



# INTEGRATED WATER MANAGEMENT IN BARBADOS – THE WAY FORWARD

OOCUR 3<sup>RD</sup> ANNUAL CONFERENCE

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NASSAU, BAHAMAS

# Worldwide Water Situation

- 1/3 of world's population live in countries that experience medium to high water stress
- 1/5 of world's population without access to safe drinking water & 1/2 is without adequate sanitation
- Water withdrawals have increased at a rate greater than twice that of population growth



# Barbados' Current Water Issues

- Does not have a comprehensive IWRM plan, Draft Policy Framework for Water Resources Development is the closest approximation
- BWA has dual role as operator and regulator
- Environmental Protection Dept. and Town Planning Office also involved



# Barbados' Current Water Issues Contd.

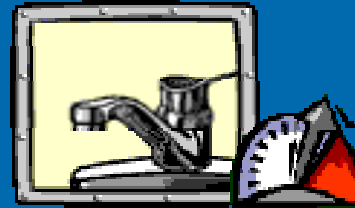
- Estimated yield of 49.6 mgd
- Current abstraction rate of 47.9 – 50.3 mgd
- Estimated abstraction rate for 2016 is 51.6 mgd

Atkins, 2000



# Demand Reduction / Augmentation Strategies

- Metering



- Commissioning of RO Desalination Plant



- Leakage Control Programme



- Rising Block Tariffs

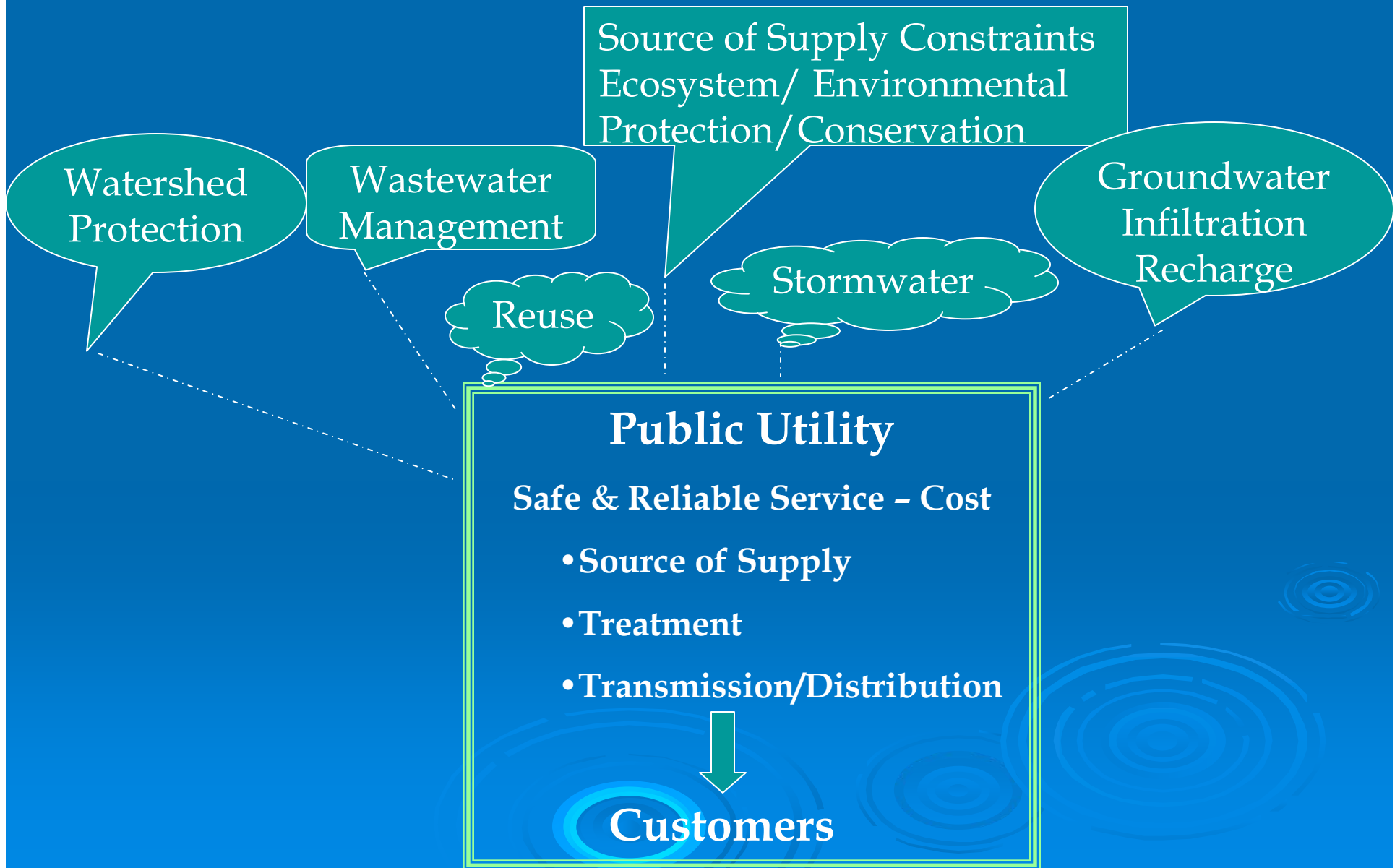


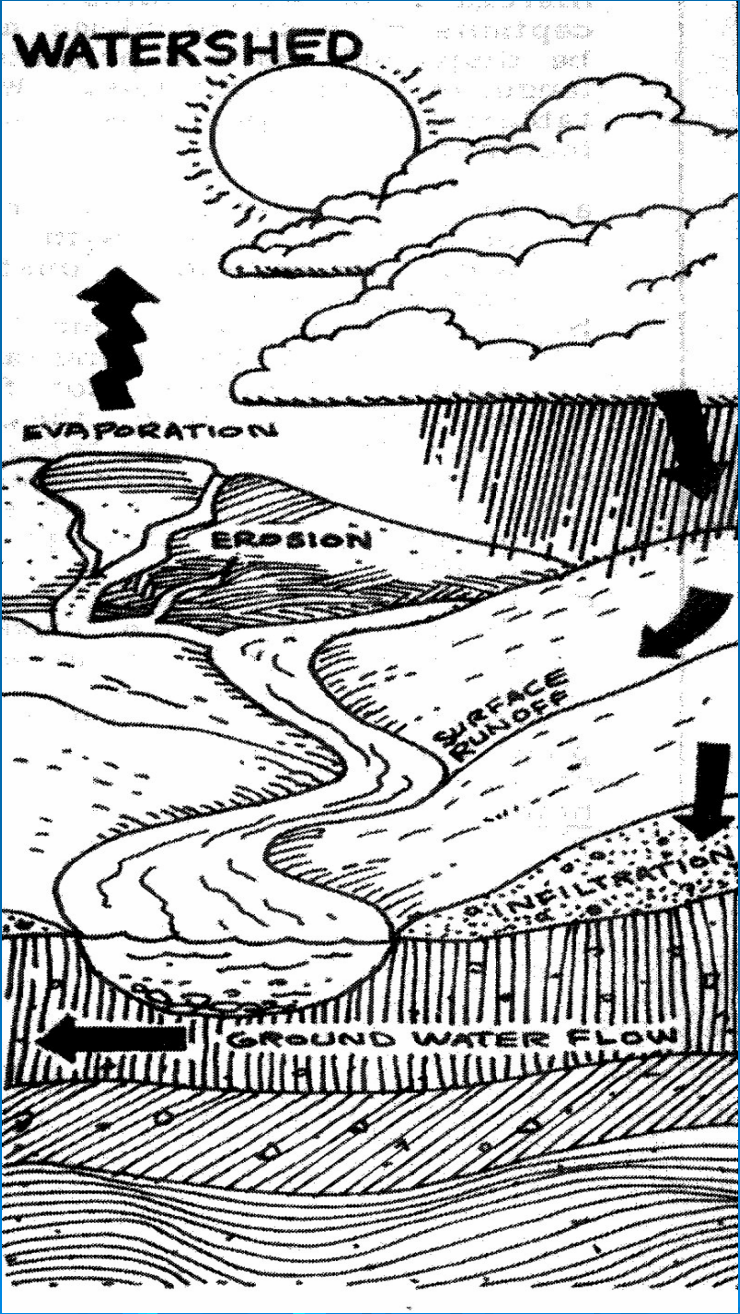
# Definitions

- IWRM – Management of the whole hydrological cycle to achieve a coherent set of water resource policies and uses that balance all reasonable social, environmental and economic needs in a sustainable way
- Sustainable – Meeting the needs of the present without compromising the ability of future generations to meet their needs.

- World Commission on Environment & Development

# Integrated Water Resource Management








# Overarching IWRM Philosophy

- IWRM is a philosophy that necessitates a holistic approach to water management and values stakeholder participation



# The Principles of IWRM

- Recognise that freshwater is a limited but renewable resource which is essential to sustaining life, the environment and development
  - Recognise that it is a very vulnerable resource
  - Manage water resources based on watersheds and stakeholder needs
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# The Principles of IWRM Contd.

- Preservation and conservation
- Equitable allocation
- Acknowledge the economic value in its competing uses and set economic goals



# Challenges

- Competing uses
- Supply and demand appear inversely proportional
- R&D required
- Lack of inter-agency coordination
- Linkages between potable water and wastewater regulations limited
- Insufficient resources for effective planning

# Solutions

- Trans-boundary and multi agency cooperation
- Regional consolidation of management skills and efficiency in resource use, production, and service delivery; procurement; R&D; best practices etc.

# Solutions Contd.

- Technology and innovation
- Capital investment
- Fusion of the top down and bottom up approaches to management



# An Effective IWRM Strategy will:

- Embrace the concept of sustainability
  - Promote R&D, knowledge sharing and best practices
  - Encourage innovative, cost effective solutions to current and future challenges
  - Facilitate stakeholder participation
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