to climate change resilient cities

1. Context and methodological approach
2. Objectives and outputs
3. Project principles
4. Rationale for stakeholder inclusion
5. Using scenario analysis
6. Strategy development

IWMI - Accra, 24 February 2010

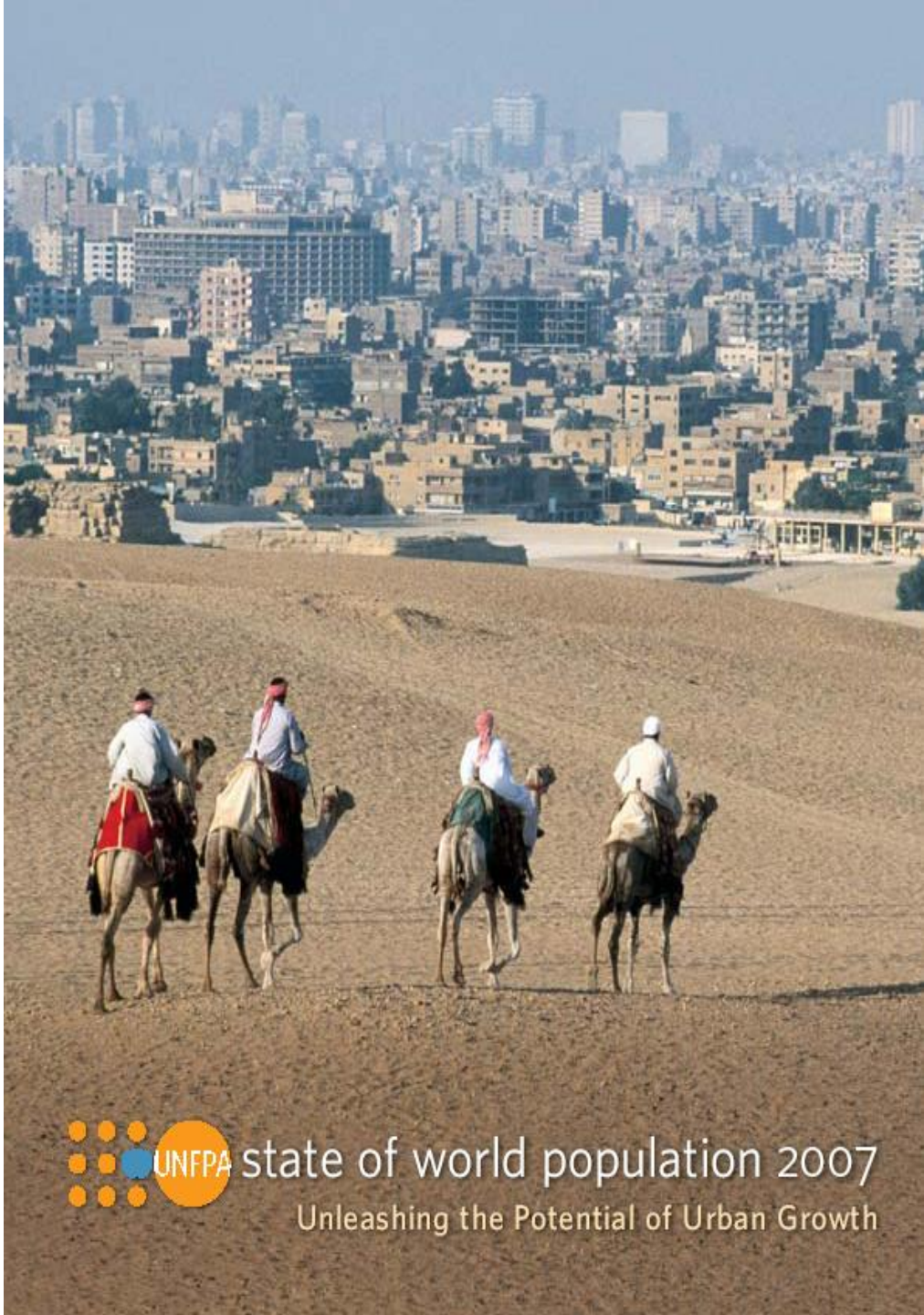
www.iwmi.org

In 2008, the world reached an invisible but momentous milestone:

For the first time in history, more than half its human population was living in urban areas

For Africa we are not yet there… BUT when it happens (2030) we are in trouble ……..

(UN-Habitat 2008)



What is urbanisation in Africa?

Impacts on most vulnerable groups

Increased vulnerabilities within an urban context are due to several structural constraints

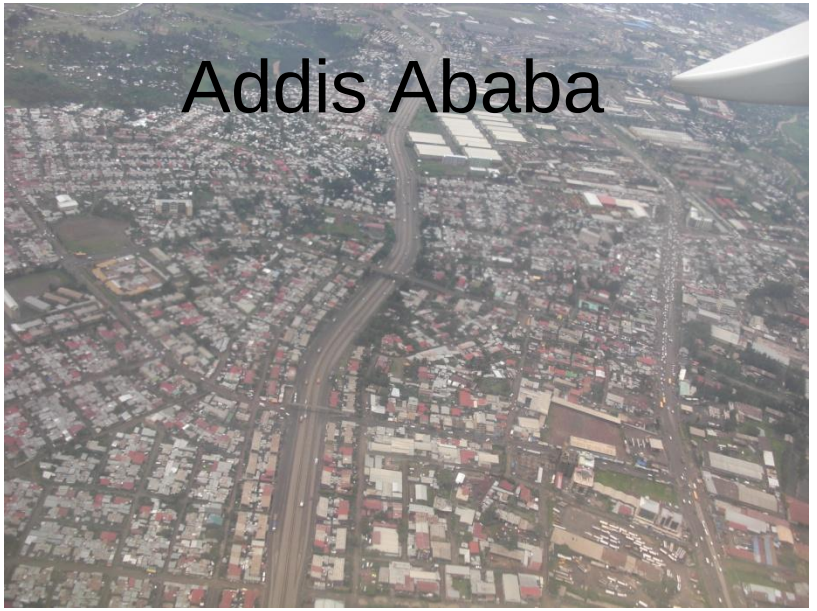
- High incidence of poverty generally and in many urban pockets
- Migratory fluxes (rural to urban)
- Higher population density and growth
- Rapid urbanisation
- Poor urban planning
- Insufficient services – municipalities unable to meet urban demands
- Weak governance and processes of accountability
- Poor translation and implementation of seemingly good 'paper' policies on decentralisation
- Weak adaptive capacity and inability to respond to frequent climate shocks that will increase

=

INABILITY TO MEET THE PRESENT URBAN WATER DEMAND AND WASTEWATER MANAGEMENT NEEDS

AGGRAVATED BY CLIMATE CHANGE

Project locations



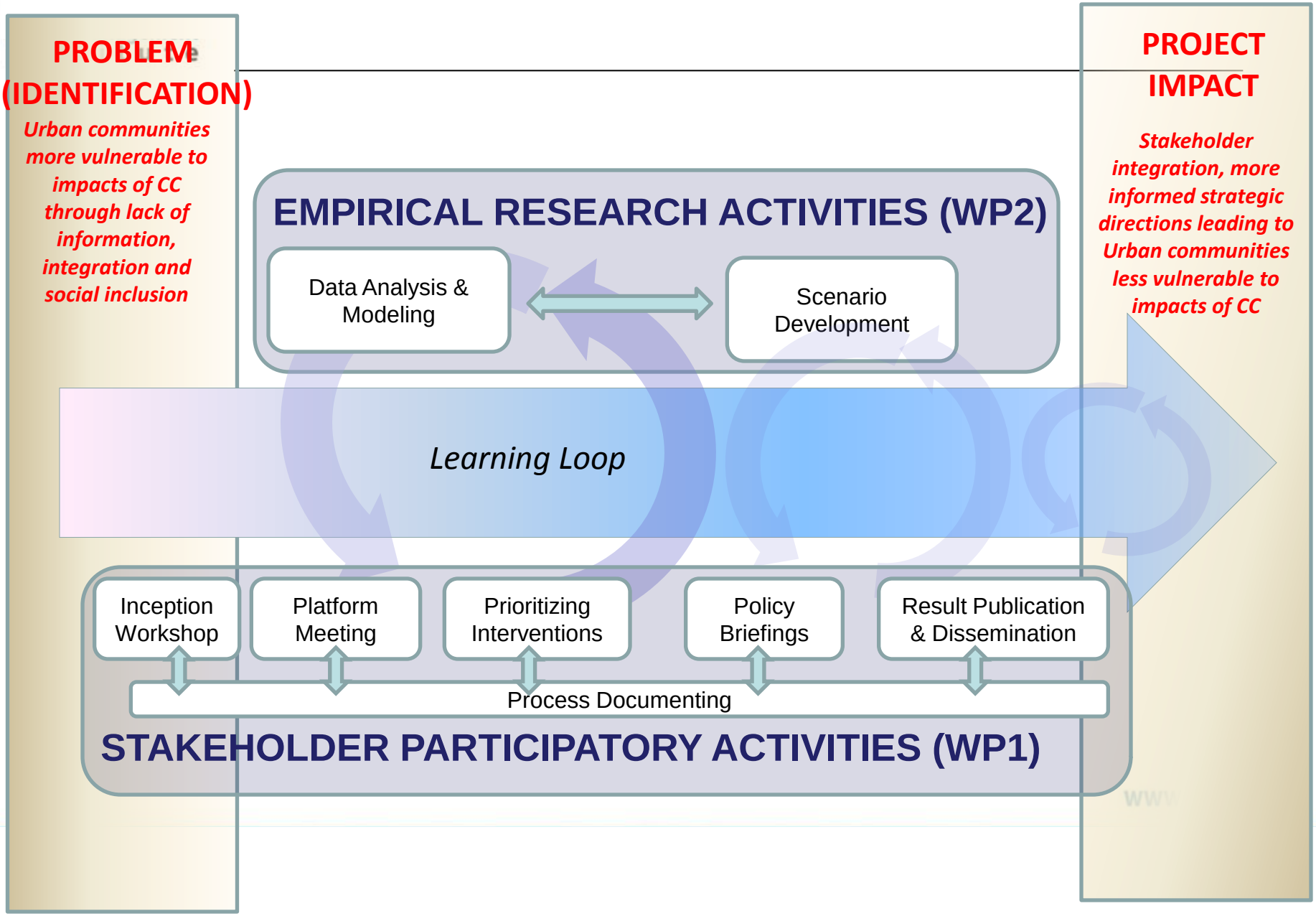
Typically these cities have the following characteristics which constrain climate change adaptive management:

1. Poor physical water system/infrastructure
2. Weak institutional capacities (incl. strategic planning)
3. Climate Change not (yet) a priority (in urban context)

One familiar impact is Flooding

- Already becoming more frequent and severe, due to increase in

Goal: to assist stakeholders of african cities in making more informed decisions to support urban resilience

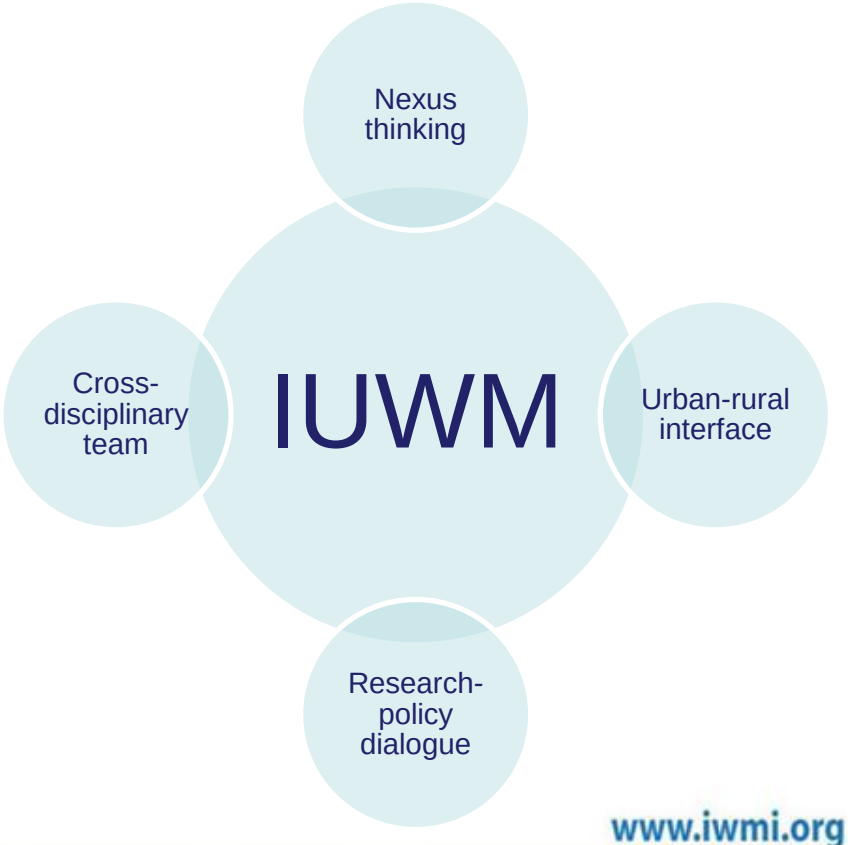


Project description

Project goal

Reduce the vulnerabilities of cities to climate change through improved and integrated urban water management

Project approach



Describing the Rural Urban Interface of water and food for cities

- The water system is anchored beyond the urban area often in the rural. Basin boundaries go beyond administrative
- The food inputs extend beyond the city boundaries into the peri-urban and rural areas often depending on the same water resource (or wastewater)
- Migration from rural areas may be aggravated by severe climate variability and change

Issue:

- Due to the treatment of rural and urban as two distinct phenomena, peculiar vulnerabilities arising from these rural-urban linkages are often not sufficiently addressed
- The solution to the problem/adaptation measure may need to originate in the rural area

Objectives

- To develop shared understanding of climate change and its effects on water management at the urban-rural interface, amongst multiple stakeholders
- To use scenarios to generate new knowledge on the upstream and downstream implications of urban water demand; resulting wastewater generation and associated water investment needs
- To prepare, in participation with city stakeholders and for the benefit of the most vulnerable groups, a strategic action plan for adapting to climate change through improved water resource management

Overall outputs WP 1 & 2

- Hydrological scenarios of future water supply for cities, wastewater generation, and their implications for agriculture (WP 2)
- Interactive research-policy platform to address urban climate change implications and corresponding adaptation strategies (WP 1)
- Decision support for investment in integrated urban development which consider implications of urbanisation and climate change and the policy response (WP 1 + 2)
- Policy and institutional orientations on how to build climate resilient cities (WP 1 + 2)

Project principles

- Consultation
- Urban-rural Integration
- Social inclusion (gender and vulnerable groups)
- Knowledge generation and sharing
- Capacity building
- Participatory monitoring and evaluation (outcome mapping)

Strategies adapted to local needs and constraints

Rationale for stakeholder inclusion

- To represent the continuity between rural and urban water use, and management (rural water supply, agriculture, irrigation)
- To account for the climate change angle in the project (Climate change anchor, adaptation, risk mitigation)
- To account for social inclusion (socio-economic factors that may compound vulnerability to climate change; convey voices of women, urban slum dwellers, communities living in flood-prone areas)
- To account for local level water governance (urban and rural local authorities)
- To reflect the basin/ national water resources management angle
- To include urban water and wastewater management (MDAs)
- To account for any health-related issues (eg flooding and water contamination from poor sanitation)

non-exhaustive list but has to be limited

“The people challenge”

Enrolling vulnerable groups

- *Fall into policy and institutional vacuums in terms of access to water and sanitation services.*

Selection of stakeholders

- *Demands a good understanding of the key players.*
- *This can be a challenge in fragmented institutional contexts.*

Ensuring the commitment of stakeholders

- *How to avoid ‘platform fatigue’?*

Ensuring good interaction among stakeholders

- *Using the right participatory tools in the right way.*

Scenario modelling

- CC impact scenarios: examples
  - CC Scenario 1: Rainfall events becoming more intense and frequent (city level)
  - CC Scenario 2: Dry periods becoming more severe (drier) and recurring more often (catchment level)
- Urban development scenarios (growth, water use, sanitation etc)
- Investment scenarios

Supply side

Demand side

More complications ☺ ☺

CC Scenario 1: Rainfall events becoming more intense and frequent (city level)

- Impact: More severe and frequent flooding in urban areas. Increased health risk due to mixing with untreated domestic wastewater.
- Possible responses leading to adaptation strategies :
  - improve drainage (broadening and dredging existing drains, digging
  - rooftop w
  - Increas ing infiltration and 'del anting more trees, bush
  - Consolidate community coping strategies and develop capacities in flood prone hotspots
  - To reduce health risk: improve sanitation systems and wastewater treatment, and minimise mixing of black water with stormwater.

CC Scenario 2: Dry periods becoming more severe (drier) and recurring more often (catchment level)

- Rural Impact: Low water availability for all water use sectors
- Possible urban impact: Reduced urban water supply.
- Possible responses towards adaptation strategies:
  - Rooftop rainwater harvesting (while safeguarding water quality/health),
  - shift to more reliance on groundwater,
  - Demand management (water saving campaigns by GWCL/AVRL, reducing leakage losses, economic tarifs, reuse of grey and black water for suitable purposes: like wastewater irrigation, greywater for car washing, etc.)
  - At catchment level shift water allocation from Agriculture and replace with recycled wastewater

Links to SWITCH project –IUWM for Accra city of the future (Some SWITCH strategies are responses to CC)

City strategic agenda for adaptation

- City Strategies are not comprehensive planning documents, like physical plans or long-term budgets.
  - Long term and participatory
  - Generalist rather than specialist (multidisciplinary)
  - Guides the cities development and management
  - Addresses changes and uncertainties in the cities environment
  - Linked to a monitoring and control system (indicators)

Strategy Development process

source: SWITCH Briefing Note 12

- Step 1: Identify components of an overall strategy
- Step 2: Evaluate each strategy component
- Step 3: Identify specific risks and constraints
- Step 4: Link strategy components to relevant parts of the vision.
- Step 5: Evaluate the utility of strategy components against the disaggregated vision under all scenarios.
- Step 6: Refine strategy components
- Step 7: Combine strategy elements to produce versions of an overall strategy
- Step 8: Select and refine an overall strategy

- Step 9: Start the planning process

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Thank you

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