



# Spatial Data Infrastructure – Africa Newsletter



SDI-Africa Newsletter

February 2011

Vol. 10, No. 2

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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Please mention SDI-Africa as a source of information in correspondence you may have about items in this issue.



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@rcmr.org](mailto:sdiafrica@rcmr.org) or [gojwang@rcmr.org](mailto:gojwang@rcmr.org)



## Input to this Issue

Thank you to Kate Lance, NASA/SERVIR-Africa (USA); Hussein Farah, RCMRD (Kenya); Horst M. Vogel, German Development Cooperation with the SADC (Botswana); France Lamy, Google.org and Clifford Okembo, ESRI East Africa (Kenya) for their contributions to this issue of the newsletter.

## SDI News, Links, Papers, Presentations

### [Climate scientists can learn from open source movement](#)



Climate scientists should learn from the open-source software movement to create more effective responses to climate change - but first, they must understand how it works, argue Brendan Barrett and Sulayman K. Sowe. Opening up climate science to a more creative process of producing knowledge can encourage individuals and communities to generate, adapt and share data and software without licensing restrictions, they say. For example, Barrett and Sowe suggest that researchers or organisations rework how climate change research is evaluated and distributed, using transparent peer-review processes or adopting an open licence model when publishing results. They point to the

example of the European Organization for Nuclear Research (CERN), which uses free and open software and makes data available online - showing that openness in science is not an alien concept. But it is neither a widely accepted concept. Climate scientists have yet to sign up to Science Commons, a project launched to make research, data and resources easier to find online.



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The authors argue that to make their research freely available, climate scientists must learn to give up control. Open-source software projects are governed by consensus and assessed through extensive and transparent peer review. Almost anyone with appropriate skills can access and develop parts of the project. But an institution like the Intergovernmental Panel on Climate Change (IPCC), whose actions are subject to intense scrutiny, may find it difficult to adopt an innovative and radically open approach to evaluating science, they say. Barrett and Sowe suggest that the IPCC could 'test the waters' by establishing a new, experimental working group to tackle a specific topic with a truly open approach, from which the climate change community can draw lessons to be implemented in the IPCC's sixth assessment report.

### [Global map of forest landscape restoration opportunities](#)



Almost 1.5 billion hectares (5.8 million square miles) of land are suitable for forest restoration, according a new analysis by the Global Partnership on Forest Landscape Restoration, a partnership between the World Resources Institute, South Dakota State University, and IUCN. The global map shows where forests have "great potential for recovery", including great swathes of deforested landscapes (about two-thirds of the opportunity) across Africa, Brazil, and Indonesia as well as degraded forests and woodlands. The analysis breaks opportunities into two

classes: wide-scale and mosaic (or patchy) forest generation.

The study finds that most of the opportunities occur not in frontier areas where deforestation is presently occurring, but in regions where forest degradation and deforestation have already occurred. It notes that restoration opportunities vary depending on local conditions. "These areas should not all be restored in the same fashion," states the World Resources Institute (WRI) on its web site. "There is no one-size-fits-all solution. Each forest landscape is unique and needs its own restoration design which responds in a balanced way to societal preferences and needs." "Lands that are currently used for crop production or grazing, for example, are not suitable for wide-scale restoration. They may, however, offer opportunities for restoration in mixed land-use mosaics. Many historically deforested areas belong to this category." The map shows that restoration opportunities are prominent on all continents. Many countries, not least in Africa, that have had their forests exposed to deforestation and degradation long ago will find rich opportunities to contribute to REDD-plus through forest landscape restoration.

The Global Partnership on Forest Landscape Restoration map is based on relatively coarse (1x1 km) remote sensing data and considers current land cover, land use, population density and other factors. It does not incorporate tenure arrangements and land-use dynamics, which could complicate forest recovery and restoration.

### [NASA partnership sends earth science data to Africa](#)



A unique partnership between NASA and agencies in Africa and Europe has sent more than 30 terabytes of free Earth science satellite data to South African researchers to support sustainable development and environmental applications in Africa. The data from one of the instruments on NASA's Terra satellite provide observations of Africa's surface and atmosphere, including vegetation structure, airborne pollution particles, cloud heights and winds. Transfer of these data to a distribution center in Africa will make it broadly accessible to African users who have

not been able to remotely download the large data files because of limitations in the continent's Internet infrastructure.

The data are from the Multi-angle Imaging SpectroRadiometer ([MISR](#)) on Terra. NASA's Jet Propulsion Laboratory in Pasadena, Calif., built and manages the instrument and NASA's Langley Research Center in Hampton, Va., processes, archives and distributes the data. MISR has been making continuous measurements of Earth's surface and atmosphere for more than a decade. MISR observes the sunlit portion of Earth continuously, viewing the entire globe between 82 degrees north and 82 degrees south latitude every nine days. Instead of viewing Earth from a single perspective, the instrument collects images from nine widely spaced view angles.

"NASA is committed to helping governments, organizations and researchers around the world make effective use of Earth observation data to aid in environmental decision making," said Hal Maring, a program manager in the Earth Science Division of the Science Mission Directorate at NASA Headquarters in Washington. "These efforts support the goals of the Group on Earth Observations, a partnership of international agencies that promotes collaborative use of Earth science data."



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South Africa's Council for Scientific and Industrial Research (CSIR) in Pretoria will distribute the data at no charge to the research community in the region. CSIR will facilitate access to the large volume of MISR data as part of its broad strategy of educating, training and transferring knowledge to the southern African research community. NASA shipped most of the data on high-density tapes last summer. The agencies will ensure the database stays updated with current MISR observations by upgrading connectivity and facilitating sharing of data among participating academic and research institutions.

### [Global Call for Action - Building a better map of Southern Sudan](#)

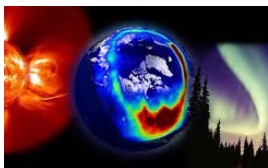
Sudan voted in a referendum from January 9 for one week to decide if the South will become independent from the North. The referendum is part of the Comprehensive Peace Agreement signed in 2005 ending the Civil War, which lasted 22 years and led to the deaths of an estimated 2 million people. Analysts fear the possibility of renewed violence.

Sudan is a huge country (2.5 million km<sup>2</sup>), with an estimated population of 44 million people, but it's poorly mapped. Without basic geospatial information, it's difficult for humanitarian agencies and first responders to monitor and evaluate the risks and current needs, target their efforts, and mobilize proper resources. At times like these, it is critical to have good maps on roads, settlements, voting stations, hospitals, buildings and other services - with both local and official names - to generate better, faster responses.

This is one of the goals of the [Satellite Sentinel](#) project, which is using imagery, field reports and Google Map Maker to conduct human rights monitoring along the border between North and South Sudan. This effort is the result of an unprecedented collaboration between [Not on Our Watch](#), Google, the [Enough Project](#), the United Nations UNITAR Operational Satellite Applications Programme ([UNOSAT](#)), the [Harvard Humanitarian Initiative](#) and [Trellon LLC](#).

With tools such as Google Map Maker and [Sudan Vote Monitor](#), you can help to improve the map, help to monitor and report human rights violations in near-real time and providing insight into the socio-political climate prevalent in the country and region. Your local knowledge and mapping contributions of schools, hospitals, and landmarks will be useful to the humanitarian community to quickly build a picture of the situation, especially in [these areas of interest](#). Items that you can map: Towns and town names (Arabic and local names especially), Roads (in-town roads as well) and trails, Displaced persons camps, Cultural landmarks, Geographic landmarks, Schools, Orphanages, shelters etc, Hospitals, Community centers, Border crossing points, Nomadic camps, Markets and large cattle gathering points, etc. Get acclimated to Map Maker through [Getting Started](#) page, and join the [Sudan-specific discussions](#).

### [South Africa opens space weather centre](#)



South Africa's space weather centre, one of 13 in the world, has been opened in the Western Cape. The centre, located at the Hermanus Magnetic Observatory, was opened by Science and Technology Minister Naledi Pandor on 10 December. The department said the centre has been "designed to fulfill international requirements and provide a superior-class facility for space weather forecasts, predictions and warnings". "This centre will contribute essential information for global space science and technology, as well as forecasts and predictions to protect our growing and

future satellite industry," Pandor said at the opening.

The regional space weather warning centre for Africa has been running at the Hermanus Magnetic Observatory for years now, and the new centre will help it expand its services. An area within the existing observatory was renovated to the tune of R1.6-million (US\$234 000) to create the dedicated space weather centre. The National Research Foundation funded the project, which began in May 2010. Although space weather does not have a direct link to conditions on earth, it can impact on the functionality of orbiting technology, like satellites, global positioning systems like GPS devices and even mobile phones. According to the Solar and Heliospheric Observatory, space weather is caused by conditions on the sun and by solar winds, which can influence the performance and reliability of space-borne and ground-based technological systems. "This centre will play a crucial role in the monitoring of conditions over Africa as we approach the next solar maximum," the National Research Foundation (NRF) said in a statement.

During a solar maximum period, the sun's magnetic field on the solar equator rotates at a slightly faster pace than at the solar poles, resulting in a type of intense storm. The last solar maximum was in 2000, and Nasa scientists predict the next one will happen in 2012. This upcoming burst of solar activity, anticipated to be the greatest since 1958, will most definitely affect mobile phones, GPSs and many other modern technologies on earth, according to Nasa. It will also result in Northern Lights shining at their brightest in 50 years. The space



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weather centre was opened a day after the official launch of South African National Space Agency and the National Space Strategy, which is expected to boost the country's involvement in space activities. However, it doesn't look like South Africa will send an astronaut to space any time soon.

### [Nigeria Government gains N44m from sale of satellite images](#)



Nigeria has generated about £175,000 (N44 million) as satellite monitoring royalties from the Nigeria Sat-1 in the orbit, through the supply of imagery capturing and analysing of imagery to other countries. Seidu Mohammed, director general of Space Research and Development Agency (NASRDA), disclosed this yesterday in Abuja during the 2010 ministerial press briefing of the ministry of science and technology.

“Our international collaborators worldwide have sent us a cheque of 175,000 pounds for sales imageries from Nigeria Sat-1,” he said. Mr.

Mohammed also hinted that Nigeria, being a member of the Disaster Monitoring Constellation (DMC), a global association of satellite owners, has begun to reap the proceeds of its satellite in the orbit. The said revenue generated has been remitted to the federal government treasuries, according to him. Another N600 million, which would have been spent on land use mapping, has also been saved as SAT-1 has been used to successfully complete the land use mapping project of the country. The director general stated that when a similar project was carried out in 1996, the sum of N600 million was spent and foreign consultants were hired, “but with Nigeria Sat-1, we have completed the mapping at no cost. Experts from our agency and the universities were used and this has saved us N500 million,” Mr. Mohammed said.

### [Nigerian Government advised to use high-tech surveillance](#)

A security consulting firm has advised the Federal Government in Nigeria to use the latest technology in security surveillance to fight insecurity. Jimie Enobong, Chief Executive Officer, Global Corp - a security consulting firm, said that security solutions such as satellite technologies, GPS, IP-based wireless mesh networks, intelligent surveillance cameras and microwave are technologies that can help the nation tackle the menace of insecurity.

The Federal Government has already ordered for closed circuit televisions which will be installed in public and private establishments to combat insecurity in the country. But the expert said that the Government should use current technologies in security surveillance, which basically is the application of intelligent high-definition surveillance cameras with a lot of video analytics.

He said if the government had applied the Internet Protocol IP mesh technologies before the bombings, the perpetrators would have been caught. On the possibility of lack of power affecting the CCTVs, Enobong stated that lack of adequate power in the country would affect the operation of the cameras, but the degree would be reduced if IP-based cameras, with power over Internet applications that consume less power and has backup that can last up to six months are used. However, he urged the government to combine technology-based security solutions with the traditional - guards, gates and guns approach to ensure the protection of the country. “Violent crimes, bombings and kidnappings with national security implications continue to endanger the lives of ordinary and innocuous citizens of this nation, as well as those who run our democracy and should be nipped in the bud” he said.

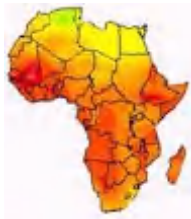
### [Ushahidi founder is the Google's Africa policy manager](#)



[Google](#) has hired Ushahidi's founder and Executive Director, Ory Okolloh, to manage its policy in Africa. [Ushahidi](#) is an open-source crisis mapping platform for crowdsourcing information, created following the 2007 Kenyan elections as a way for people to report incidents of violence.

A Harvard-educated attorney, Okolloh has worked as a corporate lawyer for an organisation that supports entrepreneurs in South Africa, though is famous for her work on Ushahidi. She was involved in the global blogging project [Global Voices](#) early on and a [TED Fellow](#). She steps down from Ushahidi to take the Google job.

On her blog, Okolloh described the new position - "The role will involve developing policy (and) strategies on a number of areas of relevance to Google and the Internet in Africa and will involve working with different parties including government leaders, policy makers, regulators and industry groups and so on."



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Google's interest in Africa is not new. Its Google Africa Blog launched in the summer of 2008, it developed tools designed for the unique needs of people living in the sub-continent, and it has tried to spur the development of "locally relevant digital content." And last year it began its G-Africa Initiative for software developers, marketing professionals and entrepreneurs. She will be based in Johannesburg, South Africa, starting in mid-January, with a portfolio that includes the whole of sub-Saharan Africa. "Overall, I'll be working to get more people online and policies favorable to that, also (cultivate) support for local content and an environment which supports innovation" she said. [Source: ReadWriteWeb]

## **6th ESRI Eastern Africa User Conference**, 5 - 7 October 2011, Zanzibar Beach Resort, Zanzibar



Eastern Africa

The 2011 ESRI EA User Conference will be held on 5 - 7 October 2011 at the [Zanzibar Beach Resort](#), Zanzibar. The conference tracks:

- Mapping & Charting and Public Safety - Defense & Intelligence, Disaster Management, Law Enforcement, National Mapping & Charting.
- Government - Demographics, Economic Development, Election Services, Land Records, Public Works, Urban Planning.
- Natural Resources - Agriculture, Biodiversity Conservation, Environmental Management, Forestry, Mining & Petroleum, Water Resources.
- Health Services and Education - Higher Education, Public Health, Research.
- Utilities - Electric Generation, Transmission & Distribution, Telecommunications, Water & Sewerage.
- Transportation & Business - Aviation, Highways & Roads, Logistics, Maritime Transportation, Railways, Real Estate.

Deadline for abstract submission: 29 July 2011 on any of the available tracks at [events@esriea.co.ke](mailto:events@esriea.co.ke).

## **Call for Papers - Special feature on Open Geographic Information**

This special feature for the Journal of Spatial Information Science (JoSIS) aims to bring together some of the key developers, academics and writers on Open Data to document its lineage, debate its philosophy and methods and to envision its future.

Invitation is for full research articles - a wide variety of stimulating papers dealing with either the theoretical and/or practical aspects of this emerging research. Potential contributions should consult the Guidelines for Authors and discuss their article with the Guest Editors Dr. Hanif Rahemtulla ([hanif.rahemtulla@nottingham.ac.uk](mailto:hanif.rahemtulla@nottingham.ac.uk)) or Professor Paul Longley ([p.longley@ucl.ac.uk](mailto:p.longley@ucl.ac.uk)) before submission. All papers will go through the normal JOSIS peer review process. Contributions are welcome from any source, and in any style appropriate to the arguments being made. Submission deadline: 30 June 2011.

## **World Conference on Marine Biodiversity**, 26-30 September 2011, Aberdeen, Scotland

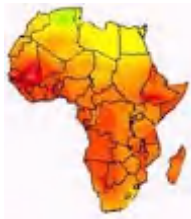
A second deadline for abstract submissions has been announced. The second call deadline: 28 February 2011. Abstracts of up to 200 words can be submitted. A separate submission is required for each individual oral or digital object presentation. Authors can submit multiple abstracts to one or more general conference themes or independently championed [themed sessions](#) (contact session champions directly for further details). In addition to open submissions to the general conference themes, the potential scope of WCMB 2011 will be maximized by active submission of themed sessions. If you would like to suggest a theme let [marine-biodiversity@abdn.ac.uk](mailto:marine-biodiversity@abdn.ac.uk) know. [Submit abstract](#).

## **Call for Papers and the 7th International Symposium on Digital Earth (ISDE7)**, 23-25 August 2011, Perth, Western Australia

The International Society for Digital Earth will hold its Biennial Symposium at the Perth Convention and Exhibition Centre, Western Australia on 23-25 August 2011. This event will be of particular interest to scientists and practitioners working in areas including spatial sciences, space technology, remote sensing, planning, geodesy, agriculture, natural resource management, climate and earth modelling, mining, resource development, spatial statistics and community empowerment.

The overall theme of the Conference is 'The Knowledge Generation'. Some topics suggested for papers include:

- Digital Earth Vision, Technologies and Applications
- Earth Observation Technologies
- Space and Satellite Technologies
- Population Growth and Infrastructure Development



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- Adapting to Global and Climate Change
- Empowering the Community
- Managing Land and Water
- Emergency Management and National Security
- Digital City and Green Cities
- Mining, Energy and Resources Development
- Natural Resource Management (NRM) and Agriculture
- Innovation

However, topics are not limited to the above and suggestion for something relevant and interesting is accepted. Submit abstracts and biography online Melissah Johnston on +61 8 9273 7042 or [melissah.johnston@walis.wa.gov.au](mailto:melissah.johnston@walis.wa.gov.au) or via [walis@walis.wa.gov.au](mailto:walis@walis.wa.gov.au). Details of the submission process, including an abstract template and guidelines are available at [http://www.isde7.net/call\\_for\\_papers](http://www.isde7.net/call_for_papers). Abstract submission deadline: 28 February 2011.

## Call for Expression of Interest to Host AARSE 2014 and Future Conferences



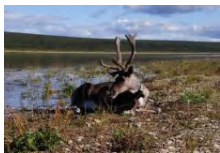
- The [African Association of Remote Sensing of the Environment](#) (AARSE) was founded in 1992 and incorporated as an international NGO under Section 21 of the South African Companies Act (Act 61 of 1973). AARSE conducts biennial (once every two years) international conferences across Africa apart from other awareness and capacity building activities. Up to 2010, AARSE has organized conferences in Harare (Zimbabwe) in 1996, Abidjan (Cote D'Ivoire) in 1998, Cape Town (South Africa) in 2000, Abuja (Nigeria) in 2002, Nairobi (Kenya) in 2004, Cairo (Egypt) in 2006, Accra (Ghana) in 2008 and Addis Ababa (Ethiopia) in 2010. The 9<sup>th</sup> conference will take place in the last week of October 2012 in Morocco (watch out for the conference website [www.aarse2012.org](http://www.aarse2012.org) before the third quarter of 2011).

AARSE is inviting expression of interest from national institutional members and other organizations/agencies in Africa for the hosting/organization of the 10<sup>th</sup> Conference of the Association in 2014 or other future editions of the conference. The conference is usually held in the month of October (of every even-number year). The bidding/declaration of interest should clearly indicate the name of (leading) organization including history of the organization and statement of previous hosting of international conference(s) of similar magnitude; Names of supporting organizations in the country supported by letters of intent from such organizations; Venue (city) of the conference; Strength of AARSE membership as well as geo-information activities in the country; Other useful information.

AARSE does not provide funds for the hosting organization but the Association can and will solicit for funding on behalf of the organization towards a successful hosting of the conference. Submit the declaration of interest to: Prof. Harold Annegarn at [hannegarn@gmail.com](mailto:hannegarn@gmail.com) with a copy to: Prof. Jide Kufoniyi at [Jide.kufoniyi@aarse-africa.org](mailto:Jide.kufoniyi@aarse-africa.org).

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

### [Satellite technology of wildlife accounting](#)

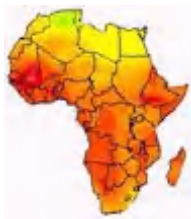


A meeting on the issues of application of space technology for monitoring and inventory of wild animals was held on 8th December, 2010 at ScanEx Research & Development Center. The most of the focus was on the issues of monitoring reindeer in Siberia, Far North and Far East. Leading specialists in sphere of wild animals' inventory took part in this event, as well as representatives of scientific organisations and companies, specializing in development of satellite technology - SPIIRAS, "ES-PAS", ScanEx,

Commonwealth of Indigenous Minorities of the North, Siberia and Far East.

The central topic for the discussion were modern methods of assessing the number of wild reindeer on the territory of Taimyr, Chukotka peninsular, Republic of Sakha (Yakutia) and other regions. A special attention was paid to the possibilities of using space imagery data for solution of tasks of habitat areas detection and monitoring of herds migration, as well as definition of approximate number of herds/ trends in their changes.

In 2011 during the aerial census of the Taimyr wild reindeer population, space imagery will be made of the concentration of the largest groups of animals in Northern Taimyr. To detect the migration paths of the wild reindeer population in Western Taimyr there are plans to acquire 15 Argos neck collars for tracking from satellites in 2011. Methodical approaches have also been discussed and measures outlined for setting up a satellite-based monitoring of reindeer in 2011. The activities will be based on a comparative analysis of high



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resolution space images, aerial fly-arounds results and Argos satellite system-based monitoring of animals, archived data and other additional information.

### [SpaceAid supporting response to floods in Senegal](#)

In the past month, Senegal received support through the UN-SPIDER SpaceAid framework in support of its response to floods. UN-SPIDER was initially contacted by the local UN OCHA office in Dakar, Senegal, which communicated the extent of the event and areas of interest for the acquisition of satellite imagery. On 10 September 2010, the Services and Applications For Emergency Response (SAFER) was activated at the request of the World Food Programme (WFP) on behalf of UNOOSA/UN-SPIDER, with the Center for Satellite Based Crisis Information (ZKI) as a value-adder, further supported by the Service Régional de Traitement d'Image et de Télédétection (SERTIT). On its SpaceAid Updates page UN-SPIDER provided the coordinates of the areas affected by the disaster and constantly updated information about the satellite imagery that was collected. Available space-based information, including a satellite tasking table as well as contact details was made available on the respective SpaceAid Updates page. During the upcoming UN-SPIDER workshop in Bonn, representatives from SAFER, from UN OCHA Dakar, and from ZKI will present their work and hold follow-up discussions on the response activities.

### [Space station tracks months-long voyages of ships at sea](#)



Hosted by Europe's Columbus research module on the International Space Station (ISS), and activated on 1 June, the tracking system picks up Automatic Identification System (AIS) signals, more usually employed by port authorities and coastguards to keep tabs on local ship traffic.

All international vessels, passenger carriers and cargo ships above 300 tonnes are mandated to carry AIS VHF-radio transponders. "AIS messages are designed to be used only on a local basis, with a range of 50 km or so to the horizon," explained Torkild Eriksen of the Norwegian Defence Research Establishment (FFI), which built the NORAIS receiver in collaboration with Kongsberg Seatex. "Instead, we are picking them up from 350 km in orbit, when they might

have travelled up to 2000 km. Our receiver, therefore, had to be designed for extreme sensitivity to detect such weak signals."

This initiative, funded by ESA, is part of the trend of using the ISS as a platform to observe and monitor our planet. The Station's orbital inclination and altitude are different to those of most observation satellites, offering other ground patterns over about 95% of the population. "Operating from space, we have been able to track ships for long periods as they cross the ocean," explained Andreas-Nordomo Skauen of FFI. Nearly 30 million AIS messages were received in only four months from more than 60 000 different transmitters. "Over the four-month period," added Mr. Skauen, "we watched one ship travel from the western Pacific to Argentina then over to Europe and down to Africa, picking up its AIS signal from two to seven times per day, depending on latitude. "So we can reveal exactly where a vessel has been in the marine environment, information that would be very useful to port, fisheries and marine authorities."

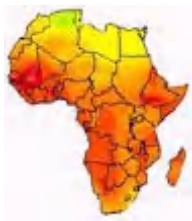
## GIS Tools, Software, Data

### [2009 global land cover map released online](#)



The European Space Agency (ESA) 2009 global land cover map has been released and available to the public online from the 'GlobCover' website. ESA and Belgium's Université catholique de Louvain created the map using software developed by Medias France and Germany's Brockmann Consult on data from Envisat's Medium Resolution Imaging Spectrometer at a resolution of 300m collected from 1 January to 31 December 2009. The map's legend uses the UN Food and Agriculture Organisation's Land Cover Classification System.

The map displays land classification information for most of the Earth's surface at a resolution of approximately 20 acres (~9 hectares) per pixel. Each pixel is color coded to represent one of 22 different land classifications, which are based on the predominant type of vegetation found at that location. The Google Earth version of the map was created by the Google Earth Library, and is presented at the full resolution of the original. A color coded legend can also be displayed as an overlay. The map is downloadable into [Google Earth](#).



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## [Orange-Senqu River Awareness Kit](#)

**Orange-Senqu River Awareness Kit** The Orange-Senqu River Awareness Kit introduces users to the fundamentals of geography, socio-economics, water governance and water management in the Orange-Senqu River basin. The River Awareness Kit is intended to provide a centralised repository for knowledge related to the Orange-Senqu River basin.

## **Remote Sensing Web Tools**

- [CID Portal](#) - An online archive containing more than 10 TByte of satellite images.
- [FOODSEC Meteodata distribution page](#) - Download meteo data derived from global atmospheric model.
- [LioDotNet](#) - A web tool for Satellite data acquisition.
- [AGRI4CAST Image Server](#) - The online portal for remote sensing vegetation state parameters.

## [BASINS 4.0](#)

The biggest change in BASINS 4.0 is the open source GIS software and the ability to transfer and share GIS standard data (shapefile, dbf, and GeoTiff) between other licensed GIS software. Also a Windows-based Climate Assessment Tool, for assessing potential impacts of changing climate on stream flows and pollutant loads has been added as a "plug-in" program which interfaces with WinHSPF.

BASINS Version 4.0 is an open source GIS that integrates environmental data, analysis tools, and modeling systems. Therefore, BASINS' hardware and software requirements are, at a minimum, similar to those of other PC-based GIS systems. BASINS can be installed and operated on a standalone, internet connected Windows compatible 32 bit personal computers equipped with the software, random access memory (RAM), virtual memory, and hard disk. [BASINS 4.0 zip file](#) (112MB)

[DEM Tools](#) "This package is useful for previewing DEM (Digital Elevation Model) data sets and wandering around in virtual representations of various places on the planet." [License: [GNU General Public License \(GPL\)](#)]

[DEMViewer](#) "DEMViewer is a digital elevation model viewer written in Java. With DEMViewer you can visualize digital elevation models generated by ArcInfo (as ASCII files) and combine it with data (in the same ArcGrid ASCII export format and/or JPG/PNG/GIF images)." [License: [GNU General Public License \(GPL\)](#)]

[GeoJasPer](#) "GeoJasPer is a free and open source Geo supporting command line transcoder between JPEG2000 and other formats. i.e. Converts image data from one format to another correctly transferring Geo information between GeoTiff and GeoJp2™ (GeoJpeg2000). [License?]"

[GISToolKit](#) "The GISToolkit software is an open source java toolkit for building spatially enabled applications. It has some ability to read data from a variety of data sources, and to display that data." [License: [GNU Lesser General Public License \(LGPL\)](#)]

## **Geospatial Research, Applications, Reference Material**

### [Satellite imagery to help improve veld production](#)

Satellite images could soon be used in South Africa to quantify veld production, estimate livestock carrying capacity and help farmers plan fodder flow, according to Weekly report. The technology used for satellite imagery is widely available and accurate, and farmers can benefit from it, say Tony Palmer and Alan Short of the Agricultural Research Council's Animal Production Institute (ARC-API). Once the technique of converting satellite data into an accurate picture of plant growth (and so of grazing capacity) is refined, researchers can give farmers real-time plant-production estimates for their veld. This will be invaluable for fodder-flow planning in livestock areas. Regional maps will be available from the agriculture department's Agricultural Geo-referenced Information System (AGIS) at [www.agis.agric.za](http://www.agis.agric.za). These maps will help government support farmers during exceptional circumstances, such as droughts.

By measuring surface temperature and atmospheric and soil moisture, satellite-borne sensors can show when conditions are optimal for evapotranspiration (ET), and so for plant growth. Launched in the late 1990s, the Moderate Resolution Imaging Spectroradiometer (MODIS) was designed to give improved ET estimates. The sensor collects data to calculate a normalised difference vegetation index (NDVI), which is a daily





## Spatial Data Infrastructure – Africa Newsletter



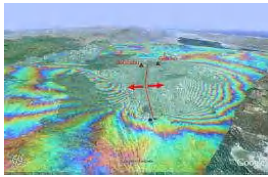
estimate of plants' active growth. Cloud-free images are then used to prepare an eight-day summary of the leaf-area index, which is the leaf area from which ET can occur. This relationship between MODIS leaf-area index and actual ET can predict biomass production in the South African savannah. As South Africa also produces livestock on grassland, succulent Karoo, Nama-karoo and thicket biomes, the water-use efficiency of typical veld conditions in these biomes will be researched as part of a project funded by the ARC, the National Research Foundation and Red Meat Research Development South Africa.

### [GPS-equipped smartphones to track disease spread](#)

Similar techniques have already been used to track sexually transmitted diseases (STDs) but airborne infections like flu are harder to monitor. Buchanan believes that accurate GPS location readings of less than 10 metres can indicate how quickly a flu pandemic might occur by monitoring patient contact with others and alerting medical staff to immunise those most likely to contract an infection earlier. "Such a system would allow emergency health providers to prioritise who may have come into contact with an individual exposed to a serious airborne illness, such as influenza during an outbreak," he said in a statement. "Another application might be to trace the source of an infection in a close environment, such as a hospital."

Researchers in France have previously suggested that GPS can help measure the severity of peripheral artery disease (PAD) in sufferers by measuring how far they walk, and the technology has also been harnessed in tracking devices designed to locate disorientated Alzheimer's patients.

### [Pinpointing where volcanic eruptions could strike](#)



A better way to pinpoint where volcanic eruptions are likely to occur has been produced by an international team of geophysicists. Scientists from the universities of Leeds, Purdue, Indiana and Addis Ababa, investigated volcanic activity occurring in the remote Afar desert of Northern Ethiopia between 2005 and 2009. By studying a rare sequence of 13 magmatic events – where hot molten rock was intruded into a crack between the African and Arabian plates - they found that the location of each intrusion was not random. They showed that they were linked because each event

changed the amount of tension in the earth's crust.

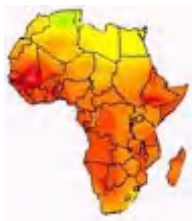
The findings, published in *Nature Geoscience*, will help scientists to more accurately predict where volcanic eruptions could strike and contribute to efforts to limit the damage they can cause. Lead author Dr Ian Hamling, who completed the analysis as part of his PhD in the School of Earth and Environment at the University of Leeds said: "It's been known for some time that a large earthquake has a role to play in triggering subsequent earthquakes, but until now, our knowledge of volcanic events has been based on isolated cases. We have demonstrated that volcanic eruptions can influence each other. This will help us predict where future volcanic eruptions are likely to happen." The team studied the region around a large volcanic dyke - a vertical crack which is created when Magma seeps from underground through rifts in the surface of the earth - which erupted in the Afar desert in September 2005. The Magma - hot molten rock - was injected along the dyke between depths of 2 and 9 km, and altered the tension of the earth. The team was able to watch the 12 smaller dykes that subsequently took place in the same region over a four year period.

The paper 'Stress transfer between thirteen successive dyke intrusions in Ethiopia' by Drs Ian Hamling and Tim Wright of the School of Earth and Environment at the University of Leeds; Eric Calais and Laura Bennati of the Department of Earth and Atmospheric Sciences at Purdue University, Indiana, and Elias Lewi of the Geophysical Observatory, Addis Ababa University, Ethiopia, is available online in *Nature Geoscience*.

### [La Niña related impacts likely to continue](#)

As of mid-January, moderate-to-strong La Niña conditions continue to exist in the tropical Pacific. Scientists at the International Research Institute for Climate and Society expect these to linger, potentially causing additional shifts in rainfall patterns across many parts of the world in months to come. These shifts, combined with socioeconomic conditions and other factors, can make some parts of the world more vulnerable to impacts. However, La Niña conditions do allow the IRI and other institutions to produce more accurate seasonal forecasts and help better predict extreme drought or rainfall in some parts of the world. This enhanced predictability could help societies improve preparedness, issue early warnings and reduce any potentially negative impacts from La Niña.

"Based on current observations and on predictions from models, we see at least a 90% chance that La Niña conditions will continue through March 2011," says IRI's chief forecaster, Tony Barnston. Climate scientists



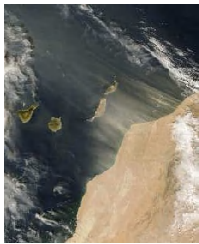
## Spatial Data Infrastructure – Africa Newsletter



have found La Niña's signature in the widespread flooding that occurred in Pakistan last year, as well as flooding in West Africa, South Africa, and most recently in Queensland, Australia, where an area estimated to be the size of France and Germany combined was left underwater. Places such as Indonesia and northern South America have also been receiving above-normal rainfall. But La Niña probably isn't to blame for the recent flooding in southeastern Brazil, says Barnston. The more likely culprit there was a pocket of above-average sea-surface temperatures in the southwest Atlantic that promoted low atmospheric pressure and an increased tendency for heavy rainfall.

La Niña can be associated with droughts as well. It's keeping east Africa drier-than-usual, sparking food-security concerns in areas lacking irrigation, including parts of Somalia, Kenya, Ethiopia and Tanzania. Areas in southeastern South America, central southwest Asia, and the southern U.S. may also see lower-than-normal rainfall for the first quarter of 2011. Once developed, La Niña conditions typically persist for 9-12 months, peaking sometime during November, December, or January. But 2010 was an interesting and lively year for climate scientists. For the first four months of this year, El Niño conditions prevailed in the tropical Pacific, but that quickly changed, and by June, a La Niña pattern had emerged.

### ['A-Train' satellites search for 770 million tons of dust in the air](#)



Using data from several research satellites, scientists will spend the next three years trying to understand the climate impacts of about 770 million tons of dust carried into the atmosphere every year from the Sahara Desert. Some Saharan dust falls back to Earth before it leaves Africa. Some of it streams out over the Atlantic Ocean or Mediterranean Sea, carried on the wind as far away as South America and the southeastern U.S. All of it has an as-yet unmeasured impact on Earth's energy budget and the climate by reflecting sunlight back into space. "The people who build climate models make some assumptions about dust and its impact on the climate," said Dr. Sundar Christopher, a professor of atmospheric science at The University of Alabama in Huntsville.

Christopher will use a \$500,000 grant from the Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations (CALIPSO) mission, developed and managed by NASA's Langley Research Center in Hampton, Va. CALIPSO is an Earth observing satellite that provides new insight into the role that clouds and atmospheric aerosols play in air quality, weather and climate. Christopher will use both CALIPSO and Aqua satellite data in his research.

Aqua was the first member launched of a group of satellites termed the Afternoon Constellation, or A-Train, a group of satellites that travel in line, one behind the other, along the same track, as they orbit Earth. Combining the information from several instruments gives a more complete answer to many questions about Earth's atmosphere than would be possible from any single satellite observation taken by it. "We want to learn more about the characteristics of this dust, its concentrations in the atmosphere and its impact on the global energy budget so we can replace those assumptions with real data," Christopher said.

### [Recent decline in the global land evapotranspiration trend due to limited moisture supply](#)

More than half of the solar energy absorbed by land surfaces is currently used to evaporate water. Climate change is expected to intensify the hydrological cycle and to alter evapotranspiration, with implications for ecosystem services and feedback to regional and global climate. Evapotranspiration changes may already be under way, but direct observational constraints are lacking at the global scale. Until such evidence is available, changes in the water cycle on land - a key diagnostic criterion of the effects of climate change and variability - remain uncertain.

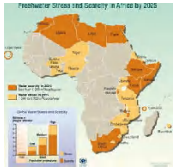
This report provides a data-driven estimate of global land evapotranspiration from 1982 to 2008, compiled using a global monitoring network, meteorological and remote-sensing observations, and a machine-learning algorithm. In addition, it has assessed evapotranspiration variations over the same time period using an ensemble of process-based land-surface models. The results suggest that global annual evapotranspiration increased on average by  $7.1 \pm 1.0$  millimetre per year per decade from 1982 to 1997. After that, coincident with the last major El Niño event in 1998, the global evapotranspiration increase seems to have ceased until 2008. The authors argue that this change was driven primarily by moisture limitation in the Southern Hemisphere, particularly Africa and Australia. In these regions, microwave satellite observations indicate that soil moisture decreased from 1998 to 2008. Hence, increasing soil-moisture limitations on evapotranspiration largely explain the recent decline of the global land-evapotranspiration trend. Whether the changing behaviour of evapotranspiration is representative of natural climate variability or reflects a more permanent reorganization of the land water cycle is a key question for earth system science.



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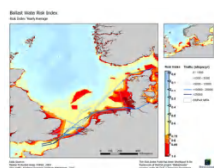


## [Freshwater stress and scarcity in Africa by 2025](#)



According to Population Action International, based upon the UN medium population projections of 1998, more than 2.8 billion people in 48 countries will face water stress or water scarcity conditions by 2025. An area is experiencing water stress when annual water supplies drop below 1700 m<sup>3</sup> per person. Water scarcity means that the annual water supply is below 1000 m<sup>3</sup> per person. This graphic shows which African nations are expected to be experiencing water stress, and which are expected to be facing water scarcity, by the year 2025. It also includes a graphic which shows that as the world's population continues to grow, a higher proportion of the population will be affected by water stress and water scarcity.

## [Satellite data reduce invasion of alien species](#)



Every day, thousands of different organisms are carried far from their natural habitat in water used as ship ballast. To reduce the transfer of invasive aquatic species between ecosystems, satellites are being used to assess areas at risk from ballast water exchange. While [plants](#) and [animals](#) have always clung to the outside of ships' hulls, the problem of marine [invasions](#) has dramatically increased since the widespread introduction of water-tight hulls in the 19th century. It is estimated that around five billion tonnes of water, carrying a multitude of micro-organisms, eggs, [larvae](#) and larger organisms, are now transported annually as ballast.

The intrusion of harmful aquatic species and [pathogens](#) through ballast water ranks one of the highest risks to the marine environment, especially in [coastal waters](#). Responding to this issue, the International Maritime Organisation (IMO) formulated the 'International Convention for the Control and Management of Ships' Ballast Water and Sediments' to prevent the potentially devastating effects. The convention, currently being ratified, is expected to take effect in 2013.

To support Germany's Federal Maritime and Hydrographic Agency (BSH), which is responsible for ballast water management in German waters, ESA is providing [satellite](#) data for a case study to estimate the risk to the environmental from ballast water.

ESA's Data User Element Innovators II Ballast Water project supports BSH and the decision processes involved for ballast-water management in the North Sea and Baltic Sea prior to the ratification of the IMO convention. The project includes the provision of two types of products: the Ballast Water Risk Index and the Average Risk Index. A workshop will be held on 25 January in Hamburg, Germany, where decision-makers and shipping companies will meet to discuss the aim of expanding the tool for use throughout Europe and possibly North America.

## 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).

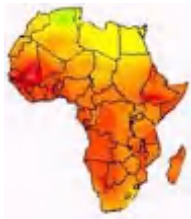
- The [SDI-Africa E-mail Discussion List](#) is open and available to anyone to read on the web. To submit messages or to receive submitted comments or notices by e-mail, one first must register.
- To see the collection of prior postings to the list, visit the [SDI-Africa E-mail Discussion List Archives](#).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

## [African Regional Centre for Space Science and Technology Education in English \(ARCSSTE-E\)](#)

The African Regional Centre for Space Science and Technology Education in English (ARCSSTE-E) is established in Nigeria at Obafemi Awolowo University Campus, Ile-Ife. Within the frame work of its mandate to build capacity in core areas of Remote Sensing and GIS, Satellite Communication, Satellite Meteorology and Global Climate and Basic Space and Atmospheric Sciences Applications.

The Space Education courses comprise a 9-month Post Graduate Diploma programme (January to September) every year; and an optional 12 months MSc degree programme. The list of courses:

- [Satellite Communication \(SATCOM\)](#)
- [Satellite Meteorology \(SATMET\)](#)



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- [Remote Sensing/Geo Information System \(RS/GIS\)](#)
- [Basic Space](#)

The Center trains participants mostly from English speaking African countries: Angola, Botswana, Cameroon, Egypt, Ethiopia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mozambique, Namibia, Nigeria, Sierra Leone, South Africa, Sudan, Swaziland Tanzania, The Gambia, Uganda and Zimbabwe. Deadline for applications: 30 September of each year.

## **ESRI Technical Certification**

ESRI has set the industry standard for GIS technology and is now establishing benchmark standards for individuals who use ESRI software with the recently launched ESRI Technical Certification Program. The ESRI Technical Certification Program recognizes qualified individuals who are proficient in best practices for using ESRI software and are awarded in different areas of expertise at both an Associate and Professional level. The program is open to ESRI users worldwide and consists of 13 certifications recognizing expertise in desktop, developer, or enterprise use of ArcGIS. Users achieve certification by successfully completing computer-based examinations, which are offered in more than 5,000 testing locations in 165 countries. Beginning in January 2011, users will be able to test for five certifications. The remaining eight are still in development and will be available later in the year. Establishing an industry recognized benchmark of expertise in using ESRI software will:

- Improve success with GIS by creating a community of professionals proficient in using ESRI software.
- Help organizations maximize their investment in ESRI products by employing a workforce certified in using best practices.
- Create professional development opportunities.
- Provide an opportunity for individuals, partners, consultants, and other organizations to distinguish themselves among their peers.
- Assist hiring organizations in assessing candidate skills and abilities.

Workplace experience, combined with GIS education and ESRI training courses, is the best preparation. The ESRI Technical Certification Web site lists specific skills that will be assessed in each exam, as well as training courses that aid in acquiring and improving these skills. Advice on the best training and preparation for a particular certification is available. [Read more.](#)

## **ESRI South Africa presents a full spectrum of GIS courses: February and March 2011**



- The course covers GIS theory and functionality: The desktop products (ArcView, ArcEditor, and ArcInfo; Server products (ArcGIS server and ArcSDE); Programming to enable customization of the product, ArcGIS extensions, as well as Introductory and advanced courses in ERDAS Imagine Remote Sensing Software'

Various training venues are available at Esri South Africa, for further information contact: 011 238 6300 [Email the training team](#)

## **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.

## **ESRI Eastern Africa Hands-on Training for GIS Professionals**



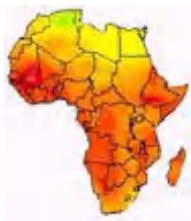
The following courses are offered at the ESRI Authorized Learning Centre in UpperHill, Nairobi, Kenya.

### **Fundamentals of ArcGIS Desktop**

- |                                                         | Duration (Days) |
|---------------------------------------------------------|-----------------|
| • ArcGIS Desktop 1: Getting Started with GIS            | 3               |
| • ArcGIS Desktop 2: Tools and Functionality             | 4               |
| • ArcGIS Desktop 3: Workflows and Analysis              | 3               |
| • <b>Data Production and Editing with ArcGIS</b>        |                 |
| • Field Data Collection Using ArcPad and ArcGIS Desktop | 3               |
| • Building Geodatabases                                 | 4               |
| • Data Production and Editing Techniques                | 4               |

### **Analysis with ArcGIS**

- |                                           |   |
|-------------------------------------------|---|
| • Performing Analysis with ArcGIS Desktop | 4 |
|-------------------------------------------|---|



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## Cartography with ArcGIS

- Creating and Publishing Maps with ArcGIS 4

## Enterprise GIS

- Introduction to ArcGIS Server 3
- Introduction to the Multiuser Geodatabase 3
- Managing Editing Workflows in a Multiuser Geodatabase 4

## Programming with ArcGIS

- Introduction to Programming ArcObjects using .NET 4
- Introduction to Geo-processing using Python 3

**Added new courses focusing on ENVI:** the Image Processing Software for processing and analyzing geospatial imagery.

- Introduction to Remote Sensing with ENVI 3
- ENVI for GIS 3
- Exploring ENVI 5
- ENVI for Defense and Intelligence 4

Contact: ESRI Eastern Africa at: [training@esria.co.ke](mailto:training@esria.co.ke), telephone: +254 20 2713630/1/2 or fax: +254 20 2713633.

## [ITC Education Brochure 2011-2012 online](#)

Read the new ITC Education brochure with all the degree, diploma and certificate programmes in geo-information science and earth observation starting in 2011. More information is available at [www.itc.nl/Pub/Study/CourseFinder](http://www.itc.nl/Pub/Study/CourseFinder)

## [NFP Course List 2011-2012](#)

Short Courses in Agriculture, forestry and fishery with fellowship application deadlines 1 May 2011 and 1 October 2011.

## [Training Course: Climate change adaptation in agriculture and natural resources management](#), 28 February - 11 March 2011, in East Africa

The course is designed for mid-career professionals who are engaged at higher levels and deal with policy making either from the research side (as advisor), government side, or from civil society who aim to have a full understanding of climate change adaptation concepts, be able to effectively and meaningfully contribute to the debate on climate change adaptation, either in the policy process and/or in providing knowledge to the policy process. For details, contact: Terwisscha van Scheltinga (Catharien), Wageningen University at [Catharien.Terwisscha@wur.nl](mailto:Catharien.Terwisscha@wur.nl) or [www.ess.wur.nl/UK/People/Catharien+Terwisscha+van+Scheltinga/](http://www.ess.wur.nl/UK/People/Catharien+Terwisscha+van+Scheltinga/), <http://portals.wi.wur.nl/climatechange>, [www.genderandwater.org](http://www.genderandwater.org).

## [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] –

l'ÉRAIFT est une école d'avant-garde au service du développement humain et durable de l'Afrique. Elle a pour vocation de former des Spécialistes (DESS & Ph.D) de l'Aménagement et de la Gestion des Forêts et Territoires Tropicaux, par une Approche Interdisciplinaire, Globale et Intégrée, autrement dit Systémique. Contact: [info@eraift.org](mailto:info@eraift.org).

## [Short-courses offered by RECTAS in 2011](#), Ile-Ife, Nigeria

The [Regional Centre for Training in Aerospace Surveys \(RECTAS\)](#) 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).



## [RCMRD - Courses offered by the department of Remote Sensing, GIS and Mapping](#)

The Centre offers the following courses in geo-information. The courses last between one week to three months, and offered through out the year.

- Introduction to Remote Sensing & Image Processing
- Introduction to Geographic Information Systems (GIS)
- Introduction to Global Positioning Systems (GPS)





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- Application of Remote Sensing & GIS in natural resources management.
- Application of Remote Sensing & GIS in Early Warning Systems for Food Security Application of RS & GIS in Disaster Risk Management
- Geospatial database development and management for use in planning process and decision making
- Principles of Digital Cartography
- Application of GPS technology in resource surveys and mapping
- Integrated Water Management
- Application of GIS in poverty mapping, health care & good governance
- Land Information Management Systems
- Service and Repair of Survey equipment

## Funding Opportunities, Awards, Support

### Early career geoscientist essay contest – the future of geological sciences



IUGS invites all early career geoscientists to submit an essay on their view of the Future of the Geological Sciences. The winning essay will be published as the lead article in *Episodes* magazine, the global publication of IUGS. The winner will also receive free registration to the next International Geological Congress (IGC) to be held in Brisbane, Australia in August 2012. The winner will be acknowledged formally with a Medal to be presented at the IUGS awards ceremony during IGC Australia.

Guidelines for submissions: • Abstract: 200 words • Paper: minimum 3000 words; maximum 5000 words • Language: English • Theme: *The Future of the Geological Sciences* • Submitted by: geoscientists under the age of 35 years • Submission deadline: 7 March 2011 • Submit essays to: [Wesley Hill whill@geosociety.org](mailto:Wesley.Hill@geosociety.org).

### African Research Grants programme issues first call for proposals

The African Union (AU) Research Grants programme, a project under the Africa–EU partnership has announced its first call for proposals (<http://www.africahrst.org/stict/rgp/call2011.aspx>). The AU is seeking proposals that focus on post-harvest and agriculture, renewable and sustainable energy, and water and sanitation in Africa. It is expected that the move will foster the implementation of Africa's Science and Technology Consolidated Plan of Action, and ensure more involvement from African scientists in solving the continent's problems. The First Call for Research Projects and Proposals will be limited to the following science and technology strategic priority actions:

- Post-harvest and Agriculture (Food security and productivity, Crop-livestock integration, Agricultural policy and commercialization, marketing of agricultural produce)
- Renewable and sustainable energy (Sustainable energy at a local and regional level, Renewable energy use and its impact on the environment, Innovative approach to Renewable and sustainable energy, Measures for making sustainable energy more widespread)
- Water and sanitation (Water for livelihood, Water for agriculture, Social and economic dimensions of water resources management)

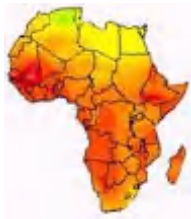
Submission deadline: 30 April 2011. [Download ALL files](#) [1552 KB].

### The 2011 Technology in Government in Africa (TIGA) Awards



The [Economic Commission for Africa \(ECA\)](#) and the Government of Finland are pleased to announce the 2011 Technology in Government in Africa (TIGA) Awards, which recognizes outstanding achievements by organisations or teams in developing and implementing innovative projects under three levels/subcategories: national, provincial, and local. The entries can be made in the following categories:

- Public service delivery to citizens/communities - projects to improve online government service delivery (such as service application forms, tax payments, revenue collection, birth & death registration, other forms of Government eServices, etc.); with a specific focus on citizens or businesses as clients of government.
- Improved health services through the use of ICTs - projects to improve online as well as Government eServices using other forms of health service delivery; with a specific focus on citizens as clients of government.



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- Public Private Partnership (PPP) in economic and financial eServices delivery - projects to improve financial service delivery (such as customs, banks, insurance, trade facilitation, etc.); with a specific focus on citizens as clients of government.
- Improved educational services through the use of ICTs - projects to improve online as well as eServices using other forms of education service delivery; with a specific focus on citizens. The prizes will be under two levels/subcategories: public and private. It is organised in collaboration with the eLearning Africa Scholarship Trust, the organizer of the eLearning Africa annual event. The [6th International Conference on ICT for Development, Education and Training](#) (eLearning Africa) takes place from May 25 - 27, 2011 in Dar es Salaam, Tanzania.

The project description should clearly illustrate the benefits to Government clients of the category entered based on the selection criteria including Government effectiveness in terms of reducing costs, effective delivery of public services and improved accessibility to citizens, and fostering local talent and creating synergies between the private and public sectors. Application forms and description of the project should be in [Format: [English](#) or [French](#)]. Submission deadline: 28 February 2011. Contact: [tiga@uneca.org](mailto:tiga@uneca.org), website: <http://www.uneca.org/tiga>.

## [Right Livelihood Award for outstanding vision and work on behalf of our planet and people](#)

The Right Livelihood Award exists to honor and support those groups of people and individuals around the globe who valiantly uphold the principles of right [livelihood](#). "Right Livelihood" embodies the principle that each person should follow an honest occupation, which fully respects other people and the natural world. It means being responsible for the consequences of our actions and taking only a fair share of the earth's resources.

Anyone except Right Livelihood Award Jury and staff members can propose anyone (individuals or organisations), except themselves and close relatives or their own organisations, to be considered for a Right Livelihood Award. Proposals must not be publicised, except to the candidate and possible referees.

Normally, the Foundation makes three Cash Awards and one Honorary Award each year. The Cash Awards are intended for work in progress or the extension of existing activities; they are never given for personal use. The deadline for proposals for any current year is March 1.

## [Call for Nomination: Nansen Refugee Award](#)

This Award is the most prestigious honour conferred by [UNHCR](#) to an individual or an organization in recognition of extraordinary and dedicated service to refugees. It consists of a commemorative medal and a US\$100,000 monetary prize donated by the governments of Norway and Switzerland. Anybody can nominate someone or some organization for the Nansen Award, but a special committee selects the annual winner. Recipients have been chosen from many different areas. Whatever their creed, colour, age or profession every winner put in extraordinary effort and time to help the forcibly displaced around the world.

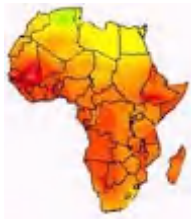
The monetary prize that accompanies the Nansen Award is intended to enable the recipient to pursue refugee assistance [projects](#) drawn up in consultation with UNHCR. To date, the Nansen Fund projects have benefited refugees in places such as Cambodia, Botswana and Venezuela. They have contributed towards the setting up of a special ward for refugee children in Pakistan, the building of schools at Katumba in Tanzania and income-generation projects for people displaced by landmines in southern Lebanon. Deadline to submit nomination: 28 February 2011.

## [European Commission \(EC\) - Combating Illegal Forest Exploitation in Central African Republic](#)

The EC will make grants to civil society organizations in the Central African Republic to combat illegal cutting and trading of forest products. The grants support the international program FLEGT (Forest Law, Enforcement, Governance, and Trade). The call is open to non-state nonprofit organizations in the Central African Republic. This includes not only environmental NGOs, but also organizations engaged in issues of national policy, governance, and social welfare. Application deadline: 25 February 2011.

## [Women's World Summit Foundation - Prize for Women's Creativity in Rural Life 2011](#)

The Prize honors women and women's groups anywhere in the world exhibiting creativity, courage, and commitment for improving the quality of life in rural communities. WWSF aims to draw international attention to laureates' contributions to sustainable development, household food security, and peace. The Prize provides an award of US\$1 thousand per laureate, and US\$3 thousand for specific African women's organizations. Nominations are due 31 March 2011.



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### [Smithsonian Tropical Research Institute - Research in Forest Plots 2011](#)

The CTFS Grants Program at STI invites applications for forest research from senior researchers, postdoctoral fellows, and graduate students. The CTFS network comprises more than thirty forest research plots across the Americas, Africa, Asia, and Europe - with a strong focus on tropical regions. Research projects can be basic or applied. Social scientists and natural scientists of all nationalities are encouraged to apply. Most CTFS research grants range from US\$3 thousand to US\$30 thousand. Application deadline: 1 April 2011.

### [Swiss Re - ReSource Watershed Award 2012](#)

The International ReSource Award for Sustainable Watershed Management is a prize for leadership in implementing sustainable watershed management in developing countries. Applications are invited from NGOs, private, scientific, and public institutions -- and combinations of them. Applicants need to be strongly linked to the communities where the water projects are located. The prize money of US\$150 thousand is used to build the capacity of the implementing organizations. The application deadline: 30 April 2011.

## Employment Opportunities

### [Project Manager, Southern Sudan Protected Areas Capacity Building Project](#), Juba, Southern Sudan

This is a full-time position based in Southern Sudan responsible for managing [Wildlife Conservation Society \(WCS\)](#) day to day implementation of a project for Protected Area Network management and building capacity in Southern Sudan in cooperation with the Ministry of Wildlife Conservation and Tourism of the Government of Southern Sudan. The project undertakes a range of activities to build capacity for protected area management, improve management of key protected areas, and develop and enhance sustainable financing of protected areas.

The desired qualifications for this position are a PhD or Master's degree in conservation, natural resource management, or related field, at least 5 years of experience working on conservation and protected areas management issues in Africa in collaboration with Government agencies, proven ability to work well in a team in multi-cultural situations and under difficult field conditions. Fluency in written and spoken English required and familiarity with languages and culture of Southern Sudan will be an advantage.

Apply by sending an application letter and CV together with the names and contact information of three referees to [jkilonzi@wcs.org](mailto:jkilonzi@wcs.org). The file size should be limited to under 500kb. Deadline: 15 February 2011.

### [LEAD Africa Fellowship Programme Director](#), Africa

LEAD Africa is part of the global LEAD network and is the pan-African platform for the three regional African LEAD Member Programmes (MPs). The Programme Director will head up the LAFP and provide a central point of accountability to LI and SF on programme delivery. Reporting to the Chief Executive of LEAD International, this position will manage a full-time staff of two and is responsible for ensuring the LAFP is delivered to a consistently high standard, meeting agreed Key Performance Indicators in terms of participant satisfaction, programme evaluation and cost efficiency.

The ideal candidate will have previous experience in a senior management role within a regional or international organisation with a matrix structure; commercial, budgeting and financial planning experience; experience of working with diverse groups and networks and in a multi-cultural environment; knowledge of leadership and sustainability issues in an African context and experience of fundraising and donor management.

The position will be based on the continent of Africa, precise location flexible. Send a letter of application stating the skills and approach that you would bring to this position with your CV/resume (no photos) to [recruitment@lead.org](mailto:recruitment@lead.org). Closing date: 14 February 2011.

### [Senior Agricultural Water Management Specialist and Office Head](#), Addis Ababa, Ethiopia

The specialist will develop, lead and carry research projects to improve water resources management whilst also managing the smooth running of the East Africa office of the International Water Management Institute (IWMI). The incumbent should hold a relevant PhD and have substantial postdoctoral research experience in the resilience and productivity of agricultural systems including irrigated and rainfed agriculture. In addition to leading research to meet IWMI's goals, she/he will develop and sustain partnerships with IWMI's collaborators. She/he will report via the Africa Regional Director and relevant Theme Leaders. The





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opportunity to lead a theme or geographically focused component of the new Consultative Group on International Agricultural Research (CGIAR) Research Program on Water, Land and Ecosystems is also a possibility for an appropriate appointee. She/he will take overall responsibility for the management of the East Africa and Nile Basin office and the professional and support staff (as per International Livestock Research Institute (ILRI) and IWMI requirements) among others.

- PhD in Agricultural Water Management or related field;
- Minimum of 10 years postdoctoral experience in the field of agricultural water management in multifunctional agricultural systems;
- Demonstrated experience of successful working in, and leading, high performing teams;
- Excellent knowledge of water management at a range of scales, including principles of water productivity and interaction of irrigation with other users and the environment, in developing countries;
- Solid record of publications in refereed international journals;
- Ability to form and maintain partnerships with local institutions and stakeholders to facilitate delivery of outcomes;
- Very good personal organizational skills; excellent communication skills in English, both written and verbal; and experience living and working in developing countries, particularly Africa.

Submit your application on-line at: [www.iwmi.org/About IWMI/Vacancies/](http://www.iwmi.org/About_IWMI/Vacancies/). Your application will be acknowledged automatically within 24 hours. If not, email: [work-at-iwmi@cgiar.org](mailto:work-at-iwmi@cgiar.org). Deadline: 15 February 2011.

### [Senior Researcher - Environmental Sciences](#), Accra, Ghana

The International Water Management Institute (IWMI) is seeking a PhD holder in Environmental Sciences or a related field, and have at least ten years' experience in research on water quality and environmental issues related to agricultural water/soil management, have the ability to develop and implement research projects and strategies on assessing and mitigating water quality issues as they affect human and environmental health, in developing countries. This position reports to the Theme Leader-Water Quality, Health and Environment. The incumbent must possess:

- PhD in environmental sciences or related field;
- Minimum of 10 years' experience in research on water quality and environmental issues related to agricultural water/soil management;
- Experience of developing and leading research teams with multiple partners and multiple disciplines from advanced research institutes and developing countries;
- Previous experience of work in developing country contexts (Asia and/or Africa), including data-scarce environments;
- Ability to develop fundable research proposals;
- a solid publication record;
- Understanding of ecological principles, the concept of ecosystem services and links to water and agriculture;
- Understanding of the importance of institutional governance, economics and social issues as they impact water resources development and their actual use;
- Excellent communication skills in English, both written and oral; and
- Ability to work as a member of a team, and work with researchers of other CGIAR centers, cultures and professional backgrounds.

Submit your application on-line at: [www.iwmi.org/About IWMI/Vacancies/](http://www.iwmi.org/About_IWMI/Vacancies/). Your application will be acknowledged automatically within 24 hours. If not, email: [work-at-iwmi@cgiar.org](mailto:work-at-iwmi@cgiar.org). Deadline: 15 February 2011.

### [Senior Fellow – Hydrogeology/Groundwater Management](#), Colombo, Sri Lanka or Accra, Ghana

IWMI currently has three senior fellows, whose role is to provide international scientific leadership in specific areas of water science and management. IWMI seeking a fourth Fellow to promote and lead our work on improved utilization and management of groundwater. A key role of the Fellow will be to stimulate innovative thinking and management options for sustainable use of groundwater in irrigation and multiple use water systems, and to develop new projects for IWMI and its partners to undertake as part of the new Consultative Group on International Agricultural Research (CGIAR) Research Program on Water, Land and Ecosystems. IWMI operates in Asia and Africa. The Fellow would be based in either Colombo or Accra, but would be



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expected to contribute to innovative projects on groundwater resources and their management in both Africa and Asia. The Fellow will report to either the Director General or Deputy Director General.

The incumbent should possess:

- PhD or equivalent experience in hydrogeology and/or groundwater management, or related field;
- Minimum of 20 years' postdoctoral experience in the field of groundwater science and management in multifunctional agricultural systems;
- Demonstrated research experience in groundwater resources assessment and/or management;
- Track record of representing an organization at a senior level, and working closely with senior colleagues;
- Excellent knowledge of water management at a range of scales, including principles of water productivity and interaction of irrigation with other users and the environment, in developing countries;
- Solid record of publications in refereed international journals;
- Ability to form and maintain partnerships with local institutions and stakeholders to facilitate delivery of outcomes;
- Very good personal, organizational and interpersonal skills; and excellent communication skills in English, both written and verbal.

Submit your application on-line at: [www.iwmi.org/About/IWMI/Vacancies/](http://www.iwmi.org/About/IWMI/Vacancies/). Your application will be acknowledged automatically within 24 hours. If not, email: [work-at-iwmi@cgiar.org](mailto:work-at-iwmi@cgiar.org). Deadline: 21 March 2011.

### [Capacity Analysis of African Agricultural Institutions](#), West Africa

Capacity analysis is required for the assessment of several regional agricultural institutions in West Africa. The assessment will look at the organizational structures, programs and skills required to support USAID's Feed the Future Initiative. Field work will take place over a four week period, beginning in March 2011. Travel will be required to a number of countries including Ghana, Mali, Benin, and Nigeria.

Responsibilities: Review the institutional capacities of African institutions (government, private sector, NGOs and training and research institutes) involved in implementing USAID's Feed the Future initiative; Assessments will review the capacities of organizations implementing and managing programs to increase agricultural productivity and will recommend actions to strengthen required management and technical capacities; and analysis of institutional capacity, SWOT analysis, process facilitation, and development of recommendations to strengthen organizational performance. Requirements:

- Experience working to increase agricultural productivity in Africa;
- Experience in conducting organizational analysis and/or evaluations, or in designing or implementing agricultural development projects in Africa;
- Excellent analytic skills;
- Familiarity with USAID program and project systems;
- French and English fluency required;
- Degree in a related field, such as development management, management, organizational development, or agricultural development and management; advanced degree preferred;
- Excellent writing and interpersonal skills and a history of working on multi-disciplinary evaluation and assessment teams;
- Ten years or more of experience working with programs to improve agricultural productivity in Africa;
- Experience in working with African Regional Economic Communities, such as COMESA and SADC, is desirable.

Only candidates who have been selected for an interview will be contacted. No phone calls. Deadline: 15 February 2011.

### [Principal Scientist - Crop Diversification / Agronomy](#), Niamey, Niger

The Agronomist will be a member of the multi-disciplinary research team of ICRISAT and provide leadership in cropping systems research and crop modeling to support crop diversification and intensification efforts across the region. A specific understanding of risks associated with the extreme weather variability in WCA is required. An understanding of soil and water related constraints, and possibly watershed management is helpful. This requires effective collaboration with a range of other disciplines, such as social and economic sciences, plant breeders as well as soil scientists. It involves collaboration with national agricultural research systems, regional agencies and other international organizations in the region in developing and implementing ICRISAT's research program.



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- PhD in the area of natural resource management, water, soils or related agriculture discipline
- 5-8 years of experience
- Research experience in an international organization is highly desirable.
- A record of achievement with academic publications, development and management of research grants, and capacity building initiatives are essential.
- Evidence of analytical capability, and experience in spatial analysis and systems modeling are a must.
- Experience in managing multi-disciplinary and cross-cultural projects is helpful.
- Fluency in spoken and written English is essential, and knowledge of French will be highly desirable.
- Demonstration of a good record of publishing in internationally refereed journals.
- Good leadership skills including good interpersonal, communication and project management skills.
- Proven ability to think strategically about research for development;

The application should include an up-to-date resume (with nationality, date of birth, marital status), names and addresses (including fax and e-mail) of three referees, date of availability, and a statement of the special qualifications for this position. Apply by email to: [icrisatjobs@cgiar.org](mailto:icrisatjobs@cgiar.org), latest by 28 February 2011.

### Director of Water Resources Unit Ouagadougou, Burkina Faso

This is an internationally recruited position. The Directors report directly to respective Commissioners who head Departments. As the principle link between the Directorate and the wider beyond, the Director is responsible to: Clearly communicate the President's and Commissioner's vision to staff, explain how the Directorate's activities aligns with them and how the Director expects the Directorate to carry-out set tasks on it; Stay on top of fast-moving technical, political, social or economic changes; Remain in frequent contact with the other Directors in the Institution to ensure that the work is harmonized with that of other Directorates as needed; Maintain a network of peer technical specialists and decision-makers in Member States, needed to ensure the smooth introduction of ECOWAS programmes.

The incumbent should possess:

- Master's degree (or equivalent) in Water Resources Management, Sustainable Development, Civil and Environmental Engineering, Forestry Management or related field
- 12 years progressively responsible and relevant experience in any of Water Resources Management, Sustainable Development, Marine Science and Management in the public sector or an International organization
- Minimum of 5 years work experience managing others, preferably in a supervisory capacity within an international organization;
- Specific knowledge in area of Water Resources Management and Sustainability

Candidates must not be fifty (50) years old or over at the point of recruitment and must be a citizen of one of the ECOWAS member states. Submit your application on-line. Deadline: 7 March 2011.

### Director of Agriculture and Rural Development Abuja, Nigeria

This is an internationally recruited position. The Directors report directly to respective Commissioners who head Departments. As the principle link between the Directorate and the wider beyond, the Director is responsible to: Clearly communicate the President's and Commissioner's vision to staff, explain how the Directorate's activities aligns with them and how the Director expects the Directorate to carry-out set tasks on it; Stay on top of fast-moving technical, political, social or economic changes; Remain in frequent contact with the other Directors in the Institution to ensure that the work is harmonized with that of other Directorates as needed; Maintain a network of peer technical specialists and decision-makers in Member States, needed to ensure the smooth introduction of ECOWAS programmes.

The incumbent should possess:

- Master's degree (or equivalent) in Agricultural Economics, Agronomy, Business Administration, Regional Planning and Development or a related field
- Minimum of 12 years progressively responsible and relevant work experience
- Minimum of 5 years work experience managing others, preferably in a supervisory capacity within an international organization;
- Work experience in Africa, preferably in the development and implementation of programmes on food security;
- Experience in knowledge management, advocacy work and strategic thinking relating to factors that affect policy decision making in Agriculture and Rural Development in developing countries;



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- Must be fluent in one of the official languages of ECOWAS: English, French and Portuguese. A working knowledge of a second official language would be an advantage.

Candidates must not be fifty (50) years old or over at the point of recruitment and must be a citizen of one of the ECOWAS member states. Submit your application on-line. Deadline: 7 March 2011.

### Other

#### [Africa lags on epidemic detection](#)



Africa lags behind in detecting infectious diseases and warning of emerging epidemics, yet bears half the world's outbreaks, says a report. The study, of nearly 400 WHO-verified disease outbreaks from 1996–2009, found more than half (53 per cent) were in Africa. Yet the continent took the longest to detect the outbreaks and to communicate about them - on average 30 and 43 days respectively after the estimated start of an outbreak.

Globally, the shortest times to discovery and public communication were in the Western Pacific, with an average of four days until discovery and 18 days until communication. In South-East Asia discovery and communication both averaged around 15 days. Worldwide, time to detection of disease outbreaks has improved overall by just over seven per cent a year, and time to communication by just over six per cent a year, since 1996 - but with considerable regional variation. One reason for this improvement was the rapid expansion of the Internet.

The most common diseases causing epidemic outbreaks were cholera, yellow fever, meningitis, avian influenza and dengue. Emily Chan, from the Harvard-Massachusetts Institute of Technology Division of Health Sciences and Technology, in the United States, and lead author of the study, said: "Openness in communication ... is crucial for a speedy response once disease has broken out". Abdisalan Noor, a research scientist at the Kenya Medical Research Institute (KEMRI)-Wellcome Trust Research Programme, said the reasons for Africa's poor performance were many and they reflected the general weakness in information systems in the wider public sector.

"Given the serious weaknesses in routine health information systems in Sub-Saharan Africa, it is not surprising the surveillance systems for detecting emerging infections, which require dynamic real-time data collection, are deficient," he told *SciDev.Net*. But he said that Africa is gradually improving its mechanisms for timely detection of emerging infections. Noor said that Africa was dealing with major infectious diseases like HIV/AIDS, malaria and tuberculosis, all of which require routine data and prompt detection of epidemics for efficient control.

He called for investment in infrastructure and capacity for early disease detection and response, saying: "The lack of a timely mechanism for case detection and response can lead to rapid spread of disease, making the management of the case even more difficult, and this could have severe health consequences - in many cases, a large number of fatalities".

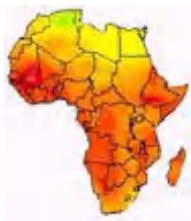
#### [Development of basin-wide management plan](#)



ORASECOM held one of her regular 'Programme Strategy Committee' meetings last year. This committee is made up of the ORASECOM commissioners from the four member states of the Orange-Senqu River Basin (Lesotho, South Africa, Botswana, and Namibia) plus the representatives of the various international cooperating partners (ICPs) who support ORASECOM in the joint development of a basin-wide IWRM plan. ORASECOM and her ICPs are thus not only compliant with the 'Paris Declaration on Aid Effectiveness' and the 'Accra Agenda for Action' but their cooperation is also

tangible proof of the fact that working together pays!

Marcus Wishart, the representative of The World Bank in the SADC Region, presented to Dr. Horst M. Vogel of the German Development Cooperation with the SADC (Botswana) the news on the "Guide to the Proposed Basin Plan" in Australia's Murray-Darling Basin. The document sets out the main elements of the proposed basin-wide plan, which will be released later in the year. One of the most critical and controversial issues that the guide outlines are environmental water requirements, volumes of water that can be taken for consumptive uses such as domestic, agricultural and industrial use - known as long-term average sustainable diversion limits (SDLs) - for surface water and groundwater, and transitional arrangements to support implementation of the SDLs. The Guide also outlines how to put the basin-wide plan into effect. As Marcus is saying in his notification, it makes for interesting reading, in particular since the Murray-Darling



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River Basin has a lot in common with pivotal river basins in the SADC Region such as the Orange-Senqu River Basin. The first of the four-part SADC 'Bridging Waters' film series titled '[Water for Peace](#)' is now available for watch. The three remaining parts will soon also feature at TheWaterChannel. The PDF document, which has been published by the 'Murray - Darling Basin Authority' is just over 7 MB big and may be downloaded

### [Southern Sudan's wildlife treasure](#)



More than 3 million people in Southern Sudan took part in a referendum to create a nation in Eastern Africa. As they do, there is a historic opportunity, perhaps unprecedented, for wildlife conservation, sustainable natural resource management and environmentally friendly ecotourism to be integrated into the nation-building process. Land-use issues loom large in the election. Vast oil deposits in Southern Sudan account for roughly 98% of the region's revenues and will come under the south's management if it becomes a separate country. The White Nile flows through Southern Sudan toward

Khartoum, adding water to the region's resource issues.

The hidden jewel in this unique landscape is its stunning wildlife. Before civil war broke out in 1983, Southern Sudan boasted some of the most spectacular and important wildlife populations in Africa and the world's second-largest wildlife migration - of some 1.3 million antelope. Large populations of buffalo, antelope, elephants and chimpanzees were neglected and presumed lost during the two-decade war.

At the request of the provisional government of Southern Sudan, the Wildlife Conservation Society surveyed the country for wildlife in 2007, thanks to funding from USAID and the U.S. Fish & Wildlife Service. The magnificent antelope migration and vast tracts of savannas, wetlands and woodlands remained largely intact. The government's task now is to establish conservation and sustainable natural resource management as part of the region's development strategy. The case for conservation is clear: The protection of parkland and wildlife must be a rallying point for Southern Sudan. Animal migrations, along with pristine savanna and wetland habitat, could become one of the greatest tourism attractions in Africa and a key component of Southern Sudan's growth and economic security. Local communities live off the land and depend upon its management for their livelihoods. Integrating conservation in land-use planning offers hope to those most in need. A sound conservation and resource management agenda will secure centuries-old wildlife migrations, along with great savannas and wetlands, for all humankind. Just as important, it will enable the people and government of Southern Sudan to move toward a free and stable democratic nation. Also see: <http://www.wcs.org/new-and-noteworthy/southern-sudan-wildlife-oped.aspx>.

### [Land 'evapotranspiration' taking unexpected turn: Huge parts of world are drying up](#)



The soils in large areas of the Southern Hemisphere, including major portions of Australia, Africa and South America, have been drying up in the past decade, a group of researchers conclude in the first major study to ever examine "evapotranspiration" on a global basis. Most climate models have suggested that evapotranspiration, which is the movement of water from the land to the atmosphere, would increase with global warming. The new research, published online this week in the journal *Nature*, found that's exactly what was happening from 1982 to the late 1990s. But in 1998, this significant increase in evapotranspiration – which had been seven millimeters per year – slowed dramatically or stopped. In large portions of the world, soils are now becoming drier than they used to

be, releasing less water and offsetting some moisture increases elsewhere. Due to the limited number of decades for which data are available, scientists say they can't be sure whether this is a natural variability or part of a longer-lasting global change. But one possibility is that on a global level, a limit to the acceleration of the hydrological cycle on land has already been reached.

If that's the case, the consequences could be serious. They could include reduced terrestrial vegetation growth, less carbon absorption, a loss of the natural cooling mechanism provided by evapotranspiration, more heating of the land surface, more intense heat waves and a "feedback loop" that could intensify global warming. "This is the first time we've ever been able to compile observations such as this for a global analysis," said Beverly Law, a professor of global change forest science at Oregon State University. Law is co-author of the study and science director of the AmeriFlux network of 100 research sites, which is one major part of the FLUXNET synthesis that incorporates data from around the world.



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“We didn’t expect to see this shift in evapotranspiration over such a large area of the Southern Hemisphere,” Law said. “It is critical to continue such long-term observations, because until we monitor this for a longer period of time, we can’t be sure why this is occurring.”

Some of the areas with the most severe drying include southeast Africa, much of Australia, central India, large parts of South America, and some of Indonesia. Most of these regions are historically dry, but some are actually tropical rain forests. The rather abrupt change from increased global evapotranspiration to a near halt in this process coincided with a major El Nino event in 1998, the researchers note in their report, but they are not suggesting that is a causative mechanism for a phenomenon that has been going on for more than a decade now.

## [Analyzing unusual imagery around the World using ArcGIS explorer online](#)



The world is full of interesting and unusual places. An overhead perspective provides a fascinating way to explore these places. A [new activity](#) in the [ArcLessons library](#) invites you to analyze 24 unusual places. The activity uses a set of images on [ArcGIS Online](#) and therefore takes place entirely within a web browser, easy to teach with and learn from.

The “Happy Earth” image is just one of [24 unusual images](#) that you will analyze in this lesson. Why is “will you marry me?” etched on top of a building? What does the Cadillac Ranch look like from above? In working through this activity, you will begin to think spatially by making use of maps, satellite images, and the concepts of scale and measurement. You will consider human impacts on the landscape, and learn how to use GIS and maps as analytical tools. No previous GIS skills are required for this lesson, and it can be used at the primary, secondary, or even the university undergraduate level, with different questions for each. Because of the flexibility of the ArcGIS Online environment, you can easily add your own unusual images, or start over with your own theme. These maps are embedded inside ArcGIS Explorer Online, which allows for the presentation capabilities that you see in this activity. You can modify this one or create your own presentation.

Select five images that are of most interest to you and answer the following: What is unusual? Is this a natural feature or a human-made feature? What are its length, width and area? In what country is the unusual feature found? What are the long-term implications of this feature? Which one of your features is in the least populated area? Which feature is changing the fastest? Which one is changing the least? Why? Do you think that any of these features will exist in 100 years? If so, which ones? Which one of your features is nearest where you live? How far is it? Which one of your features would you most like to visit? etc.

## Conferences, Events

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

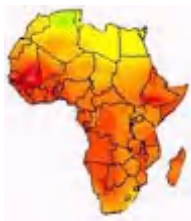
Date	Location	Event
<b>February 2011</b>		
7-10 February 2011	Johannesburg, South Africa	<a href="#">IT Governance, Risk &amp; Compliance Meeting</a> Contact Ros Hinchcliffe or Mohammed Akram at <a href="mailto:enquiry@iqpc.ae">enquiry@iqpc.ae</a> .
14-16 February 2011	Cairo, Egypt	<a href="#">International Conference on Energy Systems and Technologies</a>
18-22 February 2011	Addis Ababa, Ethiopia	<a href="#">Regional conference on geomorphology for human adaptation to changing tropical environments</a> Contact: <a href="mailto:asrata@geol.aau.edu.et">asrata@geol.aau.edu.et</a> or <a href="mailto:asfawossena@gmail.com">asfawossena@gmail.com</a> or <a href="mailto:moha_umero@yahoo.com">moha_umero@yahoo.com</a> .
21-25 February 2011	Nairobi, Kenya	<a href="#">26<sup>th</sup> Session of the UNEP Governing Council/Global Ministerial Environment Forum</a>
23-25 February 2011	Addis Ababa, Ethiopia	<a href="#">2nd GEOSS African Water Cycle Symposium</a>
26- 28 February 2011	Singapore, Singapore	<a href="#">2010 3rd IEEE International Conference on Signal Acquisition and Processing (ICSAP 2011)</a>



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<b>27 February-3 March 2011</b>	Cape Town, South Africa	<a href="#">Local Climate Solutions for Africa 2011</a> : Mobilising African leadership in local climate action.
<b>March 2011</b>		
<b>2 March 2011</b>	London, UK	<a href="#">International Data Centre World Conference and Expo 2011- Data Centre Management</a>
<b>20 March 2011</b>	St. Maarten, Netherlands	<a href="#">6th International Conference on Internet Monitoring and Protection (ICIMP 2011)</a>
<b>20-22 March 2011</b>	Hammamet, Tunisia	<a href="#">ST Environment: International Congress on Environmental Science and Technologies for a Sustainable Development</a>
<b>20-25 March 2011</b>	Cape Town, South Africa	<a href="#">2011 African Conference on Software Engineering and Applied Computing</a>
<b>21-23 March 2011</b> <b>* NEW *</b>	Grand Baie, Mauritius	<a href="#">Climate Change Impacts, Adaptation and Mitigation in the WIO region</a> : Solutions to the Crisis Contact: <a href="mailto:secretary@wiomsa.org">secretary@wiomsa.org</a> .
<b>23-25 March 2011</b>	Enschede, Netherlands	<a href="#">Spatial Statistics 2011 - Mapping Global Change</a>
<b>23-26 March 2011</b>	Ota, Nigeria	<a href="#">International Conference on ICT for Africa 2011</a> Contact: <a href="mailto:richard@ictforafrica.org">richard@ictforafrica.org</a> .
<b>30 March- 1 April 2011</b>	Ispra - Varese, Italy	<a href="#">7th International Conference on Image Information Mining (ESA-EUASC-JRC 2011)</a> - Geospatial Intelligence from Earth Observation
<b>April 2011</b>		
<b>6- 8 April 2011</b>	Stellenbosch, South Africa	<a href="#">4th IUPAP International Conference on Women in Physics</a>
<b>10-15 April 2011</b>	Sydney, Australia	<a href="#">34<sup>th</sup> International Symposium on Remote Sensing of Environment (ISRSE2011)</a> Contact: Ian Dowman, <a href="mailto:idowman@cege.ucl.ac.uk">idowman@cege.ucl.ac.uk</a> .
<b>18- 21 April 2011</b>	Exeter, UK	<a href="#">8th International Symposium on Weather Radar and Hydrology (WRaH 2011)</a> - User applications of weather radar for flood forecasting and water management
<b>May 2011</b>		
<b>2-5 May 2011</b>	Addis Ababa, Ethiopia	<a href="#">2nd Session of the Committee on Development Information Science and Technology (CODIST- II)</a> Contact: Thierry Amoussougbo at <a href="mailto:codist@uneca.org">codist@uneca.org</a> or Andre Nonguierma at <a href="mailto:codist@uneca.org">codist@uneca.org</a> .
<b>3-8 May 2011</b> <b>* NEW *</b>	Antalya, Turkey	<a href="#">Gi4DM 2011 – Geoinformation for Disaster Management</a> ,
<b>9-13 May 2011</b>	Sun City, South Africa	<a href="#">5<sup>th</sup> International Wildland Fire Conference (WildFire 2011)</a> Contact: <a href="mailto:info@wildfire2011.org">info@wildfire2011.org</a> .
<b>11-13 May 2011</b>	Orlando, USA	<a href="#">2nd International Conference on Disaster Management and Human Health: Reducing Risk, Improving Outcomes</a>
<b>18-22 May 2011</b>	Marrakech, Morocco	<a href="#">FIG Working Week &amp; XXXIV General Assembly</a> Contact: FIG Office, <a href="mailto:fig@fig.net">fig@fig.net</a> .
<b>18-20 May 2011</b>	Morelia, Mexico	<a href="#">3rd. International and 12th. National Socioeconomic and Environmental Research Conference on Livestock Farming</a>
<b>20-22 May 2011</b>	Agadir	<a href="#">Climate Change, Agri-Food, Fisheries, and Ecosystems: Reinventing Research, Innovation, and Policy Agendas for an Environmentally and Socially-Balanced Growth</a> Contact: Dr. Mohamed Behnassi at <a href="mailto:behnassi@gmail.com">behnassi@gmail.com</a> .
<b>22-26 May 2011</b>	California, USA	<a href="#">World Environmental and Water Resources Congress</a>
<b>25-27 May 2011</b>	Dar es Salaam, Tanzania	<a href="#">6th International Conference on ICT for Development, Education and Training</a> Contact: <a href="mailto:info@elearning-africa.com">info@elearning-africa.com</a> .
<b>31 May- 2 June 2011</b>	Capetown, South Africa	<a href="#">AfricaGEO2011</a>
<b>June 2011</b>		



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3-5 June 2011	Bonn, Germany	<a href="#">Resilient Cities 2011 congress</a>
11-14 July 2011	Lisbon, Portugal	<a href="#">Global Conference on Global Warming (GCGW-11)</a> , Contact: Conference Secretariat at <a href="mailto:info@gcgw.org">info@gcgw.org</a> .
<b>July 2011</b>		
3-7 July 2011	Cape Town, South Africa	<a href="#">Call for Papers: 9th Colloquium on Environmental Law</a> Contact: Glaudin Kruger at <a href="mailto:kruger@kruger-associates.com">kruger@kruger-associates.com</a> or Tumai Murombo at <a href="mailto:Tumai.Murombo@wits.ac.za">Tumai.Murombo@wits.ac.za</a> . Deadline for abstracts submission: 28 February 2011.
3-8 July 2011	Paris, France	<a href="#">25th International Cartography Conference (ICC 2011)</a>
29 July-4 August 2011	Banos, Ecuador	<a href="#">2011 International Biodiversity Conference</a>
<b>August 2011</b>		
July 29- 4 August 2011	Banos, Ecuador	<a href="#">2011 International Biodiversity Conference</a> , Contact: Dr. Barker at <a href="mailto:barkerb@wildspotsfoundation.org">barkerb@wildspotsfoundation.org</a> .
21-25 August 2011	Merida, Mexico	<a href="#">SER2011 World Conference on Ecological Restoration</a>
15-19 August 2011	Nairobi, Kenya	<a href="#">Applied Geoinformatics for Society and Environment (AGSE) 2011 Conference</a> Contact: Franz-Josef Behr at <a href="mailto:franz-josef.behr@hft-stuttgart.de">franz-josef.behr@hft-stuttgart.de</a>
22-26 August 2011	Wellington, New Zealand	<a href="#">5th International Symposium on GIS/Spatial Analyses in Fishery and Aquatic Sciences</a>
23-25 August 2011	Perth, Australia	<a href="#">The 7th International Symposium on Digital Earth (ISDE7)</a> Theme: 'The Knowledge Generation', Contact: <a href="mailto:melissah.johnston@walis.wa.gov.au">melissah.johnston@walis.wa.gov.au</a> or <a href="mailto:walis@walis.wa.gov.au">walis@walis.wa.gov.au</a> Abstract submission deadline: 28 February 2011.
<b>September 2011</b>		
4-8 September 2011	Cape Town, South Africa	<a href="#">The 6th Science Centre World Congress</a>
12-16 September 2011	Ticino, Switzerland	<a href="#">3rd Symposium on Environmental Weeds &amp; Invasive Plants (Intractable Weeds and Plant Invaders)</a>
26-30 September 2011	Aberdeen, Scotland	<a href="#">World Conference on Marine Biodiversity</a> The second call deadline: 28 February 2011.
<b>* NEW *</b>		
<b>October 2011</b>		
3-7 October 2011	Cape Town, South Africa	<a href="#">International Astronautical Congress 2011</a> Contact: <a href="mailto:enquiries@iac2011.com">enquiries@iac2011.com</a> .
5-6 October 2011	Port Harcourt, Nigeria	<a href="#">Seventh International Conference on Sustainable Development</a>
5-7 October 2011	Beach Resort, Zanzibar	<a href="#">6th ESRI Eastern Africa User Conference</a> Submit abstract by 29 July 2011 on any of the available tracks at <a href="mailto:events@esriea.co.ke">events@esriea.co.ke</a> .
<b>* NEW *</b>		
10-14 October 2011	Kimberley, South Africa	<a href="#">International Wildlife Ranching Symposium</a>
10-21 October 2011	Changwon, Korea	<a href="#">UNCCD COP 10</a> , Contact: UNCCD Secretariat at <a href="mailto:secretariat@unccd.int">secretariat@unccd.int</a>
16-21 October 2011	Cairo, Egypt	<a href="#">AfricaGIS 2011 Conference</a> Contact: <a href="mailto:africagis2011@narss.sci.eg">africagis2011@narss.sci.eg</a> or <a href="mailto:info.africagis2011@narss.sci.eg">info.africagis2011@narss.sci.eg</a> .
19-21 October 2011	Bloemfontein, South Africa	<a href="#">1st International Conference on Clays and Clay Minerals in Africa and 2nd International Conference on Geophagia in southern Africa</a>
<b>November 2011</b>		
28 November- 9 December 2011	South Africa	<a href="#">17<sup>th</sup> Conference of the Parties to the UNFCCC and 7th Meeting of the Parties to the Kyoto Protocol</a> Contact: UNFCCC Secretariat, <a href="mailto:secretariat@unfccc.int">secretariat@unfccc.int</a> .
<b>December 2011</b>		
13-15 December 2011	Shah Alam, Malaysia	<a href="#">Third International Conference on Management of Natural Resources, Sustainable Development and Ecological Hazards</a>





# Spatial Data Infrastructure – Africa Newsletter



<b>2012</b>		
<b>21-27 May 2012</b>	Vilnius, Lithuania	<a href="#"><u>12th World Congress on Environmental Health: New Technologies, Healthy Human Being and Environment</u></a>
<b>2-6 July 2012</b>	Galle, Sri Lanka	<a href="#"><u>MMM3 : Meeting on mangrove ecology, functioning and management</u></a>
<b>8-12 July 2012</b>	San Diego, California USA	<a href="#"><u>ESRI User Conference</u></a>
<b>8-12 July 2013</b>	San Diego, USA	<a href="#"><u>ESRI International User Conference</u></a>
<b>5-10 August 2012</b>	Brisbane, Australia	<a href="#"><u>34th Session of the International Geological Congress (IGC 34)</u></a> Enquiries: <a href="mailto:info@34igc.org"><u>info@34igc.org</u></a> .
<b>2015</b>	Durban, South Africa	<a href="#"><u>14th World Forestry Congress for SA</u></a>
<b>1-31 August 2016</b>	Cape Town, South Africa	<a href="#"><u>35th International Geological Congress</u></a> Registration deadline: 30 June 2016.

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