



Water Indicators and Statistics

UNSD

Workshop on environment statistics
(Abuja, 19-23 May 2008)



Environmental Issues

- 2.5% of world's water is fresh water
- 1.1 billion people lack access to improved water supply
- 2.4 billion to improved sanitation
- Competition for water resources in many countries



Policy and Management Issues

- Covenant on Economic and Cultural Rights
- 2003 International year of fresh water
- International Decade on Water for life
2005-2015
- Access to basic sanitation and fresh water
<http://millenniumindicators.un.org/unsd/mi/>
- Integrated Water Resources Management



Commission of Sustainable Development Water Indicators

Theme: FRESH WATER

Sub-theme: WATER QUANTITY

Indicators: PROPORTION OF TOTAL
WATER RESOURCES USED
WATER USE INTENSITY BY
ECONOMIC ACTIVITY

Sub-theme: WATER QUALITY

Indicators: Biochemical Oxygen Demand in water
bodies
PRESENCE OF FAECAL COLIFORMS IN
FRESHWATER
Wastewater treatment

Theme: POVERTY

Sub-theme: SANITATION

Indicator: PROPORTION OF POPULATION USING IMPROVED SANITATION
FACILITIES

Sub-theme: DRINKING WATER

Indicator: PROPORTION OF POPULATION USING AN IMPROVED WATER
SOURCE



MDGs

- Proportion of total water resources used
- Proportion of population using an improved drinking water source
- Proportion of population using an improved sanitation facility



NEPAD/AEO-2 Indicators

To be found in chapters on

- Socio-economic issues
- Land
- Atmosphere
- Fresh water
- Wetlands
- Biodiversity
- Human settlement
- Human health



NEPAD

- Internal renewable water resources available per capita or per year
- Fresh water availability for use (household, agriculture, industry, etc.)
- Urban water supply from dams
- Abstraction from boreholes for domestic use in rural/urban settings (percapita yield)
- Annual water use/consumption per capita per day
- % of population with access to safe drinking water
- Improved drinking water coverage - total population
- Number (density) of boreholes per capita unit area (rural)
- % of population connected to public water supply



NEPAD

- Annual withdrawal of ground and surface water as percentage of total available water
- Change in surface water discharge
- Improved drinking water coverage - total population
- Change in recharge rates
- Biochemical oxygen demand (BOD5) for rivers
- Emissions of organic water pollutants (BOD) total/per worker
- Average annual concentrations of total phosphorus in lakes and rivers
- Annual total dissolved solids/sediment flux in lakes and rivers
- Average annual concentrations of total nitrogen in lakes and rivers
- Average change in oxygen levels in lakes and rivers
- No. of people affected by water borne diseases
- Water use per capita
- Improved drinking water coverage - total population
- % of (change in amount/volume) freshwater used for domestic use, irrigation, industry
- Water use a percentage of renewable resources



NEPAD

- No. of people affected (Incidence of) water borne diseases
- Change in No. of water treatment plants
- Change in sewerage/waste disposal & water supply infrastructure
- Annual internal renewable water resources per capita
- Total renewable water resources;
- Annual internal groundwater recharge per capita
- Annual freshwater consumption per cap
- Change in No. of boreholes per unit (pop dependent)



Indicators selected for ECA list

| | |
|---------------------|--|
| Water accessibility | Proportion of population using an improved drinking water source [MDG] |
| | % of population connected to public water supply |
| Water quantity | Proportion of total water resources used [MDG] |
| | Ratio of external renewable water resources to total renewable water resources |
| | Total annual renewable water resources per capita |
| | Change in surface water discharge |
| | Annual groundwater recharge |



Indicators selected for ECA list

Water quality (pollution)

Emissions of organic water pollutants (BOD) total/per worker

- Biochemical oxygen demand in water bodies [CSD]
- Chemical oxygen demand in water bodies
- Average annual concentration of total phosphorus in lakes and rivers
- Average annual concentration of total dissolved solids/sediment flux in lakes and rivers
- Average annual concentration of total nitrogen in lakes and rivers
- Average annual concentration of dissolved oxygen in lakes and rivers
- Presence of faecal coliforms in freshwater [CSD]

Water usage

Total annual water use per capita

- % of (change in amount/volume) freshwater used for domestic use, irrigation, industry
- Water use intensity by economic activity [CSD]



Indicators selected for ECA list

Water borne diseases (bilharzias, river blindness, sleeping sickness, etc)
Incidence of water borne diseases

Water management issues

Developed national & river basin Integrated Water Resource Management plans
Wastewater treatment [CSD]

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- % of population connected to wastewater collecting system
- Volume of treated wastewater for domestic use
- Amount/volume of disposal of wastewater into wetlands
- % of treated wastewater produced from wetlands

Water availability

- Urban water supply from dams
- Abstraction from boreholes for domestic use in rural/urban settings (per capita yield)



Availability of methodology

Water Accessibility

- Proportion of the population using an improved drinking water source [MDG]
- % of population connected to public water supply [NOT AVAILABLE – UNSD]

Water Quantity

- Proportion of total water resources used [CSD]
- Ratio of external renewable water resources to total renewable water resources [FAO]
- Total annual renewable water resources per capita [FAO]
- Change in surface water discharge [NOT AVAILABLE]
- Annual groundwater recharge [NOT AVAILABLE]



Availability of methodology

Water Quality (Pollution)

- Emissions of organic water pollutants (BOD) total/per worker [WRI]
- Biochemical oxygen demand in water bodies [CSD]
- Chemical oxygen demand in water bodies [NOT AVAILABLE – UNSD, GEMS]
- Average annual concentration of total phosphorus in lakes and rivers [EECCA - UNSD]
- Average annual concentration of total dissolved solids/sediment flux in lakes and rivers [NOT AVAILABLE]
- Average annual concentration of total nitrogen in lakes and rivers [EECCA]
- Average annual concentration of dissolved oxygen in lakes and rivers [NOT AVAILABLE]
- Presence of faecal coliforms in freshwater [CSD]



Availability of methodology

Water usage

- Total annual water use per capita [NOT AVAILABLE]
- % of (change in amount/volume) freshwater used for domestic use, irrigation, industry [NOT AVAILABLE]
- Water use intensity by economic activity [CSD]

Water borne diseases

- Incidence of water borne diseases [NOT AVAILABLE]

Water Mgt issues

- Developed national & river basin IWRM plans [NOT AVAILABLE]
- Wastewater treatment [CSD]
- % of population connected to wastewater collecting system [NOT AVAILABLE]
- Volume of treated wastewater for domestic use [NOT AVAILABLE]
- Amount/volume of disposal of wastewater into wetlands [NOT AVAILABLE]
- % of treated waste water produced from wetlands [NOT AVAILABLE]

Water availability

- Urban water supply from dams [NOT AVAILABLE]
- Abstraction from boreholes for domestic use in rural/urban settings (per capita yield) [NOT AVAILABLE]
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International organizations involved

- UNSD
- UNEP
- GEMS-WATER
- FAO
- HABITAT
- WHO/UNICEF
- UNESCO
- ...



Methodological Support

- System of Environmental and Economic Accounting for Water (SEEA W) interim statistical standard
- International Recommendations for Water Statistics (forthcoming)
- UNSD/UNEP Questionnaire Guidelines
- CSD and MDG Methodology Sheets
- FAO AQUASTAT



Components of water statistics

- Water resources (stocks and flows in the environment)
- Water abstraction / supply / use (flows from the environment to the economy and within the economy)
- Waste water treatment and discharge, emissions (flows in the economy and from the economy to the environment)
- Quality of ambient water bodies