



## 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 25<sup>th</sup> of each month to the Editor, Gordon Ojwang' - [gojwang@rcmr.org](mailto:gojwang@rcmr.org) or [sdiafrica@rcmr.org](mailto: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.gsdi.org/newsletters.php>. You can join the GSDI Association at <http://www.gsdi.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); Karen Levoleger, kadaster (Netherlands); Richard Cooper, SEA START RC (Thailand); Monica Morrison, OKACOM (Botswana); Maleté Daniel Sebake, Council of Geosciene (South Africa); Serena Coetzee, University of Pretoria (South Africa) and Biffy van Rooyen, CSIR (South Africa) for their contribution to this issue of the newsletter. We acknowledge the various websites and links referred to here as sources of information.

## SDI News, Links, Papers, Presentations

### [GSDI 14 World Conference and AfricaGIS 2013 - November 4-8, 2013](#)



[EIS-Africa](#), the [GSDI Association](#), the [International Geospatial Society](#), and the [United Nations Economic Commission for Africa \(UNECA\)](#) are pleased to announce a close partnership in offering the joint AfricaGIS

The GSDI 14 World and AfricaGIS 2013 is a combined conference that will take place at the UNECA Conference Center in Addis Abbaba, Ethiopia from November 4-8, 2013. AfricaGIS is the largest regularly occurring GIS conference in Africa with participants from the entirety of the continent. The GSDI World Conference has built a reputation for excellence in content and moves across the globe to offer geospatial specialists in all parts of the world opportunities to better exchange ideas and learn from global peers in building spatial data infrastructure.



The theme of the conference is "Spatially Enablement in Support of Economic Development and Poverty Reduction".

Important Links: Conference Website: <http://www.gsdi.org/gsd14>; Past GSDI World Conference Proceedings: <http://www.gsdi.org/gsdiConferences>; Past open access Books affiliated with the conference: <http://www.gsdi.org/openaccessbooks>; Other: <http://www.gsdi.org/gsdiconf/gsd14/dates.html>

We look forward to seeing you in Addis Ababa in November 2013. The primary organizers and hosts of this conference include the GSDI Association, EIS-Africa, the UN Economic Commission for Africa, EiABC - Addis Ababa University, and the International Geospatial Society.

## GEO Challenge Grant

The Group on Earth Observations (GEO) has contributed \$5,000 to help defray expenses of worthy applicants from economically disadvantaged nations in Africa to attend the combined AfricaGIS 2013 and GSDI 14 conference and training workshops before and after the conference. If your organization can make a contribution to help support deserving peer professionals from across the African continent, please contact Sives Govender, Director, EIS-Africa, email: [SGovender@eis-africa.org](mailto:SGovender@eis-africa.org), phone: +27-12-3491068.

## Future trends in geospatial information management: Five to ten year vision

A new edition of the Ordnance Survey/GGIM paper has been published, titled 'Future trends in geospatial information management: the five to ten year vision.' The document was prepared by John Carpenter and Jevon Snell of the Ordnance Survey at the request of the Secretariat for the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM).

A first draft of this paper, building on both written contributions received and discussions held in April 2012 was presented to the UN-GGIM for consideration at their 2nd Session in August 2012. The paper has now been updated to reflect the feedback received at that meeting and subsequent submissions. It takes the views of a recognised group of experts from a wide range of fields related to the geospatial world, together with valuable contributions from the national mapping and cadastral authorities (NMCAs) and attempts to offer some vision of how this is likely to develop over the next five to ten years. Based on the contributions received, trends have been broken down into broad themes covering major aspects of the geospatial world. They are as follows: trends in technology and the future direction of data creation, maintenance, and management; legal and policy developments; skills requirements and training mechanisms; the role of the private and non-governmental sectors; and the future role of governments in geospatial data provision and management.

## ESRI and Vital Signs launch partnership, pairing technology and science to map, track critical services from nature to Africa's farmers



Vital Signs, a monitoring system for agriculture, ecosystems, and human well-being, announced Esri as its first corporate partner at the annual International User Conference for the geographic information systems (GIS) software developer. Vital Signs will use Esri applications and software to help policy-makers visualize outcomes of different agricultural decisions as part of the monitoring system's online indicators of sustainability.

"Feeding the growing world population will require a 70-100% increase in food production through agricultural intensification, but no country can achieve this goal if it doesn't also work to sustain nature – the healthy soils, pollinators, fresh water and forests on which farmers depend," said Dr. Sandy Andelman, Vital Signs

Executive Director and Senior Vice President of the Betty and Gordon Moore Center for Science and Oceans at Conservation International. "The foundation of Vital Signs is providing open-access information at all the scales that are relevant for agricultural decision-making – from a smallholder farmer household to a farm plot, landscape, region, and all the way to the globe."

Esri will provide Vital Signs with landscape analysis tools and help design a dashboard for users to assess tradeoffs and monitor a decision's impact on the land and farmer's livelihoods. These tools will enable them to establish baselines, set targets, and monitor the progress of sustainable policies within the five countries that Vital Signs currently works - Ethiopia, Ghana, Mozambique, Tanzania and Uganda.

"Monitoring the complexity of Earth's many ecosystems requires active networks of people, science, data, and technology," said Jack Dangermond, president and CEO of Esri. "However, actually living in sustainable relationships with these ecosystems requires people who are willing to collaborate and commit to a healthy planet. Conservation International is a standard of these values. It is an honor for Esri to work with its staff to build the Vital Signs system."



Vital Signs launched in 2012 with a grant from the Bill & Melinda Gates Foundation to Conservation International (CI). The monitoring system is co-led by CI, the Earth Institute, Columbia University (EI), and the Council for Scientific and Industrial Research, South Africa (CSIR). Vital Signs will collaborate and collaborate with governments, other nongovernmental organizations, the academic community, the private sector, and key international partners. Esri's contributions of its GIS cloud services, software, and expertise to Vital Signs will help policy makers in Africa and around the world make informed decisions about pursuing agricultural intensification sustainably.

A longtime customer of Esri software, Conservation International uses ArcGIS to collect and map data for its many projects throughout the world. For more information, please visit: [www.conservation.org/vitalsigns](http://www.conservation.org/vitalsigns) or [www.vitalsigns.org](http://www.vitalsigns.org). Contact: Kevin Connor, Conservation International, Office +1 703 341 2405/ mobile +1 571 232 0455/ email [kconnor@conservation.org](mailto:kconnor@conservation.org).

## [Africa: Computer model gives early warning of crop failure](#)



An international team of researchers has developed a computer model to predict global crop failures several months before harvest. Since 2008, widespread drought in crop-exporting regions has resulted in large increases in food prices on global commodity markets. With climatic extremes also expected to become more common, being able to predict global crop failures could help developing nations that are reliant on food imports - making them more resilient to spikes in food prices.

The study, published in *Nature Climate Change* (21 July), involved analyzing 23 years of climate forecasts and satellite observations to develop

a computer model for predicting crop yields. The researchers then tested how well their model predicted the actual yields at the end of each season for four staple crops: wheat, rice, maize, and soybean.

They found that climate-induced crop failures were reliably predicted in a third of the global crop area. Results suggest that computer models such as this could be used to produce crop estimates up to five months before harvest and help establish a system to predict global crop failure. "This presents the first assessment of the reliability of cropping prediction on a global scale," said the study co-author Toshichika Izumi, a researcher at Japan's National Institute for Agro-Environmental Sciences. "It demonstrates that we can predict food production ahead of the harvest, which is a valuable food security tool for dealing with changing climates." Yet the reliability of the model's predictions varied substantially by crop, with wheat and rice yields being the most predictable. For the major wheat-exporting countries, the model's forecasts were reliable for up to 35 per cent of the harvested area.

However, soybean and maize yields showed little predictability. Maize is a key crop across much of Africa and Latin America, suggesting more work is required to improve crop predictions for many developing nations. Chris Funk, a research geographer at the University of California Santa Barbara, United States, says these findings could still help the developing world mitigate at least some food price shocks. "In most of the world, wheat and rice are the dominant food source for rapidly expanding populations of urban poor," "These populations, who may spend up to 70 per cent of their income on food staples, are highly vulnerable to rapid price increases."

Lindsay Stringer, director of the Sustainability Research Institute at the University of Leeds, UK, says that, while the information provided by predictions is helpful, the challenge for many African countries is putting it to good use. "Focusing on food production is only part of the puzzle," "There are also issues in terms of capacity gaps and institutional communication challenges. These cause problems in mobilizing personnel and resources to act upon forecast information, and having necessary structures and processes in place to facilitate urgently needed action." [Link to study abstract](#). References: *Nature Climate Change* doi: 10.1038/nclimate1945 (2013)

## [Nigeria Space Agency to support INEC on delimitation of electoral boundaries](#)

The National Space Research and Development Agency (NASRDA) have pledged to support the Independent National Electoral Commission (INEC) on its periodic review of the delimitation of electoral boundaries in the country. The Director-General, NASRDA, Prof. Seidu Mohammed, made the pledge to a team of INEC led by its Chairman, Prof. Attahiru Jega in Abuja. Mohammed, who described the national delimitation of electoral boundaries as a delicate and sensitive assignment, said NASRDA believed that scientific approach was method.

He said NASRDA as a custodian of space asset in Nigeria had more than enough to offer INEC to make the exercise a success. "Space programme was not only about sending satellites into the orbit, but also making information available to the people". Mohammed said the number of experts, and trained engineers and



scientists in NASRDA with the agency's collaboration with Nigerian universities, made it capable to support INEC. "We need to still train some of your technical staff so that they can have a geographic information system laboratory, so that information can be updated by yourself. That we promise we can do."

Mohammed said in addition to electoral delimitation boundaries, there were other things the commission could benefit from such as the use of satellite to secure ballot boxes and fast tracking electoral process. "We have many engineers and scientists trained in communication satellite and by that you can quicken your response time after election through an encoding system. "That means when election closes, results can be forwarded to you even on GSM lines, all these are on communication satellite. "All you need do is encrypting them to make them safe and secured, so that these things can be forwarded to your centres within one or two hours, therefore making Nigeria more competitive anywhere in the world," he added. He, therefore, recommended immediate setting up of a technical committee for the collaboration of the agency and the commission.

Earlier, Jega had told the agency that INEC was seeking the support and partnership of the commission on the review of the country's delimitation of electoral boundaries, which he described as long overdue. Jega said present constituents were developed in 1996, based on the 1991 population census, under the military administration and had been used for the 1999, 2003, 2007 and 2011 general elections. "It is necessary to review the delimitation of the exiting electoral constituencies. "This is important to ensure more equity in political representation, equality of voting strength and the principle of one man, one woman, and one vote,".He said that the commission had commenced the exercise with series of interactions with stakeholders and that it was at the take off stage of interacting with the agencies of government considered as strategic partners. "The commission needs quite a lot of important data and information to be able to do the job passionately, impartially and to the satisfaction of Nigerians.

He said the constituency delimitation was a very volatile and political sensitive exercise, adding that many stakeholders had interpreted it as re-structuring of administration boundaries, which were very different issues. "It is also important to ensure that a representative is representing people of equal voting strength rather than whisked voting strength. "Professionally and competently a lot of scientific data and information is needed to help in such a way that it will be very clear there is no partisanship or bias"

He said INEC had identified NASRDA as a strategic partner to provide the country's satellite imageries in both soft and had copies as well as other useful data for the exercise. Jega also requested the agency to provided Nigeria locality list, streets maps and digital terrain model showing road network system, low land, high land drainage patterns, swampy areas, Niger Delta areas, arid and semi-arid areas.

## Satellite model could help predict landslides in Africa's remote areas



Satellite data could not only identify hotspots for landslides, but could also play a part in predicting these potentially devastating events, particularly in remote mountainous regions, a study suggest.

Researchers at the University of California, United States, have developed a model using satellite data on rainfall, topographical features of slopes, and land cover - and by testing the model on a dataset of previous landslides say it

predicts these historical events reliably and could be the basis of a real-time, global landslide prediction system. "Landslides typically occur in mountainous regions where other sources of information, including radar and gauge measurements [used in standard global landslide models], are not available," Amir AghaKouchak, co-author and assistant professor at the Center for Hydrometeorology and Remote Sensing in Irvine. "Further, in many developing countries ground-based observations are also limited due to a lack of investment. "Our model has been developed with satellite data so that it can be used [globally] in remote and topographically complex regions. Most previous landslide studies have been at a local or regional scale".

According to the researchers, the model "cannot be considered as a general landslide model" as it does not consider earthquake-triggered landslides, and not designed for small-scale landslides (local events not reported in the NASA global landslide inventory, which is the data used to calibrate the model). Nevertheless, it can be "coupled with a local physical model to improve landslide monitoring prediction" by first using the satellite model to identify landslide hotspots and then applying a physical model for slope failure to the hotspots. "Efforts are underway to further develop the model into a real-time landslide prediction model," AghaKouchak says. "But our research will largely depend on receiving grants and support."

Oliver Krol, a scientist at the Fraunhofer Institute of Optronics, System Technologies, and Image Exploitation in Germany, says, "This is a very ambitious project to develop on a global level". However, he adds that a



focus on regional models would be preferable since local conditions could be covered by individual countries much better. The research published in Natural Hazards and Earth System Sciences. [Link to full paper.](#)

## [Ancient Egyptian River could be revived for farming](#)



According to a study proposing an ambitious engineering scheme, which the Egyptian government is now reviewing, a 5,000 year-old River could be revived to bring sustainable agriculture to one of the planet's rainiest yet driest deserts. The desert of the Sinai Peninsula receives the most rainfall of any part of Egypt - around 304 millimetres annually, but most of it is do not benefit agriculture, but instead flows out into the Mediterranean Sea in flash floods.

Now, researchers from Egypt's Al-Azhar University, and Boston University and the University of North Carolina in the US - writing in a

paper published online in *Geomorphology* (15 June) - propose redirecting rainwater in the Wadi El-Arish valley's drainage area down the river's former path, away from the sea, to an area where it can be used for irrigation. "[Our study] reveals the ancient course of the Wadi El-Arish ... and provides a new approach to maximize the harvesting of rainwater for establishing sustainable agricultural development in North Sinai," says lead author Mostafa AbuBakr, a visiting scholar at Boston University's Center for Remote Sensing.

The geological record shows that the Sinai region was much wetter between 5,000 and 10,000 years ago. Using satellite radar images to visualize the ancient riverbeds that was since been buried under surface deposits, the team had compared modern day topography with paths of ancient river channels from wetter period. The river diverted from its original course when geological uplift had formed an arch of stratified rock called an anticline that blocked its path.

"This method of identifying subterranean features by using space-borne radar has been used previously and is an effective imaging tool," says Paul Tregoning, a remote sensing expert from the Australian National University, who was not involved in this study. "The authors show quite clearly the location of what appear to be ancient river beds beneath the anticline that is visible in today's topography." "Our study provides a new approach to maximize the harvesting of rainwater for establishing sustainable agricultural development"

The river originally led to three ancient lakes in a depression west of Gebel Halal, a mountain in northern Sinai. "Accessing that depression would allow its stored water to be used for agriculture," says Farouk El-Baz, an author of the paper and director of the Center for Remote Sensing. To do this, the team proposes a two-kilometre-long and six-metre-deep channel dug through the uplifted structure to divert water back along the river's previous course. They believe this could redirect enough runoff during the flash floods to create 1,400 square kilometres of fertile land in the depression west of Gebel Halal, where surface clays, low groundwater salinity and a near-surface aquifer also offer promising agriculture.

Recently, the team approached the Egyptian government through its Science and Technology Development Fund to explore this irrigation concept. The proposed project - which the Egyptian government is now assessing - would involve "a follow-up study to estimate the outcome of surface runoff redirection through a canal and evaluate the consequences of flow deviation", says AbuBakr. The plan is to create a high-resolution computer model - supplemented with field data and geophysical explorations - to construct a detailed hydrological simulation of the diversion to assess its impacts on the environment, local ecosystem, and archaeological sites in the areas around the ancient lakes. In addition to the potential to support agriculture, redirecting the river flow would help to mitigate the risk of flooding in El-Arish City, the capital of the North Sinai governorate, which lies at the end of the Wadi El-Arish on the coast. [Link to paper abstract.](#)

## [Eritrea's Agriculture Ministry compiles data regarding GIS and cartography](#)



The Agriculture Ministry's branch in Eritrea's central region has compiled the necessary data regarding Geographic Information System (GIS) and cartography. This task was facilitated with a view to identify the distribution of social service facilities, assess revenue, and classify afforestation patterns - the statement was made at a meeting conducted at the Asmara City Hall.

Mr. Mihretab Yohanes, from the branch office, pointed out that the required research regarding the effective harnessing of resources had been fulfilled, besides the clearly defining the current distribution of social service facilities.

Accordingly, the study enabled the branch office to mark crop and livestock production vis-à-vis proper utilization of land resources as grazing lands, green feed potentials, and irrigation farming capacities in the environs of dams had been sketched.



Mr. Asrat Haile, head of development and plant protection in the region, indicated that the compiling of such data was accomplished because of conducting panel discussions among agriculture experts from the region, and lauded the active collaboration of the government and administrations in the process.

Mr. Yohanes Tekeste and Ms. Rahwa Zere noted that the task demanded remarkable energy, and expressed the conviction that an achievement of this type would make significant impact in facilitating implementation of programs. In closing remarks, the administrator of the central region, Mr. Kahsai Gebrehiwet, said that the compilation of data on GIS and cartography is crucial in the follow-up of programs under implementation, and that it would give impetus to national goal of achieving the cherished afforestation.

## [Rift Valley Railways \(RVR\) installs GPS to improve tracking and control cargo movement](#)



Rift Valley Railways (RVR), the operator of the Kenya-Uganda railway, has launched a KSh. 800 million (more than US\$ 9.3 million) technology upgrade that includes global positioning system (GPS)-based software that centrally controls the movement of trains and cargo along the railway track. The automated train warrant (ATW) software allows online visualization from an operations control center in Nairobi of the precise location of trains along the railway. It will replace manual management of crossovers at railway stations with satellite-enabled self-switching movement of trains.

"The introduction of satellite navigation technology to this core component of our operations means we will eliminate a lot of waiting time at stations by giving priority track access to trains carrying cargo and also allow us to handle larger fleets," said Darlan De David, RVR group CEO. RVR is a platform company of Citadel Capital, the leading private equity firm in Africa and the Middle East with investments of US\$ 9.5 billion in five core industries, including energy, transportation, agrifoods, mining, and cement. Communication with the trains will be through on-board computers installed in all locomotives, which have remote speed-control features and a mechanism to data on the condition of engines and the track back to the control center.

Commenting on the new technology, Hernani Sozzi Jr., a veteran software developer for rail and road management with large Brazilian rail operator - America Latina Logistica said - "This is an integrated logistics and operations solution used in modern railway management system that gives real time information on multiple dimensions of the railway line and rolling stock". Sozzi, who was in Kenya to train RVR software developers and traffic controllers on the new system, said this integrated technology platform is currently used to manage railway operations in Brazil, Argentina, and South Africa. He said Japan uses the same technology to manage operations and billings for mass commuter rail.

A key component of the technology is the Translogic integrated logistics management platform, which provides a detailed manifest of the position and contents of all cargo-carrying wagons. "This platform enables us to tell customers exactly where their cargo is along the 2,352km railway track we manage," De David noted. "This innovation gives RVR the ability to effectively manage asset quality, reliably schedule maintenance, and help ensure consistently high standards of rail transportation to smooth trade in East Africa."

## [Uganda: Kaddunabbi wants partnership in agriculture insurance](#)

Ibrahim Kaddunabbi Lubega, the Chief Executive Officer for Uganda Insurance Regulatory Authority, says government and development partners should play a leading role by providing subsidies to agricultural insurance. Lubega says this would spur the success of insurance products to agriculture such as the one recently launched by Lion Assurance. Named Kungula AgrInsurance, the Lion Assurance product is set to pay particular attention to agriculture, which is the mainstay of Uganda's economy, where three out of four Ugandans earn a living. It aims at helping farmers in the recovery of monetary losses due to different unforeseen factors like weather hazards. Lubega applauded the project for targeting the majority of Ugandan population, which he believes, would help increase the insurance penetration. The figure currently stands below one per cent.

"Its success will need the intervention of government and partners because our peasantry would not afford such financial premiums without subsidizing them," he said, proposing a 50 per cent government contribution per premium. Uganda's entire agricultural insurance potential is estimated at an excess of \$150m but many players have eluded it because of the risks involved and its unpredictability. The new product brings together competing insurance companies including NIC, UAP, APA, FICO, and NIKO who will all implement the product with Lion Assurance as the lead operator.



Newton Jazire, the Managing Director at Lion Assurance, noted that the product would be divided into two packages of Livestock Arm insurance and Crop Index insurance. "For Livestock Arm, farmers and investors in agribusiness will be required to pay a premium of two per cent of the sum insured to any of the participating insurance companies," he said. Crop indexed insurance, on the other hand, will cover crop and pasture losses due to drought and excessive rainfall. This would be based on changes of rainfall data collected at the nearest weather station and remote sensing satellite data to be collected by Earth Environment Management.

The premium rate for this is between two and five per cent of the sum insured. For proper implementation, Jazire said, the farmers would be encouraged to acquire premiums through farmers' cooperatives, village savings groups and other associations, which would reduce the costs on individual small-scale farmers. He added that insurance agents would be positioned in the financial institutions used among farmers.

Jazire also highlighted that the low incomes of Ugandan farmers and an illiterate target group remained the biggest challenge to implementation. Some farmers believe it is the responsibility of the government to compensate them in case of a disaster, but this has previously proved unsustainable, cases in point being the Teso floods, Bududa landslides, and the recent Kasese floods.

### Kenya's Gertrude children hospital deploys mobile phones for efficiency and convenience



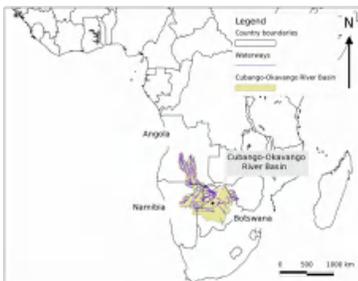
Kenya's Gertrude's Children's Hospital is now deploying mobile phones for use by medical staff in treatment of patients. The deployment follows that of portable computers on medical trolleys, dubbed computers on wheels (COW), it was revealed at the third CIO 100 Annual Awards and Symposium, ongoing in Kigali, Rwanda, by Gertrude's Hospital head of IT, Allan Tollo.

Tollo says that before deployments, doctors would not have access to notes from other doctors while patient records were separate at

each of the 10 satellite clinics for the same patient. The lack of standardization would lead to doctors repeating tests already done and patients having procedures repeated when records of original procedures could not be found or accessed. The hospitals started by having laptops linked to a secured Cisco network on the trolleys. All the trolley laptops are connected to a central system and accessible to the ten clinics, which was improved by installing the same system on Android tablets.

The medical staff can take patients notes, access lab result tests, and prescribe medicines through the system. The Kranium solution linked to a Picture Archiving and Communication System (PACS) also stores and displays digital copies of radiology images (such as x-rays). The benefit of the system is that patients can be diagnosed and treated at any of the clinics, while their information and history seamlessly handled from one medical staff to another. Further improvement of the system may include GPS mapping of patients' home locality and spread of diseases (addition by the editor).

### Paper - Okavango Collections: Sharing Environmental Information Resources of the Cubango-Okavango River Basin, Richard T. Cooper, Monica Morrison



This paper provides an account of the development of the web-based Okavango Collections (OC) metadata catalogue. In light of climate change, growing population and developmental pressures on the transboundary Cubango-Okavango river basin, there is an urgent need to ensure timely access to reliable environmental data and information for environmental decision-making. Commissioned by the Permanent Okavango River Basin Water Commission (OKACOM), OC provides a searchable directory of collections of data, data sets, image archives, books, reports, and other information available both in the region and in other parts of the world. It is based on GeoNetwork Opensource, a standards-based and open source

web catalogue, implementing international standards for metadata content and system interoperability. Its main features include a geospatial catalogue application, providing metadata editing and advanced search and discovery capabilities, and an integrated map viewer. Key development challenges included the creation of a regional geographic names thesaurus as a controlled vocabulary for place keywords, an email notification system to facilitate ongoing maintenance of metadata records, improved contacts management, and enhanced search and discovery functionality. In addition to providing an important environmental information service for the Cubango-Okavango region, and a key tool to facilitate negotiation of river basin data sharing among the riparian states, OC potentially offers a model system for implementation elsewhere. International Journal of Spatial Data Infrastructures Research (IJS DIR).



**Paper - [Address Data Sharing: Organizational Motivators and Barriers and their Implications for the South African Spatial Data Infrastructure](#), Maletse Daniel Sebake, Serena Martha Coetzee**

An address is a common reference for a multitude of information. In South Africa, multiple address datasets are developed and maintained by various public and private organizations with little or no cooperation on data sharing. We identified motivators and barriers for address data sharing in South Africa through case studies of three typical organizations, which prepare, distribute and use address data. The most significant motivators are improved data quality and an expected return on investment for better decision-making and service delivery. However, the quality of data produced by organizations participating in a data sharing initiative needs to be clearly described and evaluated, in order to avoid prejudiced perceptions of poor quality; and expectations about the timing and value of the expected return on investment from an SDI need to be managed to avoid losing support from stakeholders. Even if organizations have the best data sharing intentions and agreements in place, high staff turnover, which is a considerable problem in South Africa, can jeopardize data sharing. Technical barriers, such as common definitions, models, and formats are less significant and can be overcome by implementing appropriate standards. Public-private partnerships are not given enough consideration in the South African data sharing initiatives. Our findings have significant implications for the recently established Committee for Spatial Information (CSI) tasked with the implementation of the South African Spatial Data Infrastructure (SASDI), but they are also of interest to other countries and for other spatial datasets. (IJS DIR).

**[Call for experts: UN-SPIDER technical advisory mission to Malawi](#)**

At the invitation of the Department of Disaster Management Affairs of Malawi the UN-SPIDER Programme will conduct a Technical Advisory Mission (TAM) to Malawi from 14 October to 18 October 2013.

UN-SPIDER is currently contacting experts from the space and disaster management community to have the team defined by end of August. If your institution, organization, company, or university is interested in joining the expert team, please get in touch, so you can be provided with additional information. UN-SPIDER is looking for professionals from the field of space technology and disaster management who are already collaborating or are willing to collaborate in the future with the authorities or respective institutions in Malawi.

TAMs are part of UN-SPIDER's technical advisory support, one of the core activities of the programme. TAM experts meet during the mission with key disaster management authorities in the Government, UN agencies, regional and international organizations or initiatives and private entrepreneurs to discuss the topic in depth, make recommendations and develop guidelines to improve the use of space-based information in disaster-risk management and emergency response.

If you are interested in joining the TAM please provide a short background, résumé or CV and a short indication of your current, planned or possible type of collaboration with Malawi. Kindly send your statement of interest to Mr Markus WOLTRAN ([markus.woltran@unoosa.org](mailto:markus.woltran@unoosa.org)) until 18 August 2013.

**2nd SA-GEO Symposium**, 10-12 September 2013, University of Fort Hare, Eastern Cape, South Africa. For further information and flyer, contact: Biffy van Rooyen, Communication Manager, CSIR Strategic Initiatives Implementation Unit, Tel: +27 12 841 3887, Cell: +27 82 668 6103, Skype: biffy.van.rooyen on behalf of the South African National Earth Observations and Space Secretariat.

Registration is now open for the [World Congress on Agroforestry 2014 \(WCA2014\)](#), through the website (<https://b-com.mci-group.com/Registration/WCA2014.aspx>). Abstracts of papers and posters submitted through the website. The deadline for submissions is 30 September 2013.

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

**[Over 10,000 Nigerian banks, ATMs and POS points newly listed on Google maps](#)**

Twenty years ago, we used paper maps and printed guides to help us navigate the world. Today, the most advanced digital mapping technologies-satellite imagery, GPS devices, location data and of course Google maps are much more accessible. This increase and growth in mapping technology is improving lives and helping businesses in Nigeria realize untold efficiencies

Today, more Nigerian businesses now consider map listing as a mandatory. In the last quarter of 2012 alone, 14 banks across Nigeria took their branches and ATMs locations closer to Nigerians by listing them on Google Maps. There are over 10,000 bank branches, ATMs and POS outlet locations listed on Google Maps: Access Bank, Diamond Bank, Ecobank, Enterprise Bank, Fidelity Bank, First Bank, GTBank, Keystone Bank, Mainstreet Bank, Skye Bank, Sterling Bank, UBA, Union Bank and Wema Bank. This means that irrespective



of location, anyone in or outside Nigeria can find and locate a bank, ATM or POS location in cities in Nigeria. A simple search for banks in Nigeria will present results that would help everyone find a bank easily. Moreover, Google Maps can be used on mobile devices, a search can be done while on the move.

The implication of this is an increased potential for additional business will be huge via the billions of people around the world using Google Maps. Apart from the banks, other Nigerian businesses using Google maps to reach their customers easier include Forte Oil, Chicken Republic, Mr. Biggs, Etisalat and a number of others. The transformation of the maps we use everyday is driven by a growing industry that creates jobs and economic growth globally. To present a clearer picture of the importance of the geo services industry, we commissioned studies from Boston Consulting Group (BCG) and Oxera. What we found is that maps make a big economic splash around the world.

In summary, the global digital mapping industry is valued at up to \$270 billion per year and pays out \$90 billion in wages. While we don't have exact figures for Nigeria, it employs more than 500,000 people and is worth \$73 billion in the US alone. To explain the examples of the many benefits of maps, whether it is improving agriculture irrigation systems or helping emergency response teams save lives. 1.1 billion hours of travel time saved each year. Also, consider UPS, which uses map technology to optimize delivery routes-saving 5.3 million miles and more than 650,000 gallons of fuel in 2011.

Maps are such an integral part of how we live and do business, and that is why it is important we all understand the need to invest in the geo services industry so it continues to grow and drive the global economy. Investments can come from the public and private sectors in many forms-product innovations, support of open data policies, more geography education programs in schools and more. To learn more about the impact of the maps industry, see the full reports at <http://valueoftheweb.com/reports/geospatial-services>.

## Twitter could offer fast and cheap earthquake alerts



Japanese scientists have developed an earthquake-reporting system, Toretter, which, they say, works faster than their country's official earthquake warnings and could be adapted to warn of other disasters. Based on data from more than 1,000 earthquakes between 2009 and 2011, they showed that their system detected 93 per cent of Japan's strong earthquakes by monitoring tweets - although this included a large number of false alarms. Fine tuning the system allowed it to detect 80 per cent of the strong earthquakes with three-quarters of the alarms being accurate.

The system uses computer-based semantic analysis to classify tweets based on keywords, such as 'shaking' or 'earthquake', and their context. It also uses information about when and where each tweet is sent to pin down an earthquake's time and location, and then emails an alert within two minutes of an earthquake.

Official broadcasts by the Japan Meteorological Agency is typically six minutes, according to the paper, published in the April issue of IEEE Transactions on Knowledge and Data Engineering. "We proved that a social media user could be treated as a sensor and could be applied to earthquake observation," says lead researcher Takeshi Sakaki, from the University of Tokyo. He adds that tweets could be used in the developing world as the basis of low-cost observation systems for typhoons, tornados, tsunamis, and even heavy traffic.

Some earthquake-prone countries in the developing world, such as Indonesia, also have a high density of Twitter users - necessary for the system to work accurately. Adam Acar, professor of communication and social media at the Kobe City University of Foreign Studies, Japan, says that a Twitter-based system would be an affordable tool in developing countries that lack comprehensive early-warning systems. "Having an algorithm that constantly checks for sudden increases in the use of certain words - such as quake, shaking, flood, fire - on Twitter is certainly cheaper than hiring many people or building a number of facilities," he says. "It may not be 100 per cent reliable, but it's definitely better than nothing."

However, Acar says Twitter "should be used to supplement existing official information rather than replace it". Nicholas Sitar, professor of civil and environmental engineering at the University of California, Berkeley, in the United States, says he doubts the system would benefit developing nations because a very sophisticated network of sensors and high-speed data processing is needed to ensure the delivery of useful warnings. "Twitter is just one in a suite of information delivery systems. The real issue is whether the information can be analysed, interpreted and forwarded sufficiently fast," he says.

"This is not some kind of a magic bullet that makes up for the lack of safe construction practices in seismically active parts of the developing world," Sitar concludes. [Link to study abstract](#).



## Chile set on GPS-based tsunami warning system



Chile is set to become the first developing country to have a fully operational tsunami early-warning system that uses a satellite-based positioning system to provide alerts just minutes after an earthquake triggering a giant wave begins. Such a system could have provided a warning just three minutes after the start of the March 2011 earthquake in Japan that caused the catastrophic tsunami - saving many lives, according to the authors of a paper published in *Natural Hazards and Earth System Sciences* in 17 May.

Most tsunamis - including the Japanese one and those that struck Indonesia in 2004 and Chile in 2010 - are triggered by sea-floor motions caused by earthquakes in subduction zones, where one of the tectonic plates that form the planet's outer shell slips under another. By placing GPS (Global Positioning System) instruments roughly every 40 kilometres along the coast to measure sea-floor deformation, they will be close to the epicentre of any future earthquakes. These instruments then send the raw data to a central station for calculating tsunami risk, the paper says. The new method was developed by researchers at the GFZ German Research Centre for Geosciences in Potsdam. Traditional tsunami early-warning systems for coastal regions exposed to subduction earthquakes use seismological information should be able to provide a warning five to ten minutes after an earthquake starts, but within that time limit they tend to underestimate the magnitude of large earthquakes and, thus, a tsunami's true impact on coastal areas, the paper says.

Andrey Babeyko, a GFZ researcher and one of the paper's authors, says that the method is best suited to places where earthquakes occur near to land. "Natural conditions in Chile are much better than in Japan because the subduction zone is very close to the land," he says. "This means that information from GPS stations will get to the processing centre very fast and that the GPS will recognise and quantify offshore earthquakes much better." He says that he visited Chile a month ago to start work with Sergio Barrientos, director of the Seismological Service at the University of Chile, on a project to upgrade the country's tsunami early-warning system.

"We will be installing GPS instruments that measure ground displacements that occur due to rupture," Barrientos says. Such movements occurred during the 2010 disaster. "Monitoring these displacements in real time will enable us to estimate the characteristics of the earthquake that produced them as well as the resulting uplift of the ocean floor," he says. "With this information, we will be able to determine the tsunami-generating potential of the earthquake."

The installation of 130 coastal GPS sensors to complement Chile's existing seismological network will start later this year and take around two years, Barrientos adds. Andreas Hoechner, another GFZ researcher and the paper's main author, says that each GPS sensor costs around US\$20,000, excluding transmission and processing costs. He adds that reliable maintenance in remote areas, as well as getting data from stations to the warning centre when the shaking is too strong, could prove challenging. [Link to full paper.](#)

## GIS Tools, Software, Data

### Vital Signs - A monitoring system for agriculture, ecosystems and human well-being

Vital Signs (<http://vitalsigns.org/>) is a monitoring system for agriculture, ecosystems, and human well-being initially launching in five African regions - Tanzania, Ethiopia, Ghana, Uganda and Mozambique - with plans for expansion to other parts of Africa and the globe. The Vital Signs monitoring system provides near-real time data and diagnostic tools to inform agricultural development decisions and monitor their outcomes. Vital Signs metrics and indicators will verify that investments to improve food production also support healthy natural systems and robust livelihoods for smallholder farmers. It fills a critical unmet need for integrative, holistic measurements of agriculture, ecosystem services, and human well-being. The system will quantify sustainability and provide tools to evaluate risks and trade-offs by pooling multi-scale data into an open-access online dashboard for policy makers, the private sector and the scientific community.

### RCMRD Data Dissemination

The Regional Centre for Mapping of Resources for Development (RCMRD) has a large landsat data archive, dating back to 1972 for all African countries. It is also a reseller agent in Africa for the Digital Globe - QuickBird and WorldView 1/2 high-resolution satellite imagery, and supplies data from GeoEye (GeoEye 1/2, IKONOS & Orbview imagery), SPOT image (SPOT 2.5m, SPOT 5m & SPOT 10m), USGS (Landsat MSS,



Landsat TM & Landsat ETM+) amongst other active and passive satellite image products and datasets for Africa. These datasets are available at subsidized rates. Other low-resolution imagery datasets available include 90m SRTM, NOAA, MERIS, MODIS, scanned maps, and vector data for Africa.

The center in collaboration with European Space Agency (ESA) and EUMESAT has established a facility for direct satellite reception for MERIS, MODIS, NOAA, and EUMESAT Meteosat Second Generation (MSG) data. These datasets amongst other services can be accessed online via: <http://www.rcmrd.org/geonetwork> or via email to [remotesensing@rcmrd.org](mailto:remotesensing@rcmrd.org). Further information, please visit website: [www.rcmrd.org](http://www.rcmrd.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](mailto:sdi-africa@lists.gsdi.org).

## [2013 GIS short courses through continued education at University of Pretoria](#)

- Introduction to Quantum GIS (on request)
- Remote Sensing (on request)
- The Basics of GIS (on request)

See [www.up.ac.za/cgis/http://web.up.ac.za/default.asp?ipkCategoryID=16147&subid=16147&ipklookid=11](http://www.up.ac.za/cgis/http://web.up.ac.za/default.asp?ipkCategoryID=16147&subid=16147&ipklookid=11)

## [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: August and September 2013](#)



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 experienced 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@esri.co.ke](mailto:training@esri.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): 2013-14 courses**



Apply online for courses starting in the academic year 2012-2013. 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](http://www.itc.nl/CourseFinder). For printed copy of the study brochure, email: ([alumni@itc.nl](mailto:alumni@itc.nl)).

### **ITC Refresher Courses**

In addition to the wide range of standard courses offered, ITC frequently provides training courses specifically designed to meet customers' capacity building requirements. These courses are conducted in the Netherlands or in the recipient's country or region. For more information about short tailor-made training courses, see [Project Services](#), [Contract training](#).

#### One stop e-government for sustainable land administration

Certificate of attendance Vietnam 09 Sep 2013 2 weeks [Register](#)

#### Sensors, Empowerment and Accountability

Certificate of attendance Tanzania 21 Oct 2013 2 weeks [Register](#)

#### Modernisation of Land Administration Systems in Sub Saharan Africa (MODALS)

Methods and approaches to promote gender equality and incorporate poverty alleviation and good governance Certificate of attendance Ethiopia 21 Oct 2013 2 weeks [Register](#)

#### The use of social media, crowdsourcing and webmapping to enable spatial web presence for the private sector in Southern Africa

Certificate of attendance Namibia 28 Oct 2013 2 weeks [Register](#)

[MSc degree course in GIS and Natural Resource Management with KNUST](#), Kumasi, Ghana. Starting date: 2 September 2013; Duration - 18.5 months. For more information: [Louis Addae-Wireko, MSc](#) - KNUST and [ir Louise van Leeuwen](#) – ITC

### **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 interested organisations. These could be either advanced or other certificate programs. Please contact: [info@rectas.org](mailto:info@rectas.org) or [thontteh@rectas.org](mailto:thontteh@rectas.org).

### **Regional Centre for Mapping of Resources for Development (RCMRD) Training Programme**



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

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

Information Technology Courses (targeted at school leavers, corporate organizations, and public).

Academic Programs

- Bridging Certificate in Mathematics
- Certificate and Diploma in Information Technology



## Short Programs

- Foundation Course Graphics Application & Web Design
- Database Management
- Software Application Development
- Networking & Infrastructure Development
- PC Maintenance

## Corporate Courses

- Information Systems for Management
- Computer Aided Financial Management
- Computerized Registry Management
- Management Information Systems for Monitoring and Evaluation
- Integrated Computer Training for Managers
- Database Design and Management
- Computer Based Auditing
- Computerized Records Management for Lawyers
- Analysis and Design of Information Systems
- Advanced Computer Applications for Executive Secretaries
- Basic Programming Skills

The center also offers tailor-made courses to suit specific needs of corporate clients. Courses also conducted at location of the client's convenience.

## [GIS & GPS Short Course](#)

[GIS Professional Practice](#) (University of Pretoria, from Aug 05, 2013 12:00 AM to Nov 30, 2013 12:00 AM)

The course covers the Professional Practice theme in the academic model of the South African Council for Professional Land and Technical Surveyors (PLATO). Topics: professionalism, professional ethics, social responsibility, professional practices, partnerships, client relationships, PLATO legislation and rules, Acts relevant to geomatics (e.g. Promotion of Access to Information Act, Spatial Data Infrastructure Act) and the role of international associations and societies in geomatics. Presenters: Serena Coetzee and Sanet Eksteen.

[Enterprise GIS with FOSS](#) (Le Vendome, Paarl, from Aug 12, 2013 08:00 AM to Aug 16, 2013 04:30 PM)

Taking place 12 to 16 August 2013 Learn how to set up and run a full enterprise GIS with Free and Open Source Software. Cover the full stack: server platform, spatial database, web map servers, map tiling and caching, OGC web services and web map clients. Software includes OpenGeo Suite (PostGIS, GeoServer, GeoWebcache, GeoExt, OpenLayers), Quantum GIS (desktop, server and web client).

[Focus on QGIS](#) (Le Vendome, Paarl, from Aug 19, 2013 08:00 AM to Aug 21, 2013 04:30 PM)

This is an introductory-level course. So if you are new to GIS, new to FOSS GIS or are experienced in other GIS software and want to find out how to do your work in Quantum GIS, this course is for you. CPD: 1 point (category 1b)

[Introduction to PostGIS](#) (Le Vendome, Paarl, from Aug 22, 2013 08:00 AM to Aug 23, 2013 04:30 PM)

Geospatial Data in PostGIS PostGIS is a spatial database that is more than just a spatial data store. With PostGIS, users, web map servers, and other applications can all run off the same database.

## Funding Opportunities, Awards, Support

### [ESRI grant for GIS \(Geographic Information Systems\) products](#)

Any non-profit or non-government organization working for social justice, environment, indigenous rights or public benefit in any nation, or any individual volunteering for these types of groups, may apply for a grant. There are no grant cycles or deadlines, you can apply any time. A "basic" request is limited to Single-user versions of Arcview software (up to 3 copies), Extensions, online and live training, books, GIS Data and ESRI conference passes. Further information can be found [here!](#)

### [Call for applications: Grants to support scientific training of PhD students](#)

The Climate Food and Farming (CLIFF) Research Network is a collaborative initiative of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) and the Universities of Copenhagen and Aarhus. Each year, starting in 2011, CLIFF has provided small grants to support graduate student research on mitigation of climate change in smallholder agricultural systems.

In 2013, we invite applications from students in developing countries, enrolled in PhD programs, for sponsored short-term scientific training and research stays at CGIAR centres or affiliated research



institutions. Applications must be submitted on or before 20 August 2013. Please refer to the attached call for applications. For more information, visit <http://www.cliff.life.ku.dk> or email [Meryl.Richards@uvm.edu](mailto:Meryl.Richards@uvm.edu) or [Ngonidzashe.Chirinda@agrsci.dk](mailto:Ngonidzashe.Chirinda@agrsci.dk).

### **[African Women in Agricultural Research and Development \(AWARD\) - Fellowships 2014](#)**

AWARD is a program of two-year fellowships to strengthen the research and leadership skills of African women in agricultural sciences. The program is intended for women in the agricultural disciplines and related life sciences broadly defined. The program is open to women agricultural scientists who are citizens of Ethiopia, Ghana, Kenya, Liberia, Malawi, Mozambique, Nigeria, Rwanda, Tanzania, Uganda, or Zambia - and who have completed a university degree, particularly in the disciplines listed in the announcement. There is no age restriction. The application deadline: 9 August 2013.

### **[EU Technical Center for Agricultural and Rural Cooperation \(CTA\) - ICT for Agricultural Development](#)**

The CTA announces a media competition on using information and communication technologies (ICT) to support agricultural development. The competition is open to journalists who are nationals of the African-Caribbean-Pacific countries, and working for print or online media. The finalists will be supported to attend an international conference in Rwanda, and receive a prize of €1 thousand. The deadline for submissions (English or French): 15 August 2013.

### **[European Commission \(EC\) - Fuelwood in Northeastern Nigeria](#)**

The EC will make grants to address the growing shortage of fuel wood in the Sudan-Sahel region of Nigeria. Interventions should aim to increase fuel wood supply and decrease fuel wood demand, focusing on Katsina State. The program is open to nonprofit organizations in EU member states, Nigeria, and other ACP countries -- and to international organizations. Grants are up to €4.7 million, subject to cost shares. Reference: EuropeAid/134597/D/ACT/NG. The closing date for proposals: 28 August 2013.

### **[International Initiative for Impact Evaluation \(3ie\) - Review of Agricultural Innovations in Asia and Africa](#)**

In partnership with the Alliance for a Green Revolution in Africa (AGRA) and the International Fund for Agricultural Development (IFAD), 3ie will fund up to 16 evaluations of agricultural innovations in South Asia and Sub-Saharan Africa. The focus will be interventions in knowledge transfer, contractual arrangements, technology adoption, and soil health. Research teams that are selected in the first phase (preparation grants) will submit proposals for impact evaluations in the second phase. The application deadline: 16 August 2013.

### **[International Initiative for Impact Evaluation \(3ie\) - Review of Development Impacts in Agriculture, Climate Change, Property Rights, and Land Policy](#)**

3ie supports systematic reviews of how to improve development programs in defined thematic areas -- including Systematic Review Call 6 on questions related to agriculture, climate change, property rights, and land policy. 3ie will award one grant for each of seven questions. It encourages proposals and research participation from the developing countries. Average grant size is about US\$82 thousand. The application deadline: 30 August 2013.

### **[International Tropical Timber Organization - Fellowships Second Cycle 2013](#)**

ITTO administers the Freezailah Fellowship Fund to promote human resource development, and to strengthen professional expertise in tropical forestry and related disciplines. Twice a year, the program makes fellowship grants for participation in international conferences, training courses, and study tours. Funding can also be used to prepare manuals and monographs, and for post-graduate study. The maximum grant is US\$10 thousand. Eligibility to apply is restricted to nationals of ITTO's member countries. Grants are awarded mainly to nationals of developing countries. The closing date for the Autumn Cycle of applications: 23 August 2013.

### **[ONE International - Africa Award 2013](#)**

The ONE Africa Award honors the exceptional work of individuals and organizations based in Africa to help Africa achieve the Millennium Development Goals (MDGs). The amount of the award is US\$100 thousand, which may be split into more than one prize. Applicants may be engaged in direct services to achieve any of the MDGs, but must demonstrate a strong advocacy component. The application deadline: 19 August 2013.

### **[International Elephant Foundation - Elephant Conservation and Research 2014](#)**



The International Elephant Foundation makes grants for conservation and research of elephants. Eligibility extends to organizations and individuals internationally -- including students, scientists, and institutions. The current call for applications has three categories: (i) African elephant conservation *in situ*; (ii) Asian elephant conservation *in situ*; and (iii) *Ex situ* elephant conservation and research. The Foundation prefers grant requests of less than US\$10 thousand. The application deadline in all categories: 16 August 2013.

## UNESCO - Keizo Obuchi Fellowships 2013

The government of Japan offers 20 post-graduate fellowships per year to candidates from developing countries, especially the least-developed countries, who undertake research on specified topics. They include environment - with emphasis on water sciences, water issues, climate change, and engineering capacity building. Priority is for women candidates, candidates from least-developed countries, and African researchers. Support is up to US\$10 thousand. The deadline for applications: 30 August 2013.

## Employment Opportunities

### Nutrition Advisor Washington DC FEWS NET 2013, Washington, D.C.

Chemonics seeks a nutrition advisor to support the USAID-funded Famine Early Warning Systems Network (FEWS NET). The primary objectives of the nutrition advisor (hereinafter referred to as 'advisor') include:

- Assess nutrition work done to date as part of the FEWS NET III activity
- Provide technical guidance on the inclusion and use of health and nutrition information in food security monitoring, assessments, and analysis, including scenario building and integrated food security phase classification (IPC)
- Oversee the development of a health and nutrition context document for each FEWS NET country, including the development/adaption and implementation of a causal analysis tool.
- Oversee the development and maintenance of a database of health and nutrition information by using ACF's existing nutritional data and applying ACF's approaches, methodologies, and program practices (such as nutrition analysis, nutrition surveys and surveillance, nutrition knowledge products, and seasonality)
- Propose innovative initiatives and tools that will contribute to early warning through collaboration with ACF and FEWS NET
- Ensure FEWS NET's operational capacity to conduct nutrition assessments, studies, and analysis to support food security analysis
- Develop and implement plans to build the capacity of FEWS NET technical staff to use health and nutrition information in analysis and to conduct assessments and data collection
- Provide guidance to the development and refinement of the approach to health and nutrition and related methods and products
- Promote and support collaboration with local, regional, and international partners in health and nutrition-related activities
- Manage, coordinate, and support two regional nutrition officers responsible for the project at regional levels in all matters concerning ACF's technical and operational remit required for the delivery of the project
- Establish and enhance collaboration and partnerships within the ACF International Network, and between ACF and FEWS NET, towards efficient, effective, and quality project work

#### Qualifications:

- Master's degree in a discipline directly relevant to the position, preferably in nutrition or public health, required
- Analysis of complex survey data, particularly nutrition and health data
- Development and implementation of nutrition and health surveys, preferably in emergencies; experience with standardized monitoring and assessment of relief and transitions (SMART) and lot quality assurance sampling (LQAS) desired
- Understanding of household food security concepts, terms, and analytical approaches and a strong interest in multi-sectoral, integrated analysis
- Significant experience implementing relevant programming or conducting research/analysis in developing countries
- Ability to work effectively with a diverse group of staff across 25 country and regional offices
- Ability to travel internationally, approximately 30 percent of the time
- Experience in people management and particularly with remote management
- Demonstrable skills in brokering, negotiating, networking, and coordinating with various stakeholders



- Experience in training and building capacity of partners and staff members
- Experience in the following areas desired: Nutritional surveillance, Malnutrition Causal analysis, Early warning, Demonstrated leadership, versatility, and integrity
- Strong presentation and representation skills, written and spoken fluency in English; and working knowledge of another language, preferably French
- Eligible to work in the United States

Application instructions:

Please submit CVs and cover letters to [FEWSNutrition@Chemonics.com](mailto:FEWSNutrition@Chemonics.com) no later than August 16, 2013. In addition, please download and complete Chemonics' equal employment opportunity self-identification form and submit it separately to [EEOselfidentify@chemonics.com](mailto:EEOselfidentify@chemonics.com) with only 'FEWS NET nutrition advisor' in the subject line.

### Scientist - Livestock and Environment, Addis Ababa, Ethiopia

ILRI now seeks to expand work with a particular focus in Ethiopia in the broad area of livestock and environment by appointing a Scientist – Livestock and Environment. The Scientist will be responsible for leadership of a number of ongoing livestock and environment projects within the context of the CGIAR Research Programme on Land, Water and Ecosystems (WLE) and the CGIAR Research Programme on Humidtropics. In addition the Scientist will be encouraged to expand work on livestock and the environment in Ethiopia particularly considering future livestock intensification scenarios, their requirements for feed, their impacts on land use, and their implications for crop and tree production.

Responsibilities:

- Managing upcoming projects in the area of livestock and the environment.
- Developing ideas and expanding the livestock-environment programme (especially livestock and water, soil and land use) in ILRI with a particular focus on Ethiopia.
- Assisting in resource mobilization.
- Forging links and collaborative research with scientists across the CGIAR to strengthen ILRI's presence in the CGIAR Research Programmes WLE and Humidtropics.
- Developing collaborative links to national research partners and development agencies.
- Publishing the results of research in journals and contributing to other communication products.

Requirements:

- PhD in livestock science, environmental science or an associated discipline with an emphasis on agricultural systems approaches.
- 5 – 7 years of post doctoral experience.
- Familiarity with aspects of livestock production systems in developing countries.
- Sound understanding of livestock-environment interactions in developing countries.
- An understanding of farming systems concepts and landscape implications of farm level practices.
- Proven success in analysis of agricultural systems, having experience in collection of primary data and survey design in developing countries.
- Demonstrated skills in quantitative and qualitative data analysis.
- Good publications record with strong written and oral communication skills in English.
- Ability to work in multi-disciplinary and multi-cultural teams in developing countries.
- Demonstrated ability to lead and manage technical teams at research sites.
- Strong English language skills, both written and spoken.
- Willingness to travel frequently, often to rural areas in developing countries.

Position level: The position is level 2 Scientist level within ILRI's Livestock Systems and Environment Programme.

Duration: 3 years with the possibility of renewal contingent upon individual performance and funding.

Applicants should provide a cover letter and curriculum vitae which includes a list of publications and the names and addresses (including telephone, fax and email) of three referees who are knowledgeable about the candidate's professional qualifications and work experience. The position title and reference number: REF: SLE/LSE/06/2013 should be clearly indicated in the subject line of the cover letter. All applications to be submitted online on recruitment portal: <http://ilri.simplicant.com> on or before 8 August 2013.

### Ecosystem Ecologist, Livestock Systems and the Environment, Nairobi, Kenya

ILRI seeks to recruit an ecosystem ecologist to contribute to its research on Dryland Systems, within its Livestock Systems and Environment Programme. This research will contribute to developing environmentally sound strategies to sustainably increase productivity, reduce vulnerability and increase the resilience of pastoral and agro pastoral livestock-based livelihoods to hazards like weather conditions and climate



change, market fluctuations and insecurity. Current research includes options to reduce vulnerability, such as early warning systems, which monitor rangeland conditions, and options for diversifying livelihoods through payment for ecosystem services for biological conservation and climate change mitigation.

Responsibilities:

- Contribute to the assessments of environmental and ecological impacts of ILRI's Index-Based Livestock Insurance (IBLI) program ([www.ilri.org/ibli](http://www.ilri.org/ibli))
- Support collaboration around spectral 'ground-truthing' of remotely-sensed data that underpin IBLI contracts with the aim of increasing the precision and value of satellite-based measures of forage availability and quality.
- Undertake research on ecosystem services in rangeland systems, including how management practices affect the quality and quantity of these services.
- Undertake research on restoration of degraded lands under pastoral and agropastoral systems.
- Undertake research on the dynamics of change in rangeland ecology, particularly how changes in mobility and access to key grazing areas and water points are affecting rangelands.
- Work with climate and ecosystem modellers on future scenarios for African rangelands.
- Support proposal-writing efforts on the above topics.

Requirements:

- A PhD in ecology or natural resource management, ideally with some knowledge of combining research on social science and biophysical perspectives.
- Knowledge of rangeland ecological research in pastoral/agropastoral systems in developing countries, with a minimum of five years of post-doctoral experience but preferably more (remuneration commensurate with experience).
- A systems perspective, especially related to the challenges of sustainability and vulnerability of pastoral and agro-pastoral livelihoods.
- Experience with GIS/Remote sensing analysis and natural resource modeling.
- Good publications record with strong written and oral communication skills in English and the ability to communicate with diverse audiences.
- Ability to work in multi-disciplinary and multi-cultural teams in developing country environments.

Applicants should provide a cover letter and curriculum vitae: a list of publications and names and addresses (including telephone, fax and email) of three referees who are knowledgeable about the candidate's professional qualifications and work experience to be included in the curriculum vitae. The position title and reference number: EE/LSE/07/2013 should be clearly indicated in the subject line of the cover letter. All applications to be submitted online on our recruitment portal: <http://ilri.simplicant.com> on or before 21 August 2013.

## Other

### [How Africa can transform land tenure, revolutionize agriculture, and end poverty](#)

Sub-Saharan Africa is home to nearly half of the world's usable, uncultivated land but so far the continent has not been able to develop these unused tracts, estimated at more than 202 million hectares, to dramatically reduce poverty and boost growth, jobs, and shared prosperity. According to a new World Bank report, "Securing Africa's Land for Shared Prosperity," African countries and their communities could effectively end 'land grabs,' grow significantly more food across the region, and transform their development prospects if they can modernize the complex governance procedures that govern land ownership and management over the next decade. Africa has the highest poverty rate in the world with 47.5 percent of the population living below US \$1.25 a day.

"Despite abundant land and mineral wealth, Africa remains poor," says Makhtar Diop, World Bank Vice President for Africa. "Improving land governance is vital for achieving rapid economic growth and translating it into significantly less poverty and more opportunity for Africans, including women who make up 70 percent of Africa's farmers yet are locked out of land ownership due to customary laws. The status quo is unacceptable and must change so that all Africans can benefit from their land."

The report notes that more than 90 percent of Africa's rural land is undocumented, making it highly vulnerable to land grabbing and expropriation with poor compensation. However based on encouraging evidence from country pilots in African countries such as Ghana, Malawi, Mozambique, Tanzania, and Uganda, Securing Africa's Land for Shared Prosperity suggests an action plan that could help revolutionize agricultural production, end land grabbing, and eradicate extreme poverty in Africa.

The report suggests that Africa could finally realize the vast development promise of its land over the course of the next decade by: Championing reforms and investments to document all communal lands and prime



lands that are individually owned; Regularizing tenure rights of squatters on public land in urban slums that are home to 60 percent of urban dwellers in Africa; Tackling the weak governance and corruption endemic to the land governance system in many African countries which often favor the status quo and harm the interests of poor people; and Generating the political will of African governments to mobilize behind these land reforms and attract the political and financial buy-in of the international development community.

The new report says it would cost African countries and their development partners, including the private sector, US \$4.5 billion spread over 10 years to scale up these policy reforms and investments. "Improving the performance and productivity of Africa's agricultural sector is vital for broad-based growth, more jobs, investment, and substantially less poverty," says Jamal Saghir, World Bank Director for Sustainable Development in Africa. "Land governance is a proven pathway to achieving transformational change and impact that will help secure Africa's future for the benefit of all its families."

Most African countries already have the basic land laws in place that recognize customary land rights and gender equality which are essential to reinforce needed reforms. In addition, new satellite and information technologies can greatly reduce the cost of land administration. A growing number of African countries are now using these technologies to reduce the costs of surveying and mapping land and computerizing their land registries to improve efficiency and reduce corruption. Some 26 African countries have established at least one continuously operating reference station (CORS) and about 50 CORS are contributing data to the African geodetic reference system, which, once completed, will provide a uniform coordinate reference system across the continent.

With only 10 percent of Africa's rural land registered, inefficient land administration means that it takes twice as long and costs twice as much to transfer land compared to industrialized countries, and weak governance is the leading cause for corruption in the land sector. The report warns that "... unless communal and individual land rights are registered and land governance is improved, the recent surge in foreign direct investment in Africa will not generate shared and sustained growth, as disruptions will likely arise from the dispossession of local communities, and investors' deals will face severe uncertainty or collapse, as witnessed in Madagascar in 2009."

Highlighting the need for greater capacity, the report finds that Ghana, Kenya and Uganda each have fewer than 10 professional land surveyors per one million people, compared to 197 in Malaysia and 150 in Sri Lanka. Of Kenya's 206 registered land surveyors, only 85 were found to be practicing. The report points to the futility of building capacity without making complementary investments in land administration.

As of 2002, at least 20 countries in Sub-Saharan Africa had recognized customary land rights and gender equality, a number that has nearly doubled. The African Union Commission has developed a land policy framework backed by a five-year strategic plan for implementation to 2016. The World Bank Group now support 24 projects on land administration amounting to US \$928 million - likely the largest number of interventions on the governance of land tenure of any international development agency. Read more ...

### [Insuring Ghana's smallholder farmers against the weather](#)

The Ghana Agriculture Insurance Programme (GAIP) implemented in Ghana will help farmers suffering from the loss of income due to bad weather conditions that affect their yields. The system is straightforward. A farmer pays one-tenth of the total cost of their crops at the beginning of the farming season to GAIP. Moreover, if there is no rain for 12 consecutive days, the system triggers a payout.

This is the second year of its operation, and to date 136 smallholder farmers have received payouts on claims from GAIP because of the drought in northern Ghana. While no exact figure is available on how much was paid, the programme pays farmers depending on the size of their land and the amount they invested in inputs. On average, farmers who invest 150 dollars in inputs for half a hectare of land could be paid between 200 to 300 dollars depending on the severity of weather effects.

The scheme is dependent on automatic weather stations (AWS). AWS is a map-based system that records daily climatic data including wind, rainfall, relative humidity, and temperature. The insurance programme use the data from AWS to ascertain when the farmers are affected by the weather and payouts are made. For example, if more than 12 consecutive dry days (less than 2.5 mm of rain) is experienced within 20 km of a GMet weather station, it will automatically trigger a payout to policyholders. The initiative is funded by the German government under the Innovative Insurance Products for the Adaptation to Climate Change (IIPACC) project implemented through a public private partnership between the National Insurance Commission, the Ghana Insurance Association, and the German Agency for International Cooperation (GIZ). For the past four years, smallholder farmers in Ghana's Northern, Upper West and Upper East Regions have been affected by low rains, which resulted in their most-cultivated crops like maize, rice and yams withering before they could mature. Statistics from the Ghana Meteorological Agency (GMet) indicate that across the



country there has been a decline below the long-term mean of 6,550 mm, which was the normal rainfall pattern at the beginning of the 2000s.

Mathias Fosu, principal research scientist at the Savanna Agricultural Research Institute, said that studies conducted by the institute indicate that climate change has affected rainfall patterns in the northern part of the country. The amount of rainfall recorded annually varies between 800 mm and 1,600 mm. However, the rainfall trend for Tamale from the period 1960 to 2010 suggests a slight decrease over the six decades.

A 2012 survey conducted in 38 districts in the Northern, Upper West and Upper East Regions by the United Nations World Food Programme, with Ghana's Ministry of Food and Agriculture and the Ghana Statistical Service, showed that food insecurity was rife in those areas. The survey, titled the Comprehensive Food Security and Vulnerability Analysis, revealed that 140,000 people out of 680,000 interviewed were experiencing severe food insecurity, and women, mainly widows, headed the majority of these households.

"In the last two years GIZ purchased and installed a total of 36 automatic weather stations for GMet ... with the aim of helping GAIP improve and expand their service to farmers," Debrah said. She added that five additional AWS were purchased and installed by the Agricultural Development and Value Chain Enhancement Programme funded by the United States Agency for International Development, bringing the total to 41 AWS nationwide.

## Conferences, Events

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

Date	Location	Event
<b>August 2013</b>		
13-14 August, 2013	Cape Town, South Africa	<a href="#">Africa Geospatial Forum</a>
24-30 August 2013	Arlington, Virginia, USA	<a href="#">2nd Symposium on Advances in Geospatial Technologies for Health</a>
25-30 August 2013	Dresden, Germany	<b>26th International Cartographic Conference - From Pole to Pole</b>
26-31 August 2013	Busan, Korea	<a href="#">XXVII IUSSP International Population Conference</a>
25-30 August 2013	Hong Kong, S.A.R. China	<a href="#">59th ISI World Statistics Congress</a> E-mail: <a href="mailto:isi@cbs.nl">isi@cbs.nl</a>
26-29 August 2013	Sarawak, Malaysia	<a href="#">8th International Symposium on Digital Earth 2013</a>
27-31 August 2013	Paris, France	<a href="#">IAG International Conference on Geomorphology</a>
<b>September 2013</b>		
10-12 September 2013 <b>*NEW*</b>	University of Fort Hare, South Africa.	<b>2nd SA-GEO Symposium</b> Contact: Biffy van Rooyen, CSIR, Tel: +27 12 841 3887, Cell: +27 82 668 6103, Skype: biffy.van.rooyen
17-18 September 2013	Kenyatta University, Kenya	<a href="#">ESRI East Africa Education User Conference</a>
17-22 September 2013	Nottingham, U.K	<a href="#">FOSS4G 2013 Conference</a>
23-25 September 2013	Technical University of Lodz, Poland	<a href="#">2nd International Conference on Informatics &amp; Applications (ICIA2013)</a> Abstract deadline: 5 August 2013. Email: <a href="mailto:icia@sdiwc.net">icia@sdiwc.net</a>
24-26 September 2014	Rotterdam, Netherlands	<a href="#">Deltas in Times of Climate Change II</a> <a href="#">Read more</a> , <a href="#">Conference flyer</a>
29 September-2 October 2013	Noordwijkerhout, Netherlands	<a href="#">First International Conference on Global Food Security</a>
<b>October 2013</b>		
15-18 October 2013	Arusha, Tanzania	<a href="#">Africa Climate Conference 2013 (ACC-2013)</a>
16-18 October 2013	Jinja Nile Resort, Uganda	<a href="#">8th Esri Eastern Africa User Conference</a>



<b>23-25 October 2013</b>	Munich, Germany	<a href="#"><u>Esri Europe, Middle East, and Africa User Conference (EMEAUC)</u></a>
<b>23-25 October 2013</b>	Beijing, China	<a href="#"><u>United Nations International Conference on Space-based Technologies for Disaster Management</u></a> . Application deadline: 10 August 2013. Contact Mr. Shirish Ravan at <a href="mailto:shirish.ravan@unoosa.org">shirish.ravan@unoosa.org</a> and phone: (+86) (10) 6353 3527
<b>23-25 October 2013</b>	Rio de Janeiro, Brazil	<a href="#"><u>Sixth International Conference on Agricultural Statistics- ICAS-VI</u></a> . Abstract deadline: 15 December 2012 website: <a href="http://www.fao.org/economic/ess/ess-events/ess-icas/en/">www.fao.org/economic/ess/ess-events/ess-icas/en/</a>
<b>November 2013</b>		
<b>4-8 November 2013</b>	Adis-Ababa, Ethiopia	<a href="#"><u>GSDI 14 World Conference and AfricaGIS 2013 Conference</u></a> Please consult the <a href="#"><u>conference</u></a> web site on a regular basis.
<b>18 November 2013</b>	Africa	African Statistics Day - Organized by the UN Commission for Africa and the African Centre for Statistics.
<b>December 2013</b>		
<b>28-31 December 2013</b>	CRRAO AIMSCS, Hyderabad	<a href="#"><u>Statistics 2013: Socio-Economic and Sustainable Challenges and Solutions</u></a>
<b>2014</b>		
<b>10-14 February 2014</b> <b>* NEW *</b>	Delhi, India	<a href="#"><u>World Congress on Agroforestry 2014 (WCA2014)</u></a> Deadline for abstract submission: 30 September 2013
<b>8-14 June 2014</b>	Jeju ICC, Korea	<a href="#"><u>20th World Congress of Soil Science (WCSS)</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> .

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