



## Global Environment Monitoring System - Water Programme

June 2004

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### Good News

- Main website now hosted with UNEP's Regional Office for North America in Washington
- Ongoing collaboration with UNESCO-IHP pays dividends for building water monitoring capacity for SIDS and for Africa
- Three new co-op students are helping with work on database maintenance, data integrity and data analysis.

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## The Great Water Quality Data Drive

Global Call to Action: Send Water Quality Data from All Types Of Water Resources now.

This year, World Environment Day, with its theme of *Wanted! Seas and Oceans: Dead or Alive?* asked that we make a choice as to how we want to treat the Earth's seas and oceans. How we treat our inland waters will also have an impact on the quality of our marine environment, so it is equally urgent that we must care about the waters that flow to the ocean too.

GEMS/Water is responding with "The Great Water Quality Data Drive," designed to strengthen the scientific basis for global and regional water assessments and early warning.

GEMS/Water's mandate is to collect data and information on inland water quality for international assessments and reports.

These water quality data cover both surface and groundwater resources. However, there are many gaps that need to be filled, especially in terms of geo-spatial and temporal coverage. The current state of data distribution was featured in the GEO Yearbook 2003 ([www.unep.org/geo/yearbook](http://www.unep.org/geo/yearbook)) and specific details are reported country-by-country in GEMS/Water's Annual Report 2003 ([www.gemswater.org](http://www.gemswater.org)).

The Great Water Quality Data Drive is a specific call for inland water quality data to all water authorities around the world. Geographic priorities are Central America and the Caribbean islands, South America, Central Asia, Africa and the small Pacific Islands.

Key data to submit are: meta-data, BOD, pathogens, POPs, nitrogen and phosphorus, suspended solids and sediment

quality data. However, GEMS/Water's data warehouse stores and works with over 100 parameters covering nutrients, organics, metals, ions and is expanding to address emerging issues. All data are welcome.

Data from all types of inland aquatic environments are important for GEMS/Water. These include surface waters such as

*(Continued on page 4)*



The Great Water Quality Data Drive logo represents an electronic data storage disk in the form of a water drop.

## International Indicators

Water quality indicators apply to global health issues.

At the 12<sup>th</sup> CSD on water and sanitation, Bill Cosgrove of the World Water Council, noted that "you can't manage what you don't measure." This view applies to water resources management which relies on sound knowledge and science.

Environmental indicators are important tools for tracking progress, policy evaluation and for

informing the public.

This is not news; former Norwegian Prime Minister Gro Harlem Brundtland once wrote that "politics that disregard science and knowledge will not stand the test of time. Indeed, there is no other basis for sound political decisions than the best available scientific evidence. This is especially true in the fields of resource management and environmental protection."

International water and sanitation priorities, such as the Millennium Development Goals, are not limited to water scarcity and access. Water quality is equally important as a determinant of availability. Water which is not fit for a particular use is effectively unavailable.

Thus, there is a need for reliable, current data and information about water resources at

*(Continued on page 2)*

## International Sedimentation Initiative

UNESCO Venice Office (ROSTE) contends that within the next few decades, more than 50% of the world's total reservoir storage capacity may be lost due to sedimentation.

In association with ROSTE, the UNESCO International Hydrology Programme (IHP) International Sedimentation Initiative (ISI) Task Force met from 17<sup>th</sup> to 29<sup>th</sup> March in Paris, France.

The group has a draft proposal for ISI's first project, the Global Evaluation of Erosion and Sediment Transport Processes (GEST). An outline was prepared

on the strategic and operational plan for ISI, including GEST, applied research, education and training activities, and the role of the UNESCO IHP Secretariat. The document was submitted to the Intergovernmental Council of the IHP for approval in June. GEMS/Water plans to provide water quality data and support for load calculations and capacity building.

The need for the ISI was identified in early 2003. The Ministerial Declaration of the Third World Water Forum emphasized the need to make sustainable

use of limited freshwater resources in the context of basins. At that point, there was no global initiative to assess erosion and sediment transport to marine, lake or reservoir environments that would lead to a holistic approach for remediation and conservation of surface waters, an approach that would closely link and integrate science with policy and management needs. The outcomes of the ISI will hopefully fill this gap.

For additional information, contact Richard Roberts. ♦



Sustainable sediment management is the focus of UNESCO's ISI

## International Indicators

(Continued from page 1)

the global level, for the water and sanitation goals and targets to be measured. Environmental indicators, such as those for source water quality, create a demand for data, monitoring and information.

Indicators have become an integral part of regional and global processes and reports, such as the EEA, OECD, and the UN WWAP. And, the number of such assessments has been growing over the past 10 years.

With such political backing, environmental monitoring programmes can become better funded and supported. As well, indicator development positions water on the agendas of international financial institutions (IFIs), particularly from a long-term planning perspective.

Core set indicators form the basis for indices and ranking systems, which the public demand, because indicators tend to be tangible, and easy to un-

derstand and report.

Indicator work supports the pursuit of data integrity, access to data. One indicator example is illustrated in the urban water and sanitation story below.

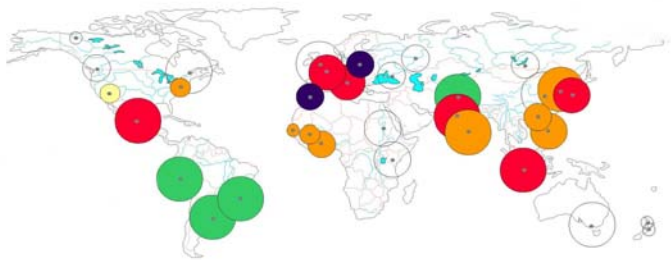
More needs to be done to improve completeness and consistency of data, and of trend analysis.

For information about indicators, contact Andy Fraser. ♦

*"You can't manage  
what you don't  
measure"*

— *Bill Cosgrove*

## Water and Sanitation



Successful waste water treatment systems reduce harm to water courses flowing to coastal areas.

Urban water quality links directly to health.

Concentrations of thermotolerant coliforms are an indicator of faecal contamination, although less reliable than *E. coli* as a measure.

More work needs to be done to produce better data on pollution, water treatment rates, and discharges to water bodies. GEMS/Water is working on filling these data gaps.

Pathogens monitoring can also

provide information for investigating waterborne disease outbreaks, and public health measures. The Pathogens 1 project, launched last year, is complete and available on our website. Also, information was received from the WHO Centre for Health Promoting Water Management and Risk Communication.

Contact Kelly Hodgson for information on data issues. ♦

## Update on QA/QC

Data verification and integrity mean reliable information, but QA/QC work is often more complex and detailed than it appears.

GEMS/Water performs complete data verification checks regularly, and commits, one-quarter of the annual core budget to laboratory-related projects.

The new Analytical Methods guide will be released shortly, after overcoming a delay. It documents environmental analytical methods used for water quality analyses by our participating countries. Lack of such

documentation can lead to the production, merging and comparison of water quality data generated by different procedures for the same parameter.

There is a need to identify and standardize the methodologies being used worldwide, in order to ensure the validity of water quality data. The new manual is the one step being taken to improve the reliability of water quality assessments.

The fifth Performance Evaluation study (PE No. 5) has been completed. 85 laboratories from 43 countries around the world participated in PE No 5,

and received individual performance reports, designed to help laboratories improve their own analytical capabilities. Participation of 14 developing countries was enabled by IAEA, whose support is gratefully acknowledged.

Plans for subsequent studies include progressive increases in scope and participation each year up to 2008. PE Study No. 6 is scheduled for later this year.

For more information, contact Yvonne Stokker. ♦



Testing the waters

## Partners for Ecohydrology and Phytotechnology

Scientific Advisory Committee works on new manual and training projects.

The Scientific Advisory Committee for UNESCO IHP VI Ecohydrology and UNEP International Environmental Technology Centre (IETC) Phytotechnology projects met in Paris from May 2<sup>nd</sup> to 7<sup>th</sup>. The purpose was to review ecohydrology and phytotechnology activities for 2003-2004 and determine opportunities for 2004-2005.

A new Manual for Ecology and Phytotechnology in Watershed Management, jointly led by UNESCO and IETC, is in the final stages of preparation and will be published in hard and electronic forms presently.

Training courses are being planned for Sudan (Nov 2004), Argentina (Mar/Apr 2005) and Bali (July 2005).

GEMS/Water has lectured in past courses on global water resources issues, monitoring

and assessment and general limnology.

About 20 demonstration sites around the world were selected for possible seed funding. The sites aim to show how ecohydrology and phytotechnology can be used to prevent or remediate environmental impacts on aquatic ecosystems in diverse geographical locations, with the socio-economic benefits.

For details, contact Richard Roberts. ♦

*More about IHP  
and IETC at  
[portal.unesco.org](http://portal.unesco.org)  
and  
[unep-itec.or.jp/ietc](http://unep-itec.or.jp/ietc)*

## Country Participation Update

Governments, universities and institutes contribute to improve global data coverage.

GEMS/Water relies on voluntary information exchanges with universities, governments and other data sources. A wide range of water quality data are submitted on an ongoing basis.

Over the past few months, several countries have been working to increase their submis-

sions to the global database. These include: Australia (federal and state), Fiji, Japan, United Kingdom and the United States. Several additional leads for country participation are currently being explored.

Links between national water quality data sources and the GEMS/Water global database will ensure that knowledge about clean water improves for

both humans and ecosystems.

To promote your country's participation in data-related activities, or for more information, contact Richard Roberts. ♦

Data submissions from participating countries (yellow), gaps to be filled (blue) include many developing countries.

## clean WATER is life

### GEMS · Water Quality News

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*GEMS · Water Quality News* welcomes articles and photos for possible publication. Readers' views and comments are also invited. For editorial information contact Sabrina Barker. For subscriptions or change of address, contact Clara Fabbro.

Established in 1978, the GEMS/Water Programme is the primary source for global water quality data. It is a multi-faceted water science centre oriented towards building knowledge on inland quality issues worldwide. Key activities include monitoring, assessment and capacity building. The twin goals of the programme are to improve water quality monitoring and assessment capacity in participating countries, and to determine the state and trends of regional and global water quality.

These goals are implemented through the GEMS/Water data bank, with water quality data from more than 100 countries, and over two million entries for lakes, reservoirs, rivers and groundwater systems. GEMS/Water activities add value to country-level data by creating global and regional water quality assessments. The programme also carries out assessments on a range of water quality issues and methodologies. GEMS/Water data have been used by many organizations, including the UN system and universities around the world.

GEMS/Water is part of the Division of Early Warning and Assessment (DEWA), UNEP.



## The Great Water Quality Data Drive

(Continued from page 1)

lakes, reservoirs, streams, rivers, estuaries, and wetlands; and ground water aquifers. Monitoring stations include baseline, impact, trend and flux stations.

The Drive will be implemented over the next six months, closing in December 2004. The outcomes will be reported, as appropriate, to the UNEP GC/GMEF and to CSD-13.

Since the kick-off on World Environment Day, more than 20 people replied to the call for data, from institutes, programmes and agencies around the world. Several agencies have expressed interest in joint projects, and all suggestions

are being followed up. There has been encouraging interest expressed at sub-national levels. More will be reported on results and developments in a future issue of this newsletter.

All data received from the Data Drive, and from other data submission initiatives are subject to the standard QA/QC review processes.

For more information on the Great Water Quality Data Drive, contact Sabrina Barker.

For a copy of the 2003 Annual Report, contact Clara Fabbro. ♦

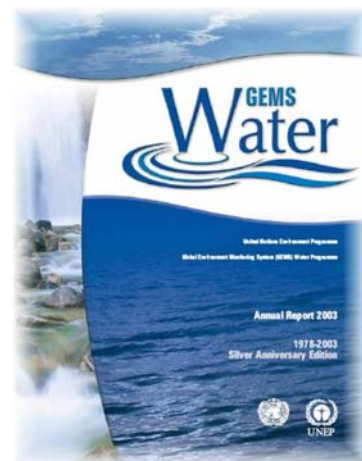


## 2003 Annual Report

- Visions and perspectives from GEMS/Water Director and UNEP Executive Director
- Highlights on core activities
- Key partners
- Financial summary
- New publications
- Summary of global data submissions by country and area.

## Upcoming...

- The GEMS/Water Operational Guide will be released in electronic copy
- New book on Russia
- Indicators development workshop with WCMC.



Silver Anniversary 1978–2003