



SPATIAL DATA INFRASTRUCTURE - AFRICA NEWSLETTER

The GeoSpatial Community

Vol. 13, No. 4

April, 2014

SDI-Africa Newsletter

The Spatial Data Infrastructure - Africa (SDI-Africa) is a free, electronic newsletter for people interested in Geographic Information System (GIS), remote sensing and data management in Africa. Published monthly since May 2002, it raises awareness and provide useful information to strengthen SDI efforts and support synchronization of regional activities.

The Newsletter is prepared for the [GSDI Association](#) by the [Regional Centre for Mapping of Resources for Development \(RCMRD\)](#) in Nairobi, Kenya.



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The [Regional Centre for Mapping of Resources for Development \(RCMRD\)](#) implements projects on behalf of its member States and development partners.

The centre builds capacity in surveying and mapping, remote sensing, geographic information systems, and natural resources assessment and management. It has been active in SDI in Africa through

contributions to the [African Geodetic Reference Frame \(AFREF\)](#) and [SERVIR-Africa](#), a regional visualization and monitoring system initiative. Other regional groups promoting SDI in Africa are [ECA/CODIST-Geo](#), [RCMRD/SERVIR](#), [RECTAS](#), [AARSE](#), [EIS-AFRICA](#), [SDI-EA](#) and [MadMappers](#)



Announce your news or information

Feel free to submit to us any news or information related to GIS, remote sensing, and spatial data infrastructure that you would like to highlight. Please send us websites, workshop/conference summary, events, research article or practical GIS/remote sensing application and implementation materials in your area, profession, organization or country. Kindly send them by the 25th of each month to the Editor, Gordon Ojwang' - gojwang@rcmr.org or sdiafrica@rcmr.org. We

would be happy to include your news in the newsletter.

This would be interesting to a colleague

PLEASE share this newsletter with anyone who may find the information useful and suggest they subscribe themselves. You can visit the [GSDI](#) website: Newsletter back issues - <http://www.gsd.org/newsletters.php>. You can join the GSDI Association at <http://www.gsd.org/joinGSDI>. Enjoy Reading - the SDI-Africa team



Support and Contributions to this Issue

Thanks to the [Global Spatial Data Infrastructure \(GSDI\)](#) Association; Hussein Farah, RCMRD (Kenya); Kate Lance, GSDI listserv moderator (USA) and Karen Levoleger, kadaster (Netherlands) for their contribution to this issue of the newsletter.

Message from the Editor's Desk

Dear Esteem Readers

The editorial team of Spatial Data Infrastructure (SDI-Africa) Newsletter wishes to thank all our esteemed readers for their continued support and invaluable contributions both in terms of shared information and materials for geospatial development in the African continent. Your monthly SDI-Africa Newsletter (PDF) will no longer be available from April as the regional news has been realigned to be produced and disseminated in a timely manner on the new website, in addition to the use of social media including GSDI LinkedIn, Facebook and Twitter accounts as and when it arises.

The regional news will continue to be available in a realtime environment, i.e. published directly to the website on a regular basis. It will concentrate on news that relates directly to 'SDI' development and implementation, as well as major applications of spatial information at regional level. The readers will have access to SDI-related news from other regions as well when they visit the website and become aware of SDI development on a global basis.

For further information, please contact: Roger Longhorn, GSDI Communications Manager at ral@alum.mit.edu. Also, do feel free to send your news to the GSDI website. Kind Regards, Gordon Ojwang'.



New Global Land Cover database released

The Global Land Cover SHARE (GLC-SHARE) database is launched by FAO on March 17, 2014. The GLC-SHARE is a new land cover database at the global level created by FAO, Land and Water Division in partnership and with contribution from various partners and institutions. It provides a set of eleven major thematic land cover layers resulting by a combination of "best available" high resolution national, regional and/or sub-national land cover databases. The database is produced with a resolution of 30 arc-second (~1sqkm).

The major benefit of the GLC-SHARE product is its capacity to preserve the available land cover information at the country level obtained by spatial and multi-temporal source data, integrating them with the best synthesis of global datasets. Many efforts have been carried out to describe the cover data at the global level. Some of them utilize Medium Resolution Satellite products (e.g. MERIS, MODIS) with a pixel resolution of 250-300 m. The results are widely applied in many environmental applications worldwide. While there have been many attempts to describe land cover data at the global level, a few of them offer a highly variable level of accuracy; in particular, low approximation exists, for example, in the definition of cropland and tree extension, especially in specific areas of the world. On the other hand, the mapping efforts at national level have been executed by local mapping agencies and/or national projects at a more detailed scale, with legends and land cover mapping methodologies differing widely. GLC-SHARE makes a huge effort to bring together these valuable datasets available worldwide, offering multiple benefits and aiming at enabling a platform for partnerships and contributions by all.

The approach implemented is based on the utilization of the Land Cover Classification System (LCCS) for harmonization of the various available land cover databases. Available land cover legends are translated using the land cover classifier elements to assign the most adequate classifier values and ranges at an intermediate step, followed by a second iteration where they are converted into the major land cover classes by assigning the class, class unit, minimum, maximum, range and best estimate values to each land cover class. The results are reported at 30 arc-second grid cell as a percentage land cover class at a successive step. The outputs make use of thematic and spatial high resolution land cover databases for various areas globally (up to 66 % of the total surface area) is covered by high resolution datasets. Where national or sub-national land cover data are not available, the information refers to the global datasets. The preliminary results are validated and calibrated. The product is by definition available at various accuracy levels related by the original data.

Applications of the database include assessment, monitoring and reporting of the distribution of the major land cover classes, land suitability evaluation, land accounting, environmental accounting, climate change impact assessments in productivity and yields, land use planning and sustainable development addressing food security and environmental threats. The GLC-SHARE has been initially prepared to improve the GAEZ land cover layer information; however, the multi-benefit effects for the global scientific community can be recognized. The product improves the information needed for assessment of natural resources, land and water global data, but also for food security purposes, agricultural production and land management. It can be considered the baseline for global climate models, land use and land cover change analysis, as well as forestry analysis and assessment. By improving the accuracy of the land cover baseline the quality and reliability of outputs will be propagated into the direct and indirect outputs.

Related links to access information about the database, methodology, paper and database download: Website on GLC-SHARE: http://www.glcn.org/databases/lc_glcshare_en.jsp, Download GLC-SHARE database: <http://www.fao.org/geonetwork/srv/en/main.home?uuid=ba4526fd-cdbf-4028-a1bd-5a559c4bff38>; http://www.glcn.org/downloads/prj/glcshare/GLC_SHARE_beta_v1.0_2014.pdf.

FAO launches new satellite-based data on forest resources on the international day of forests

Better information on forest resources is vital to halt deforestation. New data released on the occasion of the International Day of Forests confirm that forest areas continue to decline globally, with the biggest losses of tropical forests occurring in South America and Africa.

The new assessment of changes in the world's forests shows the decline of forest land use between 1990 and 2010. According to the updated survey, the area of forest cover decreased by some 5.3 million ha/year, corresponding, over the period 1990-2010, to a net loss equivalent of nearly 4 times the size of Italy or the size of Colombia. The updated findings of a global remote sensing survey show that total forest area as of 2010 is 3.89 billion hectares or 30 percent of the total land area of the Earth.

Worldwide, the gross reduction in forest land use caused by deforestation and natural disasters over the 20-year time period (15.5 million hectares per year) was partially offset by gains in forest area through afforestation and natural forest expansion (10.2 million hectares per year). There were considerable regional differences in forest losses and gains. The area of tropical forests declined in South America, Africa and Asia



- with the biggest loss in absolute terms in tropical South America, followed by tropical Africa, whereas gains in forest area were reported for subtropical and temperate Asia.

The world's forests are distributed unevenly with just under half the world's forests in the tropical domain (45 percent of total forest area), about one third in boreal (31 percent) and smaller amounts in temperate (16 percent) and subtropical (8 percent) domains. This is the first consistent survey to show the changes in forest land use for those four main ecological domains over the past 20 years. To develop the survey, FAO worked with more than 200 experts from 107 countries. The work is the result of a partnership between FAO, its member countries and the European Commission Joint Research Centre (JRC).

Scientists say wind and dust can predict sahel meningitis outbreaks

Scientists may soon be able to forecast disease outbreaks in sub-Saharan African's "meningitis belt" using weather data - and use that to plan early vaccination drives to prevent or limit casualties. In the "meningitis belt" of sub-Saharan Africa, which stretches across the Sahel from Senegal to Ethiopia, major epidemics of lethal meningitis are routine. A devastating 1996-97 outbreak killed about 25,000 people.

An effective new vaccine has driven a decrease in meningitis, but the standard procedure in the region has been to carry out vaccination drives and antibiotic treatment of the disease in districts already suffering outbreaks - and in some cases help arrives too late to make a significant impact, health officials say.

In the near future, though, scientists might be able to use climate factors such as wind and dust conditions to forecast these epidemics and develop earlier vaccination strategies to prevent or limit casualties. New research carried out in Niger by the NASA Goddard Institute for Space Studies and Columbia University found that measured levels of wind and dust can be used to predict some of the annual variability in meningitis outbreaks, at both national and district levels.

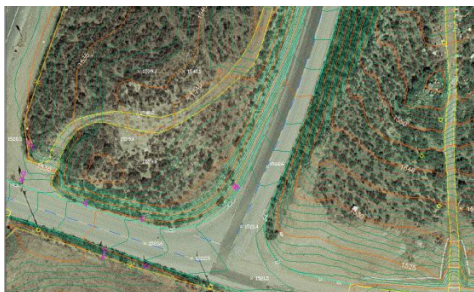
"We've known that the disease is associated to climate and environmental issues for a long time, because it's very seasonal," said Carlos Perez Garcia-Pando, one of the lead authors of the report. The challenge, he said, to figure out which climate factors were important in order to better equip public health decision makers to act. "The idea was to try to use models and observations from satellites and all kinds of data on potential (climate-related) parameters that might be affecting the disease, and try to use that information to provide advance warning," Perez said.

What the group of researchers found was a particularly close correlation between wind and dust levels and meningitis outbreaks. Madeleine Thomson, another researcher involved in the project, called the strength of the relationship "astonishing." "A lot of experts have known for a long time that environment is important, but not how important," she said.

The research on meningitis follows similar work with malaria, connecting climate factors to the mosquito-borne disease. Thomson explained that the differences between the two diseases made them well-suited for comparative studies. "We had some experience working on malaria, and chose to work on meningitis, because one, it's an important disease, particularly for the Sahel region in Africa, and it's a dry season disease, instead of a wet season disease ... So it allowed us to explore some of the challenges of dealing with a different type of the disease, but again with environmental and climate factors." "What we've learned is that yes, this approach can be applied to climate sensitive diseases, writ large," she said.

The researchers said their work was designed to help health officials make effective decisions about meningitis vaccination campaigns, and "we have been collaborating very closely with decision makers," Perez said. The next steps are to expand the research outside of Niger and build models for other parts of the affected region, he said. "What we've created is a useful tool that can help decision makers to think, organise, distribute medicine, and make their decisions more in advance," Perez said.

Rwandan Government receives equipment for border demarcation



In February, Rwanda received equipment worth Frw 130 million from the German cooperation to help surveyors conduct demarcation work along the Rwanda-Uganda border. The equipment includes two sets of Global Position System (GPS), one topographic scanner and three vehicles. Janvier Kanyamashuri, the director of the diplomatic advisory unit in the Minister of Foreign Affairs, said that the equipment will allow putting up physical demarcation signs since many of them have been destroyed by human activities. He stated that clear demarcation is necessary for the sovereignty of the state. "Sometimes people living along the border quarrel about land due to lack of clear physical boundaries," he said.



The demarcation exercise comes at a time when EAC regional integration is being strengthened, including with Uganda. "But the member states still have their own boundaries," Kanyamashuri commented.

Aguibou Diarrah, the head of the Africa Union Border Program for his part said that the programme intends to help African states exactly know their boundaries and that the target is for the continental demarcation program to be finalized by 2017.

He pointed out that the demarcation system will help African integration by preventing border disputes.

Peter Fahrenholtz, the ambassador of Germany, which financed the equipment, stated that his government is determined to support Africa in re-establishing demarcations. "Borders that are not clearly set create problems," he indicated, giving the example of Eritrea and Ethiopia, two countries in the horn of Africa having endless conflicts related to land.

Esdras Rwayitare, a member of the Rwanda national border commission, said that the GPS will enhance the precision of the demarcation as the signs put up during the colonial period have been damaged or destroyed over the years, and that will help observe protocols signed between Rwanda and neighboring countries by exactly determining coordinates and maps at the initial demarcation.

He further indicated that the precision of the boundaries will also come with the projects to unifying the people on different sides of the borders. "This is not only about demarcation but also transboundary projects uniting communities living on both sides of the border," Rwayitare stressed.

[Namibia unveils new fisheries monitoring system](#)



The Minister of Fisheries and Marine Resources, Bernard Esau urged all fishing companies that have not yet installed the Vessel Monitoring System (VMS) of the ministry, that is supposed to monitor activities of fishing vessels at sea, to do so urgently. Esau made the request during the commissioning of the N\$1.3 million monitoring system on Friday at Walvis Bay. The system was acquired from a French company that specializes in monitoring electronics. The VMS was acquired and installed in 2002 already, but became obsolete over the years and was unable to perform to the ministry's satisfaction. The ministry then started to explore the possibility of upgrading the system to acceptable international standard and acquired the present system at a cost of N\$1.3 million. According to

Esau the upgrading started in 2012 already and the VMS became operational in July last year and is now able to monitor the activities of fishing vessels in the Exclusive Economic Zone. "The ministry is ever since in a position to monitor 50 percent of our licenced fishing fleet. With this upgrade it is planned that Namibia should be in a position to monitor 100 percent of her licenced fishing vessels, excluding those exempted by the end of 2014," he said.

With the upgrading of the system the ministry will be able to track all licensed fishing vessels operating both in Namibian, as well as in international waters. The VMS supplements monitoring, control and surveillance through area control and science by way of the mapping of fleet dynamics. The VMS has been installed in accordance with the provisions of existing Namibian fisheries legislation of 2000 dealing with the VMS regulations of 2005 that focus on depth restrictions, conservation and other conditions attached to fishing quotas. The legislation requires that all licensed vessels have a functional VMS on board, which is also a minimum requirement to curb illegal, unreported and unregulated fishing activities. "The system can also monitor the location of fishing vessels through an Automatic Location Communicator (ALC), then analyse and present the information to the VMS Centre in Walvis Bay and then to the surveillance and enforcement personnel for processing and further action if necessary," Esau explained. All vessels already have tamper-proof ALCs installed for accurate vessel location and current time positioning by way of a global positioning system (GPS). According to Esau the VMS is also a useful tool for finding vessels near to a ship in distress. If a ship is carrying an ALC the last reported position may be used to narrow the search area and save valuable time. Currently 152 vessels are already captured on the system, while 77 of those are already reporting location and other data.

[Administration of Eritrea's Northern Red Sea region organizes training on civil surveying](#)

The Administration of the Northern Red Sea region in collaboration with the National GIS Center has organized a 2-month practical and theoretical training course for 24 youth regarding Civil Surveying.

Speaking at the graduation ceremony, Mr. Wolderufael Teklai, Head of human resource development in the region, explained that the training which dealt with application of modern surveying techniques was conducted in line with the endeavors being made to raise competence of employees. He further disclosed



that the trainees were selected from the branch office of the Agriculture Ministry, Housing Development and Massawa city Administration, and that the training has equipped them with the necessary knowledge to step up participation in implementation of development schemes. The beneficiaries expressed satisfaction with the training they received, and asserted that they would translate the knowledge they have acquired into practice.

Mr. Tekie Keleta, head of administration and finance in the regional Administration, noted that the subject is essential as regards ensuring labor effective work, and urged the trainees to play due role in national development activities.

First phase of E-Government in Ghana completed

Ghana has integrated 20 agencies into a one-stop administration service centre. Among these agencies are Ghana Post, Electricity Company of Ghana (ECG), Ghana Water Company Limited (GWCL), Driver and Vehicle Licensing Authority (DVLA), Ghana Immigration Service (GIS) and Ghana Police Service (GPS). Huawei Technologies Limited handed the ultra modern state of the art service centre to the Ministry of Communications to facilitate the delivery of Government services to citizens under the e-Government programme.

Speaking at the handing over ceremony in Accra, the Minister of Communications, Edward Omane Boamah, was happy to take delivery of the One-Stop Service Centre as part of the first phase of the project. He said the second phase would commence next to support the deployment of full data centre services and Long Term Evolution (LTE) sites for the functioning of the e-Government network.

“The facility is a well decorated service hall with up to twenty service counters, office equipment and administrative offices. You would also find LED screen display systems, broadcasting and surveillance systems,” he added.

Boamah added that the LTE technology had been deployed to facilitate data transmission at 4th Generation speed levels. This, he said, would ensure that the service centre provides one-stop services for all Ghanaians with fast and professional business operations by the agencies that will be located here.

The minister was excited about the timely delivery of the project by Huawei Technologies and the deployment of latest ICT technology. He said this was a demonstration of what the e-Government Platform Project would provide when completed. “With the completion and delivery to Government of this One-Stop Service Centre, it is our expectation that the Government Service Agencies and I must also add private sector organizations, will take utmost advantage of the robust ICT ecosystem and conduct operations online most of the time,” Boamah said.

Uganda has done 99% of National Land Cover/Land Use Mapping



The Geographic Information System Unit at the National Forestry Authority has done 99% of its work on the National Land Cover/Land Use Mapping. The Land Cover report goes through fourteen (14) steps and the GIS has so far completed 8th steps, they include; Image procurement (23 images), Cloud removal, Subdividing images into tiles(312 tiles), Image segmentation, Calculation of segment statistics, Generating training data, Image classification, Assigning class names, Merging the tiles, Compilation of statistics, Verification/ground truthing, Final edits/final compilation of statistics, Map

production, and Production and publication of the technical report.

A technical report will be produced at the end of the exercise and it is projected that NFA will publish the report so as to ensure ownership of the Data. According to article 37, of the National Forestry and Tree Planting Act 2003, National Authority through Inventory has a mandate of producing the only comprehensive National land cover mapping of the total area in Uganda. The last land cover mapping was done in 2004-2008 from which the Biomass technical report was produced in 2009.

The land cover/land use mapping exercise started in April 2013 and phase one of classification has been finalized. And the results will be presented in the Space Data Coordination Group Meeting (SDCG-5) organized by Food and Agricultural Organization (FAO) in Rome on from 24 to 27th Feb 2014. The participant countries include Uganda, Tanzania, Kenya, Zambia, Ecuador and Panama. The same results are going to be synthesized into a report that will be submitted to FAO for the National Forest Resource Assessment (FRA-2015) reporting.

The Land cover/Land use report contributes to many other reports but the major ones include but not limited to; the state of the Environment reports by NEMA, it also complements the statistics used by the Ministry of



Finance in the budgeting process, and the statistical data is incorporated in various reports produced by UBOS. The Ministry of Energy also uses the Biomass component of the report given the fact that 95% of population in Uganda depend on Biomass for energy hence there is need for sustained use of the fuel wood.

[RCMRD develops land cover maps towards supporting GHG inventories](#)



The Kyoto Protocol of 1997, an international agreement linked to the United Nations Framework Convention on Climate Change (UNFCCC), commits Parties by setting internationally binding emission reduction targets. The protocol requires countries to report on GHG emissions to UNFCCC every four years. In past reporting it was observed that the Land Use and Land Cover component was missing. In this regard, countries sent requests to UNFCCC for assistance in developing national LULC maps.

RCMRD has been at the forefront of developing LULC maps for GHG inventorying for Malawi, Rwanda, Zambia, Namibia, Botswana and Tanzania in the reporting year. For the year 2014, the Centre will produce maps for Ethiopia, Kenya and Uganda. Land cover and land use form a critical part of this reporting as it provides data for the Agriculture Forestry and Land Use (AFOLU) sectors in terms of cover and change.

Under an umbrella effort, the UNFCCC and US Environmental Protection Agency (EPA) are providing training to the national governments in East Africa for greenhouse gas emissions inventory assessment. RCMRD is continuously building capacity in the national governments in East and Southern Africa to generate land cover maps for use in the emissions inventory.

The project partners are: Ministries of Environment in Project Countries, UNFCCC, USAID, and NASA. Project contacts: Director General Dr. Hussein Farah (rcmrd@rcmrd.org), Project Director Dr. Tesfaye Korme (rcmrd@rcmrd.org), Project Manager Phoebe Oduor (rcmrd@rcmrd.org).

[Ghana Geospatial Forum 2014](#)

The first edition of the Ghana Geospatial Forum kicked off on March 25 with experts from various walks of life calling for the enhanced use of geospatial technology for the overall growth and development of the country. With its theme as 'Envisioning Spatially Enabled Ghana' the two-day event will focus on charting out the future course of action for the effective use of these technologies in providing better citizen services and improved operations of various departments in Ghana.

Addressing the gathering in his opening remarks, Prof. Bruce Banoeng-Yakubo, Chief Director, Ministry of Lands and Natural Resources, Ghana described how the Ministry has been using geospatial technology widely in its functioning and how it has been instrumental in resolving a lot of issues and challenges related to land management in the country.

Dr. Sylvester Anamana, Chief Director, Ministry of Environment, Science and Technology, in his speech, emphasised that Ghana has always been receptive towards the use and adaptation of modern technologies and that the Ministry has been actively involved in the propagation of these technologies in the country.

In his presentation titled 'Real Estate Market Development in Ghana and the role of the Lands Commission' during the plenary session on 'Public-Private Partnership: The Road to Prosperity', Dr Wilfred K. Anim-Odame, Acting Executive Secretary, Lands Commission, highlighted the relevance of public-private partnership in the overall process of transforming the real estate market in Ghana. It called for a collaborative effort of the government, traditional authorities, landowning groups, investors, state institutions and the general public in supporting the agenda of building a sustainable land administration system in Ghana.

Anthony Amuzu, Head, Survey Organization and Census Directorate, Ghana Statistical Services, in his presentation titled 'Benefits of Migrating from Traditional Maps to Digital Maps using Geospatial Systems' showcased the benefits of the Ghana Enumeration Area Information System (GEA-Info) and how various institutions can use information from the GEA-Info for effective planning.

William Marbell, Capture Manager Africa, Trimble Export Limited, in his presentation titled 'Bridging Africa's Infrastructure Gap by Leveraging Innovative Geospatial Technologies' cited the lack of basic infrastructure as a major constraint that has hampered the growth of the Africa continent over the years. The presentation also showcased the plethora of innovative geospatial technologies that have evolved in recent times and how it can be leveraged via public private partnerships' (PPP) to deliver the critical infrastructure required across industries in Africa to support sustainable economic growth.

Maher Khoury, Senior Director - Regional Sales, DigitalGlobe International, gave a presentation titled The African Time Machine – Information on the past, present and Future, which demonstrated how decision



makers within Africa can leverage the world's largest high resolution archive of Africa and extract features from the ground to help make better faster and better decisions.

National Institute of Surveyors Annual General Meeting, 19-23 May 2014, Benin, Edo State, Nigeria

The theme for the conference is "Connect & Collaborate" - Creating Opportunities and Awareness for Spatial Integration for land Reform, Urban Renewal, Security and Economic Development. This is to give delegates the opportunity to "Connect" with the profession and industry's latest happenings, the who's who of the Nigerian Surveying & Spatial scene and invited international attendees, and "Collaborate" with decision makers, governments, industry, and other professions and professionals to take advantage of opportunities in the integration of spatial solutions in numerous facets of development initiatives in Nigeria.

One of the conference sub-themes is Spatial Information Management (SIM):

- e-Governance and SDI in supporting decision making--theory, applications and best practice
- Integration of spatial data on cadastre, land use, real estate, utilities, environment, socio-economic information, etc.
- Public-private partnerships and economic aspects of SDI
- SIM meeting challenges - natural and environmental risk prevention and disaster and waste management, etc.
- Web and mobile GIS - challenges, services and real-time capabilities

The deadline for papers is March 14, 2014. See also: <http://www.agm2014.nisngr.com/>

Certificate Course: Earth Observation and Spatial Modeling for Integrated Water Resources Management

The Faculty ITC of the University of Twente is jointly with [RCMRD](#) and Egerton University is organizing a 9-week certificate course starting on 19 January 2015. The course will take place in Kenya, [EC Tuition fee](#) - USD 2500, Registration deadline - 15 Dec 2014, Netherland Fellowship Program (NFP) registration deadline - 6 May 2014. [Register](#). [Download the flyer](#) (PDF). For further details, please contact: Arno van Lieshout at a.m.vanlieshout@utwente.nl.

Practical SDI implementation materials from within and outside of Africa

Africa: Climate data initiative will help communities prepare

Across the country, state and local leaders are on the front lines of climate change--and it is impossible for them to ignore the consequences. In 2012 alone, extreme weather events caused more than \$110 billion in damages and claimed more than 300 lives. While no single weather event can be attributed to climate change, we know that our changing climate is making many kinds of extreme events more frequent and more severe. Rising seas threaten our coastlines. Dry regions are at higher risk of destructive wildfires. Heat waves impact health and agriculture. Heavier downpours can lead to damaging floods. Even as we work to curb greenhouse-gas emissions and expand renewable energy generation, we need to take steps to make our communities more resilient to the climate-change impacts we can't avoid--some of which are already well underway.

The Climate Data Initiative is an ambitious new effort bringing together extensive open government data and design competitions with commitments from the private and philanthropic sectors to develop data-driven planning and resilience tools for local communities. This effort will help give communities across America the information and tools they need to plan for current and future climate impacts.

The Climate Data Initiative builds on the success of the Obama Administration's ongoing efforts to unleash the power of open government data. Since data.gov, the central site to find U.S. government data resources, launched in 2009, the Federal government has released troves of valuable data that were previously hard to access in areas such as health, energy, education, public safety, and global development. Today these data are being used by entrepreneurs, researchers, tech innovators, and others to create countless new applications, tools, services, and businesses.

Data from NOAA, NASA, the U.S. Geological Survey, the Department of Defense, and other Federal agencies will be featured on climate.data.gov, a new section within data.gov that opens for business. The first batch of climate data being made available will focus on coastal flooding and sea level rise. NOAA and NASA will also be announcing an innovation challenge calling on researchers and developers to create data-driven simulations to help plan for the future and to educate the public about the vulnerability of their own communities to sea level rise and flood events.



These and other Federal efforts will be amplified by a number of ambitious private commitments. For example, Esri, the company that produces the ArcGIS software used by thousands of city and regional planning experts, will be partnering with 12 cities across the country to create free and open "maps and apps" to help state and local governments plan for climate change impacts. Google will donate one petabyte--that's 1,000 terabytes--of cloud storage for climate data, as well as 50 million hours of high-performance computing with the Google Earth Engine platform. The company is challenging the global innovation community to build a high-resolution global terrain model to help communities build resilience to anticipated climate impacts in decades to come. And the World Bank will release a new field guide for the Open Data for Resilience Initiative, which is working in more than 20 countries to map millions of buildings and urban infrastructure.

Every citizen will be affected by climate change--and all of us must work together to make our communities stronger and more resilient to its impacts. By taking the enormous data sets regularly collected by NASA, NOAA, and other agencies and applying the ingenuity, creativity, and expertise of technologists and entrepreneurs, the Climate Data Initiative will help create easy-to-use tools for regional planners, farmers, hospitals, and businesses across the country--and empower America's communities to prepare themselves for the future.

Indonesian environmentalists reject deforestation map



The Global Forest Watch 2.0, an interactive platform to track global deforestation in near-real time data, was launched on 20 February in Washington DC to provide reliable and up to date data that can help in better forest policies and management. Developed by the World Resources Institute, the University of Maryland, Google, the UN Environment Program and other partners, the mapping application launched combines satellite technology, open data and crowd sourcing to guarantee access to "timely and reliable information" about forests and to "empower people everywhere to better manage forests."

However, in Indonesia, where the rate of forest cover loss is reported to be the fastest in the world, questions were raised on the accuracy of data. Greenomics Indonesia, an environmental NGO, says the research study used to build the platform is inaccurate and misleading since it scientifically categorized palm oil plantations and concession areas under company-granted industrial forest permits as "forest cover gain."

Indonesia is the world's largest producer of palm oil, which is being targeted as among the main causes of large-scale deforestation in that country and globally. Demand for palm oil is booming because of its diverse uses for food products, cosmetics and other consumer commodities, even for biodiesel. Thousands of hectares of natural forest have been cleared to give way for vast palm oil plantations in Indonesia. Still, the study classifies this as forest gain," says Greenomics Indonesia director Elfian Effendi. "Why don't they just classify it as plantation expansion? It is quite ridiculous. World-class researchers have made a mistake in interpreting satellite data," he argues.

But an expert from Bogor Agricultural Institute, Rizaldi Boer, notes that palm oil trees and rubber trees were included in the research study because they are part of the gross number of trees. Had the study used the same definition of forest as the Indonesian government, which excludes plantations and industrial forest permit areas, the total area of primary forests would have been the same. For his part, Matthew Hansen, team leader of the University of Maryland-based research study, explains that the mapping tool on global forest change does not differentiate between forests and plantations. "The main point of the study is about the biophysical presence or absence of tree cover. On top of these are disturbances to the trees such as forest fire, logging or land clearing," "So here you will see the big D – deforestation and land degradation – in REDD," he notes, referring to the UN programme on Reducing Emissions from Deforestation and Forest Degradation.

On 7 February in Jakarta, Hansen presented new features of the global forest change map to 70 Indonesian scientists and government officials. "We have new findings that show 38 per cent of all forest losses in Indonesia are inside primary forests. A lot of the wetlands in Indonesia are being cleared compared to the uplands," he says. In their study published in November 2013, Hansen's research team reported a global loss of 2.3 million square kilometres of forest and a gain of 800,000 square kilometres of new forest from 2000 to 2012. Although Brazil's environmental programmes managed to cut the Amazon's deforestation rate from 40,000 square kilometres to 20,000 square kilometres per year, this was offset by the increasing deforestation in Indonesia, Malaysia, Bolivia, Paraguay and Zambia.



On Indonesia, Hansen said it is the “bookend to Brazil” because Indonesia has the biggest increase in forest cover loss - more than doubling its annual loss during the study period to nearly 20,000 square kilometres in 2011-2012. This article has been produced by SciDev.Net's South-East Asia & Pacific desk. [Link to Global Forest Watch site.](#)

GIS Tools, Software, Data

[Landcover database of Uganda for tsetse habitat mapping](#)

This dataset is an aggregated version of the original national Africover landcover multipurpose database. A 26-class legend is used to aggregate the classes present in the original full resolution, multipurpose landcover database. A single legend is applicable to the eight trypanosomiasis-affected counties.

[Global Forest Observations Initiative \(GFOI\): Methods and Guidance](#)

GFOI has released its first Methods and Guidance Document: Integrating Remote-Sensing and Ground-Based Observations for Estimation of Emissions and Removals of Greenhouse Gases in Forests: Methods and Guidance (MGD) from the Global Forest Observations Initiative.

This document prepared contains advice on how to use remotely sensed and ground based data in combination to estimate greenhouse gas emissions and removals associated with REDD+ activities, consistent with Decisions of the UNFCCC and guidance from IPCC. It can be downloaded from <http://gfoi.org/methods-guidance-documentation>.

The Global Forest Observations Initiative (GFOI) is an initiative of the inter-governmental Group on Earth Observations (GEO) and is a partnership of the FAO, CEOS, Australia, Norway and the USA. GFOI aims to foster the sustained availability of observations for national forest monitoring systems by providing a platform for coordinating observations and also providing assistance and guidance on utilising these observations. GFOI develops methods and protocols, and promotes ongoing research and development.

For more information see: <http://www.gfoi.org/>

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.

[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 certification is awarded in different areas of expertise at both 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 offered in more than 5,000 testing locations in 165 countries. Users are able to test for five certifications. 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.



ESRI Technical Certification web site lists specific skills assessed in each exam, as well as training courses that aid in acquiring and improving these skills. [Read more](#).

[ESRI South Africa full spectrum of GIS courses: April and May, 2014](#)



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 or [Email the training team](#)

[ESRI Eastern Africa GIS and remote sensing courses](#)

ESRI Eastern Africa is now offering update courses to conform to improvements in ArcGIS 10 and ENVI 4.8, conducted with skilled and experiences instructors together with conducive and state-of-the-art training facilities. Courses offered in the following tracks: fundamentals of ArcGIS desktop; data and map production; geoprocessing and analysis; enterprise GIS; multi-user geodatabases; and remote sensing.

Request for training arrangement for clients on site for 12-16 students. [Download](#) the course catalogue and current class schedule. To register visit: <http://esrietraining.cloudapp.net/>. For more information, contact: training@esria.co.ke, Phone: +254 20 2713630/1/2 or visit the offices on 3rd floor, KUSCCO Centre, Kilimanjaro Avenue, Upper Hill, Nairobi, Kenya.

[University of Twente - Faculty of Geo-Information and Earth Observation \(ITC\): 2014-15 Courses](#)



Apply online for courses starting in the academic year 2014-15. Browse by programme (degree, diploma, and certificate), course domain (disaster management, earth sciences, geoinformatics, governance, land administration, natural resources, urban planning, and water resources or location in the course finder at www.itc.nl/CourseFinder. For printed copy of the study brochure, email: alumni@itc.nl).

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



The [Regional Centre for Training in Aerospace Surveys \(RECTAS\)](#) is offering a number of three-week courses. Note that RECTAS is able to package and deliver customised training for intrested organisations. These could be either advanced or other certificate programs. Please contact: info@rectas.org or thontteh@rectas.org.

[Certificate Course: Earth Observation and Spatial Modeling for Integrated Water Resources Management](#)

The Faculty ITC of the University of Twente is jointly with RCMRD and Egerton University is organizing a 9-week certificate course starting on 19 January 2015.

Location – Kenya, [ECTuition fee](#) - USD 2500, Registration deadline - 15 Dec 2014, NFP registration deadline - 06 May 2014. [Register](#). [Download the flyer](#) (PDF).

Through the Netherlands Fellowship Programme (NFP) scholarships are available. Deadline for NFP application is end of April. In order to apply for NFP first apply for the course (use the 'Register' link). With the acceptance letter from ITC a NFP-request can be done. The link to NFP-application is <https://sol2web.nuffic.nl/Sol20Student/knockoutvragen.aspx?programid=76>. For further details, please contact: Arno van Lieshout at a.m.vanlieshout@utwente.nl.

[Regional Centre for Mapping of Resources for Development \(RCMRD\) Training Programme, 2014](#)



Geo-informational Courses (the courses last between one week to three months, and offered throughout the year):

- Geographic Information Systems (GIS) – 2 weeks – First week of every month
- Principles of Earth Observation (Remote Sensing) Digital Image Processing - 2 weeks- Every month
- Global Positioning System (GPS) for General Application and Mobile Mapping – 5 days
- Diggital Cartography and GIS Mapping – 2 weeks
- Autocad Map 3D 2014 – 2 weeks
- Relational Database Management System (RDBNS) MS Access/SQL Server – 2 weeks
- Certificate Course in Earth Observation and Spatial Modelling for Integrated Water Resource Management – 9 weeks – 19th January 2015



- Digital Photography – 2 weeks
- RTK/DGPS Surveying and Data Processing for Precise application – 2 weeks
- Services, Repair and Acquisition of Opti-mechanical Surveying Instruments – 2 weeks
- Bridging Certificate in Mathematics (JKUAT) – 3 months
- Diploma in IT (JKUAT) – 18 months
- Integrated Computer Training (Beginners and Advance) – 3 months – 2hrs/day
- Computer Programming – 8 weeks – 2 hrs/day
- Web Content Management – 2 weeks – 2hrs/day
- Statistical Analysis using SPSS, STATA – 3 weeks – 2hrs/day
- Mobile Computing - Android, JQuery Mobile – 4 weeks – 2hrs/day
- Project Management (Ms Project) – 2 weeks
- Tailor made courses in GIS/RS, ICT and GPS can also be organized to meet organization's needs. Minimum number of candidates in class is ten – Any time and consultative

Funding Opportunities, Awards, Support

[African Network of Scientific and Technical Institutions \(ANSTI\) - ANSTI/DAAD Post-Graduate Fellowships 2014](#)

The German Academic Exchange Service (DAAD) cooperates with ANSTI by offering financial support for Masters and Ph.D degrees at institutions in Sub-Saharan Africa. The fellowships are awarded to nationals in Sub-Saharan Africa for studies outside the applicants' home countries. Participants must be from ANSTI member institutions, and be less than 36 years old at the time of application. The application deadline is 31 May 2014.

[ARCOS Network - Small Grants for Conservation in the Albertine Rift and Great Lakes Region of Africa](#)

The ARCOS Small Grants enhance collaboration to develop sustainable solutions for biodiversity and people, focusing on critical landscapes and watersheds of the Albertine Rift and the Great Lakes Region of East and Central Africa. The program is open to civil society organizations. Governments and for-profit actors cannot apply, but may participate as cooperation partners in the project, or in coalitions where a civil society organization is the main applicant. The maximum grants are US\$5 thousand. Applications are received in two periods each year: 1 April to 15 May, and 1 August to 15 September.

[Council for the Development of Social Science Research in Africa \(CODESRIA\) -- Comparative Research Networks 2014](#)

CODESRIA supports researchers in African universities and research centers through funding for Comparative Research Networks. The networks address themes within CODESRIA's strategic plan, including (among others) research on climate change, natural resources, and development. Most grants range from US\$10 thousand to US\$35 thousand. The application deadline - 31 May 2014.

[European Commission \(EC\) - Modernization of the Agricultural Research Center in Egypt](#)

The EC will support a twinning project to strengthen the administrative framework and operational capacity of Egypt's Agricultural Research Center. The available funding is €1.4 million. Reference EuropeAid/135647/IH/ACT/EG. The deadline is 1 May 2014.

[Google Science Fair - Global Online Competition 2014](#)

The Google Science Fair invites students ages 13-18 around the world to compete in an international science fair. Individuals and small teams present their ideas and experiments to address social and environmental issues in subjects that include earth and environmental sciences, fauna and flora, and several others. Google and several partners will award scholarships and other prizes by age groups and geographical areas (local, regional, global). The deadline for submissions is 12 May 2014.

[Open Society Initiative for West Africa \(OSIWA\) -- Grants to Strengthen Frameworks for Managing Natural Resources](#)

OSIWA works to promote political and economic governance that contributes towards justice and human rights in West Africa. The 2014 call for proposals includes an objective to improve frameworks for managing natural resources in the following countries: Ghana, Guinea, Liberia, Niger, Nigeria, Senegal, and Sierra Leone. OSIWA makes most of its grants to local organizations in West Africa, although it will also fund other



types of organizations in rare and limited circumstances. There is no maximum grant size. The application deadline is 30 May 2014.

Wageningen UR Center for Development Innovation - Professional Training Courses 2014-2015

The Center for Development Innovation (CDI) at Wageningen University in the Netherlands helps build the capacities of individuals and organizations that are addressing the global challenges of sustainability and food security. Services at CDI include professional short courses in subject areas related to agriculture, genetic resources, pest management, water management, climate change, natural disasters, rural entrepreneurship, and others. Funding for most courses is available through the Netherlands Fellowship Program, with deadlines on 06 May 2014 and 07 October 2014. [Links to courses in 2014](#) and [courses in 2015](#).

[World Food Prize Foundation - World Food Prize and Borlaug Field Award 2014](#)

The World Food Prize Foundation invites nominations for the World Food Prize, and for the Borlaug Field Award. The World Food Prize (US\$250 thousand) recognizes an individual or individuals who have made outstanding achievements to enhance the world's food production and its distribution to those most in need. The Borlaug Field Award (US\$10 thousand) recognizes science-based achievement in international agriculture and food production by an individual under age 40 in the challenge to eliminate global hunger and poverty. The deadlines for nominations are 1 May 2014 for the World Food Prize, and 30 June 2014 for the Borlaug Field Award.

[United Nations University, Institute for Natural Resources in Africa - PhD Interns](#)

UNU-INRA invites applications for its 2014/2015 PhD Internship Program. Thematic areas are: green business opportunities in rural Africa; small and medium enterprises (SMEs) and resource efficiency, productivity, and resilience in rural Africa; rural SMEs and ecosystem services; and institutions and governance for environmentally-friendly business practices. The first round of application deadline in the 3-year programs is 15 April 2014.

Employment Opportunities

[Principal Scientist "Livestock genetics and informatics" \(open until filled\)](#), ILRI Nairobi Campus

Data management and integration is central to the work of the global livestock genetics program. There is a significant component of conventional bioinformatics, but the remit of this post extends to other aspects of computational analysis of biological problems. This includes integration and management of many data types including spatial, phenotyping, modeling, sequence data and sample meta-data. ILRI seek a talented individual to take overall responsibility for the management and integration of data and where appropriate to develop novel methods for data exchange and visualization. A solid background in bioinformatics is essential, but a significantly broader perspective is also required.

Main Responsibilities:

- Liaise with senior project and program managers to coordinate and manage informatics requirements and opportunities;
- Contribute to existing research projects and build independent research activities in informatics related to livestock genetics research;
- Be responsible for ensuring maintenance of the LiveGene program's collaborative networks and human and hardware capability to perform cutting-edge data analysis and visualization;
- Be an inspiring and effective leader of a diverse and enthusiastic group;
- Develop and implement a vision of informatics research and support at ILRI;
- Ensure integration of informatics into the research and research planning process at ILRI;
- Proactively establish and build strong relations with a range of local, regional and international partner institutes based on mutual trust and support;
- Be responsible for the quality of scientific research and project management within the global livestock genetics program (bio) informatics team.

Minimum Qualifications:

- Doctoral degree (PhD) in bioinformatics or in biological sciences research driven by computational analyses, with at least 5 years post PhD experience.

Essential Skills:



- Familiarity with bioinformatics, particularly the use and analysis of high-throughput sequencing data generated by a range of platforms;
- Familiarity with approaches to achieve data integration, interoperability and visualization;
- Experience in a supervisory role;
- Familiarity with Linux & Unix platforms and computational pipelines;
- Experience with high-performance clusters;
- Experience in scripting and programming;
- Experience with relational databases;
- Excellent record of scientific publications and fundraising;
- Demonstrated excellence as a manager of a team of professionals in a research organization;
- Proven success in initiating and managing multi-stakeholder and international research projects;
- Excellent written and spoken English;
- Experience in managing capacity building activities.

Applicants for the above position should send a cover letter identifying the position for which they are applying, and explaining their interest, what they can bring to the job and indicating earliest availability. They should also send curriculum vitae and the names, addresses and contacts (including telephone and email) of three referees knowledgeable about the candidate's professional qualifications and work experience.

All applications to be submitted online on our recruitment portal: <http://ilri.simplicant.com>. Screening of applications will start on 20 April 2014 and continue until the positions are filled.

Other

[Proceedings of the Global Land Project 2nd Open Science Meeting](#), Berlin, March 19-21, 2014

Conference session abstracts, Conference Themes: Rethinking land change transitions, Local land users in a tele-connected world, Impacts and responses, Land, Oral presentation abstracts, Flash talk abstracts, and poster presentation abstracts.

[East African Global Land Cover workshop, Nairobi](#): March 10-14th, 2014



The workshop aimed at enhancing the capacity of developing country partners to improve techniques to generate and/or update existing land cover information using satellite imagery. The ability to monitor the effects of climate change on natural resources and conduct carbon sequestration assessments are greatly enhanced by access to global coverage of satellite

imagery. Monitoring land cover change over time is an essential tool for climate change studies, such as forest carbon cycling processes, atmospheric models, ecosystem health and biodiversity.

This East African Participatory Workshop was geared to land cover mapping experts from the East African countries (Sudan, Uganda, Rwanda, Burundi, Tanzania, Malawi, Mozambique, Swaziland, Lesotho, and Kenya) to actively participate in a review of the USGS 30 meter Land Cover dataset and methodologies.

The workshop equipped policy makers to use the locally-produced land cover datasets from participating countries to improve the high resolution U.S. Geological Survey (USGS) Global Land Cover database. The workshop was organized in partnership with Department of the Interior International Technical Assistance Program U.S. Geological Survey and Regional Center for Mapping of Resources for Development.

[ESA: Sentinel 1a launched in April](#)

The Sentinel programme is set to launch in the beginning of April. The Copernicus Space Component, which is under ESA's responsibility, is developing the Sentinel mission for specific needs of the Copernicus programme. The six planned Sentinel missions will carry a range of technologies, such as radar and multi-spectral imaging instruments for land, ocean and atmospheric monitoring.

The first Sentinel 1a will use radar to map the surface of the Earth and be launched in April. The Mission will provide all-weather day-and-night supply of imagery, and maps to strengthen emergency service and response to natural disasters. The second mission will follow in 2015 and carry technology to monitor vegetation, soil and water cover, inland waterways and coastal areas. Sentinel 1a will be launched at the Guianese spaceport in South America. Read more: [BBC UK](#).



Conferences, Events

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

Date	Location	Event
April 2014		
1-4 April 2014	Rabat, Morocco	3rd International Conference on the Use of Space Technology for Water Management
7-10 April 2014	Paphos, Cyprus	2nd International Conference on Remote Sensing and Geoinformation of Environment (RSCy 2014) . Abstract deadline: 24 January 2014.
15-16 April 2014	Yogyakarta, Indonesia	ASEAN Workshop on Development of Standard Operating Procedure (SOP) for utilisation of Space-based information during emergency response
18-21 April 2014	University Park, Pennsylvania USA	International ISCRAM (Information Systems for Crisis Response and Management) Conference 2014: Empowering Citizens and Communities through Information Systems for Crisis Response and Management
23-24 April 2014	Suez Canal University, Ismailia, Egypt	4th International Conference of Botany and Microbiological Sciences
May 2014		
3 May 2014	To be confirmed	Intergraph Southern Africa User Group Meeting 2014
5-9 May 2014	CICG, Geneva, Switzerland	Geospatial World Forum
6-8 May 2014	Cape Town, South Africa	Esri African User Conference
6-9 May 2014	Mauritius	IST-Africa 2014 Conference
19-23 May 2014	Benin, Edo State, Nigeria	National Institute of Surveyors Annual General Meeting 2014
21-23 May 2014	Krems, Austria	International Conference for E-Democracy and Open Government 2014 (CeDEM14)
21-23 May 2014	Thessaloniki, Greece	5th International Conference on Geographic Object-Based Image Analysis (GEOBIA 2014)
25-30 May 2014	Cancun, Mexico	46th GEF Council Meeting and GEF Assembly Contact: secretariat@thegef.org
26-30 May 2014	Kiev, Ukraine	Fourth International Conference on Earth Observations for sustainable Development and Security
27 May 2014	Hamburg, Germany	Call for Abstracts: International conference: Urban Regions under Change (URC 2014)
June 2014		
2-4 June 2014	Paris, France	Global Space Applications Conference (GLAC)
5-6 June 2014	Bonn, Germany	UN-SPIDER Expert Meeting on Space Technologies for Drought and Flood
8-14 June 2014	Jeju ICC, Korea	20th World Congress of Soil Science (WCSS)
15-21 June 2014	Riviera, Bulgaria	5th Jubilee International Conference on Cartography & GIS & Seminar with EU cooperation on Early Warning and Disaster/Crisis Management
16-20 June 2014	Aalborg, Denmark	The 8th INSPIRE Conference
16-21 June 2014	Kuala Lumpur, Malaysia	XXV FIG International Congress Details/link to register, visit: www.fig.net/fig2014/registration.htm



SPATIAL DATA INFRASTRUCTURE - AFRICA NEWSLETTER

The GeoSpatial Community

April, 2014

Vol. 13, No. 4

30 June -3 July 2014	Guimaraes, Portugal	9th International Conference on Geographical Analysis, Urban Modeling, Spatial Statistics (GEOG-AND-MOD 14) Abstract Deadline: 10 February 2014
July 2014		
1-7 July 2014	Cape Town, South Africa	AfricaGEO 2014 Conference & Exhibition
12-15 July 2014	San Diego, California USA	2014 Esri 3D Mapping Forum
13-18 July 2014	Quebec, Canada	IEEE International Geoscience and Remote Sensing Symposium (IGARSS) 2014 & 35th Canadian Symposium on Remote Sensing (CSRS)
14-18 July 2014	San Diego, California USA	Esri International User Conference
14-19 July, 2014	Nairobi, Kenya	7th Conference of the African Association of Women in Geosciences (AAWG): Earth Sciences and Climate Change: Challenges to Development in Africa
August 2014		
6-8 August 2014	Nairobi, Kenya	International Workshop on Open Data for Science and Sustainability in Developing Countries (ODDC) Abstract deadline: 1 February 2014
19-21 August 2014	Lagos, Nigeria	Africa Geospatial Forum (formerly known as Map Africa conference)
September 2014		
1-3 September 2014	Gaborone, Botswana	5th IASTED African Conference on Environment and Water Resource Management (AfricaEWRM 2014) Abstract deadline: 1 April 2014
8-13 September 2014	Portland, Oregon	FOSS4G 2014
October 2014		
22-24 October 2014	Mombasa, Kenya	Esri Eastern Africa User Conference
27-31 October 2014	Cape Town, South Africa	African Association of Remote Sensing of the Environment (AARSE) Conference 2014
November 2014		
December		
2015	Durban, South Africa	14th World Forestry Congress for South Africa
19-20 May 2015	Paris, France	International Conference on Geographic Information Systems (ICGIS 2015) . Abstract deadline: 31 December 2014
23-28 August 2015	Brazil	27th International Cartographic Conference
1-31 August 2016	South Africa	35th International Geological Congress

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

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