International Symposium
Enhancing Water Management Capacity in a Changing World
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Session: Extending Global Access to Clean Water and Sanitation: an Unpostponable Commitment

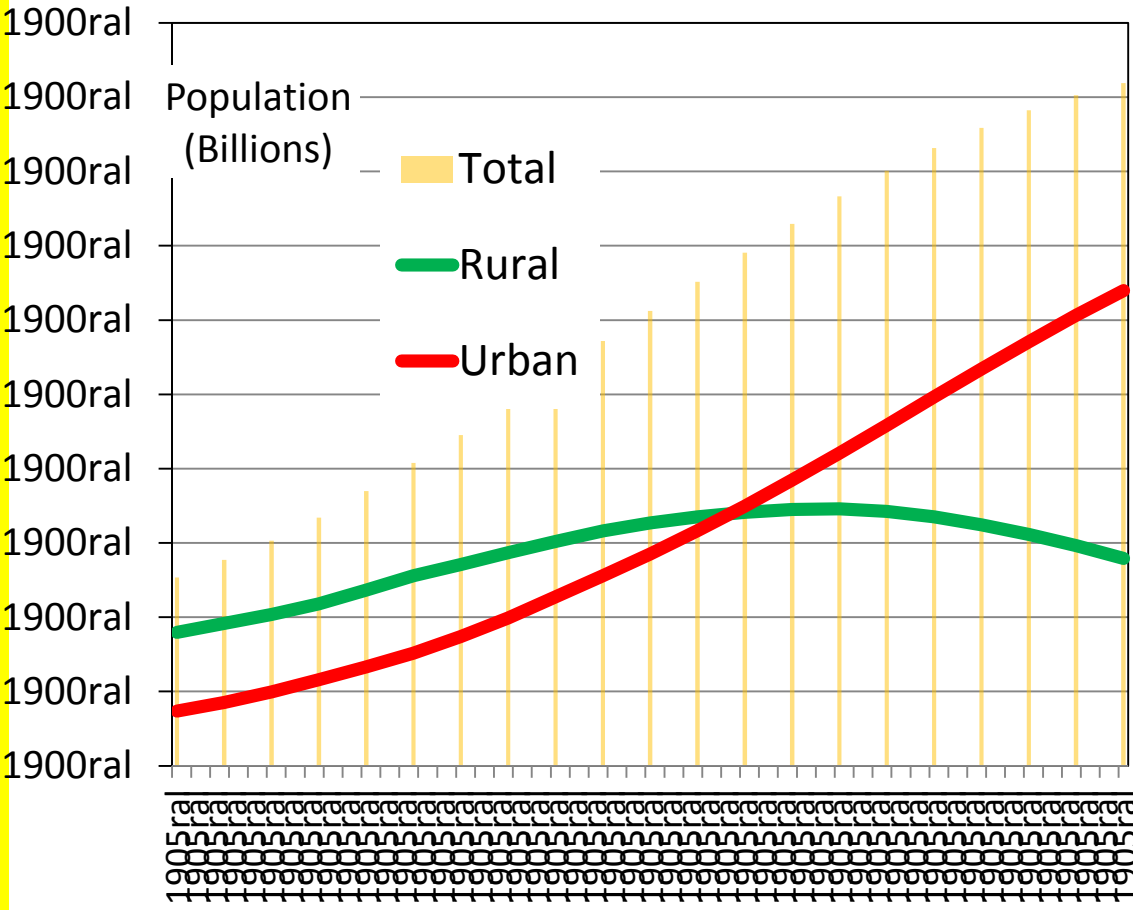
Urban Waters challenges

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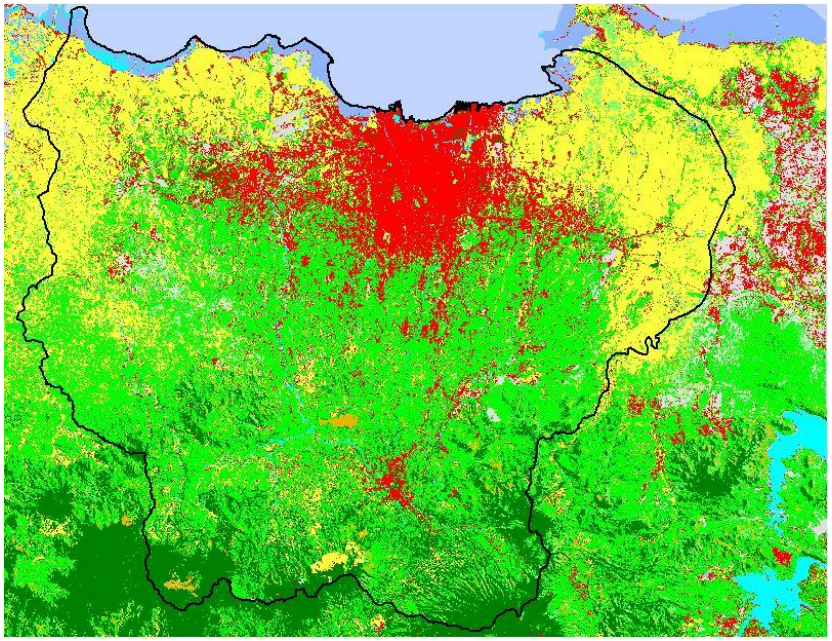
Urban Population

- World population is becoming mainly urban
- Today is about 50% (3,5 billion), but in 2050 it will be 70% (6,5 billion).
- Almost all nowadays population will be in cities

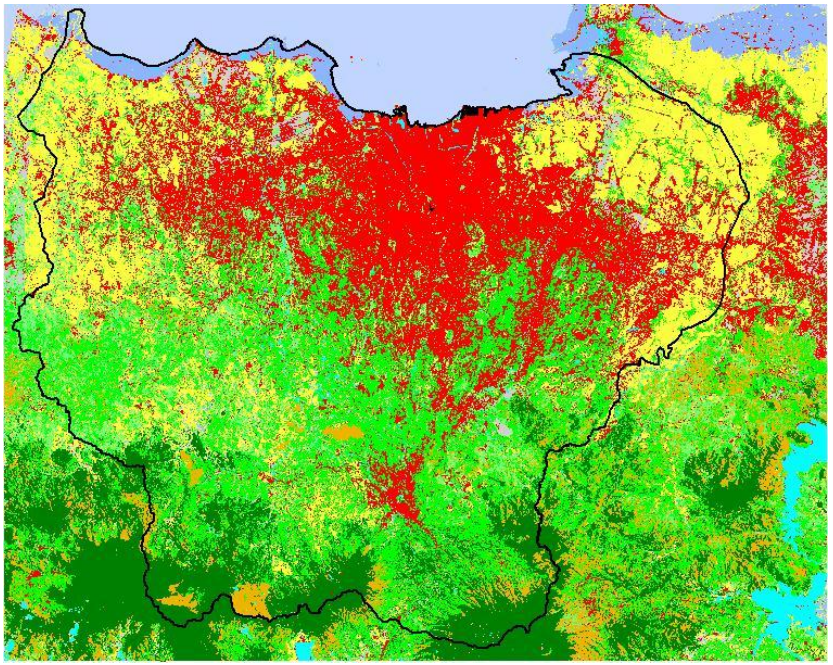


Planning Sustainable Cities. UN Habitat. 2009

Jakarta



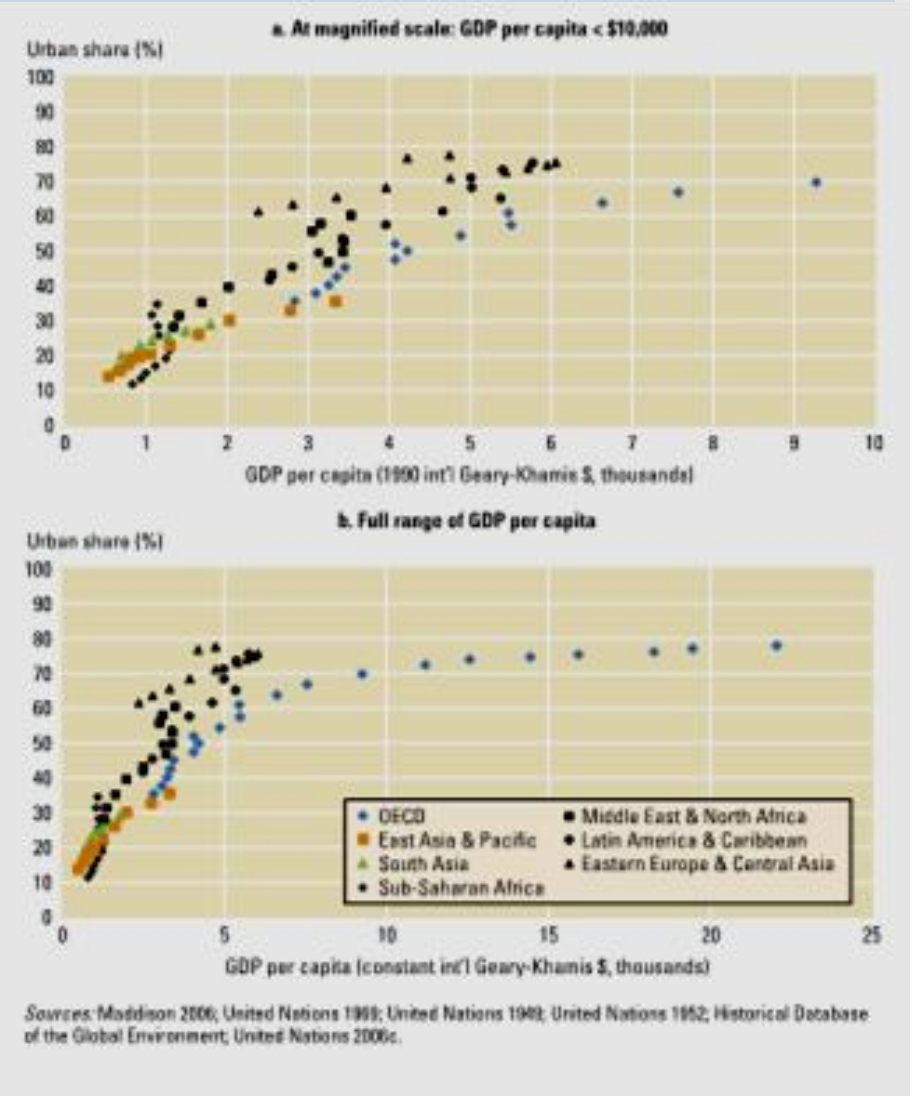
1992



2002

Impact of urbanization on population

- Population stabilized in developed countries and increasing in developing countries;
- Urbanization increases income and decrease fertility to stabilization (2,1 per couple)
- High rate fertility are poor country with low urbanization

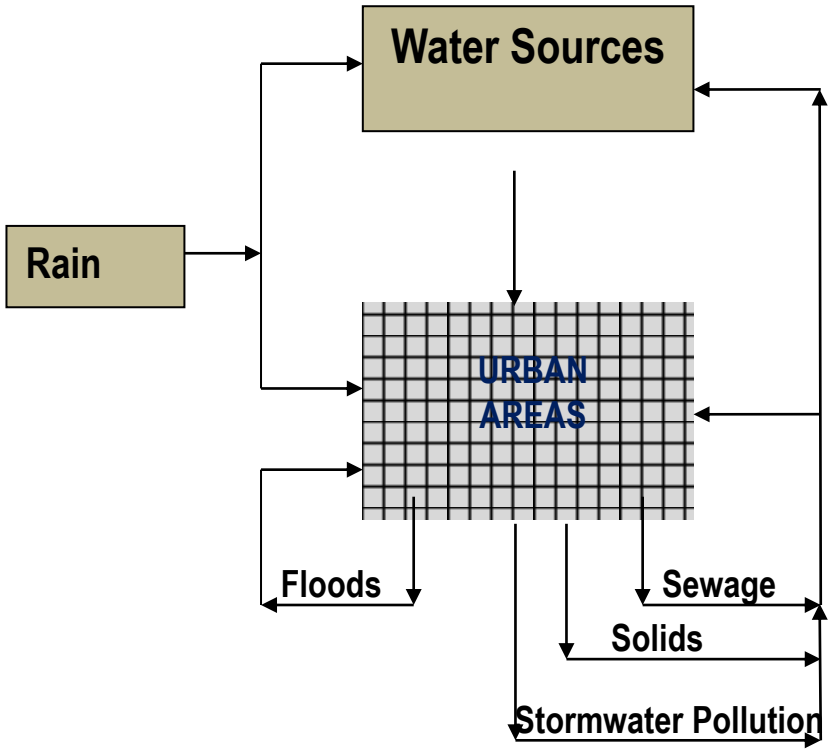


Population and space

- In developing countries 1 person uses 160 m2 of urban area and 50 m2 of impervious areas (Brazil). In developed countries (USA) 1 person uses about 500 m2.
- Brazil has 83% of urban population (160 millions) occupying about 23,000 km2.
- Population increases in the city boundaries affecting water sources;
- After the population stabilization there is reduction on density with income increase.

Developing countries urbanization and impacts

- Formal and informal population;
- Increase of urbanized area and concentration of the population in small spaces;
- High rate of use of natural resources such as water;
- Large amount of effluents in natural resources and contamination of water sources;
- cycle of contamination



Integrated impacts and problem

- Irregular land use
- Limited water supply
- Solid waste
- Lack of water and sanitation
- Stormwater floods
- Bad environment
- Potential disease proliferation







Main Causes

- High rate of increase, mainly in the city border;
- Water sector is usually public and does not provide water supply and sanitation;
- Urban drainage management does not exist and usually transfer flood inside of the city at high cost;
- Bad Solid waste services and soil erosion





Impacts

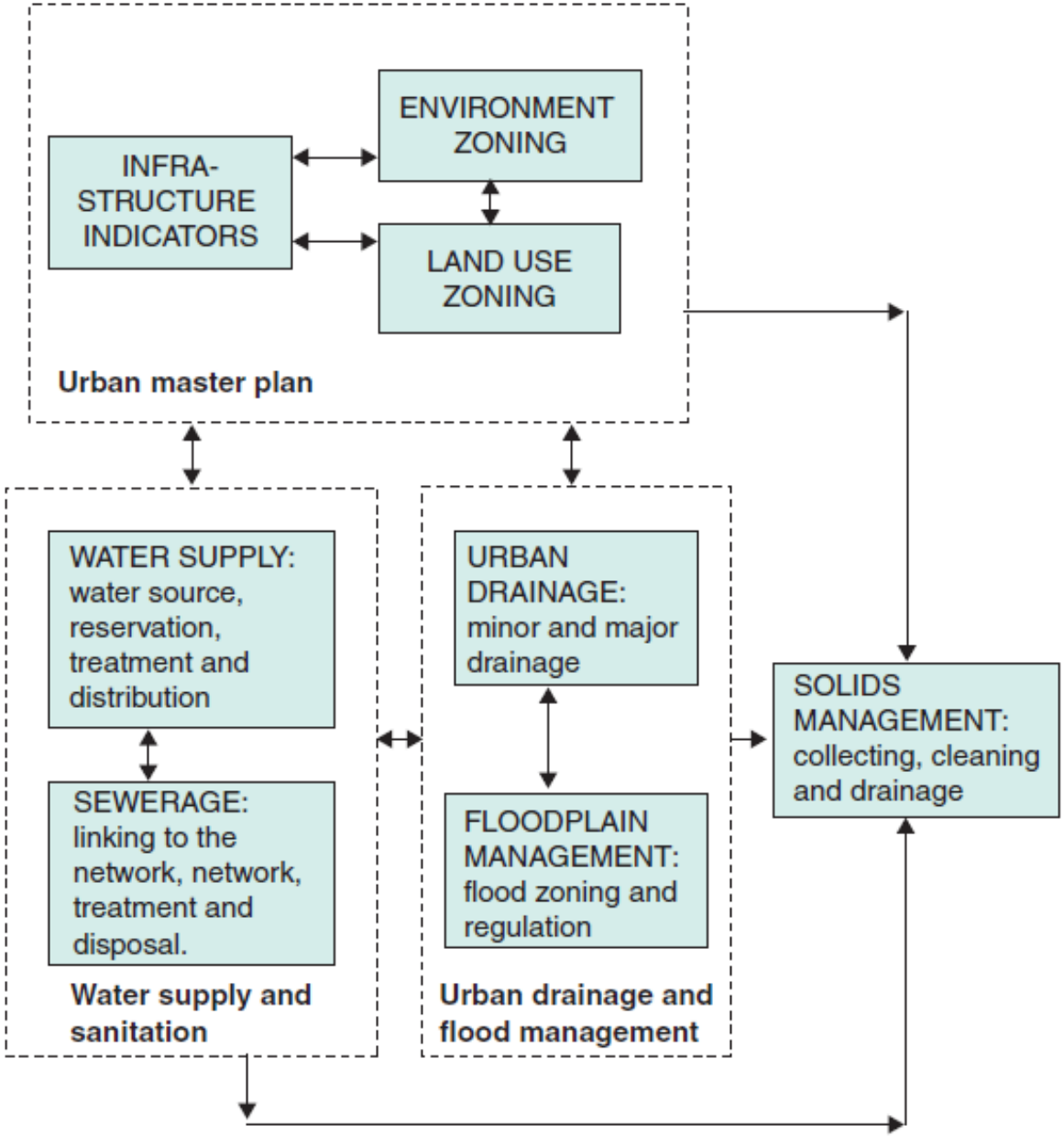
- Water conflicts and source contamination
- Lack of water supply coverage
- Sewage in natural and man made drainage
- Pollution by solids and decrease capacity of channels and conduits;
- Floods in urban drainage
- Usually the poor population are in risk areas

Main Phases of Urban Waters

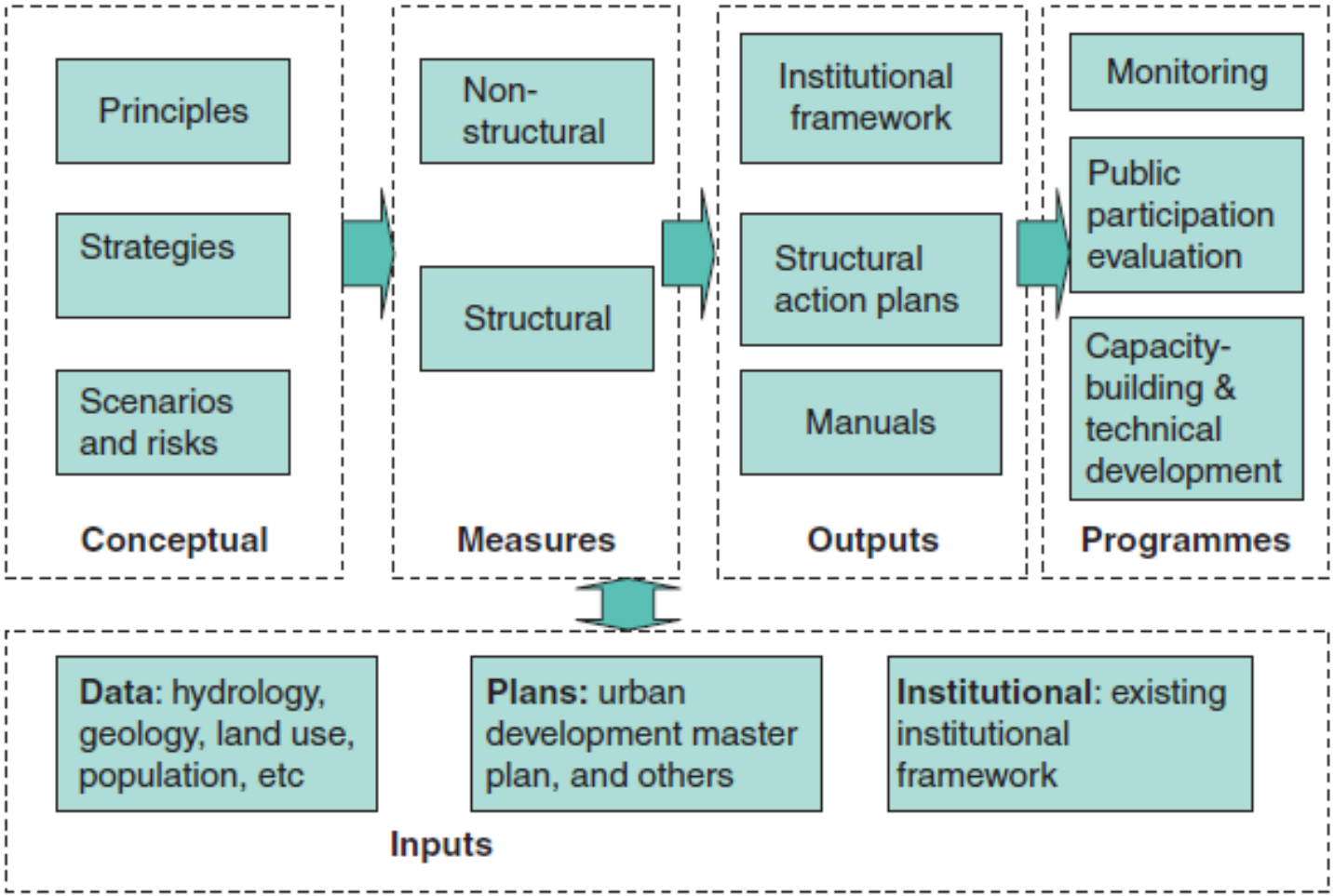
Period	Name	Description
until 1970	Hygienist	Water Supply and sewage collect dumping in the river without treatment + conduits and channels transferring flow downstream
1970-1990	Corrective	Treatment of the efluents, flood storage for stormwater.
1990* - ?	sustentable	Land use planning with *infiltration, use of environment certification,* Best Management Practices for stormwater pollution reduction

Developing Countries Challenges

- Protect its water sources
- Increase coverage of safe water and sanitation
- Improve solid waste services
- Hold the flow increase with impervious areas and conduits
- Integrated the service and management
- Develop measurable goals


ENVIRONMENT ZONING
INFRA-STRUCTURE INDICATORS
LAND USE ZONING
Urban master plan
WATER SUPPLY: water source, reservation, treatment and distribution
SEWERAGE: linking to the network, network, treatment and disposal.
Water supply and sanitation
URBAN DRAINAGE: minor and major drainage
FLOODPLAIN MANAGEMENT: flood zoning and regulation
Urban drainage and flood management
SOLIDS MANAGEMENT: collecting, cleaning and drainage

Urban Waters Plan



Challenges

- Reduction of Institutional fragmentation and improve management
- Clear society main goals for the services
- Improve efficiency and conservation
- Feasible economic and financial system;
- Capacity building, monitoring and public participation
- Action Plan

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