



# DATA FOR ALL

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# Outline (mirrors the issues to be discussed)

- Context and inherent challenges
- Data needs and acquisition – demand and supply issues
- Data integration and dissemination: from data to information, institutional and methodological barriers
- Best practices, actions needed and issues for the future



# Context and inherent challenges

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# Data <-> Water resources management <-> Development

- **Goal 1: Eradicate extreme poverty and hunger**
- **Goal 2: Achieve universal primary education**
- **Goal 3: Promote gender equality and empower women**
- **Goal 4: Reduce child mortality**
- **Goal 5: Improve maternal health**
- **Goal 6: Combat HIV/AIDS, malaria and other diseases**
- **Goal 7: Ensure environmental sustainability**
- Target 9: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources
- Target 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation
- Target 11: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers
- **Goal 8: Develop a global partnership for development**

# Background and Context

- **Data for what? Goal-driven “data demand”**
  - data for water resources management
  - water resource management for development
- **Data, water and development nexus – across all water use sectors**
  - Need attention to both water resources availability (supply) and requirements (demand) – and the relationship between the two
  - Need attention to both data production (supply) and data use (demand) – and the relationship between the two
  - Both data supply and data demand involve multiple sectors and actors (e.g., agriculture, climate)
- **Integrated approach needed – so comprehensive “data for all” topic of the Forum is much welcomed!**



## But we are far from having solid analytical frameworks and institutional mechanisms for WRM data

- **Access to Water Supply and Sanitation – a workable model:**
  - Agreed conceptual framework for defining and measuring access
  - Established Institutional Mechanism: Joint Monitoring Programme of UNICEF/WHO
- **Water resources management:**
  - No agreed conceptual framework as yet
  - Emerging Institutional Mechanism: the World Water Assessment Programme and the WWDRs

## Why makes data for water resources management so challenging?

1. Water resources management is a means towards broader goals – need to understand and quantify relationship between ends and means
2. Interactions among different elements of water resources management and use often poorly understood
3. Data needs have multiple dimensions – quantity, quality, temporal, spatial...
4. Climate change introducing new complexities – and more urgent needs
5. Multiple sectors and professions involved in water data supply and demand
6. Role of some key actors insufficiently recognized – e.g. statistics, climate science – and perhaps viewed with some suspicion

## Integrated Water Resources Management provides an overall basis

- Basic principles: water as social and economic good, holistic perspective, involvement of stakeholders
- Balancing economic efficiency, environmental sustainability, social equity
- Aligning interests and activities that are traditionally seen as unrelated or not well coordinated (horizontally and vertically)
- Not just water - integrating water in overall sustainable development processes

# Data needs and Acquisition –

# Demand and Supply Issues

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## Data needs -- domains

- WWAP Expert Group on Indicators identified four “domains” of data:
  - The state of the resource (e.g., total actual renewable water resource, at different time frames)
  - The use of the resource (e.g., agriculture water use)
  - The governance of the resource (e.g., quality of water resource management)
  - The performance of the resource (e.g., proportion of urban wastewater that is treated)

## Data needs

- **Simplicity of four domains masks huge challenges**
  - Most parameters are multi-dimensional – quantity, quality, spatial and temporal variation
  - Different methodologies needed, especially viz. a viz. governance
  - No agreed set of indicators in each domain – identifying them is a key priority of the Expert Group
  - Interactions among domains -- different elements of water resources management and use -- poorly understood
  - Climate change introduces “non-stationarity” considerations

## Data acquisition

- Data acquisition is often viewed as un-interesting in comparison with performance indicators – but it needs to get at least the same level of attention
- 3<sup>rd</sup> WWDR: Highlights that new data are hard to come by. Available for only a few indicators
- Current state of affairs is hampering insights into the trends of key indicators in a rapidly changing world – e.g., is water use efficiency improving?
- Don't want availability to drive indicator selection, but need to concentrate on indicators for which data is readily available

**Data integration  
and dissemination:**

**from data  
to information**

**institutional  
and  
methodological  
barriers**



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# Methodological challenges

- **What is needed to turn data into information useful for WRM?**
- Decision makers need to measure the ultimate economic, social and environmental impact of WRM changes -- “outcome” indicators”
- Requires a conceptual framework to link WRM to national development goals -- and analytical systems to define and measure them
- Just as GDP – the key indicator of national economic performance – is derived from the system of national economic accounts, so must the indicators of “water” performance be based on a system of water accounts

## What are the implications?

- Need a framework that
  - is quantitative and comprehensive with respect to the use and management of water in a national economy
  - allows analysis and quantification of inter-linkages
  - integrates water with other natural resources and with economic, environmental and social impacts
  - provides consistent and transparent frame of information for stakeholders

## Institutional barriers

- Different communities of data suppliers, with different languages - and often mutual suspicion
- Different communities of users, with different languages - and often mutual suspicion
- Little involvement of data management specialists - the statistics community
- No agreed institutional framework similar to the JMP in water supply and sanitation

**Best practices**

**Actions needed**

**Issues for the future**

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## Examples of best practices for data collection and management

- Joint Monitoring Programme (JMP)
- System of Environmental and Economic Accounting (SEEA 2003) under the aegis of the UN's Statistical Commission
- Regional Climate Outlook Forums

## Examples of best practices for data collection and management – the JMP

- Joint effort within the UN system
- Agreed methodology of measuring access to water and sanitation
- Based on survey methodologies
- Numbers enormously influential

## The System of Environmental - Economic Accounting for Water (SEEAW)

- Part of a broader movement towards environmental accounting
- Based on the System of Environmental and Economic Accounting (SEEA 2003) under the aegis of the UN's Statistical Commission
- Accounting system includes both physical and monetary accounts
- The physical accounts for water quantify the volume of water assets, water use and supply by sector, and water emissions by sector
- The monetary accounts quantify the value of water assets, the cost of supplying water, the tariffs paid for water and emissions, and the economic value of water and pollution.
- Authority: based on established system of national accounts, with expertise from the statistical community, and testing in several countries
- Important methodological challenges – e.g., spatial and temporal variation

# Regional Climate Outlook Forums

- **Participants:**

- National Meteorological Services, international climate modelers and researchers, sectoral user groups (food security, water, health), social scientists and sectoral researchers, private sector, civil society, donors

- **Products:**

- Authoritative consensus on the likely quality of main rainfall seasons regularly available in advance
- Increased capacity at regional and national levels for climate forecast production and use
- Vigorous dialogue among climate forecasters and between forecasters and forecast users to improve forum products and outcomes
- Emergence of regional climate information and applications networks as focal points for seasonal forecasting-related activities.

## Important Ongoing Data-related Initiatives

- United Nations World Water Development Report
- World Water Assessment Programme Expert Group on Indicators, Monitoring and Data/Metadata bases
- UN-Water Task Force on Indicators, Monitoring and Reporting
- UN Statistics Division work on SEEA-Water (further development and use at the country level)
- Secretary General's Advisory Board on Water and Sanitation

## Need mechanism for learning from best practices and for interaction among initiatives

- Can we engage with and learn more from current best practices?
- Need mechanism for learning, interaction among initiatives
  - Involve user countries in a central way
  - Involve key actors, both users and producers
  - Include members of water, statistical and climate communities
  - Bring in additional social, economic and environmental expertise as needed
- Perhaps a periodic “roundtable forum on water data”?

## Challenges for the “Data for all” Sessions

- **Sessions provide a real opportunity to tackle the multiple dimensions of the data issue in a comprehensive way**
- Address methodological issues -- links between data domains, multiple dimensions, etc.
- Address institutional issues
- Engage multiple sectors and professions involved in water data supply and demand – especially statistics and climate communities
- Foster a stronger “data and information culture” in water resource management

Thank you

