Operationalizing Water-Wise Cities

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Operationalizing Water-Wise Cities

Integrated Urban Water Management

- Concept
- Principles
- Benefits
- Implementation
- Examples
- Lessons

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Integrated Urban Water Management – IUWM

Graphic Source:
http://www.neorsd.org/images/RestoredUrbanWatershed_large.jpg

Holistic strategic planning that takes a landscape approach and manages competing water users at the level of the watershed, recognizing the needs of the city, as well as those of upstream and downstream users

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Key Principles of Integrated Urban Water Management

Integration across the water cycle

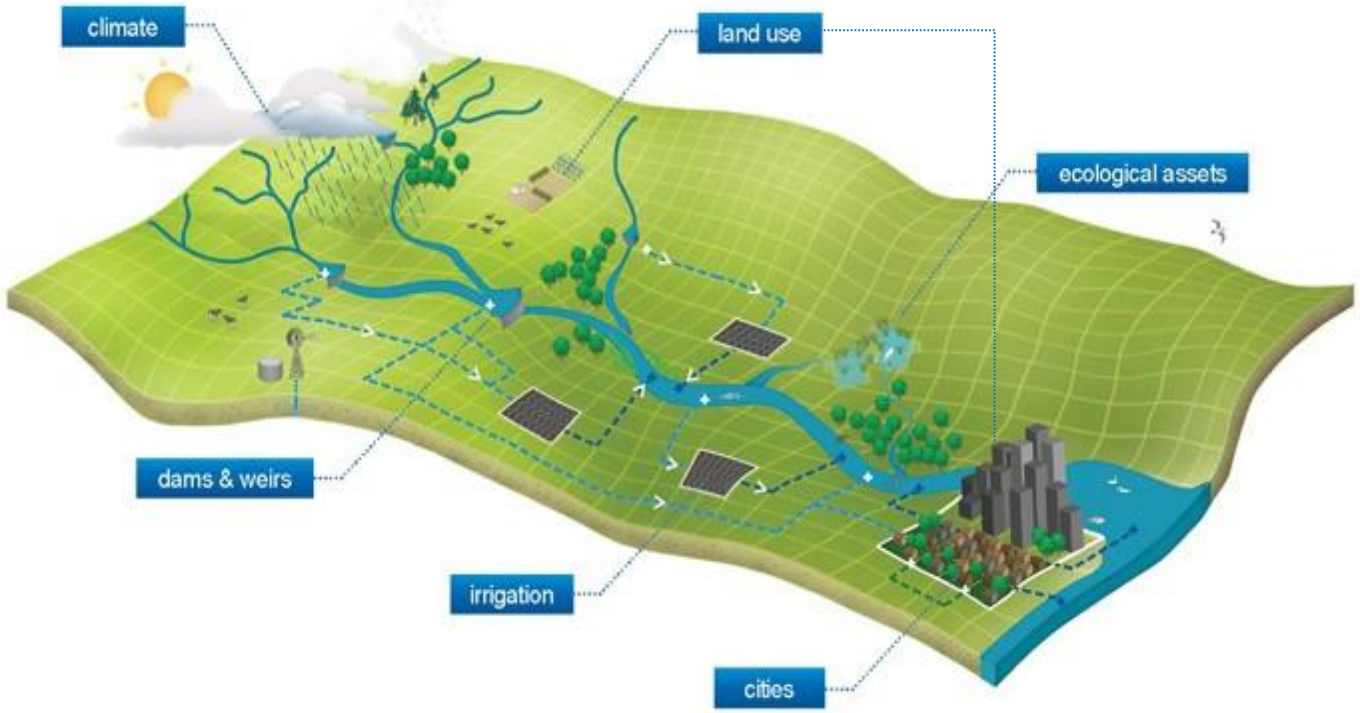
- Wastewater and stormwater: a resource
- Water cycle as one system
- Matching water quality with intended use

Integration of urban and water systems

- Pursuing economic efficiency, social equity and environmental sustainability
- Integrating water resources, land-use planning and key urban services (e.g., solid waste, housing, transport)

Integrated planning and implementation

- Stakeholder involvement instead of top-down
- Multidisciplinary planning teams



Source-http://www.ewater.org.au/uploads/images/source-composite-web.jpg

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Benefits of Integrated Urban Water Management

Costs savings through coordination & synergies, promoting alternative technologies & approaches

Leveraging complementary financing different sectors; different levels of government, bringing in alternative financing (private sector, payment for environmental services)

Improved living conditions, quality of life, economic stimulation, etc., through urban transformation, including green & cultural aspects

Before

After

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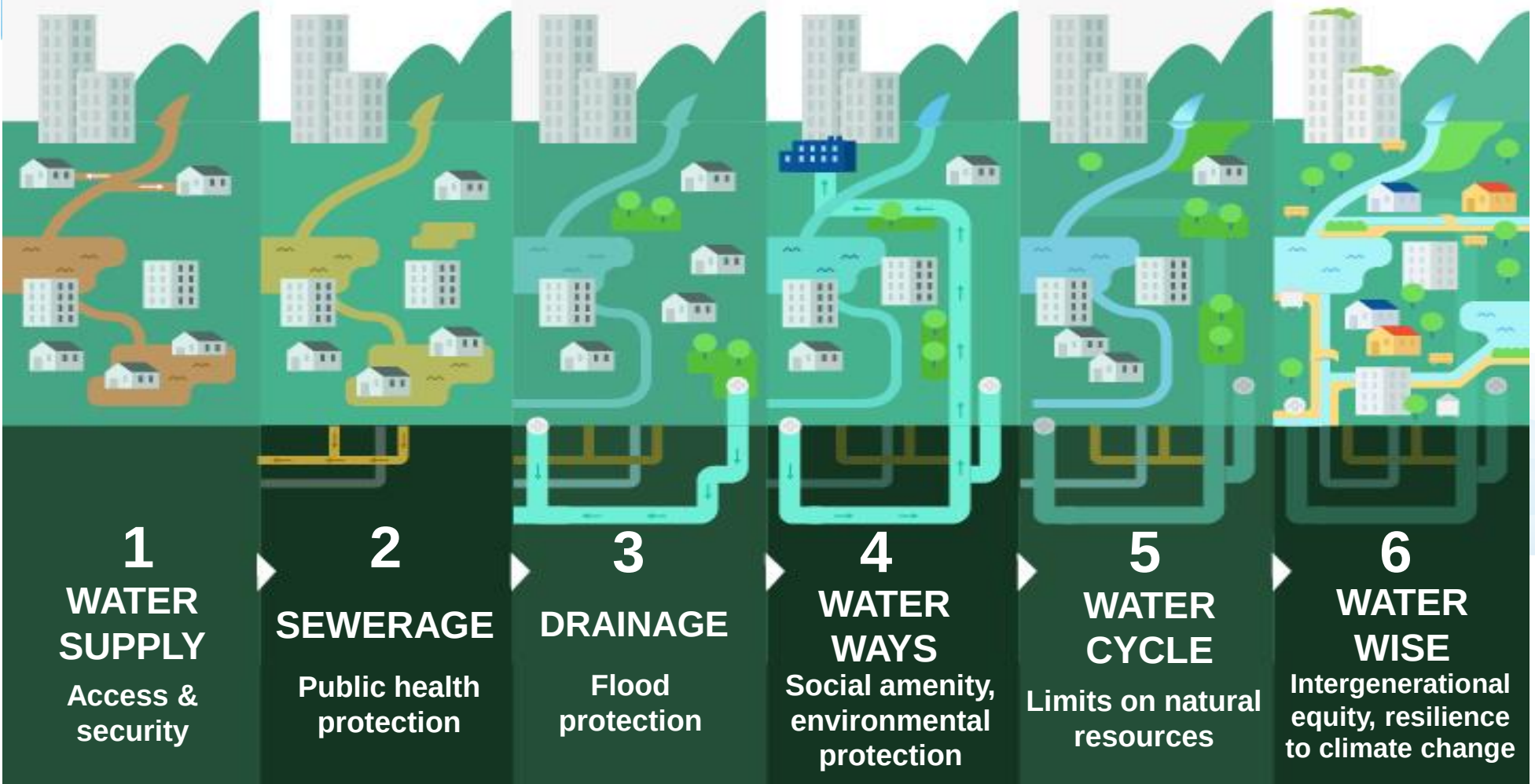
Fast Growing Cities can ‘leap-frog’ to Water Wise Cities …



… avoiding mistakes of most developed cities and securing economic benefits earlier

Source: Brown *et al* (2009), and Wong and Brown (2009)

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Implementing Integrated Urban Water Management

Sustainable Solutions

- Water Resources Management
- Water Supply & Sanitation
- Stormwater

… and beyond water …

- Urban Planning, Land use
- Solid waste
- Environment, recreational
- Housing
- Regulations, policies, non-structural measures (e.g., flood zoning, permits, etc.)

Before

After

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Key Elements

Main Drivers:
Urban Planning and Land Use
as well as…

Cross-Sector Tailored Solutions

Coordinated Execution

Integrated Participatory Planning

…stakeholder and community engagement

For the improvement of quality of life and the environment

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Process

Range of players and sectors involved for…

…an integrated solution tailored to local context and dynamics

PHASE 1

ENGAGEMENT
Activity Planning

PHASE 2

ASSESSMENT
Diagnostic

PHASE 3

PARTICIPATORY PLANNING
Final Diagnostic & Strategic Action Plan

PHASE 4

IUWM IMPLEMENTATION
AND MONITORING

Example – Brazil: Teresina

Two phases of integrated interventions focused in Lagoas do Norte, an environmental and socially vulnerable area of the city (13 km^2 and 100,000 inhabitants)

- Drainage, roadways and access ways
- Parks, leisure and cultural spaces
- Public service improvement: sanitation, schools, health posts
- Housing
- Municipal planning and modernization
- Citizen engagement
- Crime and violence prevention
- Local Economic Development

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Examples – Ethiopia: Addis Ababa

Surface and Groundwater Pollution

Drainage, Quality of Roadways and Access Ways

Housing

- 3.35 million people – expected to grow by 38% by 2030
- 600,000 m^3 water production vs. 1.3 million m^3 current demand
- 7% of households connected to sewers
- Upstream clean resources gradually deteriorates from domestic, institutional and industrial untreated waste disposal

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Lessons

- **Integrated** interventions are complex and should be part of a long process developed step-by-step, which requires **vision**, **persistence** and **commitment**
- Integrated planning and implementation takes time and resources ($$ and people) …
- … but it pays off: integrating actions and measures in the urban space is more efficient to achieve economic, social and environmental gains
- Institutional strengthening and capacity building are an essential part of the process to move from planning to actions
- Active stakeholder and community engagement is vital to success

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Lessons

- Geographically-focused interventions (basin, sub-basin) tend to work best
- Land use is a key driver; the earlier you integrate the planning process, the bigger the pay-off:
  - At the very least lower resettlement costs, but also …
  - Costs of storm water solutions:

Development with sustainable solutions (public spaces solutions)	→	US$ 200 to 400 thousand/km^2
Correction with detention (storage) and water quality control, avoiding flow increase	→	US$ 2 to 3 million/km^2
Correction with channels and conduits, transferring impacts downstream	→	US$ 6 to 7 million/km^2

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THANK YOU

MAINSTREAMING WATER RESOURCES MANAGEMENT IN URBAN PROJECTS: TAKING AN INTEGRATED URBAN WATER MANAGEMENT APPROACH

A GUIDANCE NOTE

WATER PARTNERSHIP PROGRAM

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Integrated Urban Water Management - Lessons and Recommendations from Regional Experiences in Latin America, Central Asia, and Africa

ALVAR CLOSAS, MATTHIJS SCHURING, AND DIEGO RODRIGUEZ

WPP CASE PROFILE / NO. 1 / NOVEMBER 2012

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