

# Spatial Data Infrastructure – Africa Newsletter



SDI-Africa Newsletter

January 2010

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Spatial Data Infrastructure - Africa (SDI-Africa) is a free, electronic newsletter for people interested in GIS, remote sensing, and data management in Africa. Published monthly since May 2002, it raises awareness and provides useful information to strengthen SDI efforts and support synchronization of regional activities. [ECA/CODIST-Geo](#), [RCMRD/SERVIR](#), [RECTAS](#), [AARSE](#), [EIS-AFRICA](#), [SDI-EA](#), and [MadMappers](#) are some of the other regional groups promoting SDI development.

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The SDI-Africa newsletter is prepared for the GSDI Association by the [Regional Centre for Mapping of Resources for Development \(RCMRD\)](#) in Nairobi, Kenya. RCMRD builds capacity in surveying and mapping, remote sensing, geographic information systems, and natural resources assessment and management. RCMRD has been active in SDI in Africa through its contributions to the [African Geodetic Reference Frame \(AFREF\)](#) and [SERVIR-Africa](#), a regional visualization and monitoring system initiative. RCMRD also implements projects on behalf of its member States and development partners.



If you have news or information related to GIS, remote sensing, and spatial data infrastructure that you would like to highlight (e.g., workshop announcements, publications, reports, websites of interest, etc.), kindly send them in by the 25<sup>th</sup> of each month. I'd be happy to include your news in the newsletter.

**PLEASE share this newsletter with colleagues who may find the information useful and suggest that they subscribe themselves.**

Back issues of the newsletter are at the GSDI website: <http://www.gsdi.org/newsletters.php>  
Best regards, Gordon Ojwang, Editor, [SDI-Africa AT gsdi.org](mailto:SDI-Africa_AT_gsdi.org) or [sdiafrica@rcmrtd.org](mailto:sdiafrica@rcmrtd.org) or [gojwang@rcmrtd.org](mailto:gojwang@rcmrtd.org)



## Input to this Issue

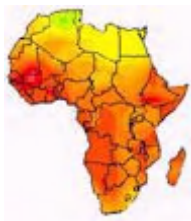
Thank you to Kate Lance, NASA/SERVIR-Africa (USA); Hussein Farah, RCMRD (Kenya); Yewondwossen Assefa, DM Solutions (Canada); Lorenz Martin, University of Bern (Switzerland); Jared Stabach and Greg Fiske, Woods Hole Research Center (USA) for their contributions to this issue of the newsletter.

## SDI News, Links, Papers, Presentations

### [REDD+ Gets US\\$3.5 Billion Initial Funding for Deforestation](#)



During the UN Copenhagen Climate Change Conference, the Governments of Australia, France, Japan, Norway, the UK and the US collectively agreed to dedicate US\$3.5 billion as fast-start climate change financing between 2010-2012 for REDD+ (reducing emissions from deforestation and forest degradation, including conservation, sustainable forest management (SFM) and stock enhancement). A joint statement follows: "Actions to reduce emissions from forests can help to stabilize our climate, support livelihoods, provide biodiversity conservation, and promote economic development. As part of an ambitious and comprehensive deal, we recognise the significant role of international public finance in supporting developing countries' efforts to slow, halt and eventually reverse deforestation. With this in mind, we collectively dedicate USD3.5 billion of fast-start climate change financing for 'REDD+' over the 2010 to 2012 period. We regard this as an initial investment in developing countries that put forward ambitious REDD+ plans and that achieve forest emission



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reductions according to their respective capabilities. We collectively commit to scaling up our finance thereafter in line with opportunities and the delivery of results. We invite other donors to join us in this effort to make early action on REDD+ a reality.” At the announcement, UK Prime Minister Gordon Brown stated that “around \$25 billion over the period of 2010-15 is needed to cut deforestation rates in developing countries by 25% by 2015. Developed countries should provide the majority of this, supporting rainforest countries’ own efforts.” In reaction to the announcement, President Omar Bongo, Republic of Gabon said “This is a major breakthrough, bringing us towards the estimated costs of fast-tracking REDD+ start-up through the first three years of an interim start-up phase. Gabon is committed to moving forward.”

### [Policy Briefs on REDD, Agroforestry and African Biocarbon Experience Released](#)



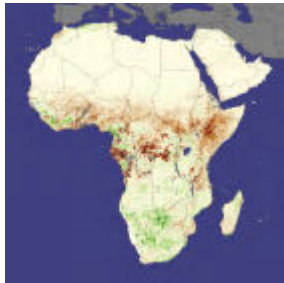
The World Agroforestry Centre and Alternatives to Slash and Burn (ASB) Partnership for the Tropical Forest Margins, members of the Consultative Group on International Agricultural Research (CGIAR), launched a series of policy briefs alongside the Copenhagen Climate Change Conference in December 2009. The briefs address reduced emissions from deforestation and forest degradation in developing countries (REDD), agroforestry and African biocarbon experiences.

The two briefs on REDD focus on the global distribution of REDD readiness activities, as well as on perceptions of fairness and efficiency along the REDD value chain in Peru and Indonesia. The brief on global distribution notes that REDD readiness is not evenly distributed around the world, it being highest in Brazil and Indonesia and lowest in Africa. It also highlights that biodiversity co-benefits are a major motivator of REDD readiness. The brief on fairness and efficiency of REDD introduces the Fair and Efficient REDD Value Chain (FERVA) method for exploring perceptions of REDD implementation. It notes that expectations of benefits from the REDD value chain vary dramatically among stakeholders.

The policy brief on agroforestry notes the role of trees on farms for contributing to mitigation, providing resilience against climate impacts and improving food security. It calls for payments for ecosystem services, in particular carbon finance, to contribute to promoting trees on farms.

The policy brief on African biocarbon experiences, prepared in collaboration with the Common Market for Eastern and Southern Africa (COMESA), notes that Africa has over 100 biocarbon projects, but that less than 5% are generating financial benefits. The brief highlights barriers that must be addressed, including complex rules set by buyers, high costs and weak governance.

### [Satellites can help monitor and manage African droughts](#)



Kenyan MP and remote sensing expert, Dr. Wilbur Ottichilo, argues the time is ripe for using satellites to spot developing African droughts. The Greater Horn of Africa is home to about 200 million people. Ecologically and environmentally, the region is highly precarious - more than 60 per cent of it is arid or semi-arid and most countries experience irregular rainfall and frequent droughts.

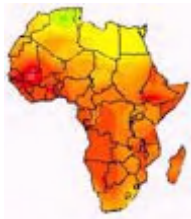
In the last two years (2007-2009), Kenya for instance experienced one of the worst droughts in recent times, resulting in food riots and outright famine. To predict, monitor and mitigate such disasters we need rapid and continuous data and information gathering. But conventional methods are not effective for the large areas affected and struggle to adapt to global change. Satellites can collect data at

global and regional scales rapidly, repetitively and in digital form. Such data when used with geographical information systems (GIS) and other geospatial data can provide a critical baseline from which future changes can be spotted, droughts anticipated before they happen and measure risk and likely impacts. Space and GIS technologies are widely used for planning in many parts of the world, yet they have not been widely adopted across most of Africa.

- Politicians and decision-makers must be sensitized to how important remote sensing can be for disaster management. Researchers must work with members of parliament to demonstrate the remote sensing for drought prediction.
- Institutions must be established or strengthened to efficiently manage disasters.

But there are signs of encouragement on the continent.

- The Regional Centre for Mapping of Resources for Development (RCMRD), established in 1975 provides capacity building and advisory services for surveying, mapping, remote sensing and GIS.



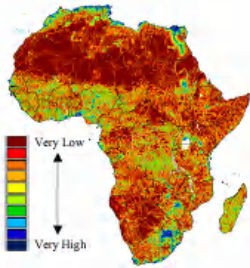
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- RCMRD collaborating with NASA has established a satellite-based disaster early warning system - SERVIR for Africa, which provides real-time freely available information on many disasters, including droughts.
- Many institutions (including InterGovernmental Authority on Development's Climate Prediction and Application Centre (ICPAC), the Southern African Development Community, and AGRIMET) in Africa are now providing satellite data and information for drought and disaster management.
- Two important sources, Meteosat 2nd Generation geostationary weather data and SPOT vegetation data are both free and already come in an easy-to-use format.
- Human capacity is not a major problem either as the RCMRD and local universities have been training people to manage remote sensing data for decades.

For space and GIS technologies to firmly take root in Africa, politicians must be brought on board and helped to build institutional capacities and design relevant policies and legislation.

### Global database for geospatial indicators



Geospatial Indicators (GI) is an exploration into the use of GIS, remote sensing and spatial reasoning methods to identify regions at risk due to inadequate food and water resources that are a result of inherent environmental scarcity, stress due to environmental dynamics and change, or inadequate social capital. To support the GI modeling effort, a database of natural and social features scalable to one to one million and including over thirty spatial data themes is constructed from extant open data sources. Recent scientific efforts have stimulated the creation of numerous well-resolved global databases representing environmental and social parameters of importance to science, such as, global vegetation, disaggregated population, topography, land surface features such as road and rail, hydrography and land cover

- these state-of-the practice databases are now in a unified Global Database (GDB). Most original sources lacked structural uniformity - representing earth features at different scales, projections, and formats. A need therefore existed to prepare a harmonized database. GDB has been constructed for all developing nations. Additionally "geospatial indicator" models required estimates of certain parameters that needed to be derived from extant data. Derived features include population projections to 2010, hazard risk maps for severe storms, flooding, tsunamis, earthquakes and volcanoes, agricultural primeness, infrastructure intensity and disaggregated GDP.

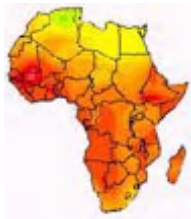
### Monitoring the Albertine Rift in Africa



Stretching from the northern end of Lake Albert to the southern end of Lake Tanganyika and spanning portions of Uganda, Rwanda, the Democratic Republic of Congo, Burundi, and Tanzania, the Albertine Rift is one of Africa's most important and most threatened sites for the conservation of biodiversity. Formed over the course of millions of years, the Albertine Rift is the result of two tectonic plates that collided and are now slowly pulling apart. This geologic activity has created some of the continent's tallest mountains and a number of the world's deepest lakes and contributed to the diversity of habitats that include active glaciers, alpine grasslands, volcanoes, lowland and montane forests, and various grass and woodland savannas. Since the early 1990s, however, this hot spot of biodiversity (home to more than 7,500 species of endemic plants and animals) has been plagued by a series of devastating conflicts, resulting in more than 3 million deaths and the displacement of approximately 2.7 million people. The region is one of the most populous in Africa, with up to 300 people per square kilometer in some locations. In addition to the pressures of population density, an influx of refugees and the lack of settlement

policies have compounded the problem of forest degradation, fragmentation, and loss, particularly in protected areas.

Three years ago, the Woods Hole Research Center (WHRC) of Falmouth, Massachusetts, began working in the region to promote the development and use of remote sensing as a tool for conservation, with the principal goal to better facilitate the exchange of information between collaborative members of the conservation communities, such as the Wildlife Conservation Society (WCS) and the Uganda Wildlife Authority (UWA). WHRC activities have included the integration of remote-sensing analysis into existing decision support systems (such as the Uganda Management Information System); the production of



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basemaps of land use/land cover, deforestation, and fire extent; and the development of monitoring tools that combine remote-sensing and biodiversity data. Data for five protected areas throughout Uganda (Budongo/Bugoma Forest Reserve, Kibale National Park, Murchison Falls Conservation Area, Queen Elizabeth National Park, and Semuliki National Park) is currently available within one access point. The data displayed is a culmination of various remote-sensing-derived products (e.g., land cover, base imagery) and vector information that was collected by UWA rangers. These vector layers include general spatial information related to each of the protected areas (e.g., protected area boundaries, rivers, roads), information related to the threats throughout the park (e.g., encroachment, poaching), and wildlife sightings that have been collected during UWA ranger patrols (1985 - present, depending on the protected area).

### [US to fund key Gambian forest conservation project](#)

The US government has announced plans to fund a conservation project in the Gambia's Kiang West Forest Park. The project aims to address the occurrence of frequent bush fires in the area and boost tourism infrastructure and facilities "to make Kiang West a lucrative destination for tourists, especially eco-tourist visitors". The Minister of Forestry and the Environment Jato Sillah has confirmed that the US embassy in Banjul is set to sponsor a US\$ 22,833 forest conservation project at the Kiang West Forest Park, located within the Lower River Region. The Department of Parks and Wildlife Management in collaboration with WWF WARMER developed the Kiang West National Conservation Fast Track Initiative Project in January 2009 sponsored by the US embassy. These statements are contained in a question and answer sheet read on his behalf at the National Assembly by Sheriff Gomez, Minister of Youth and Sports. He added that the Department of Parks and Wildlife Management in collaboration with World Bank has prepared and submitted a project concept paper commonly known as 'PIF project identification for JEF Funding. The approval of the PIF will be followed by elaboration of a full project document that would identify critical areas of intervention and strategies to be adopted for the sustainable management of Kiang West National Park and Tanji Bird preserves. The Gambia annually allocates a limited amount of funds for early burning of protected areas.

### [Kenyans may lose out on benefits of ICT convergence](#)

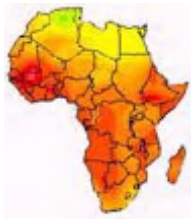
Kenya risks losing out on the benefits of converged communications unless players in the ICT sector step up their investments in fixed line broadband, experts warn. They blame the growing preference for mobile communications and wireless internet connectivity in developing countries, which they say has resulted in a decrease in fixed line communications infrastructure. This means that the country will not have sufficient fixed line broadband, especially in homes, to roll out triple play services - telephone, Internet and television in what is referred to as next generation networks. The country risks losing out on reduced costs for consumers and service providers through consolidated communications infrastructure through which multiple services can be provided. In addition, consumers will miss opportunities to save money through investing only in multi-purpose digital machines as opposed to several gadgets (television, computers, and telephone systems) as is the current case.

A recent ICT report by the United Nations Conference on Trade and Development (UNCTAD) says that in developed countries, existing fixed telecommunications infrastructure is increasingly leveraged for the introduction of triple play services over Internet Protocol (IP) platform. "By contrast, the low diffusion of fixed telecommunications infrastructure in many developing countries will seriously delay the transition to these next generation networks (NGNs)."

Next generation networks are said to maximize use of infrastructure, resulting in more efficiency, reduced costs, and value added services to consumers. But statistics show the Kenya is still far from realizing these benefits. Overall, fixed broadband connectivity stands at less than two per cent, with home connections at 0.5 per cent. Recent developments point to slow growth in the spread of fixed line infrastructure. Though fibre-optic cables - the ideal backbone for triple play services have arrived, however the high cost of extending lines to homes has been a major barrier, with wireless technologies being deployed more.

### [Nigeria to launch two earth observation satellites](#)

All is now set for the launching of two Nigeria satellites to the space by the third quarter of this year, Minister of Science and Technology, Dr. Alhassan Bako Zaku disclosed during the third annual national media conference on space and technology organized by the National Space Research and Development Agency (NASRDA) held in Lokoja, capital of Kogi State, recently stressing that the satellites are about 95 per cent complete. The idea behind the media workshop was to assist with relevant information that will go along way in reshaping the views, interest and understanding of the ordinary man in the country in space science and



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technology and the benefits that abound in its exploration, explained the Director-General of the agency, Dr. Seidu Onailo Mohammed.

The two Earth Observation satellites namely, NigeriaSat-2 and NigeriaSat-X are of high resolutions, with NigeriaSat-2 carrying a high-resolution imagery of 2.5m [pan] and 5m [multispectral] along with a 32m spatial resolution payload that will be used to replace NigeriaSat-1. NigeriaSat-1 has a lifespan of five years and still in the orbit. Nigerian engineers using facilities of Surrey Satellite Technology of the United Kingdom solely built NigeriaSat-X, which will be the first indigenous Earth Observation satellites that will be launched into space.

### [Plans of Zimbabwe Surveyor-General Department for 2010](#)

In the recently launched Three-Year Macro-Economic Policy and Budget Framework for 2010-2012 (STERP II), the Surveyor-General's Department has revealed that this year, it will implement the satellite imagery for map revision and generation, resuscitation of photographic operations and the establishment of a Geodetic Information System involving the scanning of index maps and charts. Zimbabwe government has also planned to roll out the first phase of the national land audit with over 180 000 farms earmarked for the two-phased audit in 2010.

Government expects the land audit to facilitate a comprehensive re-planning and re-designing process of land use with regard to agro-ecological zones and protection of conservancies and wildlife. Finance Minister Tendai Biti said, "The first phase of the audit would cover 12 000 A2 farms, 108 000 A1 farms, 56 250 old resettlement schemes and 6 000 small and large-scale commercial farms." Lands and Land Resettlement Minister Herbert Murerwa said, "I would want to dispel rumours that farmers will lose their land. The audit is expected to assist Government come up with policies and programmes that help farmers enhance production on their pieces of land."

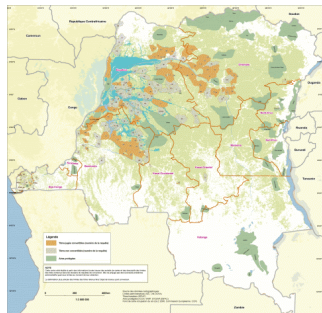
### [Satellites help in containing malaria transmission in Zambia](#)

Satellite imaging is being used to locate the potential mosquito breeding sites in southern Zambia, in a bid to reduce malaria transmission in the area. Researchers use the data, containing information such as soil moisture and water drainage patterns, to identify areas where the mosquitoes live and breed. "They can use the data to gain a more accurate picture of 'at risk' areas and interventions such as bednets and insecticides can be targeted more effectively," said lead researcher Gregory E. Glass, Director of the Environmental Surveillance Core at the Johns Hopkins Malaria Research Institute, United States. Locating breeding sites is particularly difficult in Sub-Saharan Africa, where multiple malaria vectors breed in specific areas.

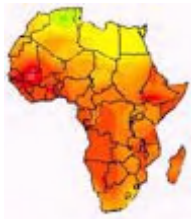
The researchers are trying to predict where breeding sites should be, rather than merely using GIS to map where they have found breeding sites previously. "Both approaches are important," he said. As well as satellite data, the researchers use environmental and hydrologic models, as well as field surveys, to determine mosquito breeding sites.

Jonathan Cox, a senior lecturer at the London School of Hygiene and Tropical Medicine said, "This type of research is a useful way to get a better understanding of the factors driving spatial variations in malaria in a particular setting." Further, he added, "Strengthening routine malaria surveillance activities and introducing basic tools to analyze and map case data would be a more appropriate and sustainable approach to mapping variations in malaria cases."

### [Protecting forests and community rights in the DRC](#)



The Democratic Republic of Congo cancelled logging operation titles in 12 million hectares of tropical forest last year in an effort to promote sustainable, socially responsible forest management. The outcomes of the DRC forest title conversion process are far reaching and have set the groundwork for transparency, accountability, and sustainable management in the DRC forest sector. At the end of its involvement as Independent Observer in February 2009, WRI-AGRECO formally attested that the process had been carried out in full compliance with the legal provisions applicable in the DRC and general principles of law. Out of the initial 156 titles for which a request for conversion submitted to the DRC government, only 65 were declared convertible by the Inter-ministerial Commission, for a total area of 10 million hectare out of the 22 million hectare under review. The remaining titles, which covered a combined area equal to the size of Pennsylvania, were deemed illegal and subject to cancellation.



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Accounting for [60 percent of forest coverage](#) in the Congo Basin (120 million hectares), the DRC's forests provide shelter, food, medicine, and spiritual and cultural value to the Congolese population. After the most recent war ended, the government initiated significant steps to shed necessary light into activities taking place within the country's forest industry in order to curb illegal logging and deforestation. These efforts culminated in a new [Forest Code](#) in 2002. The Forest Code replaced colonial rules and regulations, and for the first time set a foundation for sustainable, socially responsible forest management in the DRC. In conjunction with a [2004 moratorium](#) on the issuance of new logging concessions, the new Forest Code mandated a broad list of environmental, forest management and social requirements that would now apply to all logging operation titles in the DRC. To achieve these, the DRC government in 2005 launched a multi-stakeholder forest title conversion process, or legal review, designed to convert old logging titles into new forest concessions that would respect the new Forest Code.

### [Land Administration for Sustainable Development](#)



Land administration plays a unique role in solving sustainability issues. It involves an integrated approach that includes several common factors that can be applied around the world, even though their actual implementation can differ from country to country. Our relationship to the land includes both physical and cognitive factors and these connect to wider topics related to law, regulation and legislation. The authors of this book provide a wealth of information for understanding land administration systems and how future spatial data infrastructure may incorporate new processes leading toward sustainability.

### [Securing Food Security in the Face of Climate Change](#), 3-6 May 2010, Nairobi, Kenya

This event will launch the Challenge Program on Climate Change, Agriculture and Food Security (CCAFS), which is supported by the Consultative Group on International Agricultural Research (CGIAR) and the Earth System Science Partnership (ESSP). CCAFS is a new 10-year research initiative seeking to help vulnerable rural communities adapt to climate change and address threats to agriculture and food security.

### [African Ministerial Conference on Weather, Climate and Water Information](#), 12-16 April 2010, Nairobi, Kenya

This meeting is organized by the World Meteorological Organization (WMO) in partnership with the African Union (AU). African Ministers responsible for meteorology will meet to address ways of strengthening weather, climate and water information for decision making.

### [2nd All-Africa Carbon Forum](#), 3-5 March 2010, Nairobi, Kenya

The Second all-Africa Carbon Forum will include a conference, trade fair and capacity development to demonstrate the potential for clean development mechanism (CDM) projects in Africa. The forum is being organized by the UNFCCC Secretariat, the UN Environment Programme (UNEP), the UN Development Programme (UNDP), the World Bank, the UN Conference on Trade and Development (UNCTAD), the UN Institute for Training and Research (UNITAR) and the International Emissions Trading Association (IETA).

### [19th Session of the Near East Forestry Commission](#), 5-9 April 2010, Hammamet, Tunisia.

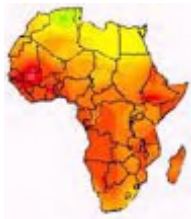
The Near East Forestry Commission (NEFC) is one of the six Regional Forestry Commissions established by FAO to provide a policy and technical forum for countries to discuss and address forest issues on a regional basis. It meets every two years. For more information contact: Moujahed Achouri, FAO Regional Office for the Near East at [moujahed.achouri@fao.org](mailto:moujahed.achouri@fao.org).

### [International Network of Basin Organizations Eighth World General Assembly](#), 20-23 January 2010, Dakar, Senegal.

This meeting will convene under the theme "Adapting to the consequences of climate change in the basin, tools for action." For more information contact: Fax: +33-1400-80145; E-mail: [inbo@wanadoo.fr](mailto:inbo@wanadoo.fr).

### [Call for Submissions for COM.Geo 2010 Conference](#), 8-11 June, 2010, Washington, DC, USA

The first International Conference and Exhibition on Computing for Geospatial (COM.Geo 2010) will be held on June 8-11 in Washington, DC. The explosion of computing driven location based applications in the past few years has revolutionized the way we live and work. COM.Geo is an international conference and exhibition on computing for geospatial, which focuses on the latest computing technologies for



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multidisciplinary research and development that enables the exploration in geospatial. COM.Geo is an exclusive event that connects researchers, developers, scientists, and application users in both computing and geospatial fields. One of the COM.Geo 2010 Conference spotlights is Cloud Computing and Geospatial. Submit research or application papers, tech talks, and special sessions, to organize courses and workshops. Suggested topics include all computing, geospatial, and applications.

- Papers include full or short papers. Both can address research or application work.
- Courses can be proposed by scholars or company representatives. A Courses Program will share the very best of computing for geospatial technologies, such as cloud computing for geospatial, business intelligence & GIS, Web GIS, mobile GIS, etc.
- Tech Talks are work in progress, late-breaking research, emerging technologies, case studies, development techniques, student projects, and exhibitor technical talks. Either a regular abstract or an extended abstract can be submitted.
- Invited sessions offer focused discussions on specialized topics in Papers Programs. They can be organized in a specific or a general theme. Proposals are required to submit.
- Workshops proposals are solicited for COM.Geo 2010 in Washington, DC.

Submission deadlines: Full and Short Papers - February 19, 2010, 11:59 PM EST; Courses Proposal - February 19, 2010; Tech Talks Abstract - March 22, 2010, 11:59 PM EST.

## 41st Session of the Statistical Commission, 23-26 February 2010, New York, NY, USA

The UN Statistics Division is committed to the advancement of the global statistical system. The Division compiles and disseminates global statistical information, develops standards and norms for statistical activities, and supports countries' efforts to strengthen their national statistical systems. It facilitates the coordination of international statistical activities and supports the functioning of the UN Statistical Commission as the apex entity of the global statistical system.

- [Membership of the Statistical Commission 2010](#)
- [Documents for the Statistical Commission 2010](#)

## 2<sup>nd</sup> Open Source GIS UK Conference - OSGIS 2010, 21-22 June 2010, Nottingham, UK

The OSGIS conference series has a strong international focus and takes a holistic approach in bringing together speakers and delegates from government, academe, industry and open source communities. High profile speakers are invited for giving presentations and run hands-on workshops for the conference series.

1. Inaugural Presentation - Professor Ari Jolma (Helsinki University of Technology, Finland)
2. Keynote Address - Arnulf Christl (President of the Open Source Geospatial Foundation)
3. Plenary Speaker - Tyler Mitchell (Executive Director of the Open Source Geospatial Foundation)

### **OSGIS 2010 Workshops**

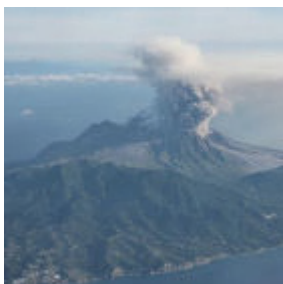
- gvSIG Desktop & Mobile Workshop- (gvSIG Association, Spain)
- OS OpenSpace Workshop (Ordnance Survey, UK)
- GEOSS Workshop (CGS, University of Nottingham, UK)

## **Future ESRI International User Conferences in San Diego, California, USA**

July 12-16, 2010	July 8-12, 2013
July 11-15, 2011	July 14-18, 2014
July 23-27, 2012	July 2024, 2015

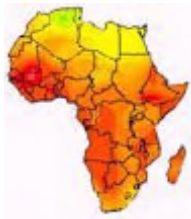
## **Practical SDI implementation materials from within and outside of Africa**

### Satellites offer crucial data for volcano safety



The International Charter on Space and Major Disasters helped manage a volcanic eruption in Montserrat. The Charter aims to provide timely and targeted satellite data during an emergency. It gives disaster managers an official route for getting satellite sensors, run by cooperating space agencies, to obtain images of problem areas. Experience from the small Caribbean island of Montserrat shows such data can be invaluable, explains **Geoff Wadge**, the volcano expert. They can prove crucial to planning an effective emergency response if local expertise is already focused on the problem and available to take swift action.

The Soufriere Hills volcano in Montserrat has been active for more than 14 years.



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The volcano exploded on 28 July 2008, showering fist-sized pumice fragments over the inhabited areas, and the government ordered an evacuation of people closest to the volcano. Scientists at the Montserrat Volcano Observatory (MVO) had already been measuring a swarm of earthquakes beneath Soufriere Hills, as new magma rose into the volcano. In the years running up to the explosion a large dome of lava a few hundred metres across had grown. If this collapsed, it would send deadly 'pyroclastic' flows of super-hot gas and rocks towards the occupied areas. To observe the dome and examine small features and tell what changes had occurred during and after the explosion, only radar could see through clouds that had covered the Soufriere Hills, and several satellite radars, available through the charter, were tasked to acquire images. The highest resolution civilian radar, TerraSAR-X, is owned by the German space agency (DLR), which is not yet signed up to the charter. Nevertheless DLR agreed to collect TerraSAR-X data over Soufriere Hills and provided new images on 2 August, plus earlier images acquired before the explosion to compare the changes. After processing the two sets of images to emphasise changes, it was found the explosion had punched a relatively small new vent through the lava dome but had not made it less stable as a result. The MVO submitted this conclusion to Montserrat's civil protection committee, which, on 6 August, used it as grounds to revoke the evacuation order and allow people back to their houses. It wasn't until more than a week later (14 August) that the cloud cleared sufficiently to confirm the radar interpretation.

### [Largest oil spill at the Australian coast under satellite control](#)



Satellites with onboard radar and optical multi-spectral hardware for Earth imaging ensure remote monitoring of the largest oil spill in the history of Australia that took place in the Timor Sea. On 21 August 2009 a series of non-controlled oil discharges occurred during drilling operations on West Atlas mobile platform upon reaching 2500 meter mark underneath the ocean bed in Montara oil field located 250 kilometers off north-west coast of Australia. It is estimated that since 21.08.09 over 400 barrels of oil per day (up to 2000 barrels/day according to more daring estimations) flow into the water basin and the spillage area have reached several thousand square kilometers. In the beginning of the emergency oilmen were evacuated from the platform, which caught fire on November 1. In accordance with the current estimations the company's damage totals 170 million dollars.

Remote location of Montara oil field as well as the need for continuous monitoring of the emergency area led to the necessity to use data of Earth remote sensing from space. The process of monitoring engaged radar-equipped satellites - COSMO-SkyMed (Italy), [TerraSAR-X](#) (Germany) and [ENVISAT](#) (European Space Agency). Space radars with synthesized aperture (SAR) ensure high accuracy in detecting oil slicks on sea surface irrespective of presence of clouds, define their spatial and temporal characteristics and track their motion and transformation in time. The size of the oil pollution area is so large that the slicks are clearly seen even on optical multispectral images with low spatial resolution produced by [MODIS](#) sensors onboard Terra and Aqua satellites (USA).

### GIS Tools, Software, Data

#### [GlobalSoilMap](#)

The purpose of the project is to develop a global database and information sources pertaining to different soils around the world. It aims to provide the information in digital form to enable its use for modeling and analysis. The GlobalSoil Map website includes several resources including software available for soil inventory and monitoring work. Several new publications are available and a list of partners and their links.

#### [Emission Database for Global Atmospheric Research \(EDGAR\) v4.0 Greenhouse Gas Emissions Dataset \(1970-2005\)](#)



Previous versions of EDGAR have been widely used by the global scientific community since more than 15 years due to the consistent global coverage and the spatial allocation of country and sector emissions. In EDGARv4.0 emissions are spatially allocated on detailed geospatial maps (0.1 degree) using the exact location of energy and manufacturing facilities, road networks, shipping routes, human and animal population density and agricultural land use. The resolution of 0.1 degree has been selected so that local, regional and global models can use the same emission dataset.



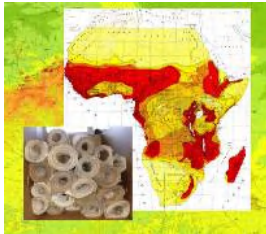


## Spatial Data Infrastructure – Africa Newsletter



Increased possibilities to verify emissions are thus becoming available through the use of advanced modeling in combination with surface and satellite observations at different scales. Figure 4 illustrates the high resolution emissions data through representation of the global greenhouse gases in CO<sub>2</sub>-equivalents per grid cell. Information on [the methodology applied](#) to calculate global greenhouse gas emissions 1970-2005 by world country and on 0.1 degree spatial grid is provided. Detailed annual emissions [by world country](#) and [on spatial grid](#) for the period 1970-2005 are available for download.

### [The Soil Maps of Africa](#)



Maps made in the past remain the backbone for present and future studies. Soil maps are resources for researchers in many fields apart from soil science; they are the source of databases, related to and dependent on soils, used to monitor land degradation and improvement, changes in land use and water resources, and to predict climatic and other environmental changes. In Africa, and other countries this type of information is rapidly being lost; much is already lost. The digitization of the African maps will enable the African countries to recover and re-use their soil information. Translation of soil information from paper maps and reports into digital

format is a prerequisite of the next step - the development of a digital information system on soil and terrain that may be drawn upon for manifold applications. [Display the soil maps of Africa](#)

### [ENDELEO provides a web-based tool to monitor vegetation dynamics in Kenya](#)



ENDELEO project is cooperation between Ghent University (Belgium), the Flemish Institute for Technological Research (VITO) (Belgium), the United Nations Environmental Programme (UNEP), the Kenyan government

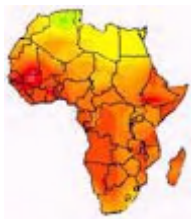
represented by the Department of Resource Surveys and Remote Sensing (DRSRS), together with multiple stakeholders. The project is financed by the Belgian Science Policy Office (BELSPO). The project aims at promoting good environmental governance of vulnerable ecosystems in Kenya, by facilitating access to updated remote sensing based information on the status of these natural ecosystems. A web-based monitoring tool has been developed to allow easy exploration of the vegetation conditions. It consists of an image viewer, interactive graphs and the calculation of statistics. These sections are updated every ten days with new images. In addition, detailed patterns of change are analysed for a number of focus areas based on high resolution satellite images. A help section is available including a manual and background information on remote sensing. The ENDELEO tool fulfils the increased demand from ecosystem managers, both government agencies and environmental NGO's, for easy visualisation and analysis of remote sensing data providing regularly updated information giving a synoptic view on vegetation dynamics and land cover changes over time, determination of the drivers of change and to evaluate policy measures. [Source: [Servir Community Blog](#)]

### [The National Map Viewer 2.0](#)



The U.S. Geological Survey has been moving their *The National Map* (TNM) online viewing and download platform to the same foundation of technology that the National Geospatial Intelligence Agency (NGA) uses for Palanterra. The richer viewer application updates the delivery methods for base maps and topos with integrated download services. The new site is now publicly available as a [Beta release](#), with promises for polishing by year's end.

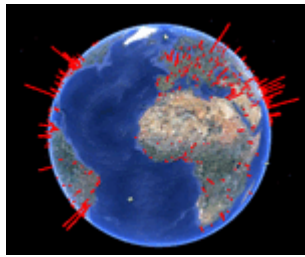
Of note is the wealth of tools here for rich map interaction. The Navigation menu includes the ability to find places based on coordinates or reverse geocode. The Advanced menu adds the ability to measure distance or area, add data, build queries or filters, buffer on points or selections, and add range rings. The Annotation menu allows users to add points, draw points, lines, polygons, squares and ellipses, and add text. There's also the ability export annotations or upload shapefiles. The advanced geospatial capabilities of this publicly-available viewer will provide a great introduction to more advanced mapping capabilities that go well beyond the standard commercial search-oriented viewers. It's great to see that the technology has caught up with the vision, and that the government is leveraging previous investments in platform technology to spread capabilities across agencies.



# Spatial Data Infrastructure – Africa Newsletter



## [Free GIS database: World database of large urban areas, 1950-2050](#)

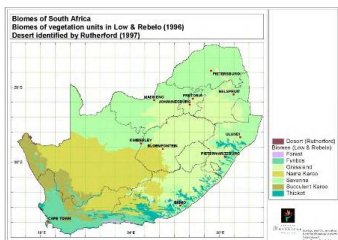


Using the data request service provided by the UN Population Division, Nordpil have assembled and geo-referenced the data from the World Urbanization Prospects, 2007 revision. The database represents the historic, current and future estimates and projections with number of inhabitants for the world's largest urban areas from 1950-2050. The data covers cities and other urban areas with more than 750 thousand people.

Data was retrieved from [World Urbanization Prospects: The 2007 Revision Population Database](#) (online database), accessed on June 8 2009. The population data was related to the ESRI Data & Maps 2008 cities dataset, where names matched, and coordinates for matching cities were retrieved using Hawhts' Tools. Cities not matched were researched using Google Earth and Wikipedia on June 9, 2009; most coordinates were retrieved from the coordinate pages on the latter source (toolserver/geohack). The data was rendered as an event layer in ArcGIS, and then exported as a shape file. The exercise was performed using Microsoft Access and Excel, together with ArcGIS and Google Earth Pro. The database is made available in various formats for use in GIS software (such as ArcGIS, uDig, MapInfo, QGIS, Global Mapper and Manifold) and spreadsheet/table format.

- [Shape file, for use in GIS software \(zip, 66 KB\)](#)
- [Table/spreadsheet \(tab-separated text file, tsv, 77 KB\)](#)
- [Table/spreadsheet \(html - best for excel, 231 KB\)](#)
- [Google Earth presentation, including time line and bar charts for individual cities \(kmz 2 MB\)](#)
- [Detailed map over large urban areas in 2005 is available on the portfolio page. This map, prepared in Wagner VII projection, presents the cities as circles in five classes.](#)
- Presentation has been prepared in Google Earth, with bars for the cities, and a timeline from 1950 to 2050. See the link under [downloads](#) to retrieve it for Google Earth or [view it directly in your browser using the Google Earth plugin](#).
- [Maps over the years 1950-2050 has been animated by Nordpil, and published to Vimeo. This short video clip shows the development and projections in population of urban areas.](#)

## [Vegetation of Southern Africa](#)

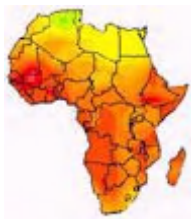


Groupings called Biomes (biotic communities) have been described for plants and/or animals living together with some degree of permanence, so that large-size patterns in global plant cover can be observed. Biomes broadly correspond with climatic regions, although other environmental controls are sometimes important. Each biome has a characteristic set of plant and animal species as well as a characteristic overall physiognomy (for example a general appearance given by the plant shapes). The general plant characteristics give a characteristic visual signature to the vegetation of the biome. Rutherford and Westfall (1994) map seven [biomes in South Africa](#): [Grassland](#), [Savanna](#), [Succulent Karoo](#), [Nama Karoo](#), [Forest](#), [Fynbos](#), [Desert](#). Low and Rebelo (1996) include a [Thicket](#) biome.

- [Map of Biomes \(.jpg\)](#)
- [Map of Acocks' Veld Types \(.jpg\)](#)
- GIS files: [GIS Users can download shape files of these maps](#)
- [Red data lists, protected plants and permits](#)

## [DIVA tool to assess vulnerability to sea level rise](#)

Researchers have created a user-friendly, interactive tool for assessing how vulnerable coastal areas are to sea level rise. They have explained how they developed the DIVA tool in order to provide insights for other researchers who need to integrate information from a variety of disciplines and from partners in different parts of the world. The DIVA tool is a piece of interactive software that allows users to choose adaptation strategies based on individual climate and economic scenarios and analyze the likely outcome of the strategy. This tool is freely available on the DINAS-COAST 1 website. Previous assessments of coastal vulnerability to the probable effects of rising sea levels were based on data that are now out of date and on simplified assumptions that do not incorporate new understandings of the impacts of climate change: particularly adaptation and the feedbacks from natural and social systems. Tackling these challenges led to the 'DIVA method. Rather than trying to develop the DIVA tool from the outset, the partners of the EU-funded

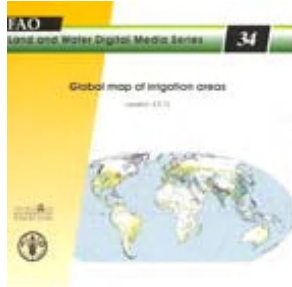


## Spatial Data Infrastructure – Africa Newsletter



project [DINAS-COAST](#) developed the DIVA method, which was in turn used to design the DIVA tool. The DIVA tool is dynamic: the modular structure allows data and the way the tool works to be continually updated. In addition, users can incorporate their own knowledge in the form of data, scenarios or modeling. The DIVA tool has been widely used by policy-makers, academics and educationists and regional versions could be developed, for example DIVA-Europe or DIVA-Caribbean. DINAS-COAST (Dynamic and Interactive ASsessment of National, Regional and Global Vulnerability of COASTal Zones to Climate Change and Sea-Level Rise) was supported by the European Commission under the Fifth Framework Programme.

### [Global Map of Irrigated Areas](#)



The latest version of the "Global Map of Irrigation Areas" is version 4.0.1. The map shows the amount of area equipped for irrigation around the turn of the twenty-first century as a percentage of the total area on a raster with a resolution of 5 arc minutes. The area actually irrigated was smaller, but is unknown for most countries. A special note has to be made for Australia and India where the map shows the total area actually irrigated. This is due to the fact that statistics collected in Australia and India refers to actually irrigated area as opposed to statistics with area equipped for irrigation which are collected in most other countries. The CD-ROM contains full documentation of the map; including an explanation of the methodology, information per country, an assessment of the map quality, and references to the background and history of the irrigation mapping project.

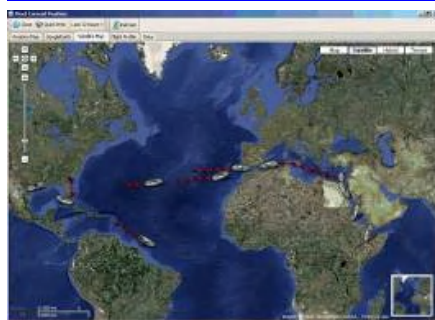
### [Soil and Terrain Database for Southern Africa](#)



This CD ROM contains the Soil and Terrain Database (SOTERSAF) for eight countries in southern Africa. Additional soil information and maps for selected countries are also included. The scale of the maps presented varies between 1:1 Million and 1:2.5 Million.

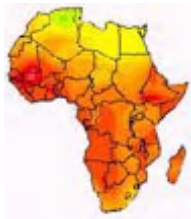
## Geospatial Research, Applications, Reference Material

### [WFP Shipping's New Real Time Vessel Tracking Application](#)



GPS tracking allows shipping lines to better plot the location of their ships and more accurately time the arrival of their vessels in port. Better timing means fewer bottlenecks in busy ports and less time spent idling, which is a major contributor to unnecessary emissions while in port. Shipping has completed first phase roll out of their new real time vessel tracking application. Built using the same system currently in use by other units in WFP, the Shipping unit can now monitor a number of vessels in real time thus allowing for increased fuel efficiency, decreased port congestion and improved security.

WFP Shipping can now visualize real time data using both [Google Earth](#) and custom maps. The real advantage of using this system is that during an emergency the unit can now quickly and easily visualize the location of all vessels and immediately make a decision about which would be the best vessel to redirect based on cargo. Rather than dispatch an entirely new shipment, a vessel in the region can be redirected and dispatch its cargo in a matter of days as opposed to the weeks it would take to send a new vessel. By scrolling over each ship the Shipping unit can also immediately visualize all data relevant to that vessel in a scrolling text box which is visible in the screenshot above. Vessel name, coordinates, bearing, speed and other key data are all visible to the operator of the system. In future versions the unit is hoping to also include cargo type, volume, origin and other relevant information about the food onboard so that decisions can be made quickly and effortlessly about the suitability of the cargo for a redirect. Precise data can still be extracted for a quick overview of vessel specifics. Information is sent directly from the shipping line to the service for the duration of the charter. Once the charter concludes data is no longer made available to the unit security reasons.



## Spatial Data Infrastructure – Africa Newsletter



### Global Carbon Tracking Portal

The Forest Carbon Tracking task is organized under the [Group on Earth Observations \(GEO\)](#) 2009-2011 Work Plan, task [CL-09-03b](#). The development of the GEO FCT task is led by governments with a strong interest in forest carbon monitoring: Australia, Canada, Japan and Norway. The Committee on Earth Observation Satellites (CEOS) and the UN Food and Agriculture Organization (FAO) are two other lead partners, while institutions in GEO member countries, Global Observation of Forest and Land Cover Dynamics (GOFC-GOLD) and the EC Joint Research Centre play important roles.

CEOS has committed resources from the world's space agencies to provide a coordinated contribution to the task with the European Space Agency (ESA) ensuring the coordination of CEOS inputs to the task. National space agencies engaged to date are Brazil, Canada, Germany, India, Italy, Japan and the USA. Seven governments have agreed to cooperate as 'National Demonstrators' for the project in 2009-2010. They are Australia, Brazil, Cameroon, Guyana, Indonesia, Mexico and Tanzania

The Forest Carbon Tracking Task (GEO FCT) has been established to support countries wanting to establish national forest-change, carbon estimation and reporting systems. It will facilitate access to long-term satellite, airborne and in situ data, provide the associated analysis and prediction tools, and create the appropriate framework and technical standards for a global network of national forest carbon tracking systems. The task follows the guidelines set out by the [United Nations Framework Convention on Climate Change \(UNFCCC\)](#). Its outputs will be available to support interested countries in their efforts to implement the Convention. The task is being carried out by a [partnership](#) of GEO member governments, key UN bodies, space agencies, the science community and the private sector.

### Geointelligence Analysis



The goal to perform 2D/3D surveys of preserved areas have been implemented in such a way to define an easily reproducible methodology, which could be easily applied to several survey sites for the implementation of a GIS based project. The analysis of thematic maps through the integration of Satellite Navigation Systems with Remote Sensing (RS) data in a Geographic Information System (GIS) offers improved insights in sustainable development (SD).

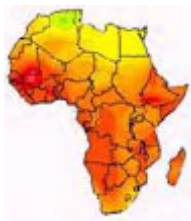
In the frame of Project MONITOR of the Galileo Joint and International Research Programmes, the Innovative Educational and Research Programmes are planning to analyse GNSS (Global Navigation Satellite System) real time positioning and innovative telecommunication

applications by using various kind of almost wearable or personal digital assistants (PDAs), Remote Mobile Investigators (RMI), pocket PCs and Smartphones as well Virtual Reference Station (VRS - [www.cgtsrl.it](http://www.cgtsrl.it)), GPS/PL/INS (Global Positioning System/ Pseudolite/Inertial Navigation System) and novel telecommunication applications.

The European Union's MONITOR project objectives are to demonstrate the use of GNSS for environmental and civil engineering monitoring, highlighting the added benefits of EGNOS/Galileo, and to analyze barriers to the wider penetration of GNSS within the land survey and civil engineering markets. In particular, the engineering model of the first Galileo satellites has completed platform integration tests at the Thales Alenia Space facility in Rome. The platform is now undergoing functional testing. Delivery of the engineering model payload from Astrium UK was expected in December last year.

These tests are an important step towards building and launching the first four Galileo satellites. Integration testing verifies the interfaces between units or subsystems and the larger integrated system. The definition phase and the development and In-Orbit Validation phase of the Galileo programme were carried out by the European Space Agency ([www.esa.int](http://www.esa.int)) and co-funded by ESA and the European Community.

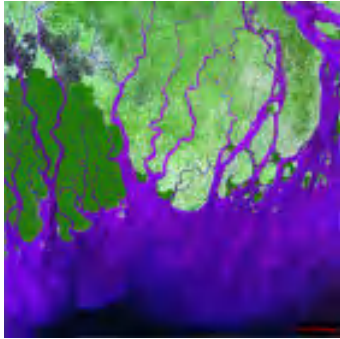
The consortium intends to analyse many applications of GNSS in environmental analysis and in cartography. Selected cases became pilot projects, for which a real time monitoring centre facility at Thales Alenia Space has been added. Fewer guarantees is possible if GPS or GPS+GLONASS is used to monitor landslides and building monitoring in deep valleys or in town centres. In several cases it was found that hills and buildings may create problems when carrying out GNSS monitoring. Hence more satellites are needed. Moreover, particular features of Galileo could be of general interest in an area which cannot be easily covered by other data communication systems.



## Spatial Data Infrastructure – Africa Newsletter



### Disaster management needs satellite 'constellations'



Ever since 1972, when the United States launched the first Earth observation satellite, Landsat-1, data from satellite remote sensing has identified disaster sites, helped assess damage and risks, monitored situations and offered early warnings. But disasters come in all shapes and sizes, needing varying data during the disaster cycle of mitigation, preparedness, response and recovery. No single satellite can hope to meet all these needs. Rather, what disaster managers need is a constellation of satellites carrying a range (multispectral) of sensors, says **Ranganath Navalgund**, Indian space researcher.

Crucially, different situations need data collected in different wavebands. For example, optical and near infrared data can map land use or assess agricultural droughts. But to track a cyclone's eye, or monitor flooded areas beneath cloud, microwave sensors are needed. And landslide studies depend

on accurate high-resolution digital elevation models, which require data collected by stereo-viewing optical sensors (e.g. Cartosat – 1), Interferometric Synthetic Aperture Radars (InSARs) or Light Detection and Ranging (LIDAR) instruments. Then again, for fires or volcanoes, it is thermal imagery that is needed to pick up hotspots.

There is often an awkward trade-off between temporal and spatial resolutions. To manage many natural disasters such as cyclones or fires, demands detailed and continuous data. Although geostationary satellites, such as Meteosat or INSAT provide almost constant surveillance (every 15 minutes), but they lack detail (their spatial resolution is low). Conversely, polar-orbiting satellites offer higher spatial resolution data (even down to less than 1m) but information is only collected once every few days. Geostationary satellites, predominantly designed for weather forecasting, are good at spotting a cyclone as it's forming, tracking its movements, and predicting land fall points. But they don't usually carry microwave sensors, which are needed to estimate a cyclone's intensity - critical for predicting potential damage.

A constellation of polar-orbiting satellites, equally spaced around a sun-synchronous orbit to provide continuous coverage over any given place, could solve this. Such a constellation, designed primarily for disaster management, could offer more frequent data in the right part of the spectrum. Of course, the most important thing for effective disaster monitoring and mitigation is that satellite data reaches managers and emergency planners in an easy-to-use format. So satellites in a constellation must provide a certain amount of on-board processing and automatic analysis (as for the MODIS fire map, (see [Remote sensing for disasters: Facts and figures](#)). Being able to integrate satellite data with other geo-spatial datasets and environmental models is also crucial. Satellites aren't the whole answer. To assess landslide risk, you must integrate remote sensing data with population maps and other spatial databases. Similarly, to forecast or warn of floods you need real-time satellite data on rainfall intensity and river discharge, but also in-situ observations, knowledge of the topography, and hydrological models.

### Training Opportunities

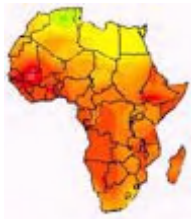
Have you signed up to receive [SDI-Africa Newsletter](#) notices? It only takes a minute, and then the GSDI Association can notify you when a new issue of the SDI-Africa newsletter is available, plus alert you to particular GSDI announcements (like a call for GSDI grants, or a call for papers for a GSDI conference).

The GSDI Association also hosts an [SDI-Africa E-mail Discussion List](#) with intermittent news and announcements of opportunities (this discussion list is separate from the SDI-Africa Newsletter list).

- The [SDI-Africa E-mail Discussion List](#) is open and available to anyone to read on the web. To submit messages or to receive submitted comments or notices by e-mail, one first must register.
- To see the collection of prior postings to the list, visit the [SDI-Africa E-mail Discussion List Archives](#).
- To post a message to the list, send an email to [sdi-africa@lists.gsdi.org](mailto:sdi-africa@lists.gsdi.org).

[JICA-Net \(Videoconferencing/E-learning\) Remote Sensing & GIS Course](#), January - March 2010 (January 7, 13, 20, 27, February 3, 10, 17, 24 and March 3)

Organized by Japan International Cooperation Agency (JICA) and supported by Japan Society of Photogrammetry and Remote Sensing.



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Learning objective is to promote remote sensing and GIS for the sustainable development of natural resources and environment in developing countries through e-learning or distance education. Contents Outline:

1. The remote sensing course has been designed for promoting remote sensing for the sustainable development of natural resources and environment in developing countries with the financial support of Japan International Cooperation Agency (JICA). The course is intended to be delivered in a lecture style and will be transmitted to target countries as distance learning through satellite communication systems.
2. GIS course has been designed for promoting GIS for the sustainable development of natural resources and environment in developing countries with the financial support of Japan International Cooperation Agency (JICA). The lecture of the course is intended to be transmitted to target countries through satellite communication systems.

This e-learning program is scheduled to be broadcasted in four (4) instruments in Remote Sensing (RS) Course and GIS Course respectively, and each instrument consist of three (3) units of sessions approximately three (3) hours. After the series of eight (8) instruments, (1) instrument and GIS in RS is broadcasted. Under the guidance of local coordinator attending each site, self-learning materials (recorded lectures) will run in the sessions and Q & A sessions with lecturers will be provided live from Tokyo.

## [International Masters Program in Geospatial Technologies - Grants for students and visiting scholars](#)

The University of Münster, Germany, University Jaume I, Spain, and New University of Lisbon, Portugal, provide a new Masters Program in Geospatial Technologies. The English-taught Masters program has been approved in the educational program of excellence of the European Union ERASMUS MUNDUS. The program targets international applicants and will provide 10 full scholarships for non-EU students (26.000 € + tuition fees + insurance package). The Masters program addresses holders of Bachelor degrees in application areas of Geographic Information, such as Geography, Environmental Planning, Regional Planning, Transportation/Logistics, Agriculture, Forestry, Retailing/Marketing , etc., and/or researchers (visiting scholars) with high-level academic achievements in the field of Geographic Information. Deadline for third country (non-EU) scholars applying for an Erasmus Mundus grant: January 15, 2010.

## [Traineeships in Observational Oceanography for Students from Developing Countries](#), 1 August 2010 - 31 May 2011, Bermuda

The Bermuda Institute of Ocean Sciences (BIOS) has been awarded the Nippon Foundation-POGO Centre of Excellence in Observational Oceanography. The Centre will offer a 10-month programme of study at Bermuda on Observational Oceanography. Travel and living expenses of the trainees will be covered by the NF-POGO Centre of Excellence. The course is open to about 10 participants, approximately 8 will be from developing countries with the remainder from developed countries. Trainees must have at least a first degree in science. Preference will be given to applicants who currently hold a position in a research or academic institution in a developing country and anticipate returning to the country after completion of training at the NF-POGO C of E. Candidates have to demonstrate immediate relevance of their training to on-going or planned ocean observations in their home country. Deadline: 1 February 2010.

## [Free ESRI Courses](#)

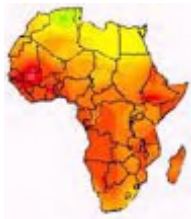
Free online course modules from ESRI's Virtual Campus site. Learn the basics of many of their software packages and extensions or take some concept courses such as a review of projections.

## [Course on Demographic and Health Surveys](#), June 21-25, 2010, Nairobi, Kenya

University of Nairobi Enterprises and Services Ltd is offering professional short course on Demographic and Health Surveys. The course provides an overview of the DHS surveys and how to use DHS data to improve health programs. Demographic and Health Surveys (DHS) are nationally-representative household surveys that provide data for a wide range of monitoring and impact evaluation indicators in the areas of population, health, and nutrition. Demographic and Health Surveys provide countries with a standardized tool to obtain indicators for the effective monitoring of national programs such as those on HIV/AIDS, health and family planning services available in a country. Contact: Prof. Mwanthi, [mmwanthi@uonbi.ac.ke](mailto:mmwanthi@uonbi.ac.ke).

## [GIMS course schedule for December 2009](#), South Africa

GIMS is an ESRI accredited learning centre servicing Southern Africa. Contact:



# Spatial Data Infrastructure – Africa Newsletter



- Midrand & Port Elizabeth: Contact Queen Mofokeng (011) 238 6300, (011) 238 6310 at [gmofokeng@gims.com](mailto:gmofokeng@gims.com)
- Durban: Contact Patricia van Schalkwyk, (031) 303 5356, (031) 303 5376 at [pvanschalkwyk@gims.com](mailto:pvanschalkwyk@gims.com)
- Cape Town: Contact Kathi Wöhl (021) 422 4620, (021) 422 4628 at [kathi@gims.com](mailto:kathi@gims.com).

## L'Ecole Régionale post-universitaire d'Aménagement et de gestion Intégrés des Forêts et Territoires tropicaux (ERAIFT) [Regional School on Integrated Management of Tropical Forests and Territories] –



**Promotion : inscriptions ouvertes**, Kinshasa, République Démocratique du Congo. Le **cursus de l'ERAIFT** aboutit à l'obtention d'un Diplôme d'Etudes Supérieures Spécialisées (DESS). Ce diplôme est l'équivalent d'un Master du système « LMD » (Licence, Master, Doctorat) des Accords de Bologne. Il est reconnu par le Conseil Africain et Malgache pour l'Enseignement Supérieur (le CAMES). Le programme du DESS comprend 16 chaires dont l'enseignement s'étend sur une période de 12 mois. L'étudiant dispose ensuite de 6 mois pour rédiger son mémoire. Le contenu de ce dernier repose sur l'approche systémique, et

s'inscrit dans le cadre de l'aménagement intégré du territoire, du développement humain, durable et écologiquement viable, de la lutte contre la pauvreté et de la gestion rationnelle de l'environnement. L'autre grade décerné par l'ERAIFT est le Diplôme de Philosophiae Doctor (Ph.D.) en Aménagement et gestion intégrés des forêts et territoires tropicaux. Bourses disponibles, mais limitées en nombre. Contact: [info@eraift.org](mailto:info@eraift.org).

## Short-courses offered by RECTAS in 2010, Ile-Ife, Nigeria



The [Regional Centre for Training in Aerospace Surveys \(RECTAS\)](http://www.rectas.org) is offering a number of three-week courses. Also note that RECTAS is able to package and deliver customised training for interested organisations. These could be either advanced or other certificate programs. Contact: [info@rectas.org](mailto:info@rectas.org) or [thontteh@rectas.org](mailto:thontteh@rectas.org).

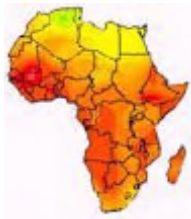
## LUMA-GIS, Lund University GIS Centre (Sweden) Master's program in GIS

Lund University Master's program in GIS is a free, distance-learning, 2-year program for full-time students. The entire program is given in English and is equivalent to 120 European ECTS credits (1.5 ECTS credits are approx. equivalent to 1 week full-time studies). All courses, given as "distance education", means that the teaching methods and course examinations are conducted over the Internet. The program is equivalent to a degree of Master in Sweden. It is the responsibility of international students to verify if the program is also recognized as a degree of Master in their country of origin. The entire program is free of charge for all students, meaning that there are no tuition fees. The students will be supplied with all required computer software and licenses, theoretical material (except course literature for some courses), practical exercises, and data. Course literature (books) may be required for some of the more advanced courses. Applications deadline for the Master's Program starting autumn 2010 is 15 January 2010. Applications for individual courses starting September 2010 open March 2010.

## Distance Learning - Certificate



- [Principles of Databases](#) (8 weeks). Starting date: 8 February 2010. Deadline for application: 18 January 2010. [Register](#).
- [GIS Data Quality](#) (6 weeks). Starting date: 15 Mar 2010. Deadline for application: -. [Register](#).
- [Multi-Hazard Risk Assessment](#) (6 weeks), Starting date: 17 May 2010. Deadline for application: 26 April 2010. [Register](#).
- [Principles of Remote Sensing](#) (8 weeks). Starting date: 17 May 2010. Deadline for application: 26 April 2010. [Register](#).
- [Environmental Impact Assessment and Strategic Environmental Assessment using spatial decision support tools](#) (6 weeks). Starting date: 7 Jun 2010. Deadline for application: 17 May 2010. [Register](#).
- [Principles of Geographical Information Systems](#) (7 weeks). Starting date: 6 Sep 2010. Deadline for application: 16 August 2010. [Register](#).
- [Spatial Decision Support Systems](#) (8 weeks). Starting date: 11 October 2010. Dealine for application: 20 September 2010. [Register](#).
- [Learning IDL for Building Expert Applications in ENVI](#). Starting date: 25 Oct 2010. Deadline for application: 4 October 2010.



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- [Digital Terrain Model extraction, processing and parameterization for Hydrology](#) (3 + 3 weeks). Starting date: 29 November 2010. Deadline for application: [8 November 2010](#). [Register](#).
- [Principles and Applications of Remote Sensing and GIS in Natural Resources Management at KNUST, Kumasi, Ghana](#) (12 weeks). Starting date: 20 September 2010. [Register](#).

### MSc and PG Diploma

- [Water Resources and Environmental Management](#) (Mc degree -18 months), Netherlands. Starting date: 13 Sep 2010. Deadline for application: [1 July 2010](#). [Register](#).
- [Water Resources and Environmental Management](#) (PG Diploma - 9 months), Netherlands. Starting date: 13 September 2010. Deadline for application: [1 July 2010](#). [Register](#).

### Funding Opportunities, Awards, Support

#### [Google Model Your Town Competition](#)

Google has announced the first international Google Model Your Town Competition and invites people to use free sketching tools to create a 3D portrait of their community and ensure its place on the 3D world map. You can model as many structures as you like which types of buildings you choose to include is entirely up to you. The important thing is that your choices say something about the character and history of your town.

- Modeling teams may include up to six members.
- Buildings can be modeled with [SketchUp](#), a free and relatively easy-to-use 3D modeling program from Google. You use SketchUp in combination with [Google Earth](#) to give models a precise geographic location.
- Buildings can also be modeled with [Google Building Maker](#) if your town is located in an area where Building Maker data is available. These models can also be edited and improved with Google SketchUp.
- Each completed building model should be uploaded to a dedicated town collection on the [Google 3D Warehouse](#).
- Join our [Google Competition Group](#) to discuss ideas and issues with other modelers. It's also a great way to find people to help you form a team.
- To enter, each team must complete and submit an online [entry form](#).

The winning individual/team will receive:

- USD\$10,000 for the town's public school district (or international equivalent)
- Visit from a Google team, along with an event in the winners' hono
- Video profile of the winning team and their town, to be featured on YouTube
- Virtual tour of the winning town that will be added to the Google Earth website
- International publicity in the form of blog posts, tweets and other media
- Additional coverage on Google websites

The competition submission deadline is 11:59 PM PST on [March 1, 2010](#).

#### [UK: 2010 Scholarship and Bursary Awards from IOM3](#)

The Institute is inviting applications for its 2010 Scholarship and Bursary Awards, which will be judged in respect of academic excellence. Applicants must specify academic ability: candidates merely seeking assistance for financial hardship will not be considered. The available awards are:

- Bosworth Smith Trust Fund: For postgraduate research into metal mining, nonferrous extraction metallurgy or mineral dressing.
- Centenary Scholarship: For first or second year undergraduates who are student members of IOM3, to help career development in minerals and mining.
- Edgar Pam Fellowship: For postgraduate study of minerals and mining by those living in Australia, Canada, New Zealand, South Africa and the UK who wish to undertake further study in the UK.
- G Vernon Hobson Bequest: To help the teaching and practice of geology applied to mining.
- Stanley Elmore Fellowship Fund: To support UK university-based research into extractive metallurgy and mineral processing.
- The Tom Seaman Travelling Scholarship: For a member, 35 years old or younger, who is training or has completed training for a mining or related technology career.

Submissions must be returned by [26 March 2010](#).

#### [Kathryn Fuller Fellowships – Advancing Conservation through Science](#)





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WWF-US has announced the Kathryn Fuller Fellowships for 2010. For nearly 50 years WWF has committed to delivering science-based conservation results while incorporating the latest research and innovations. As part of its commitment to advancing conservation through science, WWF established Kathryn Fuller Fellowships to support PhD students and postdoctoral researchers working on issues of exceptional importance and relevance to conservation in WWF-US priority places. This year, the Kathryn Fuller Science for Nature Fund will support doctoral and postdoctoral research in the following three areas:

- Ecosystem services
- Measuring and monitoring carbon stocks in forests
- Climate change impacts on and adaptation of freshwater resources

Fuller Doctoral Fellows receive either \$15,000 or \$20,000 allocated over a period of up to 2 years to cover research expenses.

Fuller Postdoctoral Fellows receive \$140,000 to cover a stipend and research expenses over a period of up to two years as well as \$17,500 to cover indirect costs at the host institution over the two-year fellowship period. Application deadline: January 31, 2010.

### [African Doctoral Dissertation Fellowship 2010](#)

The African Doctoral Dissertation Research Fellowships are awarded to advanced doctoral students who are within two years of completing their doctoral thesis at an African university. The fellowships target individuals whose research show great promise of making substantive contribution to strengthening health systems or show great promise of enhancing the understanding of governance, equity, health or population-related issues in Africa. The program primarily supports doctoral research (including data collection). Coursework is not considered for support.

The program is offering 15 fellowships to doctoral students in sub-Saharan African Universities. Students from Francophone countries can now download both the 2010 Call and application form in French and may submit their applications in French as well. The Call and application forms: [2010 ADDRF Call English](#), [2010 ADDRF Call French](#), [2010 Application English](#), [2010 Application French](#). Deadline for submission of applications: 15 January 2010.

### [Russell E. Train Fellowships for Conservation Studies](#)

WWF's Education for Nature Program has announce the availability of Russell E. Train Fellowships for students from Bolivia, Colombia, Ecuador, Kenya, Mexico, Papua New Guinea, Peru, Tanzania, and Timor Leste who are pursuing master's and doctoral degrees in conservation-related fields. Train Fellowships provide up to two years of support for education-related costs including tuition and fees, room and board, books, travel, and research. Applicants must be citizens or permanent residents of a participating country and must have at least two years' experience in conservation. Applicants must have applied to, have been accepted to, or be currently enrolled in a conservation-related degree program at an accredited institution of higher education.

- Applications for students from Bolivia, Colombia, Ecuador, and Peru are due by January 31, 2010.
- Applications from Kenya, Mexico, Papua New Guinea, Tanzania, and Timor Leste are due by February 28, 2010.

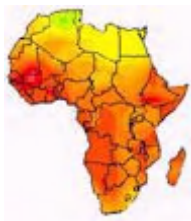
Guidelines, applications, and application deadlines vary by [participating country](#).

### [2010 Kinship Conservation Fellows Program](#)

The Kinship Conservation Fellows Program is designed to equip select career conservationists with effective tools for solving environmental problems through market-based principles. The program provides hands-on instruction in Bellingham, Washington (USA) during a month-long curriculum of presentations, discussions, case studies and field trips. Applicants should be conservation leaders with five years of experience, who are deeply committed to conservation. Also, candidates should have had at least some exposure to business and economic principles and be in a work environment where these principles can be integrated with conservation work. Eighteen applicants will be selected to participate. Deadline: January 18, 2010.

### [“Afrique One” Postdoc Fellowships in Ecosystem and Population Health](#)

The [African Research Consortium for Ecosystem and Population Health \(Afrique One\)](#) is seeking to appoint eleven post-doctoral research scientists to its prestigious 4-year fellowship program. The Consortium comprises eleven African Universities and Research Institutes in Chad, Cote d'Ivoire, Ghana, Senegal, Tanzania, and Uganda, and is funded through the Wellcome Trust's African Institutes Initiative. The



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fellowship program seeks to support the next generation of African science leaders in the field of ecosystem and population health.

Afrique One is looking for the very best post-doctoral scientists to develop independent sustainable science programs in each of the consortium's core institutions. Fellowships come with competitive salaries and substantial research support budgets that include graduate studentships, technician salaries, travel funds, and consumables. All areas of science that fall within an Ecosystem and Population Health remit may be supported, but successful applicants must be able to demonstrate a long-term commitment to leading and developing science programs relevant to their countries research needs and that enhance existing research activities in their chosen institutions. Applications should be made to individual participating institutions, and comprise: a full CV, 3 letters of reference; and a 4000 word outline of their research plan. The deadline for applications is February 1, 2010. Late submission will be considered in the event that positions are not filled. Applicants must be able to take up the position by September 1, 2010.

### [Alexander von Humboldt Foundation Fellowships on Climate Issues](#)

The Alexander von Humboldt Foundation is granting up to twenty International Climate Protection Fellowships annually funded under the Federal Environment Ministry's (BMU) International Climate Protection Initiative. The fellowships target prospective leaders from non-European threshold and developing countries who are engaged in the field of climate protection and resource conservation in academia, business and administration in their countries. The fellowship will enable the recipients to conduct a research-related project of their own choice with hosts in Germany whom they are free to choose themselves. Complete applications must reach the following address by 15 January 2010 (further calls for sponsorship beginning in 2011 and 2012 are currently planned).

### [UNESCO/Keizo Obuchi \(Japan\) Co-Sponsored Research Fellowships Programme: 2010 Cycle](#)

With a view to keeping alive and honouring the spirit of former Prime Minister Obuchi and his belief in "people building the next era", 20 fellowships per year, for the ninth year, will be awarded to deserving candidates from UNESCO developing countries, especially the least developed countries (LDCs), who are eager to undertake research on one or more of the selected topics: 1. environment (with particular emphasis on water sciences); 2. Intercultural dialogue; 3. Information and communication technologies; and 4. peaceful conflict resolution. The aim of the fellowships is to support innovative and imaginative post-graduate research in the areas of development to which former Prime Minister Obuchi was committed and which coincide with areas of particular interest to UNESCO. Deadline: 8 January 2010.

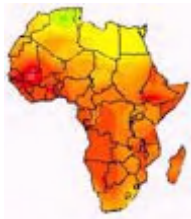
### [UNESCO-Keizo Obuchi Fellowship for Young Researchers](#)

UNESCO is inviting young researchers in developing countries to apply for grants through the UNESCO/Keizo Obuchi Research Fellowship Programme, financed for the tenth time by Japan through funds-in-trust dedicated to the development of human resources. The programme offers a total of 20 fellowships for a maximum value of US\$6,000-10,000 each. They target post-graduate university researchers with a Masters Degree or equivalent in one of four fields: the environment, inter-cultural dialogue, information and communication technology, and peaceful conflict resolution. Deadline: 8 January 2010.

### [Captain Planet Foundation Funding for Youth Environmental Projects](#)

The mission of the Captain Planet Foundation is to fund and support hands-on environmental projects for children and youth. The foundation's objective is to encourage innovative programs that empower children and youth around the world to work individually and collectively to solve environmental problems in their neighborhoods and communities. Through environmental education, the foundation believes that children can achieve a better understanding and appreciation of the world in which they live. The foundation offers small grants of \$500 or less each, as well as a limited number of grant awards ranging from \$500 to \$2,500 each. Applicants must be at least 18 years old to submit a proposal. Deadlines for submitting grant applications are June 30, September 30, December 31, and March 31. Grant proposals are reviewed over a period of three months from the date of the submission deadline. Visit the Captain Planet Foundation Web site for complete program information and guidelines.

## Employment Opportunities



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### **Systems modeler (Post-Doctoral Position)**, Addis Ababa, Ethiopia

SLP/ILRI seeks to recruit a post-doctoral scientist to contribute to the SLP funded project 'Optimizing livelihood and environmental benefits from crop residues in smallholder crop-livestock systems in sub-Saharan Africa and South Asia' jointly conducted by CIMMYT, CIP, ICRISAT, IITA, ILRI/IWMI, and Wageningen University. He/she will play a leading role in implementing trade-off and sustainability models in coordination with all the partners. In addition he/she will collect and organized relevant secondary bio-physical information for the study sites and will build regional capacity for modeling approaches. The successful candidate will have:

- PhD in Agricultural or Environmental Sciences, Biology, Ecology, Geo-information Science and/or Mathematic, obtained within the last 5 years;
- Strong capabilities in quantitative analysis, with expertise in state-of-the-art systems modeling;
- Capability to quickly adapt and learn/adopt new methods/approaches and tools;
- Good understanding of and interest for agricultural challenges in the developing world;
- Experience in GIS/Remote Sensing and spatial analysis would be an advantage;
- Fluent in English with good writing skills;

The initial appointment will be for two years with the possibility of one renewal for one year, contingent upon individual performance and availability of funds. Applicants should send a detailed CV, names and contact details (Telephone, E-mail) of three professional referees to the Human Resources Office, ILRI, P.O. Box 30709-00100, Nairobi Kenya; e-mail: [recruit-ilri@cgiar.org](mailto:recruit-ilri@cgiar.org) by 31 January 2010 or until the position is filled. For more information on the position, contact [b.gerard@cgiar.org](mailto:b.gerard@cgiar.org).

### **Senior Programme Officer**, Nairobi, Kenya

Under the general guidance of the Director, DEPI and the direct supervision of the Chief, Climate Change Adaptation Unit, the incumbent will carry out the following responsibilities:

Policy Analysis: Develop and formulate policies and strategies under the work-programme for climate change adaptation. Advise and provide technical assistance to governmental, intergovernmental and non-governmental organizations and scientific communities on the UNEP climate change strategy.

1. Programme development and project implementation: Interpret the UNEP climate change strategy and subsequent agreement with project partners and stakeholders; Develop key indicators for monitoring overall results of adaptation programme with the UNEP Medium Term Strategy especially Ecosystem Management.
2. Programme Management: Develop a network of partnerships with governments and institutions;
3. Knowledge management and communication: Supervise the focal point for the DEPI Work Programme under the UN Framework on Climate Change Committee; Develop an internal communication strategy for building awareness, technical capacity and UNEP wide support;

Education:

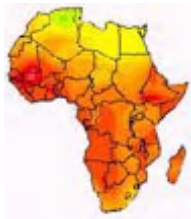
- Advanced university degree (Master's degree or equivalent) in environmental policy management/environmental sciences or a related area. A first level university degree in combination with qualifying experience may be accepted in lieu of the advanced university degree.
- A minimum of 10 years of progressively responsible experience in environmental programme management in climate change issues. At least 5 years of experience at the international level working on climate change issues is required.
- Experience on project implementation/management is required. Experience within the UN system is required.
- Fluency in oral and written English is required. Knowledge of another UN official language is an advantage.

Deadline for application: 22 February 2010. How to apply: <http://www.unep.org/vacancies>.

### **Chief, Ecosystems Services Economics Unit**, Nairobi, Kenya

This post is located in UNEP/DEPI at the Nairobi duty station. Under the direct supervision of the Deputy Director, DEPI, the incumbent will carry out the following:

1. Ecosystem Services: Lead the development of normative frameworks, approaches and tools for UNEP and its partners; Develop the UNEP-wide strategy on ecosystem services including Millennium Assessment follow up activities; Establish working relationships with networks and act as the UNEP-wide focal point for all activities related to the economics of ecosystem services; Develop, establish and



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maintain a set of sound policies, procedures, standards and tools in support of the mainstreaming of ecosystem services;

2. Economics: Lead and participate in the formulation, organization and management of mandated programmes of economic analysis and the formulation of possible economic strategies; Lead and participate in the identification of new or emerging development issues related to ecosystem services of potential concern to the international community; Commission economic studies and analyses; Finalize reports on development for issuance by the United Nations.
- Advanced university degree (Master's or equivalent) in economics, environmental policy or environmental sciences. A first level university degree in combination with qualifying experience may be accepted in lieu of the advanced university degree.
- A minimum of ten years of progressively responsible experience in economics and environmental policy development. Experience in international initiatives in the field of economics and ecosystem services is required. Experience in the management of portfolio projects and multi-disciplinary teams an advantage.

Deadline for application: 20 February 2010. Contact: [Recruitment@unon.org](mailto:Recruitment@unon.org).

### **Chief (Scientific Assessment Branch)**, Nairobi, Kenya

Under the overall guidance of the Director of the Division of Early Warning and Assessment (DEWA), and within delegated authority, the incumbent will function as Chief of the Scientific Assessment Branch (SAB). The Chief will, within delegated authority, be responsible for planning, implementation and reporting on relevant parts of UNEP's programme duties, which will include: Programme Management; Programme Implementation; Policy Advice and Guidance; Programme Budget and Supervisory Responsibilities.

Professionalism: Demonstrated ability to direct and coordinate implementation of work programme activities and projects. Proven ability to analyze and integrate diverse information. Have a broad knowledge of environment and development issues, and ability to develop and direct development of new approaches, scientific disciplines, methodologies, and tools for UNEP's assessment and reporting activities. Demonstrated ability to integrate and synthesise multidisciplinary information sets pertaining to the many environmental and developmental factors influencing sustainable development.

- Advanced university degree in natural and environmental sciences, natural resources management or related disciplines. A first university degree in combination with qualifying experience may be accepted in lieu of the advanced degree.
- Minimum 15 years of relevant working experience, including at least five years at national and international level. Experience in diverse areas pertaining to different aspects of environment and development is an asset.
- Fluency in oral and written English is required. Knowledge of another official United Nations language would be an asset.

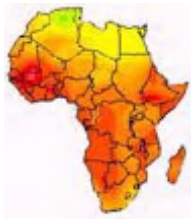
Deadline for application: 17 January 2010. How to apply: <http://www.unep.org/vacancies>.

### **Information Systems Assistant, G-6**, Nairobi, Kenya

Under the general guidance of the Chief, Applications Development and Solutions Delivery Section, the incumbent will be responsible for:

- 1) Developing new applications on a standardised methodology:
  - a) Identify business areas and processes where web-based systems can improve efficiency.
  - b) Work closely with users to elicit their requirements, study current work flows and storage requirements and translate this to project documents.
  - c) Undertake project management to ensure the timelines of all project milestones and oversee implementation.
  - d) Write code and implement the system using various tools; java, PHP, Lotus Notes, XML, Perl, ASP.net and SQL i.e. PostgreSQL and MySQL.
  - e) Prepare system documentation.
  - f) Plan and carry out thorough testing of the systems made.
- 2) Maintaining, supporting and improving existing applications:
  - a) Change management and version control of all systems in production.
  - b) Develop new and enhance existing features.
  - c) Document all the changes on existing systems.
- 3) Provide and manage the infrastructure for the development and delivery of web-based applications:
  - a) Manage the web server and all internet facilities.
  - b) Administer and support client's websites and web-based applications.
  - c) Install, configure and support, trouble shoot and maintain packaged and custom web applications.
- 4) Technology follow-up and research and development:
  - a) Technology follow-up, review and evaluation of UNON's web services.
  - b) Manage the evaluation of demonstration applications (software) and hardware.
- 5) Training of users including:
  - a) Draft training materials.
  - b) Conduct training sessions and demonstrations of systems for users and helpdesk support.
- 6) Provide guidance to new/junior staff where applicable.

Requirement:



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- Completion of secondary education is required; additional technical training in Computer Science, Information Technology is required.
- Minimum of six years of relevant and progressively responsible experience in systems analysis and programming, systems administration and maintenance, software development, technical writing. Operational experience of Local Area Networks (LAN) and Wide Area Networks (WAN) and with UNIX is required. Experience across a broad range of hardware and software platforms is required.
- In-depth IT knowledge of latest standards for development and ability to implement systems in Java, PHP, Lotus Notes, XML, Perl, ASP.net and SQL.
- Fluency in oral and written English is required. Knowledge of a second official UN language is an advantage.

Deadline for application: 21 January 2010.

### [Programme Officer \(International Waters and Biodiversity/Land Degradation, P-4, Nairobi, Kenya](#)

This post is located in UNEP/DGEF at the Nairobi duty station. Under the supervision of the Senior Programme Officer, the incumbent will undertake the following: 1. Project identification and development: Liaise with partners to identify project concepts, discuss and clear such concepts with the Senior Programme Officer and present them to the Project Approval Group (PAG); Work with the Fund Management Officer to internalize the Project Preparation Grant upon approval; Verify that the project proposals meet GEF quality-at-entry standards; Support the executing partners in mobilizing co-financing for the project. 2. Supervision of project implementation: Prepare project supervision plans and apply adaptive management principles to the supervision of the projects; Organize and manage the project inception and provide oversight to project execution; Regularly monitor project progress and performance and rate progress towards meeting project objectives; Periodically assess project assumptions and monitor risk; Monitor reporting by project executing partners and provide feedback; Manage any mandatory project(s) mid-term review and prepare a management response with a plan for implementation of recommendations; Support the project terminal evaluation and ensure that the projects are financially closed. 3. Division knowledge management and data management: Identify and codify lessons emerging from project implementation; Ensure accuracy and completeness of project data in the project information system for all projects; Contribute to project data reconciliation exercises within the Division and with the GEF Secretariat; Identify media and other outreach opportunities and materials and provide project information and materials; Participate in events organized by GEF and UNEP to disseminate information on project results and lessons. 4. UNEP and GEF corporate tasks: Contribute to the Council document reviews; Represent Division in UNEP and GEF meetings; Participate in the UNEP Project Review Committee; Provide input to UNEP and GEF policy and information documents; Provide input to GEF corporate evaluations, country portfolio evaluations, thematic evaluations and impact evaluations and to the preparation of the Management Action Record.

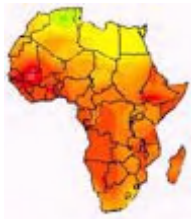
- Advanced university degree (Master's degree or equivalent) in environmental/natural sciences or related area with specialization in issues related to the protection and management of International Waters and Biodiversity/Land Degradation. A first level university degree in combination with qualifying experience may be accepted in lieu of the advanced university degree.
- A minimum of seven years of progressively responsible project/programme management experience in International Waters, Biodiversity/Land Degradation or related field, of which some should be at the international level.
- Fluency in oral and written English is required. Knowledge of another UN official language is an advantage.

Deadline for application: 24 January 2010.

### Other

#### [UN Report for COP15](#)

The member states of the [United Nations Economic Commission for Europe \(UNECE\)](#) are some of the main polluters of greenhouse gases, with the EU, USA and Canada among others. The report *Catalysing change - the UNECE response to the climate countdown*, prepared for the COP15 climate conference in December 2009 summarizes the activities among the UNECE members to mitigate and act on climate change. The UNECE counts 56 countries as members in Europe, North America, Central Asia, Caucasus and the Middle East. The report was edited by the authors and prepared with the UNECE secretariat and [Zoi Environment](#),



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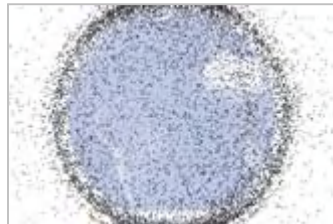


graphics were partly based on previous work by UNEP/GRID-Arendal in the form of the [Climate in Peril](#) summary report, and other illustrations were prepared as originals by [Nordpil](#). The report features several charts and maps on climate change issues that required extensive data collection and preparation for the presentation.

The [full report can be downloaded from the UNECE](#). Sample illustrations from the report are available in the [portfolio section](#) (see below):

- [UNECE and climate change, report cover](#)
- [Cartogram over greenhouse gas emissions, UNECE members and other countries/regions](#)
- [Carbon dioxide emissions and wealth](#)

### [NASA, DARPA Host Space Junk Wake-Up Call](#)



Outer space has become Earth's largest junkyard. It is an [international dumping ground](#) for derelict spacecraft, wreckage from colliding satellites, remains from mischievous anti-satellite testing, spent rocket stages, discarded lens caps and clamp bands, paint chips and, yes, at one point, even a lost-to-space tool bag.

Experts from around the world are attending a wake-up call type of meeting. NASA and the Defense Advanced Research Projects Agency (DARPA) have teamed up to take a hard look at the issues and challenges of de-cluttering space of human-made orbital debris. The result: A first-of-its-kind International Conference on Orbital Debris Removal is being held through 10 December 2009 in Chantilly, Va. More than 50 presentations from the United States, Russia, France, Germany, and Japan will be offered to address not only the technical and economic challenges, but also the legal and policy issues associated with orbital debris removal.

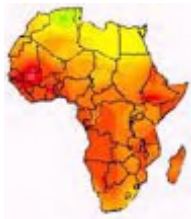
For many years NASA has considered means to "remediate" the near-Earth space environment, that is, removing human-made flotsam from Earth orbit – at both low and high altitudes, said Nicholas Johnson, chief scientist of NASA's Orbital Debris Program Office at Johnson Space Center in Houston, Texas. "We have also evaluated the feasibility of numerous concepts proposed by other U.S. government organizations, the aerospace industry, academia, and the general public," Johnson told SPACE.com. "To date, none of the techniques examined have proven entirely practical due to technical and/or economic reasons." The ElectroDynamic Debris Eliminator (EDDE) vehicle, he said, is the only viable method known for the plucking from space of large debris. However, Pearson, President of Star Technology and Research, Inc flags a knotty issue - "You can't just go up there and move somebody's stuff without permission," Pearson said. "Anything that can go up and grab a piece of debris and bring it down...well, it can also grab somebody's operational satellite and bring it down. That's a space weapon," he cautioned.

### [East Africa: "Land grabbing" creates tensions as countries combat local and global food insecurity](#)

Once able to sustain its population of 30 million with local agriculture, Saudi Arabia now anticipates importing all of its wheat by 2016, according to Reuters. Saudi Arabia's aquifers are drying up as a result of climate change, which has led to a massive decline in local wheat harvests. In order to guarantee food security for the population, Saudi Arabia's government has turned to land acquisition, commonly referred to as "land grabbing" in East Africa. The King Abdullah Initiative for Saudi Agricultural Investment Abroad is a government program that provides financing and credit for companies to invest in international agriculture for Saudi Arabia.

To be considered for Saudi investment, countries must be politically stable, have useful natural resources for agriculture, tax relaxation on agricultural exports, anti-corruption laws, and low-cost labor. Contracts must be long-term, and Saudi Arabia must have the decision-making power on what crops are produced.

The first Ethiopian harvest under the investment arrived in Saudi Arabia last year. Olivier De Schutter, United Nations Special Rapporteur on the right to food, spoke on the emerging land acquisition trend. "Investment contracts should prioritize the development needs of the local population". "The countries targeted by such large-scale land investment are caught in a scissor. It requires very fine tuning and good management to reap benefits for the local population in general". The most likely outcome of such agreements will be a loss of essential farmland without benefit to the local population. Even if the investors agree to put a portion of their harvest to market in their host countries - hypothetically contributing to food security for host counties - such contributions could disrupt local markets and undermine local farmers' businesses by flooding the market with cheaper goods produced by agribusiness instead of small-scale farms. Global food security presents complex problems for countries aiming to shield their populations from



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hunger. Saudi Arabia's investment abroad is its answer to diminishing local crop yield. But Ethiopia's domestic need for sufficient food supplies makes for a delicate balance between cooperation and exploitation.

## Biomass Burning



Biomass burning is the burning of living and dead vegetation. It includes the human-initiated burning of vegetation for land clearing and land-use change as well as natural, lightning-induced fires. Scientists estimate that humans are responsible for about 90% of biomass burning with only a small percentage of natural fires contributing to the total amount of vegetation burned.

Burning vegetation releases large amounts of particulates (solid carbon combustion particles) and gases, including greenhouse gases that help warm the Earth. Greenhouse gases may lead to an increased warming of the Earth or human-initiated global climate change. Studies suggest that biomass burning has increased on a global scale over the last 100 years, and computer calculations indicate that a hotter Earth resulting from global warming will lead to more frequent and larger fires. Biomass burning particulates impact climate and can also affect human health when they are inhaled, causing respiratory problems. Burning also will permanently destroy an important sink for carbon dioxide if the vegetation is not replaced.

Researchers involved in the Biomass Burning Program at NASA Langley Research Center (LaRC) are currently working to answer questions such as What is the annual, global amount of greenhouse gases that are released into the atmosphere due to biomass burning?. How does biomass burning impact the Earth's atmosphere and climate?. The major goal of this research is to quantify the effects of global fires on the composition and chemistry of the atmosphere and the Earth's climate.

## 9th International NCCR Climate Summer School - "Adaptation and Mitigation: Responses to Climate Change", 29 August - 3 September 2010, Grindelwald, Switzerland

The NCCR Climate invites young scientists to join leading climate researchers for keynote lectures, workshops and poster sessions. The topics covered at the NCCR Climate Summer School 2010 will include:

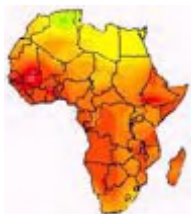
- Emission scenarios and the future of the global climate
- Economics of climate change: an overview
- Assessing costs and benefits of climate change
- Adaptation and Mitigation: instruments, strategic aspects and implementation
- Climate policy and international negotiations

The summer school is open to young researchers (PhD students and Post-Docs) worldwide. Participation is highly competitive and will be limited to a maximum of 70. The registration fee (1'200 CHF) includes half board accommodation, excursion and teaching material. Five special grants by ThinkSwiss (covering the registration fee and a part of the travels) for US citizens or for students in the USA plus a small number of grants for students from developing countries will be available. For further information, contact: University of Bern, NCCR Climate Management Centre at [nccr-climate@oeschger.unibe.ch](mailto:nccr-climate@oeschger.unibe.ch). Deadline for application: 22 January 2010.

Items newly added to this listing of events since the last SDI-Africa issue are marked \*NEW\*

### Conferences, Events

Date	Location	Event
<b>January 2010</b>		
<b>12-16 January 2010</b>	Addis Ababa, Ethiopia	<a href="#"><u>Conference on Water Resources in Ethiopia (CWRE2010)</u></a> Abstract deadline: <u>September 30, 2009</u> .
<b>20-23 January 2010</b>	Dakar, Senegal	<a href="#"><u>8th World General Assembly of the International Network of Basin Organizations</u></a> Theme: Adapting to the consequences of climate change in the basins: Tools for action

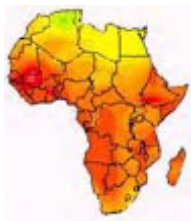


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25-26 January 2010 <b>*NEW*</b>	Addis Ababa, Ethiopia	<a href="#">19th Ordinary Session of the AU Permanent Representative Committee</a> This meeting, convened by the African Union (AU), will consider a report of the most recent round of climate change negotiations and a report on the accession of the AU to the UNFCCC and the Kyoto Protocol.
27-29 January 2010	Cape Town, South Africa	<a href="#">Winter Congress on Science, Engineering and Technology (WCSET 2009)</a> Paper deadline: <u>October 31, 2009</u> .
<b>February 2010</b>		
2 February 2010	Addis Ababa, Ethiopia	<a href="#">2010 Euro-Africa Cooperation Forum on ICT Research Learning and Reflecting on ICT Collaborative Research and Development - Projecting the Future of ICT Research in Africa</a>
1-5 February 2010	Maun, Botswana	<a href="#">International symposium: Wetlands in a flood pulsing environment - effects on biodiversity, ecosystem function and human society</a> Deadline for abstracts: <u>1 October 2009</u> .
15-17 February 2010	Cotonou, Benin	<a href="#">2nd Regional Workshop in the Workshop Series of the GEO Coastal Zone Community of Practice (CZCP)</a>
18 February 2010	Bryanston, Midrand, South Africa	<a href="#">Spatially-enabled Information Services Conference</a>
21-24 February 2010	Dubai, UAE	<a href="#">2nd Annual Middle East and North Africa (MENA) GIS Conference</a>
21-27 February 2010 <b>*NEW*</b>	Dar es Salaam, Tanzania	<a href="#">4th International Conference on Community-Based Adaptation</a> . For more information contact: Saleemul Huq, Hannah Reid at <a href="mailto:saleemul.huq@iied.org">saleemul.huq@iied.org</a> or <a href="mailto:hannah.reid@iied.org">hannah.reid@iied.org</a> .
22-26 February, 2010	Brazzaville, Republic of Congo	<a href="#">17th Session of the African Forestry and Wildlife Commission and 1st African Forestry and Wildlife Week</a>
23-26 February 2010	New York, NY, USA	<a href="#">41st Session of the Statistical Commission</a>
<b>March 2010</b>		
1-3 March 2010	Stellenbosch, South Africa	<a href="#">Precision Forestry Symposium</a> Abstract deadline: <u>30 November 2009</u> .
3-5 March 2010 <b>*NEW*</b>	Nairobi, Kenya	<a href="#">2nd All-Africa Carbon Forum</a>
3-5 March 2010 <b>*NEW*</b>	Addis Ababa, Ethiopia	<a href="#">ILRI Workshop on Adaptation to Climate Change</a>
6-10 March 2010	Alexandria, Egypt	<a href="#">International Conference on Coastal Zone Management of River Deltas and Low Land Coastlines</a> . Abstract deadline: <u>31 October 2008</u> . Contact: Professor Nabil Ismail, <a href="mailto:nicoastmarine@gmail.com">nicoastmarine@gmail.com</a> .
22-23 March 2010	Kampala, Uganda	<a href="#">ICT and Development - Research voices from Africa</a>
25-26 March 2010	Cape Town, South Africa	<a href="#">International Conference on Information Management and Evaluation (ICIME 2010)</a> Organized by University of Cape Town, Department of Information Systems.
25-28 March 2010	Yaounde, Cameroon	<a href="#">International Conference on ICT for Africa 2010 (ICIA 2010)</a> Theme: ICT for Development - Contributions of the South. Deadline for full papers: <u>December 1, 2009</u> .
<b>April 2010</b>		
5-9 April 2010 <b>*NEW*</b>	Hammamet, Tunisia	<a href="#">19th Session of the Near East Forestry Commission</a> For more information contact: Moujahed Achouri, FAO Regional Office for the Near East at <a href="mailto:moujahed.achouri@fao.org">moujahed.achouri@fao.org</a> .
9-16 April 2010	Sydney, Australia	<a href="#">International Federation of Surveyors (FIG) 2010</a>

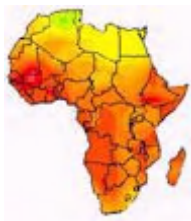




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11-15 April 2010	Cape Town, South Africa	<a href="#">INORMS 2010 - Organisation for Research Management Societies</a>
11-16 April 2010	Sydney, Australia	<a href="#">XXIV FIG International Congress 2010</a> Abstract deadline: 22 September 2009.
12-16 April 2010 <b>*NEW*</b>	Nairobi, Kenya	<a href="#">African Ministerial Conference on Weather, Climate and Water Information</a>
14-16 April 2010	Addis Ababa, Ethiopia	<a href="#">UN-SPIDER Regional Workshop “Building Upon Regional Space-based Solutions for Disaster Management and Emergency Response for Africa”</a>
14-16 April 2010	Zahedan, Iran	<a href="#">4th International Congress of Islamic World Geographers (ICIWG2010)</a> Contact: <a href="mailto:M_A_Daraei@yahoo.com">M A Daraei@yahoo.com</a> . Abstract deadline: 22 October 2009.
14-16 April 2010	London, UK	<a href="#">GISRUK Conference 2010</a> Theme: Global Challenges
<b>May 2010</b>		
3-7 May 2010 <b>*NEW*</b>	Paris, France	<a href="#">5th Global Conference on Oceans, Coasts, and Islands</a> For more information contact: Miriam C. Balgos at <a href="mailto:mbalgos@udel.edu">mbalgos@udel.edu</a> .
10-21 May 2010 <b>*NEW*</b>	Nairobi, Kenya	<a href="#">4th meeting of the CBD Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA 14)</a>
11-14 May 2010	Guimarães, Portugal	<a href="#">13th AGILE Conference on Geographic Information Science</a>
24-26 May 2010	Rome, Italy	<a href="#">4th Global Workshop on Digital Soil Mapping</a> Theme: From Digital Soil Mapping to Digital Soil Assessment: identifying key gaps from fields to continents.
26-28 May 2010	Lusaka, Zambia	<a href="#">5th International Conference on ICT for Development, Education and Training (eLearning Africa 2010)</a> Deadline: December 14, 2009.
<b>June 2010</b>		
2 June 2010	Enschede, The Netherlands	<a href="#">International Society for Photogrammetry and Remote Sensing Symposium on Education &amp; Outreach 2010</a>
8-11 June 2010	Washington, DC, USA	<a href="#">COM.Geo 2010 Conference</a>
21-22 June 2010	Nottingham, UK	<a href="#">2<sup>nd</sup> Open Source GIS UK Conference - OSGIS 2010</a>
21-24 June 2010	Yogyakarta, Indonesia	<a href="#">9th GISDECO Conference</a> Theme: Applying Remote Sensing and GIS in Disaster Management Abstract deadline: 15 January 2010. Contact: <a href="mailto:sliuzas@itc.nl">sliuzas@itc.nl</a> .
28 June-2 July 2010	Bergen, Norway	<a href="#">Living Planet Symposium</a> Abstract deadline: 1 December 2009.
28 June - 2 July 2010 <b>*NEW*</b>	Edinburgh, Scotland	<a href="#">18th Commonwealth Forestry Conference</a> The theme of this conference is “Restoring the Commonwealth’s Forests: Tackling Climate Change.” For more information contact: Tel: +44-131-339-9235; Fax: +44-131-339-9798; E-mail: <a href="mailto:cfcc@in-conference.org.uk">cfcc@in-conference.org.uk</a> .
<b>July 2010</b>		
5-7 July 2010	Vienna, Austria	<a href="#">ISPRS TC VII Symposium, “100 Years ISPRS - Advancing Remote Sensing Science”</a>
6-9 July 2010	Salzburg, Austria	<a href="#">Applied Geoinformatics Forum Symposium and Exhibition Salzburg (GI Forum 2009)- Advancing the GI Dialogue</a> Deadline for papers and extended abstracts: February 1, 2010.
12-16 July 2010	San Diego, CA, USA	<a href="#">2010 ESRI International User Conference</a> Abstract deadline: October 16, 2009.
<b>August 2010</b>		
<b>September 2010</b>		
13-15 September 2010	Ghent, Belgium	<a href="#">8th International Conference on Geostatistics for Environmental Applications (GeoENV 2010)</a>



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<b>14-17 September 2010</b>	Zurich, Switzerland	<a href="#">GIScience 2010</a> Full paper deadline: <a href="#">January 29, 2010</a> .
<b>October 2010</b>		
<b>18-22 October 2010</b>	Singapore	<a href="#">GSDI-12 World Conference 2010: Realizing Spatially Enabled Societies</a> In conjunction with the 16th PCGIAP Annual Meeting.
<b>25-29 October 2010</b>	Fez, Morocco	<a href="#">6th World FRIEND Conference (Flow Regimes from International Experimental and Network Data)</a> Theme: Global Change: Facing Risks and Threats to Water Resources. Abstract deadline: <a href="#">October 30, 2009</a> . Contact: <a href="mailto:friend2010@msem.univ-montp2.fr">friend2010@msem.univ-montp2.fr</a> .
<b>November 2010</b>		
<b>8-11 November 2010</b> <b>*NEW*</b>	Sede Boqer Campus, Israel	<a href="#">3rd International Conference on Drylands, Deserts and Desertification</a> For more information contact: Dorit Korine at <a href="mailto:desertification@bgu.ac.il">desertification@bgu.ac.il</a> .
<b>December 2010</b>		
<b>1 January - 31 December 2011</b> <b>*NEW*</b>	Worldwide	<a href="#">International Year of Forests, 2011</a>
<b>21-25 February 2011</b> <b>*NEW*</b>	Nairobi, Kenya	<a href="#">Twenty-Sixth Session of the UNEP Governing Council/Global Ministerial Environment Forum</a>
<b>28 November - 9 December 2011</b> <b>*NEW*</b>	South Africa	<a href="#">Seventeenth Conference of the Parties to the UNFCCC and 7th Meeting of the Parties to the Kyoto Protocol</a> For more information contact: UNFCCC Secretariat at <a href="mailto:secretariat@unfccc.int">secretariat@unfccc.int</a> .

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