

UN Global Environment Monitoring System - Water Programme

December 2005

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Good News

- Youth Initiative planned to improve awareness of water quality issues in the Nile region
- Ongoing collaboration with UNESCO-ISI offers potential for building a coordinated sediment quality database
- Two new co-op students are helping with work on database maintenance, data integrity and data analysis
- Successful outcomes of UNEP/UNESCO International Workshop: Groundwater Protection in Africa 28 – 30 November 2005, Cape Town

Building African Networks: Two New Regions

A new workshop each for Francophone and Southern Africa

GEMS/Water, with UNEP-IETC and the Associ  t   du Bassin du fleuve Niger (Niger Basin Authority, ABN), convened a three-day workshop that brought together 32 ministry staff, academics and experts from eight of the nine riparian countries of the Niger basin.

The workshop was held in Ouagadougou, Burkina Faso, from July 26-28 2005, and was hosted by the Ministry of Agriculture, Hydrology and Hydrological Resources of Burkina Faso.

The goal of the workshop was to build monitoring capacity and share experiences at a regional level. Participants expressed support for establishing a GEMS/Water regional office, hosted by the ABN, as a useful resource for forming partnerships between countries and for

sharing resources and expertise to ensure quality of data produced.

A future workshop to include francophone North African countries from outside the Niger River basin is planned for 2006, to further strengthen francophone African countries and to increase participation in GEMS/Water activities and assessments.

The second workshop "Building Monitoring Capacity in Southern Africa: best practices" was held 1-2 December 2005 in Pretoria, South Africa. Focal points from GEMS/Water-South Africa and GEMS/Water-Zimbabwe (South Africa Department of Water Affairs and Forestry, and the Zimbabwe Ministry of Water Resources respectively) developed a "best practices" framework for representing their countries internationally.

The long-term aim is to estab-

lish a Southern Africa regional network including other SADC countries. Plans are underway to hold a second workshop in Mozambique in mid-2006.

For additional information on either regional initiative, contact Sabrina Barker. ♦



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GEMStat— Results for 2005

More than 4,300 visitors went to www.gemstat.org for water quality data and information this past year

GEMStat, a new global water quality online database was launched last World Water Day, 22 March 2005, to strengthen the scientific basis for global

and regional water assessments, indicators and early warning. Between March and December, a total of 4,319 visitors from around the world accessed [GEMStat.org](http://www.gemstat.org) (see table below and graph on page 4).

GEMS/Water's mandate is to collect data and information on

inland water quality for international assessments and reports.

The water quality data in GEMStat cover both surface and groundwater resources, with over two million data points for 100 parameters covering nutri-

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	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
# Visits	544	754	427	480	406	392	416	411	489
# Countries	58	79	46	62	46	49	59	50	51

Biodiversity Convention Works on Water Indicators



www.biodiv.org

The Convention on Biological Diversity (CBD) convened the 1st meeting on Biodiversity Indicators Partnership (BIP) between 10 and 14 December in Cambridge

To implement a Conference of the Parties decision, the first BIP meeting was designed to cover the “2010 Biodiversity target” including indicators and targets for water ecosystems.

Members of the BIP are required to complete an Indicator Development Template that outlines the status, data and methodology used, and principal us-

ers of the indicator, as well as the approach to be taken to further develop the indicator over the next three years (Phase 1) to best track progress toward the 2010 target.

GEMS/Water is the lead inter-governmental agency for the development of Water Quality of Freshwater Ecosystems indicators, that fall under the designated “ecosystem integrity and ecosystem goods and services” focal area.

As the lead, GEMS/Water is responsible for the preparation of the Indicator Development Tem-

plate for water quality by January 9, 2006.

Discussions also focused on identifying gaps and overlaps within and among the indicators and to establish links between collaborating agencies working on the same indicator.

A funding proposal to support the BIP activities is being coordinated by UNEP’s World Conservation Monitoring Center (WCMC).

For additional information, contact Geneviève Carr. ♦

IAEA Global Network of Isotopes in Rivers

*More about
IAEA at
www.iaea.org*

IAEA convened the 3rd Regional Coordinating Meeting of the Global Network of Isotopes in Rivers in Vienna, November 26 to December 3, 2005

The Global Network of Isotopes in Rivers (GNIR) is an IAEA Coordinated Research Project (CRP) that is investigating the value in establishing a global monitoring network of isotopic composition of runoff in large rivers. The purpose of the 3rd Research Coordination Meeting (RCM) was to: 1) provide a rationale by scientific and practical justifica-

tion for establishing a river isotope monitoring network; 2) develop a draft protocol for such a network; 3) outline the operation of the network; and 4) establish a procedure for compiling and synthesizing case studies from the CRP. A report from the 3rd RCM will be used by IAEA to enable an extension of the CRP until 2008.

Isotope signals in river discharge can improve description and quantification of river hydrological cycles. Isotopes can be used to quantify water origin,

mixing history, water balance and residence times, surface-groundwater exchange and renewal rates, and evaporation-transpiration partitioning. Isotopic measurements can also be applied to better understand pollution sources, as well as hydrologic changes related to climate and land use changes. Stable isotopes such as ¹⁸O and ²H are most commonly measured in rivers, but others such as ¹⁵N in nitrate, ¹³C in particulate organic matter, and water ³H content

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GEMS/Water Japan and MeREM

3rd International Workshop on the Mekong River Ecosystem Monitoring Project (MeREM)

GEMS/Water participated at the 3rd MeREM workshop with GEMS/Water-Japan (National Institute on Environmental Studies) in December in Viet Nam.

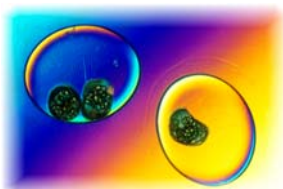
The main objective of the meeting was to review completed and on-going activities and to discuss

possible activities for the 2006-2007 biennium.

The global GEMS/Water will continue to help guide the Mekong River project, which is now forming linkages with other groups working in the basin. Capacity building in both chemical and biological water quality monitoring will provide new information for this important river system.

The second MeREM journalist-scientist workshop was also held in Viet Nam. Journalists from each of the riparian countries are invited to come and learn about the activities of MeREM through its technical presentations and site visits.

Contact Richard Robarts for information. ♦



merem.nies.go.jp

New Laboratory Performance Evaluation Study No. 6

The 6th Laboratory Performance Evaluation (PE) study is underway, involving laboratories from more than 50 countries

The purpose of the PE study is to ensure the validity of, and comparability between, water quality datasets, which are required for global environmental water quality assessments.

108 sample sets were distributed to labs around the world, with 93 of the labs returning data. Test samples for PE Study No.6 consist of one Quality Control (QC) sample with known concentration levels, and one Performance Evaluation (PE) sample with unknown

concentration levels for each parameter group. The target analytes include nutrients, demand analyses (BOD, COD, and total organic carbon), minerals, pH, solids (residue analyses) and trace metals.

Certified quality control (QC) standards allow laboratories to verify their ability to generate accurate data for their parameters, and to apply corrective actions to analytical procedures, if necessary. Following submission of measurement data on the known and blind test samples, each participant receives a tailored data quality assessment that illustrates their ana-

lytical performance for each analyte for which they provided measurement results.

The results of the 6th PE study will be published in 2006, and will include analyte-specific evaluations using confidential lab codes assigned to each participant.

In the long term, we anticipate the on-going series of PE studies will generate a trend of improved quality of data submitted to GEMStat, the global water quality database.

For more information, contact Yvonne Stokker. ♦



IAEA is sponsoring developing country participation in the 6th Lab PE Study, currently underway.

IAEA Global Network of Isotopes in Rivers

(Continued from page 2)

can also be measured.

GEMS/Water is interested in assisting IAEA with establishing contact with national water monitoring agencies globally, in developing a sampling and analytical protocol for a GNIR, and in establishing operational guidelines for a GNIR. It would be valuable to investigate the relationship between water quality and river isotopes and to explore the use of isotopes as tracers of water pollution.

The conclusion of the meeting affirmed the feasibility of establishing a Global Network of Isotopes in Rivers (GNIR). IAEA confirmed its interest in integrating a GNIR with existing water monitoring networks such as GEMS/Water.

The proposed GNIR should be based on the GEMS/Water design and, where possible, river isotope monitoring overlap with water quality monitoring. The GNIR would specify only a minimum protocol for the collection

of river isotope data and subsequent submission of data. The importance of metadata that describe sampling and analytical protocols and any pertinent details of the station location was stressed.

The next meeting of the CRP will likely take place in 2007 in Vienna (at the IAEA's International Isotope Meeting). The final meeting will take place in spring 2008.

Contact Geneviève Carr for information. ♦

*More about
IAEA at
www.iaea.org*

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 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: Argentina, South Africa, India, and Canada.

Several additional leads for country participation are currently being explored.

Links between national water quality data sources and our 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, to name a National Focal Point, or for more information, contact Richard Robarts.

For data submission contact Kelly Hodgson. ♦



Global network covers 1,400 stations with over two million records and 100 water quality parameters.

GEMS - Water Quality News

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Established in 1978, the UNEP 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), United Nations Environment Programme, (UNEP). www.unep.org




GEMStat Results

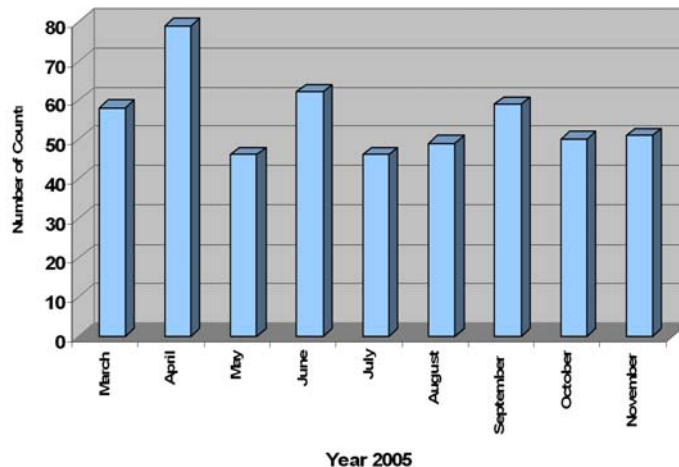
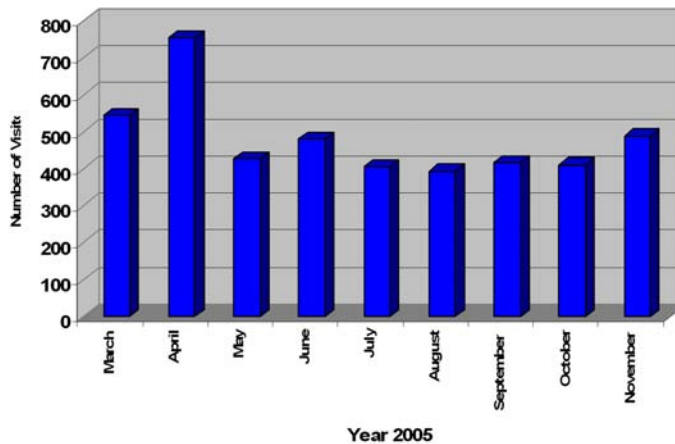
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ents, organics, metals, ions and is expanding to address emerging issues. Monitoring stations include baseline, trend and flux stations.

Despite the growing use and access to global water quality data, there are many gaps that need to be filled, especially in terms of geospatial and temporal coverage.

All readers are invited to visit www.gemstat.org and comments and feedback designed to improve the site are most welcome.

For more information about GEMStat, contact Kelly Hodgson. 



Upcoming...

- 10th Special Session of the Governing Council of UNEP— February 7-9, 2006 in Dubai
- 4th World Water Forum, March 16-22, 2006 in Mexico
- 3rd GEMS/Water Technical Advisory Group meeting— autumn 2006
- 2nd Review of UNEP's Global Programme of Action

