



No need to grow economy at cost of biodiversity, says UN

A new global strategy to combat unprecedented levels of biodiversity loss calls for 'significant' increases in biodiversity investments in 100 countries – while at the same time aiming to foster economic growth and create jobs in addition to protecting endangered species and habitats.

Launched late last year, the report 'The Future We Want: Biodiversity and Ecosystems – Driving Sustainable Development – the Strategy' will see the UN Development Programme (UNDP) work with national governments to protect biodiversity and manage ecosystems across 1,4 billion hectares of land and bodies of water.

According to UNDP, it will also help governments find new ways to finance biodiversity management through "domestic revenue, innovative financial mechanisms, and donor funding from a range of sources."

"Human survival depends heavily on biodiversity and healthy ecosystems, yet in recent decades, the world has experienced unprecedented biodiversity loss and ecosystem degradation, undermining the very foundations of life on earth," said UNDP's Associate Administrator, Rebeca Grynspan. "As 1,2 billion people living in severe poverty depend directly on nature for their basic needs and livelihoods, this needs urgent international attention."

UNDP unveiled the strategy at the

11th Conference of the Parties to the UN Convention on Biological Diversity, Hyderabad, India. The Conference adopted the new strategy, which UNDP said is designed to help countries integrate biodiversity management with development planning, enable protected areas to contribute to sustainable development, and ensure that management and rehabilitation of ecosystems mitigate the effects of climate change.

Source: UN News

Collapse of Classic Maya civilisation linked to drought

The Classic Maya culture thrived in rainy times and then collapsed as the climate became dry, according to new research.

The Classic Mayan region covers portions of Mexico, Belize, Guatemala and Honduras. An international project led by researchers from Pennsylvania State University, in the US, and ETH Zurich, Switzerland, has created a precisely-dated record of rainfall from cave deposits in the Classic Maya region, and compared it to a 'war index' of hostile events recorded on stone monuments. The research has enabled the team to create a unique historical timeline linking climate and culture in unprecedented detail.

The war index is based on how often certain keywords occurred in Mayan inscriptions on carved stone monuments. The researchers were then able to chart how increases in war and unrest were associated with periods of drought.

The new datasets provide a unique insight into how a civilisation prospered and developed, expanding into large cities during a period of favourable climate and then collapsed following climate change between AD 660 and 1100.

Maya rulers commissioned monuments to record events and the research team found the frequency of texts carved on stone monuments pointing to status

rivalry, war and strategic alliances increased significantly between AD 660 and 900, during the drying trend.

The role of climate change in the fall of the Classic Maya civilisation had previously been suggested, but remained controversial due to dating uncertainties in previous climate records. The research team constructed rainfall for the last 2 000 years using the chemistry of stalagmites from Yok Balum cave in Belize. The cave is located 1,5 km from the Classic Period Maya site of Uxbenká and is close to other major Maya centres, all influenced by the same climate systems.

According to Dr James Baldini of Durham University, who led the cave monitoring portion of the study, the rise and fall of the Mayan civilisation is an example of a sophisticated civilisation failing to adapt successfully to climate change. "Periods of high rainfall increased the productivity of Maya agricultural systems and led to a population boom and resource overexploitation. The progressively drier climate then led to political destabilisation and warfare as resources were depleted. After years of hardship, a nearly century-long drought from 1020 sealed the fate of the Classic Maya."

The findings of the study have been published in *Science*.

Cleanup of most challenging US contaminated groundwater sites 'unlikely for decades'

Around 10% of the US's 126 000 contaminated groundwater sites are considered so complex that restoration is unlikely to be achieved within the next 50 to 100 years due to technological limitations.

This is according to a new report from the US National Research Council. According to the report, the estimated cost of complete cleanup at these sites ranges from US\$110-billion to US\$127-billion.

Several national and state groundwater cleanup programmes developed over the last three decades under various federal and state agencies aim to mitigate the human health and ecological risks posed by underground contamination. The US Department of Defence, for example, has already spent around US\$30-billion in hazardous waste remediation to address past legacies of its industrial operations.

"The complete removal of contaminants from groundwater at possibly thousands of complex sites in the US is unlikely, and no technology innovations appear in the near time horizon that could overcome the challenges of restoring contaminated groundwater to drinking water standards," said Michael Kavanaugh, chair of the committee that wrote the report. "At many of these complex sites, a point of diminishing returns will often occur as contaminants in groundwater remain stalled at levels above drinking water standards despite continued active remedial efforts."

UN WATER
World Water Day
2013
International Year of
Water Cooperation
The international year of water cooperation starts

In 2010, the United Nations General Assembly declared 2013 as the UN International Year of Water Cooperation. World Water Day, celebrated on 22 March, will also be devoted to the theme of water cooperation, and various events are planned around the world.

The year is aimed at emphasising that water is critical for sustainable development, including environmental integrity and the eradication of poverty



and hunger. It is hoped that the year will serve as a platform to unify all efforts to increase people's awareness of water-related problems and ways to resolve them, thus creating a favourable environment for generating new ideas and searching for the most efficient ways to address challenges.

For more information, Visit: www.unwater.org/watercooperation2013/

Study offers tool for incorporating water impacts into policy decisions

How valuable is water to society exactly?

This is the question researchers at the University of Minnesota's Institute on the Environment hope to answer with their new policy-making framework.

The framework, published late last year in the *Proceedings of the National Academy of Sciences*, provides a tool for assessing and valuing the many services clean water provides – from recreation and beauty to navigation and hydropower – and incorporating them into policy decisions.

"After repeated requests for information on the value of water quality, we realised that there was a huge gap between the demand for economic values of water quality and our ability to provide tools to estimate those values. This gap limits our ability to make informed decisions," explained project leader, Prof Bonnie Keeler. "We provide a framework that describes the numerous pathways in which changes in water quality affect our health, recreation and livelihoods and the economic value of those changes. This yields a far more accurate picture of the costs and benefits of decisions."

The decision-making template developed links actions, changes in water quality, changes in a spectrum of ecosystem goods and services, and

changes in the economic value that accrues from the changes in ecosystem goods and services. The researchers then outlined a five-step plan policy makers can use to apply the template to on-the-ground decisions around water issues.

"There will never be a single number that describes the value of clean water in all places and contexts," noted Prof Keeler. "What our paper proposes is a way for users to link tools from ecology and economics to get value estimates that are specific to their location and sets of alternative actions. Ideally these values can then factor into incentive programmes, cost-benefit studies and payment programmes for ecosystem services."

Sustainable cities must look beyond city limits

City leaders aspiring to transform their cities into models of sustainability must look beyond city limits and include in their calculation the global flow of goods and materials into their realm, argue researchers in the Royal Swedish Academy of Sciences journal, *Ambio*.

Many cities are now developing sustainable strategies to reduce pollution and congestion, improve the quality of life of their citizens and respond to growing concern about human impact on climate and the environment. But

sustainable city initiatives often ignore the environmental footprint from imported goods and services such as food, water, energy to cities.

"The sustainability of a city can no longer be thought of in isolation from the combined resource use and impact of cities globally. Urbanisation is no longer a local issue," say Earth-system researchers in their paper, 'Planetary stewardship in an urbanising world: beyond city limits', published in October.

"Urban areas drive much of the global changes we see, whether in energy use, food supply, resource depletion or land-use change," says lead author Dr Sybil Seitzinger, Executive Director of the International Geosphere-Biosphere Programme in Sweden.

The world has urbanised rapidly, and continues at an unprecedented pace.

Today, over half of all people live in urban areas, with most growth taking place in Africa and Asia. "Humankind is expected to build more urban areas during the first 30 years of this century than all of history combined," notes co-author, Prof Karen Seto, from Yale University.

A system of sustainable cities will require adequate information on resource flows and their impacts, preferably in near-real-time and on a global scale. "Digital technologies are now putting this kind of information within grasp," says Dr Seitzinger.

To access the paper, Visit: www.springerlink.com/content/t06251122wp126p3/fulltext.pdf



Water by numbers

5 000 – The estimated number of Durban residents who have openly objected to the city's sewage-to-drinking water plan, the Independent Online Reports. The plan involves recycling around 116 million litres of wastewater a day from the KwaMashu and Northern wastewater treatment works and then blending it with conventionally treated drinking water.

57% – The percentage of South Africa's population that have flush toilets connected to the sewerage system, up from 55% in 2007, according to Census 2011. According to the latest census statistics, only 5,2% of the country's households do not have any toilet facility.

89,4% – The percentage of households in Gauteng which have access to piped water inside their house or yard, according to Census 2011 – the highest in the country. Households in the Free State have the second-highest access to piped water in the house of yard (89,1%) followed by the Western Cape (88,4%).

4 000 – The estimated number of artisans and technicians required to overcome the crippling challenges of poor operation and maintenance of water-related infrastructure, according Water & Environmental Affairs Minister, Edna Molewa.

10 – The number of water meters being stolen a day from some areas of Johannesburg, according to Johannesburg Water. The water and sanitation service provider has reported an increase in water meter theft, especially from its Central region, which includes areas such as Berea, Hillbrow, Doornfontein, Yeoville, Observatory and Kensington.

260 – The number of critically endangered wattled cranes left in South Africa. The Endangered Wildlife Trust has created awareness of the plight of this bird – and all crane species – as well as their wetland habitats first annual Chrissiesmeer Crane Festival, in Mpumalanga.