

Global Environment Monitoring System - Water Programme

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Good News

- Participation at UNESCO's International Sedimentation Initiative in Khartoum, Sudan
- Participation at openGRID multistakeholder initiative in Cambridge
- Congratulations to UNEP GPA for the successful outcomes of the 2nd Intergovernmental Review in Beijing

Water Quality for Ecosystem and Human Health

New information and assessment backgrounder

GEMS/Water has launched a new publication called *Water Quality for Ecosystem and Human Health*. The purpose of the report is to present an overview of key global water quality issues; and to analyze state and trends in water resource quality, with examples from around the world. The target audience includes academia, research scientists, and water practitioners. The report can serve as a backgrounder to other water assessments.

Most of the data and analyses presented in the book are derived from GEMStat, the global water quality database accessible at www.gemstat.org. These data are a vital contribution to monitoring progress towards meeting the Millennium Development Goals and World Summit on Sustainable Development targets on water and sanitation. Indeed, there

is evidence that the quality of water resources is improving in some parts of the world. Current pH data and assessment demonstrate that such targets can be met. This is only one example, but it does show progress.

This trend is directly linked to governmental policies and legal mechanisms designed to remediate environmental degradation. There is evidence that successful results can be achieved in developed and developing countries alike.

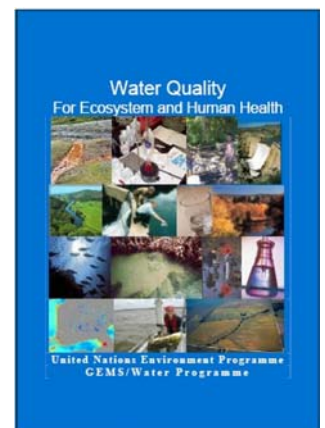
The key messages of the report are:

1. Human activities have the greatest impact on water resource quality, even in remote areas;
2. Impaired water resources can lead to impaired human health and economic decline;
3. Restoration of some impaired aquatic ecosystems has been demonstrated to varying

degrees in different parts of the world;

4. Climate variability, biotic invasions and the introduction of new chemicals

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UNEP  GLOBAL ENVIRONMENT MONITORING SYSTEM

Water Quality for Ecosystem and Human Health, available in PDF format and "Digital Atlas" format

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Outcomes of Laboratory PE Study No. 6

Final Report of PE No. 6 documents the outcomes of interest to water quality laboratories

GEMS/Water offers Laboratory Performance Evaluation (PE) studies biannually to UN member states that are active in the Programme.

The purpose of each exercise is to ensure the validity of, and comparability between, water quality datasets, which are required for GEMStat, and for global water assessments.

The recent study, PE-06, supported over 100 laboratories

from more than 50 countries worldwide (see map on p.4).

Test samples for PE Study No.6 consisted of one Quality Control (QC) sample with known concentration levels, and one PE sample with unknown concentration levels for each parameter group. The 47 target analytes were grouped in test samples classified as nutrients, demand analyses (BOD, COD, and total organic carbon), minerals, pH, solids (residue analyses) and trace metals.

Participation in these PE studies provides many benefits to

participants. The inclusion of certified quality control (QC) standards allows labs to verify their ability to generate accurate data for the parameters of interest, and to apply corrective actions to analytical procedures, where necessary.

Following submission of measurement data on the known and blind test samples, each participant receives an individualized data quality assessment that illustrates their analytical performance for each analyte for which they provide measurement results.

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GEMStat Flying with Google Earth

GEMS/Water stations can be mapped in 3-D with Google Earth

On November 13, 2006, GEMS/Water launched a new capability to the global online water quality database, GEMStat, by making it geospatially referenced to Google Earth.

All 2,743 stations in the GEMS/Water global network can be mapped with three-dimensional satellite pictures available from Google Earth.

This means that the physical features and characteristics of each station are visible, such as land use, deforestation, proximity to a factory or a city.

With Internet access, water quality practitioners, researchers and scientists around the world can see GEMStat stations in their physical surroundings. This service will help generate better water quality analyses and assessments, and in turn, better decisions being made on managing all water resources.

Google has brought geographic information to over 100 million people. Riding on the wave of that success are information providers, like GEMS/Water, that can now open their products to more intensive scrutiny, more imaginative exploitation and more

innovative exploration of possible uses.

Simply allowing open access to everyone to see where water quality is being assessed and where it is not, may lead to more governments contributing data to the global network. It may also prompt non-specialists, who are better informed, to challenge their authorities about the long-term effects on the quality of their water.

For more information on how to benefit from GEMStat and Google Earth, contact Kelly Hodgson. ♦



Visit www.gemstat.org for instructions on how to download free Google Earth software

Biodiversity Indicators Proposal Successful

The 2010 Biodiversity Indicators Partnership wins GEF funding

The Biodiversity Indicators Partnership (BIP) serves to coordinate a suite of indicators designed to measure achievement of the World Summit on Sustainable Development target to reduce the rate of biodiversity loss by 2010, and has been awarded funds from the the Global Environment Facility (GEF).

Funds allocated by the GEF to

the 2010 BIP amount to over \$3.6 million, and cover activities from late 2006 until 2009.

The BIP includes over 40 organizations, MEAs, and governmental agencies, coordinated by UNEP-World Conservation and Monitoring Centre (WCMC).

GEMS/Water has the lead for developing inland water quality indicators related to the 2010 target. GEMS/Water has now started preliminary work on developing a Water Biodiversity Index, and development is

set to continue over the next 12 months.

Development of a new source water quality index is also in progress. A draft report is planned for January 2007, to illustrate regional and water basin trends. Currently, the indicator is being tested against raw data, with preliminary trend analysis set to start in early December.

For further information, contact Carrie Rickwood. ♦

3rd Meeting of the Technical Advisory Group

Focus on future needs in water quality monitoring and assessment

UNEP convened the third meeting of its Technical Advisory Group for GEMS/Water from 25 to 26 September 2006. The meeting was hosted by UNEP-WCMC in Cambridge, and brought together technical and scientific experts from United Nations bodies and other partners committed to environmental water quality and sustainability. Discussion high-

lights include:

1. Global water quality data access on www.gemstat.org, open web services and geospatial referencing with Google Earth;
2. Needs for data quality and capacity building in developing countries;
3. Technical issues such as modelling, ecohydrology, and groundwater data needs; and
4. The future needs for global water quality data collection

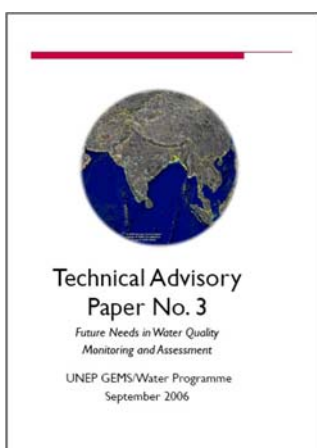
and assessment.

Details and plans for fulfilling these issues are described in the Technical Advisory Paper No.3, as the main product of the meeting. This paper may be of interest to those working in water quality monitoring and assessment. The fourth advisory meeting is scheduled for early 2008.

The Paper is available in English in PDF format, on our website. Contact Sabrina Barker. ♦

Visit

*www.twentyten.net
for more about the
2010 BIP*



www.gemswater.org/publications

Outcomes of PE Study No. 6

(Continued from page 1)

The Final Report for PE Study No. 6 will be released in the next few weeks and will include analyte-specific evaluations using confidential lab codes assigned to each participant. Ninety-seven laboratories provided data (90% participation rate) in this study. In comparison, study PE-05 had 68 sets of data from 38 countries with an 80% participation rate (see table).

Plans for future PE studies include progressive increases in scope and participation. We are presently investigating the demand for pesticides and other persistent organic pollut-

ants (POPs), and the feasibility of including microbiological tests for PE-07 in 2007. In addition to assisting labs in producing reliable data for their water quality analyses, we anticipate the on-going series of PE studies to generate a long-term trend of improved quality of data submitted to GEMStat, the global online water quality database.

For information on participating in our QA/QC activities, or for copies of the PE-06 Final Report or the *Analytical Methods for Environmental Water Quality* guide, contact Yvonne Stokker. ♦

	PE-05	PE-06	% increase
#Analytes	20	47	135%
#Participating Countries	38	50	32%
#Sample Sets Issued	85	108	27%
#Data Sets Submitted	68	97	43%
Data Return Rate	80%	90%	

First International Sediment Initiative Conference

UNESCO-IHP successfully convened the first ISI conference

UNESCO-International Hydrological Programme convened its International Sediment Initiative (ISI) International Conference from 12 to 15 November, in Khartoum, Sudan, preceded by the 5th meeting of the ISI Steering Committee.

About 300 participants from 60 countries attended the conference which aimed at ensuring sustainable sediment management, in the context of sustainable water resources de-

velopment at global scale. GEMS/Water presented the only paper addressing water quality.

The conference issued the "Khartoum Declaration", which says that the forum added a new dimension to the ISI and facilitated exchange of experiences in research and best practices. It calls upon national governments and international organizations to allocate funding and support for sedimentation research, development and management, emphasizing the socio-economic

impacts, and valuing sediment as a resource.

The forum was very successful and participants shared experiences in preventing erosion and controlling sedimentation in reservoirs and irrigation schemes. This is very important in Africa since as Andras Szöllösi-Nagy, Secretary General of the IHP, has pointed out, in 30 years Africa will lose 50% of its reservoir storage capacity due to sedimentation.

For details, contact Richard Robarts. ♦

Visit
www.irtces.org/isi
for UNESCO's
International
Sediment Initiative

Water Quality for Ecosystem and Human Health

(Continued from page 1)

and microbes to water bodies continuously pose new threats to aquatic ecosystem health that must be addressed by regulatory authorities at local, national and global scales; and

5. Baseline and trend data are needed to track the effectiveness of policies and interventions.

The future of water quality at local, regional, and global scales depends on invest-

ments of individuals, communities, and governments at all levels to ensure that water resources are protected and managed in a sustainable manner.

The 132 page report includes over 40 figures, an extensive glossary, as well as an overview of water quality standards and guidelines from national and international sources.

Water Quality for Ecosystem

and Human Health is available in English in PDF format at <http://www.gemswater.org/publications/index-e.html> and is also presented online as a "Digital Atlas" at http://www.gemswater.org/freshwater_assessments/index-e.html

For more information on this report, or on GEMStat database, participating and accessing data, contact Kelly Hodgson. ♦

"Digital Atlas" version of the report is accessible at
www.gemswater.org/freshwater_assessments

clean WATER is life

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

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, GEMStat, 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 considered as an inter-agency body of the UN, and is functionally part of the Division of Early Warning and Assessment (DEWA), UNEP.



Global Participation in Laboratory PE Study No. 6

