



## 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

Thank you to the [Global Spatial Data Infrastructure \(GSDI\)](#) Association; Hussein Farah, RCMRD (Kenya); Kate Lance, GSDI listserv moderator (USA) and Cleopus Wangombe, Ministry of Planning, National Development and Vision 2030 (Kenya) for their contributions to this issue of the newsletter. We also acknowledge the various websites and links referred as source 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 2013 Conference and the GSDI 14 World Conference. This combined conference 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". Please consult the [conference](#) website as the Call for Papers and program details become available.



## Giant landslides identified by seismic fingerprints



A new technique that can identify catastrophic landslides based on their seismic signals could one day lead to a global system for identifying regions at particular risk from this hazard. Giant landslides involve millions of tonnes of rock and debris moving downslope at speeds often above 110 miles per hour. Such events are rare, but, when they occur, the loss of life and damage to property can be enormous.

In 2009, several hundred people were killed when typhoon-loosened rock fell from a mountain onto a remote Taiwanese village. Some 300 landslides of this scale have been documented scientifically since the nineteenth century, but there is still no global system for identifying these events as they are infrequent and often occur in remote areas. It can also take a long time to confirm

individual landslides, particularly when they occur in isolated places. "In Taiwan [in 2009], it took 48 hours for the authorities to realise a landslide had happened, valuable time that could have helped people to be rescued," Göran Ekström, study co-author and professor of earth and environmental sciences at Columbia University, United States, tells SciDev.Net. "In the aftermath of the event, many people were very critical of the government for its slow response."

In a paper published in *Science* last week (22 March), Ekström and his Columbia colleague Colin Stark say they have found a way of distinguishing the 'surface waves' associated with giant landslides from the background cacophony of seismic noise, particularly from earthquakes, using a data analysis technique.

Applying their technique to historic seismic data that is freely available online, the pair confirmed several known giant landslides and identified others that were previously unverified. One of the results independently confirmed anecdotal reports that a landslide had struck a remote village in northern Pakistan on 4 January 2010. Ekström says that a major factor behind their algorithm's success is that scientists now have better images of the Earth's interior, which makes it possible to more realistically model how seismic waves move through the planet. "Open access to the seismological data collected around the world is essential," he says. One current limitation of the technique is that it over detects, generating about ten false positives for every genuine landslide. As a result, seismic signals must be verified against visual evidence of landslides on satellite images. "If the project becomes something for the whole globe, then I think the operational monitoring would be better done by governments and agencies," David Petley, a geography professor at Durham University in the United Kingdom, believes that the research could eventually lead to a global system. But he says that it needs to identify landslides more quickly after they occur and to locate them more precisely. "I suspect that the real strength of this is ... in better understanding the dynamics, which in turn should allow us to identify dangerous sites before the landslide occurs," he says. "The global hotspot for landslides is the southern edge of the Himalayan mountains, specifically in northern Pakistan, northern India, Nepal, Bhutan and western Bangladesh."

Ekström says that the same technique could also be used to identify seismic signals linked with volcanic activity. In a separate study, he identified signals associated with the 2002 eruption of the Nyiragongo volcano in the Democratic Republic of Congo. In this event, molten lava flowed through the city of Goma leading to deaths and mass evacuations. [Link to full paper in Science](#)

## Africa's Information Highway - The AfDB launches Open Data Platforms for 20 African countries

The African Development Bank (AfDB) has launched Open Data Platforms for the following 20 African countries: Algeria, Cameroon, Cape Verde, Democratic Republic of Congo, Ethiopia, Malawi, Morocco, Mozambique, Namibia, Nigeria, Ghana, Rwanda, Republic of Congo, Senegal, South Africa, South Sudan, Tanzania, Tunisia, Zambia and Zimbabwe. The Open Data Platform program is part of the AfDB's recently launched "Africa Information Highway" initiative aimed at significantly improving data management and dissemination in Africa. Work is on course to complete platforms for the rest of African countries by July 2013.

The Open Data Platform is a user-friendly tool for extracting data, creating and sharing own customized reports, and visualizing data across themes, sectors and countries in tables, charts and maps. Through the Open Data Platform, users can access a wide range of development data on African countries from multiple international and national official sources. The platform also facilitates the collection, analysis and sharing of data among countries and with international development partners. The platform offers a unique opportunity for various users, such as policymakers, analysts, researchers, business leaders and investors around the world, to gain access to reliable and timely data on Africa. Users can visualize time series development indicators over a period of time, perform comprehensive analysis at country and regional levels, utilize



presentation-ready graphics or create their own, blog, and share their views and work with others, thereby creating an informed community of users.

## [Ghana: Making cities 'smarter' through use of geo-ICT](#)

ICT-based platforms can encourage collective action and put pressure on local governments and service providers to respond to citizens' problems. In Ghana, the World Bank has recently helped implement an ICT platform called "Taarifa" to help citizens and local governments monitor waste disposal. Taarifa (which means "headline" in Swahili, <http://taarifa.org/>) is a smartphone-based app that enables community-based reporting and monitoring of service delivery. Designed by an open source community, the platform is an online tool for information collection, visualization and interactive mapping which allows citizens to document and report issues and service delivery gaps via SMS, online feedback forms, email or Twitter.

Officially launched as 'The Ghana Districts Monitor' (<http://ghdistrictsmonitor.org/>), the Taarifa platform was implemented to enable civil society to monitor waste collection services in the city on behalf of the urban poor, and report problems to the concerned authorities. In the first phase of the pilot project, smartphones were distributed to four CSOs (already engaged with local governments on issues related to water & sanitation, waste management, youth education, and slum redevelopment) and people were trained to use the app, record data and fill-out and send their reports in real time.

Taarifa is designed to be a sustainable and powerful social accountability tool. For example, the app automatically captures GPS coordinates, works in the absence of any mobile internet signal (the information gets stored in the phone memory and is automatically sent when the phone connects with Wi-Fi or catches a signal), and the platform also integrates with regular SMS. At the operational level, CSOs were encouraged to monitor on a contract basis with service providers or other agencies. The money earned from these contracts allows them to buy more phones, train more personnel, and fuel-up their vehicles. As of this writing, such contracts have already been signed and citizen reporting is alive and well in the municipalities of the Greater Accra Metropolitan Area (GAMA).

The road ahead is still long and more work remains. Faced with tight budgets, municipalities are struggling to tackle the plethora of issues brought to their attention by the newly-empowered citizens. A stronger coordination mechanism is needed to ensure that complaints logged are followed by quick action. But as urban populations rise and service delivery is unable to keep up, ICT platforms such as Taarifa will help local governments to become better service providers and take more proactive approaches in the fight against poor sanitation in Ghana and make cities more livable for everyone.

## [Nigeria commissions forestry geographic information lab](#)

The Minister of Environment, Hajjiya Hadiza Ibrahim Mailafia has commissioned the Forestry Geographic Information System (FGIS)/Remote Sensing Laboratory as part of effort to ensure proper monitoring of the nation's forestry reserve. Mailafia said that the department of forestry in association with GIS/Remote Sensing has successfully used the techniques to produce the first comprehensive Land Use and Vegetation (LUV) maps for the country under the Nigeria Radar Project (NIRAD).

The project according to her provided the necessary baseline information that guided not only forestry management practices in the country, but other land-based development sectors. The facility also houses the web-based National Forestry Information System (NFIS), the platform where relevant information from the forestry sub-sector in Nigeria accessed freely through online networking.

The minister commended the ecological fund office for providing the resources for setting up the FGIS/Remote Sensing Laboratory, and also commended Forestry Association of Nigeria (FAN) for collaborating with the ministry in setting up NFIS, which will enhance inter-sectoral cooperation and contributions of forestry to the socio-economic development of the country. The Geographic Information System (GIS) is a computer-based system designed to capture, store, manipulate, analyze, manage and present all types of geographical data, while remote sensing is the acquisition of information about an object or phenomenon without making physical contact with the object, adding that both technologies have revolutionized forest resources assessment worldwide. Also speaking, Dr. Bukar Hassan, Director, Drought and Desertification Amelioration in the ministry said the laboratory would enable the department of forestry obtain up to date information and data on Nigeria's forest resources for the purpose of planning and sustainable management.

## [Gambias' TDA re-demarcation exercise](#)

The Gambia Tourism Board has revealed that the Ministry of Tourism & Culture, in collaboration with the Ministry of Regional Administration, Lands & Traditional Rulers, the Gambia Tourism Board, the Department of Lands & Survey, the Department of Physical Planning and Housing, and the National Roads Authority,





began the re-demarcation of the Tourism Development Area (TDA) on March 4th, 2013 starting from Tanji to Kartong in the First Phase and from Tanji to Kotu in the Second Phase.

The re-demarcation exercise brought to the attention of the Governor of the West Coast Region and the Paramount Chief, and would include Alkalolu and Seyfolu of the concerned areas. The press release reads: The Ministry of Tourism & Culture, The Ministry of Regional Governments, Lands & Traditional Rulers, The Gambia Tourism Board, The Department of Lands & Surveys, The Department of Physical Planning and Housing, and the National Roads Authority: Hereby informs the general public that due to the documented challenges through a comprehensive study undertaken by the aforementioned Government institutions, would undertake beginning on Monday the 4th March 2013 a re-demarcation exercise of the Tourism Development Area (TDA) starting from TANJI to KARTONG in the First Phase and from TANJI to KOTU in the Second Phase.

The re-demarcation exercise has been brought to the attention of the Governor of the West Coast Region and the Paramount Seyfo and would include ALKALOLU and SEYFOLU of the concerned areas.

The objective of the re-demarcation exercise is to:

- Re-establish the TDA boundary considering the illegal removal of the pegs that demarcated the TDA
- Address the encroachments on the TDA
- Serve evacuation notices to all encroachers on the TDA
- Develop a GIS Mapping of the TDA area (TDA1) with the objective of developing a TDA inventory
- Regularize all incomplete structural developments on the TDA
- Remove all Billboards that did not follow the Government mandated guidelines and procedure with the objective of implementing a new Billboard standards

The general public is hereby advised that the TDA re-demarcation exercise is solely for the purposes of enhancing further development of the TDA and MUST NOT be misconstrued to have any other objective outside of those indicated above. The Ministries and Government institutions facilitating the re-demarcation exercise seeks the support of all the ALKALOLU SEYFOLU and private interest personnel and businesses within the TDA in the carrying out of this exercise.

## Climate change could be double-edged sword for farmers



On a global level, climate change could slash crop yields and increase reliance on irrigation in the 2030s, but in some regions, including Southern Africa, agricultural output could increase and farming become less dependent on water, according to a study published in 27 February. The researchers, based in Canada, China and Switzerland, set out to predict the combined impact of climate change on food production and water levels globally, regionally and locally.

"Such a study not only provides large-scale [global and continental] analysis, but also in-depth spatial details that can help decision-makers deal with climate mitigation and adaptation locally," says lead author Junguo Liu, a professor of hydrology at the Beijing Forestry University, China.

The researchers used global datasets for soil data, climate, fertilizer inputs, and crops, taking into account whether they were irrigated or rain-fed. Using eight climate scenarios, they estimated the yields of three staples - maize, rice and wheat - and water use for the short-term 2030s period and the long-term 2090s one. They then compared these with figures obtained in the 1990s.

"Southern and eastern parts of Sub-Saharan Africa, along the Rift Valley, may profit in the short run from climate change regarding yields for the three staple food crops," says Christian Folberth, a co-author of the study, and a research scientist with the Swiss Federal Institute of Aquatic Science and Technology. "Western and central parts, on the other hand, show a slight negative impact."

The researchers found that regions that presently have sufficient water, including south-eastern parts of Latin America, will depend more on irrigation in the 2030s. In contrast, regions with insufficient water, including most parts of Sub-Saharan Africa, will depend less on irrigation for water because of favourable temperatures. Folberth says that, until the 2030s, the increase in atmospheric carbon dioxide and modest changes in temperature may lead to yield increases in some regions if temperatures do not exceed crop temperature thresholds. By the 2090s, however, the thresholds may be reached resulting in low yields.

The researchers have issued a warning about this double-edged sword. "The positive impacts in the short run can help alleviate food shortage problems," the study says. "However, they may distract [from] attention paid to adapting and mitigating measures to combat the long-term negative impacts of climate change."

But Richwell Musoma, an irrigation agronomist at Zimbabwe's Department of Irrigation Development, says the study's findings are unlikely to be experienced in most African countries. He cites a 2011 Food and Agricultural Organization study that predicted yields from agriculture in Sub-Saharan Africa will decline by



between 20 per cent and 50 per cent by 2050. Musoma also notes that, due to erratic rainfall patterns experienced in most African countries, irrigation has become important, and thus water use is likely to increase in the 2030s. [Link to the study.](#)

## Rapid disease mapping could guide treatment in South Sudan



Rapid mapping to quickly determine precise distribution and prevalence of major neglected tropical diseases (NTDs) such as schistosomiasis and lymphatic filariasis can help guide evidence-based interventions, a study reveals. The study, conducted in South Sudan and published in PloS One on 20 December 2012, used surveys to map the prevalence of certain NTDs and determine where treatment is needed the most.

"Rapid mapping is very important to help gather information for interventions into NTDs and for national policymaking," says Simon Brooker, one of the report authors and a Wellcome Trust senior research fellow at the Kenya Medical Research Institute. "South Sudan has the highest number of total infections of NTDs in Africa," Brooker tells SciDev.Net, adding that the distribution and

prevalence of major neglected tropical diseases varies considerably across the three states

In the study, three states of South Sudan were surveyed from May to September 2010 to identify areas where levels of schistosomiasis, lymphatic filariasis or soil-transmitted helminthiasis were high enough to make their populations eligible for mass preventive drug treatment programmes targeting these diseases. The study involved taking more than 12,000 urine and stool samples from children from 193 sites to test for schistosome and soil-transmitted helminth infection, and nearly 4,000 blood samples from adults from 50 sites to test for lymphatic filariasis.

The survey mapped the areas where some 1.4 million people should be treated against schistosomiasis, where 1.3 million people require annual treatment to treat lymphatic filariasis and where 1.2 million need regular treatment against soil-transmitted helminths. The survey provides further evidence that rapid mapping to target preventive drug treatment is important for public health due to this marked spatial variation of disease and the resulting need for evidence-based targeting of treatments, he says. Charles Chunge, director of the Centre for Tropical and Travel Medicine in Nairobi, Kenya, said that rapid mapping followed by interventions to control such diseases is therefore vital not just for South Sudan, but also for the whole of Africa. The researchers conclude that "the challenge now remains to complete NTD mapping in the remaining states in the country, and to regularly provide treatment to eligible populations". [Link to full paper](#)

## Tanzania farmers urged to assess soil potentialities



The Northern Zone Agricultural Research Coordinator, in the Ministry of Agriculture, Food Security and Cooperatives, Dr Charles Lwamchai, said as time and climate change, growers in the country need to look before leaping into farming. He was speaking during the recently concluded first phase for the Africa Soil Information Service (AfSIS) meeting of members. Dr Lwamchai noted that poor soil health is the single most important constraint to food security in sub-Saharan Africa, whereby the continent's agricultural land is severely degraded and many farmers suffer from chronically low-yielding crops.

With soil quality under further pressure from growing populations, increasing food demand and lack of investment in adequate soil management, science and technology are vital to transform the continent's agriculture and related socioeconomic systems. "Most of the farmers in Tanzania still use traditional knowledge in assessing soil potentialities, but the traditional knowledge alone is not enough...we need to incorporate scientific knowledge in this area," he said, adding that the situation need to be diverted. The official implored the need for smallholder farmers to inculcate a habit of testing soil potentialities before investing in it. "We are currently facing a number of challenges including climatic and weather variability that makes crop production unpredictable. So it is high time for farmers and extension officers to work closely to improve productivity," he said.

Dr Lwamchai recalled four years ago when a group of scientists, led by the International Centre for Tropical Agriculture (CIAT) in Nairobi, embarked upon an ambitious project to assess soils across sub-Saharan Africa. "The assessment was aimed at reducing sub-Saharan Africa's soil information gap and provide consistent baseline for monitoring soil health." Dr Lwamchai stated that on March 31, this year, the first phase of the Africa Soil Information Service (AfSIS) drew to a close. Previously, recommendations about



which fertiliser to use and crops to plant were based on data collected from different sources, each of varying quality, using various methods and several languages. "Now, using the highly detailed digital maps, databases and soil assessments produced through AfSIS, scientists and policymakers now have the tools with which to make sitespecific recommendations for boosting food production," he said.

The project, financed by the Bill & Melinda Gates Foundation and the Alliance for a Green Revolution in Africa (AGRA), was implemented in partnership with the World Agroforestry Centre (ICRAF), Columbia University and Wageningen University with support of national partners. The project conducted field activities in 19 African countries geared towards establishing the Global Digital Soil Map Consortium, creating data management systems for easy update, analysis and dissemination. It was also meant to develop digital soil maps of different soil functional properties and establish a soil health surveillance system in SSA, providing evidence-based, spatially explicit soil management recommendations to national research and extension providers of selected countries.

"So, the planned meet is meant to create a platform for stakeholders share the AfSIS tools that will benefit landusers, scientists and policy makers and explore possible activities and opportunities for further advancement of AfSIS I achievements," said George Sayula. Mr Sayula is a researcher of the Arusha-based Selian Agricultural Research Institute (SARI). AfSIS tools are to benefit land-users, scientists and policy makers and explore possible activities and opportunities for further advancement of AfSIS I achievements. Tanzania was one of the 19 African countries that took part in AfSIS.

## [Uganda sets Sh14b for national mapping](#)



About 4.4 million euros (US\$14b) is needed for a comprehensive mapping of Uganda over three years. According to Alex Lwakuba, a commissioner for crop production and marketing in the agriculture ministry, mapping of the whole country is a very expensive venture, which requires substantial amounts of money. However, if we use the existing information in the reconnaissance report of 1958/60 and modern technology, the exercise could be done in six months at 1.2 million euros (sh3.8b).

Lwakuba was commenting on the \$7m (sh1.6b) proposed to cover the National Physical Development Plan formulation. This was during a one-day workshop on the National Land Use Policy and National Physical Development Plan implementation at the Grand Imperial Hotel in Kampala

recently. The physical development plan defines space, land and resource utilisation, leading to sustained action to ensure urban and rural development and environmental protection.

Participants, mainly from the local government and lands ministries, observed that the proposed budget was very small. Lwakuba regretted that Uganda's land use and land cover information is outdated and does not capture all combinations of current land use that characterise the country. He said mapping the country would help in dividing it into viable agricultural production zones for export. Participants noted that the three-year period beginning 2011, proposed for the preparation of the national physical development plan was too long.

The state minister for urban development, Urban Tibamanya, cautioned Ugandans against politicising and undermining the process of making a national land use plan. He called for a participatory process so that all Ugandans own the final plan. Let us plan with the people with participatory planning embraced right at the beginning of the exercise.

## [Uganda: Mobile Money Serving Urban Areas Most - Bank of Uganda](#)



Mobile Money outlets are concentrated around the urban areas, and roadsides in Uganda as opposed to the rural areas that are already underserved by financial services, new data has revealed. A four-month survey by the Bill and Melinda Gates Foundation revealed that mobile money outlets are located in close proximity to commercial banks as they need to rebalance their cash float every now and then.

"While mobile money services have greatly increased financial inclusion, their geographical reach has remained along main roads and around commercial banks as opposed to spreading out in the rural areas where we need them to be," a Bank of Uganda (BOU) official noted. "Their

contribution to financial access has been marginal. We need them in areas where it is not viable to have bank branches."





The survey shows that 99.7% of all urban residents can access a mobile money branch within a 5 km radius compared to only 32.8% of rural residents. Karina Broens Nielsen, a programme officer with the foundation, noted that the mobile money outlets increased the geographical reach of financial services by just 3.8%. Commercial bank branches reach 18.4% of the total population, ATMs reach 21.4%, microfinance institutions reach 26.5%, savings and credit organisations reach 37.3%, and mobile money reaches 41.1% of the entire country.

Mobile money service providers are mainly located by the roadside as a security measure. Mireya Almazan, a programme officer with the foundation noted that the services are eventually expected to spread into more populated rural areas. Transactions worth more than sh11.7 trillion have been made through the mobile money system with 8.9 million registered users since March 2009 according to BOU data. The figures are a sharp contrast to slightly over four million commercial bank account holders despite the existence of the banking sector in Uganda since 1912.

Justine Bagyenda, the BOU executive director, supervision noted that the reach of banking services has grown over time with 495 bank branches in 2012 from 393 branches in 2010 and 714 ATMs from 625 ATMs in the same period. "Technological advancements have ensured that access to cash in and cash out points is extended beyond the traditional banking system," she said. "The use of Geographical Information Systems (GIS) analysis in identifying the distribution of cash in and cash out points relative to where people live provides an important indicator for all stakeholders in the financial sector," she added.

## [Use of Remote Sensing and GIS in environmental degradation detection and monitoring - Lake Naivasha Basin, Kenya](#)



*Submitted by emwandongo on 17-02-2013*

Land cover is a fundamental variable that impacts on, and links many parts of, the global environment. Degradation in land cover can have far-reaching ramifications at local, regional and global levels. Thus, patterns of land cover must be understood at a range of spatial and temporal scales with a view to characterizing and predicting the potential environmental impacts. This work focused on the degradation of land cover occurring within the Lake Naivasha basin in Kenya. The area has undergone rapid land use transformations since independence to date leading to land cover changes. This in turn compromises the natural resource base, hence, the need to monitor and avail reliable data for decision making on sustainable land use. The research objectives were three-fold: to determine the probable driving forces of land

use that results in environmental degradation in Lake Naivasha basin ; to establish and map the magnitude, rates, nature and spatial distribution of the land cover degradation that had occurred in the area and; to establish the trend and relationship between the natural resource base and the land use.

Both remote sensing and GIS techniques were employed to collect the pertinent data needed for fulfilling the research objectives. Multi-temporal satellite data (GeoEye 2010 and Landsat TM 1989, 1995, 2000, 2006 and 2010) were acquired and field survey conducted from, which land cover sample data were collected using the Global Positioning Systems (GPS). Data on the driving factors of land use were obtained through semi-structured interviews. The land cover sample data were then used for classification of the satellite images using object-based approach resulting in land cover maps for 1989, 1995, 2000, 2006 and 2010. These were further analyzed for changes using the post-classification technique. The analysis yielded results on the estimates of the magnitude and rates of land cover changes within the Lake Naivasha basin as well as the geographic distribution of these changes. In overall, the open water, papyrus, other natural vegetation such as grasslands and shrub lands ii showed declining trends in their rates and magnitude of change whereas the irrigated agriculture and built-up land had a constant increase between 1989 and 2010. Linear model regress was employed in the analysis of land cover and land use. Friedman's test was employed in the analysis of the driving factors of land use and its results concluded that the driving factors had different influences on land use in Naivasha basin. Both proximate and underlying processes constituted the driving factors of land use. These included demographics (household sizes and numbers), market availability and prices, climate and sustenance (source of livelihood).

In light of the results obtained, a range of conclusions are drawn but the main one is that the overriding nature of environmental degradation in Naivasha basin had been the conversion of open water and papyrus to irrigated agriculture. These degradations were spread throughout the basin. Finally, exploration of better classification approaches, integration of old remote sensing data (aerial photos) and in-depth studies of land cover degradation within smaller portions of Lake Naivasha basin are among the recommendations made for further research. *Key words: detection, Monitoring, degradation, Land cover, Change, Lake Naivasha basin.*



## Paper Call Reminder: GSDI & AfricaGIS Conference

We are now six weeks away from the deadline for abstracts and/or papers for the GSDI World Conference (GSDI 14) and AfricaGIS 2013. This combined conference is being held at the UN Economic Commission for Africa Conference Center in Addis Ababa 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.

This combined and fully integrated conference offers numerous opportunities for oral presentations and refereed and non-refereed publication outlets. We invite presentations covering the full range of practice, development and research experiences that advance the practice and theory of spatially enabling citizens, government, and industry. The conference theme is Spatial Enablement in Support of Economic Development and Poverty Reduction.

This call supports two primary forms of publication: (1) a conference proceedings containing abstracts for all accepted submissions with designation of both refereed and non-refereed full papers in the proceedings, and (2) a pre-conference published book containing fully refereed articles.

### IMPORTANT DATES

- Deadline for Submission of Abstracts: 15 May 2013
- Deadline for Submission of Full Papers for Refereed Outlets: 15 May 2013
- Deadline for Submission of Full Papers for Non-refereed Outlet: 1 Sept 2013
- Deadline for Full Conference Registration Payment for All Presenters: 15 Sept 2013
- Conference Dates: 4-8 Nov 2013

### IMPORTANT LINKS

- Joint Conference Call for Abstracts and Papers: <http://www.gsdi.org/gsdiconf/gsdi14/papercall.html>
- Conference Website: <http://www.gsdi.org/gsdi14>
- Past GSDI World Conference Proceedings: <http://www.gsdi.org/gsdiConferences>
- Past open access Books affiliated with the conference: <http://www.gsdi.org/openaccessbooks>
- Other Important Dates: <http://www.gsdi.org/gsdiconf/gsdi14/dates.html>

We look forward to seeing you in Addis Ababa in November 2013. 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.

## Call for participation: 2013 MyCOE / SERVIR Initiative in West Africa for Undergraduate and Graduate Students

The MyCOE / SERVIR Initiative in West Africa is a 10-month fellowship program for undergraduate and graduate students in eligible countries\* who are currently enrolled in any field at an institution of higher education in an eligible country with ideas and plans for research that address themes of Women in Climate Change and Food Security using geographic technologies. Students are invited to propose a research and outreach project and will be competitively selected based on their long-term potential to contribute to these topics in the region.

The program is particularly interested in receiving applications demonstrating linkages across Three Generations of Women in Climate Change and Food Security. The program will connect teams of emerging researchers and their mentors with international pioneering female scientists and experts in climate change for inspiration and guidance. In turn, the most competitive MyCOE fellows' outreach activities proposed should include an integral educational component that reaches out to young girls in their countries, encouraged to consider careers in science. Selected teams may stimulate the interest of young girls by engaging them in their research and by sharing experience in secondary (preferred) or middle school level classrooms with which they propose to engage. Thus, this program will advance women's participation and contribution to Climate Change in Africa by linking three generations: pioneer female scientists/mentors, university student fellows, and young girls in middle or secondary school.

The MyCOE / SERVIR program will provide students with customized capacity training in GIS, remote sensing, GPS, and/or spatial techniques to help them enrich their research proposals. They will also receive professional development, have access to additional mentoring by international experts, and engage in an online community with other fellows. Interested students must apply with a mentor who is willing to work closely with them throughout the duration of the program and attend the workshop. The program provides travel support and research stipends for both students and their mentors.





*Partners:* My Community, Our Earth: Geographic Learning for Sustainable Development (MyCOE), Association of American Geographers (AAG) (MyCOE Secretariat); National Aeronautics and Space Administration (NASA), United States Agency for International Development (USAID), The SERVIR Global Program; Esri; Center for Remote Sensing and Geographic Information Services (CERSGIS) in Accra, Ghana, and others.

*Eligible Countries:* Benin, Burkina Faso, Cameroun, Chad, Cote d'Ivoire, Ghana, Guinea, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo. Please note that to be eligible, all participants must be citizens of one of the eligible countries and be studying (students) or working (mentors) and residing in the same or another of the eligible countries. Female and male students are encouraged to apply according to the focus of this call for participation. Deadline: April 30, 2013.

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

### Crowdsourcing to tackle South Africa water leaks

Multinational technology giant IBM has launched a crowdsourcing project to help capture, share and analyze information about the water distribution system in South Africa. The project, called "WaterWatchers," is driven by a new mobile phone application and SMS capability that will enable South African citizens to report water leaks, faulty water pipes and general conditions of the country's water infrastructure for 30 days starting from World Water Day, 22 March. "Every update will provide vital data points to an aggregated 'WaterWatchers' report to create a single view of the issues challenging South Africa's water distribution system," IBM said in a statement on Friday.

The free app, which is currently available for Android and available for download at [www.ibmwaterwatchers.co.za](http://www.ibmwaterwatchers.co.za), and the SMS capability together provide an easy way for anyone to collect and report issues on local waterways and pipes to a centralized portal. After taking a photo and answering three simple questions about the particular water canal or pipe, the data will be uploaded in real-time to a central database. After 30 days, the data will be analyzed and aggregated into a meaningful "leak hot spot" map for South Africa.

"This project is about analyzing use, predicting demand and managing the future of our country's water," said IBM South Africa Smarter Planet executive Ahmed Simjee. "It's a unique exercise in crowdsourcing for South Africa, and we encourage every person to become a 'citizen scientist' - to engage with the environment and help create a big picture map of our water leaks and issues," Simjee said. "By enabling countless individuals to gather and submit data, WaterWatchers represents a new kind of data aggregation, analytics and visualization for water planners in South Africa - and is exactly the kind of 'big data' challenge IBM excels at solving."

Under-spending on water in South Africa has seen the Department of Water Affairs increase spending by 20% to R9-billion (US\$900-million) in 2011-2012, while spending on water sector management increased by 28.8% year-on-year over the same period, and spending on water infrastructure management rose by 13.2% year-on-year.

### Satellite-based earthquake detection mooted



We may one day be able to detect earthquakes in remote areas of the Earth from space, say scientists who used a satellite to pick up low-frequency sounds from the earthquake that hit Tohoku, Japan, in March 2011. The researchers report that the satellite is the "first seismometer in orbit".

During an earthquake the Earth's surface "moves like that of a drum", creating a low-frequency sound in the atmosphere that cannot be heard by humans, says Raphaël Garcia, a researcher at the University of Toulouse, France, and the lead author of the study. Garcia and colleagues were able to trace these acoustic waves - known as 'infrasounds' - from the Tohoku earthquake to the Gravity Field and Steady-State Ocean Circulation Explorer (GOCE) satellite. It is the first time that

infrasounds are detected from space, they say.

The European Space Agency launched the satellite in 2009 to measure the Earth's gravity field. It orbits the earth at a relatively low altitude of about 270 kilometres - an ideal height for detecting infrasounds, which fade at higher altitudes. It is because of this fading that researchers had previously failed to find infrasounds, despite searching for a number of years. Now they suggest a standard altitude of about 300 km for satellite detection of infrasounds. Other gravity-measuring satellites that have failed to detect such signals include the Challenging Minisatellite Payload (CHAMP), which orbits at 320 km and the Gravity Recovery and Climate Experiment (GRACE), which orbits at 480 km.



GOCE was not designed to be a seismometer. "We have been interested in using data from GOCE for studying the atmosphere," says study co-author Eelco Doornbos of Delft University of Technology in the Netherlands. "Detection of earthquakes is a spin-off of the application of the satellite." However, it is unlikely that satellites will be able to act as real-time detectors for earthquakes on land as there was a lag of 27 minutes between the earthquake and GOCE detecting the first infrasound wave.

"An advantage of having seismometers in space would be to detect the signals from earthquakes that happen in the middle of an [ocean](#)," says Doornbos. "But I don't think they will replace ground-based seismometers." He says that more than one satellite would be necessary to detect earthquakes from space, a prospect too expensive to see in the next ten years. But as instruments become smaller and cheaper it may "be feasible to launch a few inexpensive satellites at the same time, which might be used to help in pinpointing earthquakes". Doornbos adds: "At some point, the space agencies may decide that it might be a good idea to [install seismometers] on older satellites."

Ramesh P. Singh, a geophysicist at Chapman University, United States, says that, when an earthquake occurs, ground-based seismometers provide information on the event within a few minutes. By the time GOCE detected the first signal from the Tohoku earthquake, almost half an hour later, it was already known that the earthquake had occurred. The study was published in Geophysical Research Letters last month (14 March). [Link to abstract in Geophysical Research Letters](#).

## GIS Tools, Software, Data

### **aWhere Weather, an interactive online platform in forestry**

This is an interactive online platform providing access to localized weather data, valuable for anyone doing research in forestry or work in forest policy or management. Through the support of an international charitable organization, aWhere Weather offers free access to historical, daily-observed and 8 days of daily forecasted 'localized' weather data for locations in South Asia and West, East, and Southern Africa. Weather Data are available for the following variables:

- Precipitation
- Minimum and Maximum Temperature
- Minimum and Maximum Relative Humidity
- Solar Radiation
- Maximum and Morning Wind Speed
- Growing degree days (dynamically calculated for your base and cap temperature)

The data is available every 9 km from the equator (akin to having a full meteorological station every 9 km), and can be accessed online or through a daily or weekly emailed weather report. This platform is designed to play a vital role in agriculture and land management initiatives providing accurate, highly localized weather data for researchers, extension workers and policy makers.

Access is free and easy. Register at <http://www.awhere.com/en-us/weather-p>. Then, you can log back in anytime at [me.awhere.com](http://me.awhere.com). For questions on the platform, please contact [weather@awhere.com](mailto:weather@awhere.com).

### **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\(at\)rcmrd.org](mailto:remotesensing(at)rcmrd.org). Further information, please visit website: [www.rcmrd.org](http://www.rcmrd.org).

### **CARIS' HIPS and SIPS 8.0 featuring water column data supplementation**

CARIS has announced the release of CARIS HIPS and SIPS 8.0, the leading hydrographic data processing system. HIPS and SIPS offer a single solution for bathymetry, seafloor imagery, and water column data processing. The HIPS and SIPS 8.0 includes some significant enhancements, such as the continued implementation of water column data processing allowing the data to be supplemented into the bathymetry,



the redesigned calibration tools in Subset Editor and the new HIPS project database allowing for faster open times and multi-user access.

The HIPS and SIPS 8.0 allows users to supplement the bathymetry in existing projects with water column data. The data can be selected and imported as additional bathymetry and is stored in a CSAR point cloud. Water column data can now be imported as fully corrected bathymetric data and utilized in the same tools and workflows as standard bathymetry. The Calibration module has been redesigned for improved usability and workflow. The Calibration tools have been migrated to the latest interface and tools in Subset Editor allowing users to utilize simple and intuitive controls. The new \*.hips file for HIPS and SIPS projects is a database that will provide several advantages, including management of multi-user access to the data. The project database also significantly improves the performance of opening a project. Testing on a project containing hundreds of track lines shows open times are dropping from several minutes to only a few seconds.

## 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.gsd.org](mailto:sdi-africa@lists.gsd.org).

## Call for Applications - GEM Course 2013

Growing population densities are putting increasing pressure on scarce land resources. Adequate solutions to environmental problems such as deforestation, overgrazing, and the depletion and contamination of land and water resources depend on integrated insights and improved management. Planners, managers, policy makers and researchers need to understand the complexity of the factors involved and be able to work together with professionals from a variety of disciplines. Geo - information technology and, in particular, remote sensing, plays a central role in the search for clear analyses and viable policies. Skills in this field will therefore continue to be much in demand in industry, government and NGOs.

Five renowned European institutes offer you a unique Erasmus Mundus joint European Master of Science (MSc) Course in Geo - information Science and Earth Observation for Environmental Modelling and Management (GEM).

The course has duration of 22 months and will be taught by world class faculty in five countries: Iceland, UK, Sweden, Poland and The Netherlands. While studying in at least two of the five universities, as well as studying in a multi - cultural environment, students will gain valuable insight into the academic, social and cultural diversity of northern and central Europe. Graduates gain a multiple MSc degree from the consortium universities.

For the academic year starting in September 2013, we are pleased to announce that there will be EU Erasmus mundus scholarships available for both non-EU and EU students. In addition, for exceptional EU candidates, we will have a limited number of scholarships available that pay full-fees.

Deadline for EM scholarships: 31 December 2012.

Deadline for Self-funded non-EU candidates: 1 July 2013.

Deadline for Self-funded EU candidates: 1 August 2013.

Apply now online: <http://www.gem-msc.org/application/Registration/>. More information can be obtained from [www.gem-msc.org](http://www.gem-msc.org) or send an email to [info@gem-msc.org](mailto:info@gem-msc.org).

## 2013 GIS short courses through continued education at University of Pretoria

- Introduction to Geoinformation Standards - 15-16 July 2013 in Pretoria
- Spatial databases with PostGIS - 25 - 29 March 2013 in Pretoria
- Introduction to Quantum GIS (on request)
- Remote Sensing (on request)
- The Basics of GIS (on request)

See [www.up.ac.za/cgis](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 presents a full spectrum of GIS courses: April and May 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](#)

## GIS and Remote Sensing courses at Esri Eastern Africa

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.

Client site training arrangement on request for 12-16 students. [Download](#) course catalogue and current class schedule. To register, visit <http://esrietraining.cloudapp.net/>. For more information, contact: [training@esria.co.ke](mailto:training@esria.co.ke), telephone: +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).

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. 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.

## Funding Opportunities, Awards, Support

### [South Africa and Namibia Joint Science and Technology Research Programme in South Africa, 2013](#)

Research Projects for Namibian and South African Students in the field of Bio Sciences, Space Science, Indigenous Knowledge Systems, and Environment. [\[Read Full Scholarship Detail\]](#)

### [ICCR Scholarships for Ethiopia and Djibouti in India, 2013/14](#)

The Indian Council for Cultural Relations (ICCR), Government of India is pleased to offer ICCR Scholarships for Ethiopia and Djibouti. [\[Read Full Scholarship Detail\]](#)

### [ICCR Africa Scholarships Scheme for Sudanese Nationals in India, 2013/14](#)

Under the Africa Scholarship Scheme, the Indian Council for Cultural Relations (ICCR) offers 27 scholarships for Sudanese students for PhD/.. [\[Read Full Scholarship Detail\]](#)

### [Joint DAAD PhD Scholarships in Agricultural Economics, 2013](#)

DAAD Funded Doctoral Scholarships in the field of Agricultural Economics at The Georg-August-University of Göttingen (Germany) and University of Talca. [\[Read Full Scholarship Detail\]](#)



## **[2013 Research Position in Bioinformatics for International Students at King's College London in UK](#)**

Research Position in Bioinformatics at the Department of Informatics, King's College London in UK 2013  
Study Subject(s): Subject is bioinformatics. Course Level: This scholarship is.. [\[Read Full Scholarship Detail\]](#)

## **[Erasmus Mundus EMJD Research Fellowships for PhD Students, 2013](#)**

Erasmus Mundus funded Doctoral Research Fellowships for **third-world country**. PhD candidates and EU Students for training and carry out their research activities in at.. [\[Read Full Scholarship Detail\]](#)

## **[2013 Doctoral Student Position in Geobiophere Science at Lund University in Sweden](#)**

Department of Physical Geography and Ecosystem Science, Lund University offers Doctoral student position in the field of Geobiophere Science. The applicants applying.. [\[Read Full Scholarship Detail\]](#)

## **[The Duke of Portland Developing Solutions Scholarship for African Students at University of Nottingham in UK](#)**

University of Nottingham offers Masters Scholarship in the field of Crop Improvement for African Students in UK, 2013 Study Subject(s):.. [\[Read Full Scholarship Detail\]](#)

## **[Women's World Summit Foundation - Prize for Women's Creativity in Rural Life 2013](#)**

The Prize honors women and women's groups anywhere in the world exhibiting creativity, courage, and commitment for improving the quality of life in rural communities. WWSF aims to draw international attention to laureates' contributions to sustainable development, household food security, and peace. The Prize provides an award of US\$1 thousand per laureate, and US\$3 thousand for specific African women's organizations. Nominations are due 30 April 2013.

## **[African Network of Scientific and Technical Institutions \(ANSTI\) - ANSTI/DAAD Post-Graduate Fellowships 2013](#)**

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 2013.

## **[World Food Prize Foundation - World Food Prize and Borlaug Field Award 2013](#)**

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. Nominations must be submitted by 1 May 2013 for the World Food Prize, and by 30 June 2013 for the Borlaug Field Award.

## **[No-profit supply of computers to Developing Countries](#)**

Computer Aid International has already shipped over 50,000 PCs to more than 90 developing countries. Out of those 50,000 shipped over 35,000 have gone to educational institutions while the remaining to community organisations working in fields as diverse as HIV/Aids, environment, human rights and primary healthcare. Computer Aid International aims to: (i) Increase the number of refurbished computers being re-used overseas; (ii) increase the number of UK organisations donating their used IT equipment for re-use overseas; (iii) identify and work with those organisations in recipient countries able to derive maximum value from refurbished computers; (iv) provide training and work experience in computer repair to people from socially excluded communities.

## **Employment Opportunities**

### **[Consultancy: Mapping hard to reach areas in Sierra Leone](#)**

UNICEF seeks a Consultant to map hard-to-reach areas in Sierra Leone. Hard-to-reach areas are those parts of the country that have physical, communication, security, social and economic conditions that make them receive a level of public service that is relatively inequitable. The incumbent should possess:





- Minimum of a Master's degree in Statistics, Demography or Economics
- At least eight years of progressively responsible work experience in conducting geographical mapping and large surveys as well as production of interactive maps.
- Excellent interpersonal, communication and organizational skills gained from working with communities and officials in field research conditions.
- Excellent analytical and documentation skills.
- Good communication and writing skills in the English language.
- Excellent computing skills.
- Able to work independently with a variety of stakeholders.
- Adaptability and flexibility, confidentiality, initiative, concern for accuracy and quality.

Qualified candidates to submit:

- Application letter of no more than 1 page.
- Write-up of no more than 2 pages suggesting how they would approach the geographic mapping of facilities and services in the areas and the format and software they would use to present the maps.
- Curriculum Vita of no more than 3 pages, and
- Completed UN P11 Form (can be downloaded at <http://www.unicef.org/about/employ/files/P11.doc>)

Please send the documents to the Human Resource Officer, UNICEF Sierra Leone, on or before Friday 12 April 2013. Email: [espillsburywilliams@unicef.org](mailto:espillsburywilliams@unicef.org) with the subject line "Consultancy (Mapping hard to reach areas in Sierra Leone)"

### **Technical Advisor-Co-management, livelihoods, and agriculture, Sierra Leone**

The Gola Rainforest National Park Programme is an exciting long-term initiative supporting the management of the Gola Rainforest National Park, the second only National Park in Sierra Leone and a global priority for biodiversity conservation. The RSPB is seeking a dynamic co-management, agriculture & livelihood specialist to provide technical and operational support to the Programme to deliver its objectives.

You will have skills and experience in planning, budgeting, implementing workplans, and monitoring and evaluation, as well as building capacity in these areas. You will also have a strong background in community development programmes and participatory approaches as well as REDD, be practically minded and passionate about conservation. Closing date: not mentioned.

More information: <http://www.rspb.org.uk/vacancies/details/342064-technical-advisor-comanagement-livelihoods-agriculture>

### **Various Jobs vacancies in Kenya, October 2013**

Kenya Forest Service is a State Corporation established by an Act of Parliament to sustainably manage and conserve all types of forests. The Service seeks to recruit self-motivated, dynamic and results oriented individuals to fill the following positions:

#### **Chief Officer - Survey and Mapping**

The position holder will establish forest boundaries and maintain spatial data records on all forests in Kenya.

- Planning, developing, coordinating and implementing survey and mapping programmes and policies.
- Coordinating surveys, boundary demarcations and mapping of forest reserves and ensuring that all boundary records for the Forest Reserves are held in safe custody.
- Provision of expert witness on litigation matters concerning boundary disputes.
- Overseeing compilation of documents leading to the drawing up of boundary plans, titles, leases and sub-leases issued to Kenya Forest Service.

Suitable candidates must have the following minimum qualifications:

- An undergraduate degree in Surveying and Photogrammetry or an undergraduate degree in Geospatial and Geomatics Engineering or equivalent qualification from an accredited institution.
- Be a registered full member of the Institution of surveyors of Kenya.
- Be a licensed land surveyor by the Kenya Land Surveyors Board.
- Five (5) years progressive work experience in a senior level three (3) of which should be in an appropriate environment and institution.
- Postgraduate qualification in GIS or geo-informatics
- Practical knowledge in global navigation satellite systems (GNSS).

#### **Remote Sensing Officer**

The Kenyan Forest Service has set out to develop institutional capacity for central GIS and remote sensing hub to support the sustainable management of forest through modern technology. This will require remotely sensed data in a distributed GIS system to allow field staff to undertake forest resources assessment

- Development and management of forest cover monitoring system



- Setting of standards for collection, input and storage of remotely sensed data for detecting forest cover changes and forest health arising from deforestation, forest degradation and enhanced forest conservation programmes
- Coordinate gathering, analysis and modeling of remotely sensed forest data
- Produce periodical updates of forest cover and forest cover change (change detection)
- Assist in building the required capacity for conducting forest resource assessment through remote sensing technology and maintain forest resource database.
- Advising the Service on changes in forest cover
- Liaising with other stakeholders in the field of remote sensing

#### Required Qualifications, Experience & Key Competencies

- Master of Science degree in either Geo-Informatics, or Remote Sensing from an accredited university
- Undergraduate degree in Surveying and Photogrammetry/Remote sensing from an accredited university
- A minimum of five years of working experience in application of remote sensing technology, Geographical Information Systems (GIS) in the field of forest resources assessment or (Natural Resources Management) in a large reputable organisation,
- Practical experience in use of Remote Sensing software applications in natural resource assessment and/or monitoring is an added advantage.
- Good knowledge of Remote Sensing, Photogrammetry and related technologies such as Global Navigation Satellite Systems (GNSS),
- Ability to collect, analyze and appropriately display remotely sensed data;
- Proficiency with various computer applications including but not limited to Microsoft Office, computer assisted drawing (CAD), ILWIS, ERDAS, IDRISI;
- Ability to explain complicated technical concepts in a clear, correct and concise manner to non-technical users;
- Ability to share information with others and collaborate within a high-performance multi-disciplinary team

#### **Geo-Data Base Administrator**

The Kenyan Forest Service has set out to develop institutional capacity for a central Geo-Database to support the sustainable management of forest through modern information management. This will require a robust server based Geo-Database to support forest resource data archive, analysis, and sharing.

- Design and development of databases
- Harmonization of all forest resources databases
- Setting of standards for resource geo-data storage and management
- Management and Administration of database(s) within KFS
- Manage data import / export and ensure data integrity / data quality
- Produce data reports and data mining queries
- Implement approved data sharing and security arrangements
- Perform the necessary technical design and development functionality to ensure that application systems can be effectively developed and implemented.

The candidate should have the following qualifications and experience:

- Postgraduate training with Masters degree in Geo-spatial Information Systems or equivalent from an accredited university
- Bachelors Degree in geo-informatics or computer technology from an accredited university is a must
- Experience with Linux Server Operating System
- Basic understanding of Relational Data Base Management Systems ( RDBMS);
- Three years experience in geo-database design, implementation, management and maintenance
- Experience with Oracle and/or PostgreSQL
- Experience in web mapping
- At least three years work experience in a similar position.
- Ability to share information with others and collaborate within a high-performance multi-disciplinary team

Interested and suitably qualified candidates should send their application, detailed Curriculum Vitae with daytime contacts, testimonials, and copies of academic and professional certificates to The Deputy Director: Human Resource and Administration, Kenya Forest Service, P.O. Box 30513-00100, Nairobi by 25 October 2013.

#### [University of Birmingham Scholarships for International Students](#)

In 2013/14, the University of Birmingham is offering 18 International Postgraduate Scholarships worth £10,000 towards the cost of a one year Masters (Taught or Research) programme. These awards are intended for tuition fees only and cannot be used towards living expenses. Applicants must have an excellent



academic background; due to the level of competition for these scholarships, only applicants with a first class Bachelors degree (or equivalent) will be considered.

Applicants must also demonstrate excellence in an area of their life; this might be outstanding academic achievement, exceptional achievement in extra curricular activities (such as sport, music, managing events or societies) or significant achievement gained either in their working life or through volunteering and service to others. Applicants must also outline the contribution they will make to the University of Birmingham as a student and what they expect to gain from studying here.

In order to apply candidates must:

- Have been offered a place to study on an eligible one year Masters programme at the University of Birmingham;
- Be overseas for fee purposes;
- Be attending full-time and on-campus (not distance learning);
- have a valid student ID number;
- not be in receipt of a full fee scholarship from any other source;
- Have made adequate financial provision to study in the UK (including any associated visa/travel expenses);
- Be able to pay any outstanding tuition fees not covered by the scholarship.

Please be aware that you must have made an application to study at the University of Birmingham before submitting a scholarship application. To find out more about how to apply, please review our [application procedures](#). Applications will close on 31 May 2013 for entry in the 13/14 academic year.

## Other

### Lake Victoria could soon be history



Lake Victoria is under threat, and the very people this natural resource is supposed to serve are the ones threatening its existence. Starting today, up to June 5, World Environment Day, in a campaign, Save Lake Victoria, New Vision, its sister paper Bukedde and some of its platforms like Bukedde TV, Urban TV and Bukedde FM will run investigative stories and commentaries highlighting the irresponsible human activities threatening the world's second largest fresh water lake.

Lake Victoria, measuring 68,800 square kilometres, is a shallow lake shared by Kenya with 6%, Uganda 43% and Tanzania 51%. It has up to 1,000,000 metric tonnes of fish in the three countries. Pollution hotspots

include Murchison Bay, Kitubulu, Bukoba, Mwanza, Musoma and Kisumu. The main catch is Nile perch, estimated at 51% and tilapia, estimated at about 24%. The rest is silver fish. Lake Victoria had more than 400 species of fish before the introduction of Nile Perch. However, it now has about 200 species. The smaller species disappeared due to the predatory behaviour of the Nile Perch.

Lake Victoria, which has been supplying Kampala's six million people with water, has shrunk to an expansive mass of green muddy water. It has more smelly algae than water. "Lake Victoria can die," Dr. Tom Okurut, the executive director of NEMA, told reporters and editors under Vision Group while presenting a paper entitled, "Lake Victoria, a matter of survival for Uganda" at the Vision Group head offices, recently. Okurut blames human activities such as overfishing, pollution, conversion of forests and wetlands into farmland that remove the vegetation cover from soil, resulting in massive silting. Other threats such as climate change, according to Okurut the former executive secretary of Lake Victoria Basin Commission, are also to blame for the slow death of the lake. He also pointed out that Lake Victoria is a critical resource supplying water to the cities such as Kampala, Kisumu in Kenya and Mwanza in Tanzania. The lake is also under intense pollution from the cities (unplanned urbanisation). Kampala's two million people get water from Murchison Bay, also referred to as the mouth of the lake.

Uganda's hydro-electric power at Nalubaale and Kiira, with a potential of 388MW and Bujagali's 250MW, respectively, is produced using water from Lake Victoria. Even the potential power production along the Nile, including Kalagala and Murchison Falls, estimated at 3,000MW, will disappear with Lake Victoria. Okurut says it is predicted that the disease burden on Uganda's economy is likely to increase if the degradation of the lake is not checked. For long, according to Okurut, fish was the cheapest source of proteins, but now prices are increasing, as local consumers have to compete with the export markets. Also diseases such as cholera, bilharzia and malaria are increasing, especially where the water has become polluted. In addition to this, conflicts over resources such as fishing grounds, wetlands, and forests within Uganda and across the country are likely to increase. Other underlying causes pushing Lake Victoria towards degradation is the





unregulated access by all. "The lake belongs to everybody without a strong sense of responsibility," says Okurut.

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

| Conferences, Events |                                |   |
|---------------------|--------------------------------|---|
| Date                | Location                       | Event   |
| <b>April 2013</b>   |                                |   |
| 7-12 April 2013     | Vienna, Austria                | <a href="#">Successful Governmental policies and actions for a better soil management</a>   |
| 7-12 April 2013     | Vienna, Austria                | <a href="#">Validation and uncertainty in soil erosion modelling: achievements and challenges</a>   |
| 7-12 April 2013     | Vienna, Austria                | <a href="#">Soil System Sciences</a> (All relevant sessions)  |
| 8-10 April 2013     | Pafos, Cyprus                  | <a href="#">First International Conference on Remote Sensing and Geo-information of Environment</a>   |
| 11-13 April 2013    | New Orleans, LA, USA           | <a href="#">Population Association of America 2013 Annual Meeting</a><br>Website: <a href="http://paa2013.princeton.edu/">http://paa2013.princeton.edu/</a> |
| 16-19 April 2013    | Barcelona, Spain               | <a href="#">12th International UFZ-Deltares Conference on Groundwater-Soil-Systems and Water Resource Management</a>  |
| 22-26 April 2013    | Beijing, China                 | <a href="#">35th International Symposium on Remote Sensing of Environment</a>   |
| <b>May 2013</b>     |                                |   |
| 8-10 May 2013       | Aachen, Germany                | <a href="#">9th International Conference on Web Information Systems and Technologies (WEBIST) 2013</a>  |
| 13-16 May 2013      | Rotterdam, Netherlands         | <a href="#">Geospatial World Forum 2013</a><br>Contact: <a href="mailto:info@geospatialworldforum.org">info@geospatialworldforum.org</a>                    |
| 14-17 May 2013      | Leuven, Belgium                | <a href="#">16th AGILE Conference on Geographic Information Science</a>   |
| 21-24 May 2013      | Bonn, Germany                  | <a href="#">Water in the Anthropocene. Challenges for Science and Governance. Indicators, Thresholds and Uncertainties of the Global Water System</a>       |
| 22-25 May-13        | Belgrade, Serbia               | <a href="#">2nd International Scientific Conference RESPAG</a> - Regional Development, Spatial Planning and Strategic Governance                            |
| 28-30 May 2013      | Kampala, Uganda                | <a href="#">UMEC 2013 1st Uganda, Mining, Energy Oil Gas Conference and Exhibition</a>  |
| <b>June 2013</b>    |                                |   |
| 4-7 June 2013       | Ohio, USA                      | <a href="#">Mapping Global Change: Spatial Statistics 2013</a>  |
| 10-12 June 2013     | Salzburg, Austria              | <a href="#">Symposium for Research in Protected Areas</a>   |
| 17-18 June 2013     | Ghent, Belgium                 | <a href="#">Conference on Desertification and Land degradation</a>  |
| 19-20 June 2013     | Napoli (Italy)                 | <a href="#">Four Decades of Progress in Monitoring and Modeling of Processes in the Soil-Plant-Atmosphere System: Applications and Challenges</a>           |
| 23-27 June 2013     | Florence, Italy                | <a href="#">INSPIRE Conference 2013 Call for Contributions</a>  |
| <b>July 2013</b>    |                                |   |
| 3-5 July 2013       | Denmark                        | <a href="#">From effective to intelligent agriculture and forestry</a>  |
| 6-9 July 2013       | San Diego, USA                 | <a href="#">ESRI Survey Summit - The Esri Annual Conference</a>   |
| 7-11 July 2013      | Catalonia, Spain               | <a href="#">9th European Conference on Precision Agriculture (ECPA)</a>   |
| 8-12 July 2013      | San Diego, USA                 | <a href="#">ESRI International User Conference</a>  |
| 21-26 July 2013     | Melbourne, Victoria, Australia | <a href="#">IGARSS 2013</a><br>Deadline for abstracts/proposals: 10th January 2013<br>Check the <a href="#">event website</a> for more details.             |



|   |                                      |   |
|---|--------------------------------------|---|
| <b>August 2013</b>                            |                                      |   |
| <b>13-14 August, 2013</b>                     | Cape Town, South Africa              | <a href="#">Africa Geospatial Forum</a>   |
| <b>25-30 August 2013</b>                      | Dresden Germany                      | <b>26th International Cartographic Conference - From Pole to Pole</b>   |
| <b>26-31 August 2013</b>                      | Busan, Korea                         | <a href="#">XXVII IUSSP International Population Conference</a>   |
| <b>25-30 August 2013</b>                      | Hong Kong, S.A.R. China              | <a href="#">59th ISI World Statistics Congress</a><br>E-mail: <a href="mailto:isi@cbs.nl">isi@cbs.nl</a>  |
| <b>26-29 August 2013</b>                      | Sarawak, Malaysia                    | <a href="#">8th International Symposium on Digital Earth 2013</a>   |
| <b>27-31 August 2013</b>                      | Paris, France                        | <a href="#">IAG International Conference on Geomorphology</a>   |
| <b>September 2013</b>                         |                                      |   |
| <b>17-22 September 2013</b>                   | Nottingham, U.K                      | <a href="#">FOSS4G 2013 Conference</a>  |
| <b>23-25 September 2013</b>                   | Technical University of Lodz, Poland | <a href="#">2nd International Conference on Informatics &amp; Applications (ICIA2013)</a><br>Abstract deadline: 5 August 2013. Email: <a href="mailto:icia@sdiwc.net">icia@sdiwc.net</a>  |
| <b>24-26 September 2014</b><br><b>* NEW *</b> | Rotterdam, Netherlands               | <a href="#">Deltas in Times of Climate Change II</a><br><a href="#">Read more</a> , <a href="#">Conference flyer</a>  |
| <b>29 September-2 October 2013</b>            | Noordwijkerhout, Netherlands         | <a href="#">First International Conference on Global Food Security</a>  |
| <b>October 2013</b>                           |                                      |   |
| <b>23-25 October 2013</b>                     | Rio de Janeiro, Brazil               | <a href="#">Sixth International Conference on Agricultural Statistics- ICAS-VI</a> , Abstract deadline: 15 December 2012<br>FAO: <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="#">GSDI 14 World Conference and AfricaGIS 2013 Conference</a><br>Please consult the <a href="#">conference</a> web site on a regular basis.  |
| <b>18 November 2013</b>                       |                                      | African Statistics Day Celebrations - 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              | CRRAO AIMSCS will be organizing a conference during the International Statistics Year, 2013 - <a href="#">Statistics 2013: Socio-Economic and Sustainable Challenges and Solutions</a>  |
| <b>2014</b>                                   |                                      |   |
| <b>8-14 June 2014</b>                         | Jeju ICC, Korea                      | <a href="#">20th World Congress of Soil Science (WCSS)</a>  |
| <b>2015</b>                                   | Durban, South Africa                 | <a href="#">14th World Forestry Congress for SA</a>   |
| <b>1-31 August 2016</b>                       | Cape Town, South Africa              | <a href="#">35th International Geological Congress</a> . Registration deadline: 30 June 2016.   |

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