



## 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

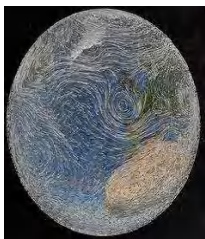


## Support and Contributions to this Issue

Thanks to the [Global Spatial Data Infrastructure \(GSDI\)](#) Association; Hussein Farah, RCMRD (Kenya); Kate Lance, GSDI listserv moderator (USA); Karen Levoleger, kadaster (Netherlands); Wahu Mbatia, SERVIR AFRICA Programme (Kenya) and Andiswa Mlisa, GEO Secretariat (Switzerland) for their contribution to this issue of the newsletter.

## SDI News, Links, Papers, Presentations

### Useful and used data key to building resilience



The future resilience of the planet rests upon shortening the distance between emerging scientific evidence and actionable policy. A high-level panel, titled 'Perspectives on the Value of Earth Observations', agreed on the importance of the "usability of information" in the International Strategy of Disaster Reduction and other global efforts to strengthen resilience.

Mr Achim Steiner, Executive Director of the UN Environmental Programme (UNEP), said collaboration and coordination was crucial: "We need to join up the dots about what we know about how resources can be used and not be used in future. "The world really is heading terribly in the wrong direction. We need to bring science to decision making. And in such a complex world, we can no longer afford the luxury of taking very narrow, specific responses. "It is also important that we are not paralyzed by waiting to have perfect information before we act. Such an approach has never been the basis for human decision making."



Mr Steiner pointed to some “wonderful examples” of international cooperation - such as on weather patterns and pollution that have contributed to a more resilient planet. UN Special Representative of the Secretary-General for Disaster Risk Reduction Ms Margareta Wahlström said data had to be “useful and used”. “There is a huge gap between the capability of science and technology and what practitioners and policymakers do with this data. Lots of the best data needs an expert to interpret it, which means that it is not sufficiently accessible,” Ms Wahlström said.

Prof. Philippe Gillet, Acting President of Ecole Polytechnique, Federale Lausanne, said data alone was useless: “It needs to be processed and fitted into models and the better the models, the better our understanding of the way our planet functions.” He pointed to an exciting future centred on the potential of ‘Big Data’ coupled with the ubiquity of smartphones. “This is changing the way we do science. Every citizen has the potential to become a scientist.”

Mr Serge Troeber, Chief Underwriting Officer, Corporate Solutions in Swiss Re, said his company was already reaping the benefits of collaborating over data. He cited the use of satellite imagery from the European Space Agency to help assess damage from floods in Canada last year as one example. “Climate change is affecting the insurance industry considerably; we need to consider whether today’s one-in-100 years flood is tomorrow’s one-in-30-years flood,” he said.

Ms Karine Siegwart, who is Vice Director of the Swiss Federal Office for the Environment, moderated the panel, one of the highlights of the Tenth Plenary Session of the Group on Earth Observations (GEO-X) and Ministerial Summit held in Geneva. The Group on Earth Observations is a voluntary partnership of governments and international organizations, which is coordinating efforts to build a Global Earth Observation System of Systems. The Group was launched after the 2002 World Summit on Sustainable Development and by the G8 recognizing the importance of international collaboration to support decision making in an increasingly complex and environmentally stressed world.

Sources: United Nations Office for Disaster Risk Reduction (UNISDR)

## **Recommended Practices: Using Space Technologies for Disaster and Risk Management**

At the 4th meeting of the UN-SPIDER Regional Support Offices on 11 February 2013 in Vienna, Austria, the UN-SPIDER’s network was developing recommended practices on the use of space-based information for disaster risk management and emergency response. The practices deal with a variety of topics such as droughts, floods, agricultural monitoring or land degradation and include detailed information on the data and methodologies used as well as step-by-step instructions.

Regional Support Office already submitted five practices with others to follow. These practices were to be discussed at the 5th UN-SPIDER RSO-Meeting on 13 and 14 February 2014 in Vienna, Austria, and disseminated through the UN-SPIDER Knowledge Portal once final.

- Flood Mapping: This practice is devoted to the use of SAR satellite imagery for flood mapping. The practice shows the use of ESA NEST software for pre-processing and processing of SAR imagery using a threshold method for deriving the flood extent. Quantum GIS is used as a software to visualize the results of image processing. This practice was developed by the Space Research Institute NASU-SSAU, Ukraine.
- Crop Yield Forecasting: This practice is focused on using NDVI (Normalized Difference Vegetation Index) values derived from MODIS to build a linear regression model for crop yield forecasting. It is shown how Quantum GIS software can be used to extract average NDVI values over administrative regions. This data is further integrated with official statistics on crop yield to build a regression model. For this purpose, any statistical package can be used. This practice was developed by the Space Research Institute NASU-SSAU, Ukraine.
- Flood risk management and response: This practice presents three examples of using satellite data in the context of floods. Two are focusing on risk management through flood plain delineation using topographic analysis based on free SRTM elevation data. The third practice is looking at water body detection for rapid flood mapping in emergency situations using SAR data. This practice was developed by the [National Space Research and Development Agency \(NASRDA\)](#), Nigeria and the National Space Activities Commission (CONAE), Argentina. The Agustin Codazzi Geographic Institute (IGAC) developed an additional practice on flood susceptibility based on Radarsat 2 and CosmoSkyMed data, Ultracam D, RapidEye and SPOT 5 data, SRTM digital elevation model and high resolution digital terrain model as well as field data. The final susceptibility map contains information on geology, geomorphology, soils, and land use and land cover.
- Drought Monitoring and Assessment: This practice explains the creation of multi-temporal drought severity maps based on MODIS satellite data using different satellite based vegetation Indices, such as NDVI, NDVI-Dev, VHI, VCI, TCI and WSVI. Based on the most appropriate selected Index, a variation matrix for



certain months in particular region(s) is obtained. This practice was developed by the Iranian Space Agency (ISA), Iran.

- Land Degradation Monitoring: This practice is demonstrating a modelling approach for land degradation monitoring. Input data include free satellite based rainfall, slope, and vegetation data plus population, soil and various baseline datasets. The resulting potential and actual land degradation index map, change map, and land degradation hotspots can be used to support policy decisions for combating land degradation and appropriate planning of natural resources. This practice is developed by the [Regional Centre for Mapping of Resources for Development \(RCMRD\)](#) in Kenya based on results of the [AMESD project](#).

The Recommended Practices are complementing a similar effort of Regional Support Offices on documenting lessons learned on the use of Space-based information in the case of a particular disaster in the country of the RSO. In the context of these booklets, the Space and Upper Atmosphere Research Commission (SUPARCO) of Pakistan focused on floods and the Iranian Space Agency on drought. The documents are still being reviewed and will be made available on the UN-SPIDER Knowledge Portal.

### [Landsat 8 celebrates first year of success](#)

NASA launched the Landsat 8 Earth observing satellite from Vandenberg Air Force Base in California on February 11, 2013. Landsat 8 is the latest success in a decades-long NASA and U.S. Geological Survey partnership that has provided a continuous record of change across Earth's land surfaces since 1972. Orbiting 440 miles above Earth, Landsat satellites document natural processes such as volcanic eruptions, glacial retreat, floods, and forest fires, and human processes such as urban expansion, crop irrigation, and forest clear-cutting. Since 2008, all Landsat data are freely available to anyone on Earth.

On May 30 2013, NASA transferred the satellite to the USGS, which now operates Landsat 8 along with older sister Landsat 7. With two Landsat satellites on orbit, the USGS can provide data every eight days for any spot on the Earth's landmasses, supporting water managers, agricultural commodities markets, and scientists around the globe.

"For over forty years, the Landsat Program has provided a valuable stream of image data of the Earth's landscape. The newly activated Landsat 8 satellite continues this mission, sending images to the USGS Earth Resources Observation and Science (EROS) Center," "The land and water resource data from Landsat 8 is a great asset to agricultural producers and others in both the public and private sectors. The images produced are a vital planning tool, allowing researchers to analyze the ways in which land use and management have changed, and giving policymakers important information as they seek to develop sensible economic and environmental policy, including track flooding, wildfires, drought, and other changing environmental conditions.

Landsat 8 is stocked with a 10-year supply of fuel and carries two highly sensitive observation instruments, the Operational Land Imager and the Thermal Infrared Sensor. Advanced technology increases the reliability and sensitivity of these instruments, while the improved measurements are still compatible with the past Landsat data record. Landsat 7 and Landsat 8 together collect nearly 1000 images per day, almost double the amount of data collected three years ago when Landsat 5 and 7 were operating together. This increased data collection benefits all Landsat applications, especially in persistently cloudy areas (e.g. humid tropics and high latitudes). The USGS data processing system provides images to the public within five hours of the data's arrival at the USGS EROS. This speedy data delivery has significant benefits for disaster support.

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



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

The first Sentinel 1a will use radar to map the surface of the Earth and will be launched in April. The Mission will provide an all-weather day-and-night supply of imagery. It will also provide maps to strengthen emergency service and response

to natural disasters.

The second mission should follow in 2015. It will carry technology to monitor vegetation, soil and water cover, inland waterways and coastal areas. It should also provide information for emergency services.



Sentinels 3, 4 and 5 will provide all sorts of data on temperature and topography as well as filling the gaps of the other missions.

Sentinel 1a is currently undergoing final testing in France. Shortly, it will be transferred to Italy, where it will take an Antonov transport plane to the Guianese spaceport in South America, from where it will be launched. Read more: [BBC UK](#).

### [Global forest watch maps now available on ArcGIS online](#)

Data from Global Forest Watch, an online forest monitoring and alert system is now available on Esri's ArcGIS Online GIS cloud service. By using a portal on Esri's platform to access GFW Global Forest Watch satellite data and crowd-sourced information, people can add powerful maps, datasets, and applications to their forest projects and better analyze indicators of forest change. Global Forest Watch, a partnership of more than 40 organizations led by the World Resources Institute, uses GIS maps and data to promote sustainable forest management and policy. Esri, the world leader in GIS, strongly supports the GFW mission to empower people everywhere to better manage forests.

"Thanks to dramatic advances in technology, we can, for the first time, see what is happening in forests in near real-time," Dr. Nigel Sizer, director of the global forest initiative World Resources Institute said. "GIS helps us take very powerful data and make sense of it. The analytical capabilities of GIS enrich our understanding of the earth's forests of not only where but why and how."

On February 20, World Resources Institute launched the Global Forest Watch website. In tandem with the launch, Global Forest Watch data went live on ArcGIS Online, extending the GIS cloud platform to Global Forest Watch data users. People can use the service to track deforestation throughout the world. "Monitoring forest health and designing sustainable solutions is a challenging task, but an essential one," Esri president Jack Dangermond said. "The Global Forest Watch initiative demonstrates the capacity of open data, shared systems, and platform technologies to bring many experts together to design solutions for a universal problem."

To promote transparency in forests around the world, Global Forest Watch combines near real-time satellite monitoring technology, forest management and company concession maps, protected-area maps, mobile technology, crowd-sourced data, and on-the-ground networks. Within ArcGIS Online, users can now access Global Forest Watch data and add it to a basemap. They can also draw from Esri's massive data collection, such as Landsat, to get a more comprehensive perspective about complex problems. In addition, they have access to Esri's premium content as well as content added to the service by users every day.

Esri, along with more than 40 organizations, participated in creating the strategic vision and implementation of Global Forest Watch's online tool at [globalforestwatch.org](#). Esri's application extends the analytical capabilities of this data. The Global Forest Watch platform is intended for use by stakeholders in the world's forests, including concerned citizens, government leaders, buyers, and suppliers of sustainable forest products who seek to better manage forests and improve local livelihoods.

### [New maps highlight habitat corridors in the tropics](#)

A team of Woods Hole Research Center (WHRC) scientists created maps of habitat corridors connecting protected areas in the tropics to incorporate biodiversity co-benefits into climate change mitigation strategies. Drs. Patrick Jantz, Scott Goetz, and Nadine Laporte describe their findings in an article entitled, "Carbon stock corridors to mitigate climate change and promote biodiversity in the tropics," available online in the journal *Nature Climate Change* on January 26.

Climate change and deforestation are changing tropical ecosystems, isolating organisms in protected areas that will change along with climate, threatening their survival. Nearly every animal and plant species requires traveling some distance for nutrition, reproduction, and genetic diversity, but few conservation or climate mitigation strategies take the connections between conserved lands into account. These habitat corridors are essential for longer-term biodiversity conservation, while also providing opportunities for climate change mitigation in the form of carbon sequestration and avoiding emissions from deforestation.

According to lead author Dr. Jantz, "Maintaining connectivity of forest ecosystems provides ecological and societal benefits ensuring long-term species survival and providing room for ecosystems to reorganize in response to climate change and protecting ecosystem services that people depend on." Co-author Dr. Goetz sees corridors as "avenues for migration of flora and fauna" needed for their survival "under the climate change we're already committed to".

The team used a high-resolution data set of vegetation carbon stock (VCS) to map 16,257 corridors through areas of the highest biomass between 5,600 protected areas in the tropics. For Dr. Jantz, "the VCS corridor approach informs global frameworks for land management based climate change mitigation by showing which forests contain significant carbon stocks and are important for tropical biodiversity."



Part of the study focused on the Legal Amazon, where the team used economic and biological information combining species richness and endemism with economic opportunity costs and deforestation threats to prioritize optimal corridors. For Dr. Goetz, "Conserving tropical forests ultimately requires prioritizing the services they provide to people in a local setting. Identifying lands locally valuable for agriculture or other high-value uses, considering biodiversity and the threat of deforestation, our analysis provides both maps and a framework for realistic conservation planning."

Dr. Laporte adds, "Because it is unlikely all remaining tropical forests can be protected, the corridors defined by this study provide a way to prioritize lands in the context of the multiple benefits of tropical forest conservation." According to Dr. Thomas E. Lovejoy, a Senior Fellow at the United Nations Foundation, "This represents a significant step towards the kind of integrated planning and management essential for sustainable development."

This work was made possible through the support of NASA, the Gordon and Betty Moore Foundation, the Packard Foundation, and the Google.org Foundation.

Full citation for the Nature Climate Change article: Jantz, P., S. Goetz, and N. Laporte. 2014. Carbon stock corridors to mitigate climate change and promote biodiversity in the tropics. Nature Climate Change. doi: 10.1038/NCLIMATE2105.

Source: <http://whrc.org/news/pressroom/PR-2014-JantzGoetzLaporte.html#sthash.goG5hq5l.dpuf>. WHRC is an independent research institute where scientists collaborate to examine the drivers and impacts of climate change and identify opportunities for conservation around the globe.

## **Nigeria: Nasarawa in last lap of lands registry technology**

The total land size of 27,300 square kilometers of Nasarawa State, sharing boundary with five states and the Federal Capital Territory (FCT), all within the North-Central and North-East zones of the country: FCT in the North-West, Plateau in the North-East, Kaduna in the North, Benue in the South, Kogi in the South-West, and Taraba in the South-East - are now in aerial images called orthophotos.

Aeroprecisa Limited, the firm handling the provision of Digital Aerial Mapping (DAM) of Nasarawa, in what will lead to the computerization of the land management and administration in the state, completed flying the state to capture the images, in the late days of December, 2013.

The firm resumed flying after the operation was suspended several times between 2012 and 2013 because of the ceiling of cloud that thickened around at various periods. Approvals to fly the state borders with FCT - considered a restricted area because of the No-Fly-Zone also did not come easy from concerned authorities including the presidency and the military high command, until last December, the state government said.

Sonny Agassi, state commissioner of Lands and Urban Development, supervisors of the project, told Daily Trust that the flight operations with light aircraft fitted with high powered cameras that captured detailed images of every property on the ground across the 27,300 kilometres of land in the state, was completed after full approvals were obtained from high authorities by the governor, Umaru Tanko Al-Makura.

He said relevant authorities including regulatory and security bodies had given the approval to fly parts of Karu at the border with FCT, designated as No Fly Zone because of the nearness to certain security zones in Abuja.

DAM, a component of the N2.7 billion (US\$16,876,561) Nasarawa Geographic Information Systems (NAGIS), a 24-month project of urbanization, is being handled by the firm under the totality of the NAGIS project undertaken by Siraj Consultancy Engineering.

NAGIS is a 21st-century urbanization project with an output expected to provide the roadmap that will lead the current administration to give Nasarawa the same planned development as its big neighbour, Abuja.

The firm commenced test flights operations on May 31, 2012 over Keffi and resumed flying of Lafia, Keffi, Nasarawa and Doma towns in December of the same year capturing aerial images processed into the data base at NAGIS' recently commissioned complex in Mararaba, near Abuja. Now, every detail of property on ground in the entirety of Nasarawa is photographed and processed into a computer data base, to provide the foundation for the three components of NAGIS: GIS, Digital Aerial Mapping, and Cadastral Districts Planning.

"It's a milestone, making Nasarawa one of the first generation of areas in the whole of Africa, to acquire this technology," Sonny Agassi, a Nigerian-Canadian who is supervising the project said. He said, "From an agrarian state, Nasarawa has now become the most sophisticated part of Nigeria - with a technology that beats the rest of the country."

Nasir el-Rufai, the former FCT minister who pioneered GIS there confirmed when he participated in the commissioning of NAGIS complex in Mararaba on May 30, 2013 that NAGIS beats AGIS (Abuja GIS) because AGIS lacks DAM. The FCT administration, several years after the project was executed in 2003, is yet to have the flying component, compelling AGIS to rely on Google images, or satellite images to provide the foundation for their GIS. Read more ..



## Map experts deployed to South Sudan

MapAction has deployed two mapping experts to South Sudan at the request of the United Nations. The volunteers will be working in partnership with the United Nations Office for the Co-ordination of Humanitarian Affairs and other humanitarian responders to assess the impact of recent violence and aid priorities. The charity, based near High Wycombe, gathers data to create maps of the location and needs of displaced people so that aid agencies can plan and implement their response.

South Sudan, which formed in July 2011, has been hit by unrest since December 15, when fighting among presidential guards later spiraled into ethnically based violence across the country.

A spokesman for MapAction said: "Wide-spreading fighting has extended across the country, affecting hundreds of thousands of civilians. The crisis is exacerbating what was already a challenging humanitarian situation, with 4.4 million people requiring humanitarian assistance prior to recent violence. "According to United Nations statistics, an estimated 413,000 people have been internally displaced as a result and over 74,000 more have fled to neighbouring countries (as of 14 January).

"Aid agencies believe that the number of internally displaced people could be much higher, as insecurity and logistical constraints have prevented relief workers from traveling outside towns."

MapAction has been operational since the Indian Ocean tsunami of 2004. Since then it has sent teams to more than 30 humanitarian crises including Haiti and Pakistan after an earthquake and flooding respectively. Copyright (c) Press Association Ltd. 2014, All Rights Reserved.

## RCMRD to assist Sudan National Survey Authority (SNSA) and RSA in long-term strategic planning



Representatives from the Regional Centre based in Nairobi attended a meeting with members of the Sudan National Survey Authority (SNSA) to undertake national surveying and mapping exercises, as part of SNSA's vision is to become the Centre of Excellence in Geomatics in Sudan and Africa.

*Caption (Left-Right) Mr. Abdalla Mohamed Abdalla - Head of GIS and Mapping Department, Directorate of Surveying, Ministry of Planning & Infrastructure, Khartoum State, Dr. Katetegeilwe Rwiza - Director, Land Surveys and Management RCMRD, Engineer Abobakr Ali Mohamed -Head of Surveying*

*Department, Directorate of Surveying, Ministry of Planning & Infrastructure, Khartoum State, Mr. Danny Mubanga – Surveyor General, Survey Department, Ministry of Lands, Natural Resources and Environmental Protection, Zambia, Mr. Zabron Masele – retired Director, Surveys and Mapping Division, Ministry of Lands and Human Settlements Development, Tanzania, Mr. Grant H. Bowers - Geographic Information System Officer, African Union Border Program, Ethiopia, Dr. Tesfaye Korme - Remote Sensing, GIS and Mapping RCMRD.*

Sudan National Survey Authority has the mandate of delimitation and demarcation of boundaries between the sixteen Regional States and countries sharing borders with Sudan. RCMRD will partner with SNSA and the Sudan Remote Sensing Authority (RSA) to assist achieve its long-term strategic plan and associated operational plan that indicate the strategic objectives and guide the implementation of annual activities.

## Call for Proposals: RCMRD/SERVIR-Africa Small Grants Program

The SERVIR-Africa program is a science, technology and development program established through a partnership between United States Agency for International Development (USAID) and National Aeronautics and Space Administration (NASA) in collaboration with the Regional Centre for Mapping of Resources for Development (RCMRD). The SERVIR program touches upon multiple sectors related to international development and supports the objectives of the intergovernmental Group on Earth Observations (GEO) in the areas of agriculture, biodiversity, climate change, disasters, ecosystems, health, water, and weather. The overarching goal of the SERVIR program is to improve environmental management and resilience to climate change. With an eye toward this goal, the SERVIR program works to build the capacity of SERVIR regional hub institutions, governments and other key stakeholders to integrate earth observation information and geospatial technologies into development decision-making.

SERVIR-Africa has launched a small grant program geared towards engaging all active members in the Geo-information and GIS sector. It aims to help grow the network of organizations, universities, and institutions in the Eastern and Southern Africa region that utilize geospatial tools and information to improve



decision making related to climate adaptation, vulnerability, or mitigation. The anticipated outcome of the grant activities is to stimulate the innovative use of geospatial tools and information to translate science into sustainable policy and practice that addresses the development challenges posed by climate stresses in the following thematic areas; Agriculture/Ecosystems and Sustainable Landscapes, Water Resources Management, Geo-spatial Information Technology and Disasters.

Call for proposals from eligible organizations/institutions within RCMRD member States. The eligible organizations include non-governmental organizations, community-based organizations, research institutions, universities, private organizations, international non-governmental organizations, registered foundations, professional associations, and consortiums of the above.

Deadline for submission of concept papers: 28 March, 2014. Submit concept papers to: [servirgrants@rcmrd.org](mailto:servirgrants@rcmrd.org). For further information, please contact Wahu Mbatia at [wahu@rcmrd.org](mailto:wahu@rcmrd.org).

### [XXV FIG International Congress, Kuala Lumpur, Malaysia, 16-21 June 2014](#)

The overall theme of the FIG Congress is “Engaging the Challenges, Enhancing the Relevance”. Every four year FIG organises a congress, where thousands of surveying and land professionals from across the globe meet to debate and get inspired, particularly on current developments and contributions that will allow the profession to be continually armed with knowledge and best practices.

It will for the first time since its beginning in 1878 for the FIG Congress to be held in Asia, and the silver jubilee Congress will be a culmination of the four-year FIG Work Plan as well as the start of a new 4-year term with a new FIG President who will be elected at the General Assembly. Do not miss this grand celebration! [Invitation...](#) the [registration has opened!](#) - Take advantage of the discounted early bird registration fee! [Register now...](#)

### [National Institute of Surveyors Annual General Meeting](#), 19-23 May 2014, Benin, Edo State, Nigeria

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

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

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

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

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

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

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



### [SWALIM completes preliminary estimation of land cover in northern Somalia](#)

Sustainable management of land resources requires one to have accurate and up to date information on the major vegetation types and land uses. For Somalia, the existing information is old and requires updating. This need is urgent considering the widespread land degradation witnessed throughout the country. The government



and development agencies continuously requests for updates on land cover and land use information on Somalia. In response, SWALIM has worked tirelessly to generate the new land cover and land use information.

SWALIM adopted the USGS dot matrix land cover mapping technique approach that allows mapping of large areas accurately at a reasonable cost and time. Using this approach and working with over 290,000 km<sup>2</sup> of satellite imagery, SWALIM recently completed a new land cover map for the Northern part of Somalia. This work follows a similar exercise for Southern Somalia completed earlier this year, which takes SWALIM a step forward to providing a comprehensive land cover and land use dataset for Somalia.

Seven types of land cover based on the FAO LCCS3 have been mapped for the new dataset. A preliminary land cover map for Northern Somalia shows interesting initial results, for instance an increase in agricultural land in the areas around Hargeisa, Gebiley and Borama from 1,589 to 2,401 Km<sup>2</sup> as compared to a study done in 2007. The next step is to verify the preliminary land cover map and characterize associated land uses. SWALIM has trained staff from the Ministry of Agriculture, and Ministry of Environment and Rural Development in Somaliland who are currently engaged in a field data collection surveys. This exercise will be extended to Puntland in the near future.

Once verified and completed, the new dataset will provide vital information to support agricultural interventions, land use management, and planning and land and environment policy development among other uses. SWALIM hopes to extend the mapping to areas that are not mapped in order to provide a complete land cover and land use dataset for the entire country.

## [Remote Sensing / Geographical Information Systems: Helping to conserve Tanzania's wildlife and wild places](#)

Where? is an increasingly important question in conservation. Where is a species of conservation interest found? Where is a species' habitat in critical condition? Where will predicted climate change have the greatest impact? Where are threats to species' survival the greatest? Where do the ecosystem services provided by protected areas extend? The use of Geographic Information Systems (GIS) to analyse location-based data can provide an answer to these questions and in doing so deliver critical scientific and management information to conservation agencies.

GIS is essentially a collection of computer-based tools for processing, analyzing, and storing location based data. An essential pre-requisite for the use of GIS is a location-based question to answer. For example, what is the area of Abbot's duiker (*Cephalophus spadix*) habitat in the southern highlands of Tanzania impacted by wildfire in 2009? Based on the specifics of the question, it is possible to identify a list of datasets and GIS processing and analysis steps necessary to provide a relevant answer. A simplified approach to answering the above question would require datasets, one indicating the extent of Abbot's duiker habitat, and the other the extent of wildfire in 2009. Processing would involve an intersect calculation to determine the area of overlap between the datasets.

A significant amount of data that collected by WCS in Tanzania is geo-referenced using handheld Global Positioning System (GPS) devices. This allows biological data, collected by teams of researchers in the field, to be imported into GIS for analysis with auxiliary geo-referenced datasets (for example land cover, river networks, human settlements, protected area boundaries). The resulting spatial analyses provide WCS researchers and managers in our partner organizations with information that can assist in planning conservation activities on the ground.

One source of the auxiliary data used in these analyses is remote sensing (RS). Remote sensing in this context involves the collection of information about the earth's surface by cameras and sensors mounted on either aerial or satellite platforms. A traditional form of remote sensing data is an aerial photograph. Recent developments in satellite and sensor technology mean that 'better' information is increasingly available from remote sensing (better means at higher spatial, temporal, and radiometric resolutions). We currently use remote sensing data to develop information on local land-cover, outbreaks of wildfire, and change in vegetation condition over time, river flow assessments, invasion of non-indigenous tree species, and as base maps for displaying the areas of work.

The core aims of the Tanzanian GIS – RS project are threefold:

- Develop spatial applications, which incorporate a broad range of geo-referenced data in GIS analyses to answer questions, which are relevant for conservation research and management activities in Tanzania.
- Build local capacity to conduct spatial data collection and analysis, including the IT infrastructure necessary for working with large geo-referenced datasets.
- Promote the use of spatial analyses in applied conservation management decision making.

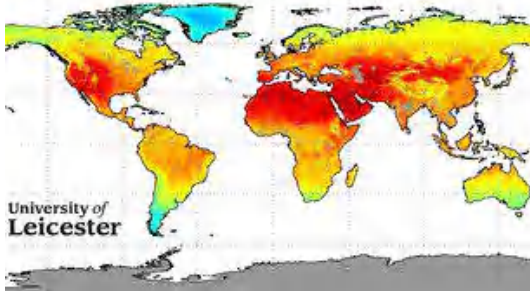




During the day to day work, the use of commercial desktop GIS and image processing software is critical, however there is an increasing emphasis on developing applications based on open-source and web-based approaches.

## GIS Tools, Software, Data

### [GlobTemperature project: One stop shop for surface temperature data](#)



The European Space Agency (ESA) has launched a new project to provide scientists with a one-stop shop for land, lake and ice temperature data - measured by satellites. The GlobTemperature project was launched under the Data User Element Programme and will merge surface temperature data from a variety of satellites into a common format, which will be made available in a single online archive.

ESA reported: "The data will come from instruments including SEVIRI on Europe's MSG mission, AVHRR and IASI on MetOp, as well as American and Japanese instruments and from the upcoming Sentinel-3 mission. Archived data from the

(A)ATSR instruments flown on the ERS and Envisat missions will also be included.

The new, global datasets developed under GlobTemperature will provide a more complete representation of day and night temperatures, including estimates of clear-sky versus cloudy sky biases."

Like thermometers in the sky, satellite instruments can measure the temperatures of Earth's surfaces. ESA's new GlobTemperature project is merging these data from a variety of spaceborne sensors to provide scientists with a one-stop shop for land, lake and ice temperature data. Information on land surface temperature is a key parameter for studying the Earth system. It plays an important role in physical processes such as atmospheric convection and surface evaporation, biological processes like vegetation sensitivity to stress and to fire, and chemical processes such as emissions of gases from the surface to the atmosphere.

Long-term trends in surface temperature can also be an indicator of climate change. Meteorologists and climate scientists rely heavily on air temperature measurements made using thermometers installed at ground-based weather stations despite the availability of satellite-derived measurements. This is mainly due to the complexity of the data from different satellite instruments, utilising both infrared and microwave data, and the variety of formats in which the data are made available. It is also difficult to convert the satellite measurements of the temperature of the solid land surface to the commonly used air temperature. An example of this is the difference in temperature between hot tarmac and cooler grass on a summer's day even at the same air temperature.

In addition, satellite data suffer from gaps due to cloud cover or provide limited sampling of the day/night temperature cycle. To fill these gaps and better meet users' needs for land surface temperature data, ESA recently initiated the GlobTemperature project under the Data User Element Programme. GlobTemperature will merge surface temperature data from a variety of satellites into a common format which will be made available in a single online archive.

The data will come from instruments including SEVIRI on Europe's MSG mission, AVHRR and IASI on MetOp, as well as American and Japanese instruments and from the upcoming Sentinel-3 mission. Archived data from the (A)ATSR instruments flown on the ERS and Envisat missions will also be included. The new, global datasets developed under GlobTemperature will provide a more complete representation of day and night temperatures, including estimates of clear-sky versus cloudy sky biases.

To promote uptake of these datasets, five case studies are being undertaken in different application domains to demonstrate the benefits that satellite measurements can bring.

For example, three test sites in Africa, Europe and North America will investigate to what extent satellite-derived surface temperature measurements can contribute to accurately predicting evapotranspiration rates. "The temperature of land surfaces is a key parameter controlling the surface heat fluxes, and its accurate estimation from satellites will contribute to improving the evapotranspiration estimates at global scale," said Carlos Jimenez from the French company Estellus. Evapotranspiration models are used to monitor drought conditions and predict agricultural yields, and are particularly important in developing countries where in-situ observations are virtually non-existent. The GlobTemperature project will run for the next three years, with the next open user consultation planned to be held at the Karlsruhe Institute of Technology on 25-26 June. Read more...



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

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

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

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

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

## SWALIM digital document repository (SDDR)

The SWALIM Digital Document Repository (SDDR) was updated for the third quarter of 2013 (July, August, and September). The updates include new series data, new water and land reports and new land maps as indicated in the list below:

- Time series data • Climate data from automatic weather stations • Manual rainfall data • River levels data • Discharge Measurements data • Synoptic stations data
- Reports and Documents: a) Water Reports series: • W-21 Climate Change Impacts on Water Resources of Somaliland and Puntland • W-22 Water Demand Assessment for the Juba and Shabelle Rivers. b) Land Reports series: • L-19 Methodology for Monitoring of Mangroves in Somalia • L-20 Practical guide for Land degradation monitoring • RSM-02 Estimating Cultivable Areas in Central and Southern Somalia using Remote Sensing
- Maps and spa al data • Cul vable areas in Southern Somalia ( District maps) • Relief types of the northern AOI • Land cover change map from visual interpretation • Land cover of Northern Area of Interest – Main aggregations • Irrigated Agricultural areas of Puntland

SWALIM will continue to ensure that all our information and data is available to our stakeholders through this one-stop platform, which is updated on a quarterly basis throughout the year. SDDR is accessible online via <http://sddr.faoswalim.org/sddr/>

Should you experience any difficulties in accessing SDDR contact us on [swalim@fao.org](mailto:swalim@fao.org).

## **Training of Trainers in use of Earth Observation Tools for Water Quality Assessment**



The workshop organized by Regional Centre for Mapping of Resources for Development (RCMRD) in collaboration with Water Capacity Building Network (WaterCap), TIGER Capacity Building Facility (TCBF), the Kenya Water Institute, Kenya and UNDP-CapNet kicked off at the RCMRD, Nairobi, Kenya from 17<sup>th</sup> to 21st February 2014.

The training has drawn participants from Kenya and several other developing countries. The training focus on acquisition of hands-on skills in the application of Geographic

Information Systems, Earth Observation, and Remote Sensing in water quality assessment.

## 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.rcmr.org/geonetwork> or via email to [remotesensing\(at\)rcmr.org](mailto:remotesensing(at)rcmr.org). Further information, please visit website: [www.rcmr.org](http://www.rcmr.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).

## 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: March and April, 2014



The course covers GIS theory and functionality: The desktop products (ArcView, ArcEditor, and ArcInfo; Server products (ArcGIS server and ArcSDE); Programming to enable customization of the product, ArcGIS extensions, as well as Introductory and advanced courses in ERDAS Imagine Remote Sensing Software'. Various training venues are available at Esri South Africa, for further information contact: 011 238 6300 or [Email the training team](#)

## ESRI Eastern Africa GIS and remote sensing courses

ESRI Eastern Africa is now offering update courses to conform to improvements in ArcGIS 10 and ENVI 4.8, conducted with skilled and 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@esria.co.ke](mailto:training@esria.co.ke), Phone: +254 20 2713630/1/2 or visit the offices on 3rd floor, KUSCCO Centre, Kilimanjaro Avenue, Upper Hill, Nairobi, Kenya.

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



Apply online for courses starting in the academic year 2014-15. Browse by programme (degree, diploma, and certificate), course domain (disaster management, earth sciences, geoinformatics,



governance, land administration, natural resources, urban planning, and water resources or location in the course finder at [www.itc.nl/CourseFinder](http://www.itc.nl/CourseFinder). For printed copy of the study brochure, email: ([alumni@itc.nl](mailto:alumni@itc.nl)).

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



The Regional Centre for Training in Aerospace Surveys (RECTAS) is offering a number of three-week courses. Note that RECTAS is able to package and deliver customised training for 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).

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

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

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

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

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



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

- Geographic Information Systems (GIS) – 2 weeks – First week of every month
- Principles of Earth Observation (Remote Sensing) Digital Image Processing - 2 weeks- Every month
- Global Positioning System (GPS) for General Application and Mobile Mapping – 5 days
- Digital Cartography and GIS Mapping – 2 weeks
- Autocad Map 3D 2014 – 2 weeks
- Relational Database Management System (RDBMS) MS Access/SQL Server – 2 weeks
- Certificate Course in Earth Observation and Spatial Modelling for Integrated Water Resource Management – 9 weeks – 19<sup>th</sup> January 2015
- Digital Photography – 2 weeks
- RTK/DGPS Surveying and Data Processing for Precise application – 2 weeks
- Services, Repair and Acquisition of Opto-mechanical Surveying Instruments – 2 weeks
- Bridging Certificate in Mathematics (JKUAT) – 3 months
- Diploma in IT (JKUAT) – 18 months
- Integrated Computer Training (Beginners and Advance) – 3 months – 2hrs/day
- Computer Programming – 8 weeks – 2 hrs/day
- Web Content Management – 2 weeks – 2hrs/day
- Statistical Analysis using SPSS, STATA – 3 weeks – 2hrs/day
- Mobile Computing - Android, JQuery Mobile – 4 weeks – 2hrs/day
- Project Management (Ms Project) – 2 weeks
- Tailor made courses in GIS/RS, ICT and GPS can also be organized to meet organization's needs. Minimum number of candidates in class is ten – Any time and consultative

### Funding Opportunities, Awards, Support

#### African Water Association - Small Grants for Young African Water Professionals

With funding by the U.S. Agency for International Development, the African Water Association in partnership with Development Alternatives, Inc. will award small grants to young professionals in Africa who are working in the water sector. Grant-funded projects should aim to reduce water losses; increase access to improved sanitation; and/or foster communication and knowledge sharing regarding water management and sanitation in Africa. Grants will range from US\$2 thousand to US\$10 thousand for projects up to one year. The closing date for applications is 14 March 2014.



## **[Aga Khan Foundation - International Scholarships 2014-2015](#)**

The Aga Khan Foundation supports programs in rural development, broadly defined, in a number of developing countries. It provides scholarships and loans for postgraduate studies to outstanding students from the developing world, with priority for masters studies. The Foundation also considers applications for PhD programs in certain circumstances. Applications are invited from the following nationalities: Afghanistan, Bangladesh, Egypt, India, Kenya, Kyrgyzstan, Madagascar, Mozambique, Pakistan, Syria, Tajikistan, Tanzania, and Uganda. The application deadline is 31 March 2014.

## **[European Commission \(EC\) - Food Security in South Sudan](#)**

The EU Delegation to South Sudan announces funding to help vulnerable populations in South Sudan sustainably produce and obtain access to food. Related aspects are the rehabilitation of livelihoods and of agricultural and livestock production, resilience to climate change, and others. Eligibility extends to nonprofit NGOs in the EU (plus its candidate countries and the EEA), developing countries, and OECD/DAC countries. Grants will range from €1 million to €1.5 million, subject to cost shares. Reference EuropeAid/135010/DD/ACT/SS. The deadline for concept notes is 07 March 2014.

## **[European Commission \(EC\) - Grants for Climate Change in Namibia](#)**

The EC seeks to fund solutions for energy efficiency that contribute to climate change adaptation and mitigation in rural areas of Namibia. Small grants are €50 thousand to €100 thousand for projects of one to three years. Large grants are €300 thousand to €1 million (adaptation), and €500 thousand to €1.5 million (mitigation), for projects of two to four years. All grants are subject to cost shares. The program is open to non-state organizations, parastatals, local authorities, and private enterprises in Namibia and EU member states, as well as qualifying international organizations. Reference EuropeAid/135365/DD/ACT/NA. The closing date is 27 March 2014.

## **[European Commission \(EC\) - Intra-ACP Academic Mobility in Africa](#)**

The project "Africa For Innovation, Mobility, Exchange, Globalization, and Quality" aims to facilitate academic mobility among ten participating African universities. The current call (2nd cohort) is for masters and doctoral students who will enroll for defined periods at the partner institutions. The available courses include many in the agricultural sciences and natural sciences. The deadline for applications is 15 March 2014.

## **[Gadfly Project - Support for Geo-Based Web Applications 2014](#)**

The Gadfly Project offers in-kind grants to nonprofit organizations that can demonstrate novel uses for geo-based web applications. Gadfly provides services and training in the developing world to develop new geographical information systems (GIS), web maps, and geo-management practices. The closing date for proposals is 31 March 2014.

## **[German Federal Ministry for Food and Agriculture \(BMEL\) - Agricultural Research to Combat Malnutrition in Africa](#)**

The BMEL will fund research that addresses nutrition-sensitive food production in eligible African countries (Angola, Ethiopia, Madagascar, Mozambique, South Africa, Uganda, and Zambia). The focus will be fruits and vegetables, especially indigenous and neglected crops and other plant products, to improve the nutritional status of local populations. The work should strive to build awareness of nutrition among relevant stakeholders. Grants are to German institutions in collaboration with African partners. The application deadline is 17 March 2014.

## **[Institute of International Education - Carnegie African Diaspora Fellowships](#)**

The Carnegie African Diaspora Fellowship Program offers short-term fellowships to African-born academics at universities in the USA and Canada to collaborate with African universities in research, curriculum co-development, and/or graduate student training. Project requests to host scholars are submitted online by African higher education institutions in Ghana, Kenya, Nigeria, South Africa, Tanzania, and Uganda. Scholars whose discipline and expertise fit the activities and objectives proposed in a project request may be matched with the project. Scholars need to apply by 17 March 2014.

## **[International Initiative for Impact Evaluation \(3ie\) - Climate Change and Disaster Risk Reduction](#)**

In this thematic window, 3ie aims to produce a critical mass of evidence on what works in Reduced Emissions from Deforestation and Forest Degradation (REDD/REDD+), especially through early warning systems. Eligible countries are Bangladesh, Brazil, Colombia, Indonesia, Kenya, the Maldives, Mozambique,



Morocco, Nepal, Pakistan, and Uganda. 3ie will fund proposal preparation grants of up to US\$30 thousand to research institutes and consortia. The deadline for applications is 17 March 2014.

### [International Initiative for Impact Evaluation \(3ie\) - Micro Financing of Agriculture in South Africa](#)

In this policy window, 3ie offers grant funding for an impact evaluation of the Micro Agricultural Financial Institutions of South Africa (MAFISA) scheme implemented by South Africa's Department of Agriculture, Forestry and Fisheries. The lead institution making the application must be located in the Republic of South Africa. The deadline for submitting qualifications statements is 17 March 2014.

### [Regional Universities Forum for Capacity Building in Agriculture \(RUFORUM\) - Graduate Scholarships in Research Methods](#)

With funding provided by the Bill and Melinda Gates Foundation, RUFORUM offers a limited number of graduate scholarships for a master's degree program in research methods, hosted at Jomo Kenyatta University of Agriculture and Technology in Kenya. Priority is for staff members and research scientists at RUFORUM universities and National Research Institutes in the RUFORUM countries. Special consideration will be given to applicants from outside Kenya; women are encouraged to apply. Applications will be accepted during the period 24 March through 30 March 2014.

### [Taiwan International Cooperation and Development Fund - Scholarships for Higher Education 2014](#)

Taiwan's program of development assistance includes scholarships for university students in eligible developing countries to study in Taiwan. The program provides full scholarships for applicants from selected countries in the Asia-Pacific region, West Asia, Eastern Europe, Sub-Saharan Africa, and Latin America and Caribbean. Subject areas at Taiwan's participating universities include tropical agriculture, renewable energy, environmental sciences, conservation and wildlife management, and others. The application period is 01 January 2014 through 14 March 2014.

### [UK Government - Research on Groundwater for the Poor in Sub-Saharan Africa](#)

Three agencies of the UK government (DFID, NERC, and ESRC) are partners to support international research that combines social and natural sciences to enable sustainable use of groundwater for the benefit of the poor in Sub-Saharan Africa (UPGro). Consortium proposals are invited for funding of up to £1.9 million for projects of up to four years. The closing date for outline proposals is 03 March 2014.

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

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

## Employment Opportunities

### **Central Africa Natural Resource Policy Specialist, Brazzaville, Republic of Congo**

The World Resources Institute (WRI) is seeking a Natural Resource Policy Specialist to be based in Brazzaville, Republic of Congo. For more information on the position responsibilities and desired qualifications, please see apply online at [www.wri.org/careers](http://www.wri.org/careers). All applications must be submitted online through this career portal in order to be formally considered. For further information, please contact: Lauren Goers Williams at [lgoers@wri.org](mailto:lgoers@wri.org).

## Other

### [County Government of Marsabit, Kenya: Tender for Supply of Digital Aerial Photography Services](#)

Closing Date: 12/3/2014

The County Government is in the process of undertaking physical planning of Marsabit Central, Moyale, North Horr and Laisamis towns. The digital Aerial photography is to provide base data for the planning of the



above named towns. The County Government invites for sealed bids from eligible companies for Supply of Digital Aerial Photography services.

A complete set of tender documents may be obtained by interested candidates upon payment of non-refundable fees of Kshs. 1000 (One Thousands Shillings only) in the form of a banker's cheque drawn in favour of Marsabit County Revenue Account on or before 12th March 2014 at 10.00 am.

The documents should be deposited in the Tender Box situated at the Procurement office at the headquarters of the County Government of Marsabit and addressed to: County Secretary, County Government of Marsabit, P. O. Box 384-60500, Marsabit

Prices quoted should be net inclusive of all taxes and must be in Kenya Shillings and shall remain valid for (90) days from the closing date of the tender. The Tenders shall be opened soon thereafter at Pastoral Centre at 10:00 am in the presence of tenderers or their representatives who choose to attend. The County Government of Marsabit reserves the right to accept or reject any tender either in part or whole without giving any reason for its decision.

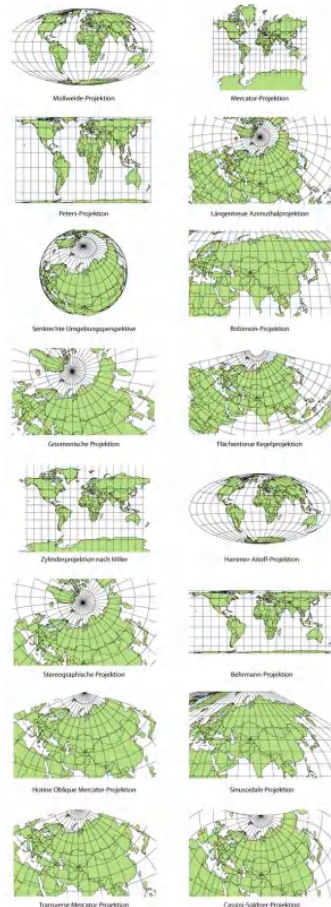
### First compilation of world's small hydropower data launched



The International Centre on Small Hydro Power (ICSHP) together with the United Nations Industrial Development Organization (UNIDO) have completed the first World Small Hydropower Development Report 2013, which is now available from a knowledge sharing portal: <http://www.smallhydropower.org/>.

Viewers can explore information of 20 regions and 140 countries or territories, with information on the electricity sector, renewable energy policy and the small hydropower sector (installed and potential capacity).

### Cartographic Anomalies: How map projections have shaped our perceptions of the world



At some point in all of our lives our perception of the world began to change-our knowledge of the world, from school or personal travel experience, began to grow in our minds a map of the world, which started to encompass more than just our hometowns and the surrounding suburbs. Soon this mental map started to include nearby states or territories, other countries, and slowly but surely a global mental map was created in each of our minds, unique and personal to every one of us.

These mental maps have common elements; for instance, Canada on your mental map will always be Canada, although the outlines may be fuzzy if you are not from there or do not have a specific memory tied to that location. We all generally can place Europe and Asia, India and Australia, South America and Africa on our maps.

Think of the map you learned about the world from in school- what did it look like? Was it colorful or topographical, with carefully outlined international borders or highlighting the physical geographical barriers present all around the earth? Did your teacher point out your country, your state, your hometown? What did it look like?

When you take a closer look at a map, you may realize that not all is, as it seems. Proportions are off ever so slightly, and the options of maps to look at differ in ways we could not imagine as young students. Everyone seems to have a different idea of how the world looks despite living in this era of satellites and technology, advanced GIS systems, and increasing global communication. In this article, we explore how the maps surrounding us have altered our perceptions of the world and how to be aware of this effect when studying geography and cartography.

#### The Dilemma of the Map Projection

Cartographers for centuries have been coming up against the same problem when attempting to accurately depict a visualization of the earth, as we know it - depicting a round earth on a flat surface. The most common map projections (Mercator, Peters, Mollweide, Eckert IV, Goode's Homolosine) each have critics and fans but were all created to solve a different cartographical

problem; all, it can be argued, are attempting to show the world as it truly is.

Mercator's projection of the world continues to be beneficial for navigation for sailors and pilots, all whom rely on the straight lines depicted on the map, which matches up, with the four cardinal directions on a compass.



The downside to Mercator's projection is that it is nearly impossible to show both shape and size of the landmasses being shown on a map- one must be sacrificed, and this tends to be size (as shape is very important on a map!). Cartographers call this size/shape discrepancy 'the Greenland Problem' as the Mercator projection shows the small island of Greenland (0.8 million square miles in size) to be roughly the same size as the continent of Africa (11.6 million square miles). Mercator's projection best compromises the true size and shape of the continents on Earth closer to the Equator, and the farther you get away from the equator the less accurate size is able to be depicted.

This cartographic anomaly has the following effect on how we perceive the world - developing countries, typically located in the southern hemisphere, are seen as being smaller than the so-called Western world (Europe, the United States, and Canada). This diminishes not only their size, but also their importance in an increasingly developing and global world. During the height of European colonialism and Western empire building, (some may argue this is still the case in different ways) this map projection served the dominant powers' purposes. Most people who look at a map do not automatically assume that it is biased or incorrect, and rarely are maps intentionally created to deceive; however, maintaining awareness of your own perceptions of the world is very important.

Cartographers have attempted to solve the age-old problem of size/shape by creating Equal-Area projections- these include the Mollweide, Peters, Eckert IV, and Goode's Homolosine projections. Due to its unique map shape, Goode's Homolosine projection has the least shape/size discrepancy of all the maps listed above.

The Peters projection rocked the world of cartography by directly challenging the assumptions of the Mercator projection - its perception of the world-aligned reality more closely, with what can be shown on a flat map surface. This map, by no means 100% accurate, still serves the purpose of changing perceptions of the world based on science and reality instead of map anomalies.

How do you think the world (starting with our perceptions) could change if the map looked differently? What if Australia was on top and the hemispheres switched? By changing how we look at a map we truly can begin to explore and change our assumptions about the world we live in.

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

## Conferences, Events

Date	Location	Event
<b>March 2014</b>		
17-21 March 2014	Tunis, Tunisia	<a href="#"><u>3rd Geospatial Conference in Tunis (GCT): Building geospatial bridges for the sustained development of North Africa</u></a>
19-20 March 2014	Dubai, UAE	<a href="#"><u>ICRS 2014: International Conference on Remote Sensing</u></a>
19-21 March 2014	Berlin, Germany	<a href="#"><u>2014 Global Land Project Open Science Meeting - Land Transformations: Between Global Challenges and Local Realities</u></a>
Barcelona, Spain	23-27 March 2014	<a href="#"><u>6th International Conference on Advanced Geographic Information Systems, Applications, and Services (GEOProcessing 2014)</u></a>
24-25 March 2014	Algiers, Algeria	<a href="#"><u>1st International Conference on Information and Communication Technologies for Disaster Management (ICT-DM 2014)</u></a>
<b>April 2014</b>		
1-4 April 2014	Rabat, Morocco	<a href="#"><u>3rd International Conference on the Use of Space Technology for Water Management</u></a>
7-10 April 2014	Paphos, Cyprus	<a href="#"><u>2nd International Conference on Remote Sensing and Geoinformation of Environment (RSCy 2014)</u></a> . Abstract deadline: 24 January 2014.
15-16 April 2014 <b>*NEW*</b>	Yogyakarta, Indonesia	<a href="#"><u>ASEAN Workshop on Development of Standard Operating Procedure (SOP) for utilisation of Space-based information during emergency response</u></a>





18-21 April 2014	University Park, Pennsylvania USA	<a href="#">International ISCRAM (Information Systems for Crisis Response and Management) Conference 2014: Empowering Citizens and Communities through Information Systems for Crisis Response and Management</a>
23-24 April 2014	Suez Canal University, Ismailia, Egypt	<a href="#">4th International Conference of Botany and Microbiological Sciences</a>
<b>May 2014</b>		
3 May 2014	To be confirmed	<a href="#">Intergraph Southern Africa User Group Meeting 2014</a>
5-9 May 2014	CICG, Geneva, Switzerland	<a href="#">Geospatial World Forum</a>
6-8 May 2014	Cape Town, South Africa	<a href="#">Esri African User Conference</a>
6-9 May 2014	Mauritius	<a href="#">IST-Africa 2014 Conference</a>
19-23 May 2014 <b>* NEW *</b>	Benin, Edo State, Nigeria	<a href="#">National Institute of Surveyors Annual General Meeting 2014</a>
21-23 May 2014	Krems, Austria	<a href="#">International Conference for E-Democracy and Open Government 2014 (CeDEM14)</a>
21-23 May 2014	Thessaloniki, Greece	<a href="#">5th International Conference on Geographic Object-Based Image Analysis (GEOBIA 2014)</a>
25-30 May 2014	Cancun, Mexico	<a href="#">46th GEF Council Meeting and GEF Assembly</a> Contact: <a href="mailto:secretariat@thegef.org">secretariat@thegef.org</a>
26-30 May 2014 <b>* NEW *</b>	Kiev, Ukraine	<a href="#">Fourth International Conference on Earth Observations for sustainable Development and Security</a>
27 May 2014	Hamburg, Germany	<a href="#">Call for Abstracts: International conference: Urban Regions under Change (URC 2014)</a>
<b>June 2014</b>		
2-4 June 2014	Paris, France	<a href="#">Global Space Applications Conference (GLAC)</a>
5-6 June 2014 <b>* NEW *</b>	Bonn, Germany	<a href="#">UN-SPIDER Expert Meeting on Space Technologies for Drought and Flood</a>
8-14 June 2014	Jeju ICC, Korea	<a href="#">20th World Congress of Soil Science (WCSS)</a>
15-21 June 2014	Riviera, Bulgaria	<a href="#">5th Jubilee International Conference on Cartography &amp; GIS &amp; Seminar with EU cooperation on Early Warning and Disaster/Crisis Management</a>
16-20 June 2014	Aalborg, Denmark	<b>The 8th INSPIRE Conference</b>
16-21 June 2014 <b>* NEW *</b>	Kuala Lumpur, Malaysia	<a href="#">XXV FIG International Congress</a> Details/link to register, visit: <a href="http://www.fig.net/fig2014/registration.htm">www.fig.net/fig2014/registration.htm</a>
30 June -3 July 2014	Guimaraes, Portugal	<a href="#">9th International Conference on Geographical Analysis, Urban Modeling, Spatial Statistics (GEOG-AND-MOD 14)</a> Abstract Deadline: 10 February 2014
<b>July 2014</b>		
1-7 July 2014	Cape Town, South Africa	<a href="#">AfricaGEO 2014 Conference &amp; Exhibition</a>
12-15 July 2014	San Diego, California USA	<a href="#">2014 Esri 3D Mapping Forum</a>
13-18 July 2014	Quebec, Canada	<a href="#">IEEE International Geoscience and Remote Sensing Symposium (IGARSS) 2014 &amp; 35th Canadian Symposium on Remote Sensing (CSRS)</a>
14-18 July 2014	San Diego, California USA	<a href="#">Esri International User Conference</a>
14-19 July, 2014	Nairobi, Kenya	<a href="#">7th Conference of the African Association of Women in Geosciences (AAWG): Earth Sciences and Climate Change: Challenges to Development in Africa</a>



<b>August 2014</b>		
<b>6-8 August 2014</b>	Nairobi, Kenya	<a href="#"><u>International Workshop on Open Data for Science and Sustainability in Developing Countries (ODDC)</u></a> Abstract deadline: 1 February 2014
<b>19-21 August 2014</b>	Lagos, Nigeria	<a href="#"><u>Africa Geospatial Forum</u></a> (formerly known as Map Africa conference)
<b>September 2014</b>		
<b>1-3 September 2014</b>	Gaborone, Botswana	<a href="#"><u>5th IASTED African Conference on Environment and Water Resource Management (AfricaEWRM 2014)</u></a> Abstract deadline: 1 April 2014
8-13 September 2014	Portland, Oregon	<a href="#"><u>FOSS4G 2014</u></a>
<b>October 2014</b>		
<b>22-24 October 2014</b>	Mombasa, Kenya	<a href="#"><u>Esri Eastern Africa User Conference</u></a>
<b>27-31 October 2014</b>	Cape Town, South Africa	<a href="#"><u>African Association of Remote Sensing of the Environment (AARSE) Conference 2014</u></a>
<b>November 2014</b>		
<b>December</b>		
<b>2015</b>	Durban, South Africa	<a href="#"><u>14th World Forestry Congress for South Africa</u></a>
<b>19-20 May 2015</b>	Paris, France	<a href="#"><u>International Conference on Geographic Information Systems (ICGIS 2015)</u></a> Abstract deadline: 31 December 2014
<b>23-28 August 2015</b>	Rio de Janeiro, Brazil	<a href="#"><u>27th International Cartographic Conference</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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